

## ARTICLE V. EROSION AND SEDIMENT CONTROL

### Sec. 6.5-61. Intent.

The intent of this article is to protect property, prevent damage to the environment, and promote the public welfare in the city, by guiding, regulating and controlling the design, construction and use of excavation, grading and other similar activities which disturb or break the topsoil, or result in the movement of soil. During construction, soils are the most vulnerable to erosion by wind and water. This eroded soil endangers water resources by reducing water quality, and causing the siltation of aquatic habitat for fish and other desirable species. Eroded soil also necessitates the repair and cleaning of storm sewers, ditches and other facilities in the stormwater system. The regulations contained in this article are intended to prevent soil erosion, and to provide procedures for submission, review and approval of erosion control plans prior to soil disturbance.

(Ord. No. 1674, 2-28-05)

### Sec. 6.5-62. Definitions.

For the purposes of this article, the following words are defined.

*City Engineer.* The City Engineer of Danville, Kentucky, and the employees and/or the designees of the City Engineer.

*Erosion.* The process by which the ground surface is worn away by the action of wind or water.

*Excavation or cut.* Any act by which soil or rock is cut into, dug, quarried, uncovered, removed, displaced or relocated, including the conditions resulting from such activities.

*Fill.* A deposit of soil, rock or other non-deteriorating material used by man to replace or supplement the original soil or sub-soil.

*Floodplain.* That land adjacent to a stream, channel, or body of water, which has been or may be hereafter covered by flood water during the base flood. *Floodplain* shall include those lands within the Special Flood Hazard Areas shown on the Federal Emergency Management Agency Flood Insurance Rate Map, as well as other land that is anticipated to be covered with water during the one hundred (100) year, one (1) hour storm, based on a fully developed watershed and calculated using the procedures of the *Stormwater Manual*.

*Grading.* Any stripping, excavating, filling, stockpiling of soil, or any combination thereof, including the land in its excavated or filled condition.

*Natural features.* Shall include, but not be limited to, lakes, ponds, springs, wetlands, existing water courses, soils and rocks.

*Natural ground cover.* Shall include, but not be limited to, vegetation (such as grasses, shrubs, legumes and the like), and tree stands having trees five (5) inches or greater in diameter, or fifteen (15) feet or greater in height.

*Natural ground surface.* Any ground surface in its original state before any grading, excavation or filling. Where there is any question of the location of the *natural ground surface*, the City Engineer shall make such determination.

*Post-development floodplain.* The portion of land adjacent to a stream or other watercourse which is anticipated to be covered with water during the one hundred (100) year, one (1) hour storm, based on a fully developed watershed and calculated using the procedures of the *Stormwater Manual*.

*Sediment.* Any solid material which is a product of erosion, whether mineral or organic, and that is in suspension, is being transported, or has been moved from its site of origin, whether by air, water or gravity.

*Slope.* Any inclined, exposed surface of a fill, excavation or natural terrain.

*Soil.* All earth material of whatever origin that overlies bedrock, and may include the decomposed zone of bedrock which can be readily excavated by mechanical equipment.

*Stormwater Manual.* A document hereby adopted by the City Commission and incorporated into this article by reference to provide standards for the design, review, construction and inspection of stormwater facilities. From time to time the city government may revise, modify or amend the *Stormwater Manual*. When referenced in this article, the current edition, latest revision of the *Stormwater Manual* shall be used.

*Stream.* Any river, creek or channel in which water flows for substantial periods of the year, and which has a drainage area of at least one hundred (100) acres.

*Stripping.* Any activity which removes or significantly disturbs the vegetative surface cover, including clearing and grubbing operations.

*Watercourse.* Any body of water, including but not limited to, lakes, ponds or streams, whether perennial or intermittent.

(Ord. No. 1674, 2-28-05)

### Sec. 6.5-63. Scope of coverage.

No grading, stripping, excavating, filling or other disturbance of the natural ground cover or natural features shall take place prior to the submission of an erosion and sediment control plan, prepared in conformance with this article and the *Stormwater Manual*, unless otherwise exempted herein. If the grading and/or excavation is to be conducted in stages, each stage may proceed only if the erosion and sediment control measures for the preceding stage have been completed in conformance with the submitted plan.

(Ord. No. 1674, 2-28-05)

### Sec. 6.5-64. Exceptions.

No grading permit or separate erosion and sediment control plan shall be required for the following activities.

- (a) Any emergency activity which is immediately necessary for the protection of life, property or natural resources.
- (b) Agricultural practices such as plowing, cultivation, construction of agricultural structures; nursery operations such as removal and/or transplanting of trees.
- (c) Installation of lateral sewer lines, telephone lines, electric lines, gas lines or the installation of similar public service facilities.
- (d) Excavations at cemeteries for human or animal burial.
- (e) Excavation or fill, provided that it:
  - (1) Is less than four (4) feet in vertical depth at its deepest point, as measured from the natural ground; and

(2) Does not result in a total quantity of more than one hundred (100) cubic yards of material being removed from, deposited on, or disturbed on any lot, parcel or combination thereof; and

(3) Does not impair existing surface drainage, constitute a potential erosion hazard, or act as a source of sedimentation to any adjacent land or watercourse; and

(4) Has no final slopes steeper than one (1) foot vertical in three (3) feet horizontal; and

(5) Has proper vegetative cover reestablished as soon as possible on all disturbed areas; and

(6) Has no fill placed on a surface having a slope steeper than five (5) feet horizontal to one (1) foot vertical.

(f) Grading as a maintenance measure or for landscaping purposes, provided:

(1) The aggregate area(s) affected or stripped at any one time does not exceed ten thousand (10,000) square feet, and is not within a floodplain or a natural watercourse;

(2) The grade change does not exceed eighteen (18) inches at any point, and does not alter the drainage pattern;

(3) Proper vegetative cover is reestablished as soon as possible on all disturbed areas;

(4) The grading does not involve a quantity of material in excess of one hundred (100) cubic yards.

(g) Finished grading and excavation below finished grade for the following uses, when authorized by a valid building permit; provided the disturbed material or fill is handled in such a manner as to conform to the provisions of section 6.5-67: Requirements for low density residential projects:

(1) Basements and footings of a residential structure of no more than four units;

(2) Retaining walls;

(3) Swimming pools;

(4) An accessory structure related to a residential structure of no more than four units.

(Ord. No. 1674, 2-28-05)

### **Sec. 6.5-65. Erosion and sediment control plans.**

(a) *Authorization to prepare plans.* All erosion and sediment control plans must be prepared by a licensed professional engineer or a licensed landscape architect. However, all hydrologic, hydraulic, structural and geotechnical design must be prepared by a licensed professional engineer. All erosion and sediment control plans shall be prepared in accordance with this article and with the *Stormwater Manual*.

(b) *Submission of the plan, posting of the surety, and issuance of a grading permit.* All erosion and sediment control plans shall be submitted to the City Engineer, who shall conduct an administrative review of the plan to verify that all items have been submitted as required by this article and the *Stormwater Manual*. It shall be the responsibility of the design engineer or the landscape architect, as appropriate, to ensure the accuracy and completeness of all drawings, reports and calculations, and to ensure construction feasibility of the design. Within ten (10) working days of receipt of the erosion and sediment control plan, the City Engineer shall notify, in writing, the engineer or the landscape architect, as appropriate, of any omissions; shall determine the amount of the irrevocable letter of credit, when posted with the City Engineer; shall authorize the Building Inspector to issue the grading permit. Provided all other permit requirements are met, the Building Inspector shall issue the grading permit, upon notification by the City Engineer.

(c) *Contents of the erosion and sediment control plan.* All erosion and sediment control plans shall, at a minimum, conform to the requirements of the *Stormwater Manual*.

(1) *Written description.* The erosion and sediment control plan shall contain a written description of the site, and the measures which will be used to control the erosion and sediment on the site, which shall include:

a. A statement of the purpose of the project, the location and size of the site, and the area to be disturbed;

b. A discussion of the topography, land cover conditions, soils, percent and location of impervious areas, and the drainage patterns both before and after the soil disturbance;

c. A schedule of the work to be conducted, including the beginning and the completion dates of the soil disturbance, staging and sequencing of activities, including re-vegetation and winter shutdown, if appropriate;

d. A list of the best management practices that will be used, and their location on the site; and

e. An operation and maintenance plan indicating the schedule for inspection and the maintenance and repair of the best management practices during construction.

(2) *Site plan.* The site plan shall be prepared at a scale of one (1) inch equals fifty (50) feet, and shall contain the following information:

a. The site boundaries, the pre-construction topography at two (2) foot intervals, drainageways, utilities, and the location of the site disturbance;

b. The finished grades, topography, building locations, paved areas, construction entrances, other access locations, soil stockpile areas, and equipment storage areas;

c. Planned best management practices overlaid with other site features; and

d. Areas planned for no disturbance.

(3) *Other information.* The project engineer shall submit all hydrologic, hydraulic, structural and geotechnical design calculations, drawings and specifications.

(4) *Certifications.* The following certifications shall be submitted with the erosion and sediment control plan.

a. For all plans, a signed and witnessed certification by the property owner which shall state:

"I certify that I am the owner of the property shown hereon, do agree with all graphic and textural representations shown herein, and that no grading, stripping, excavating, filling or other disturbance of the natural ground cover will be conducted except in conformance with this submitted plan."

b. For plans prepared by a licensed professional engineer, a signed and witnessed certification which shall state:

"I certify that this plan was prepared by me or under my direction; that the engineering design was prepared in accordance with the Erosion and Sediment Control Ordinance and with the *Stormwater Manual*; and, to the best of my knowledge and belief, the information shown herein is accurate."

c. For plans prepared by a licensed landscape architect, a signed and witnessed certification which shall state:

"I certify that this plan was prepared by me or under my direction; this plan was prepared in accordance with the Erosion and Sediment Control Ordinance and with the *Stormwater Manual*; that no hydrologic, hydraulic, structural or geotechnical design is required for this plan; and, to the best of my knowledge and belief, the information shown herein is accurate."

(d) *Submission of an irrevocable letter of credit for erosion and sediment control required.* The City Engineer shall not authorize the issuance of any grading permit until the permit applicant has posted an irrevocable letter of credit, in an amount determined by the City Engineer as being sufficient to ensure the provision of the following on the site:

- (1) Re-grading of the site as might be necessary to correct any slopes which do not meet the standards of this article;
- (2) Installation of erosion and sediment control measures to protect adjoining or on-site streams and waterways;
- (3) Seeding and mulching of the site as would be needed to stabilize the soil;
- (4) Conversion of any temporary basins to properly operating permanent stormwater best management practices.

(e) *Extensions of time.* Every grading permit issued to implement an erosion and sediment control plan shall expire six (6) months from the date of issuance, unless work has commenced in accordance with the plan. If work authorized by the permit is not completed within the terms of the permit, or is not commenced within six (6) months, the permit holder may, in writing and prior to the expiration of the permit, request the Building Inspector grant an extension to the permit. The Building Inspector may grant the extension, upon a showing by the permit holder that:

- (1) There was justification for the delay in commencing or completing the work;
- (2) The delay will not create a new erosion hazard or permit an existing hazard to continue; and
- (3) A new completion date has been established.

(Ord. No. 1674, 2-28-05)

### **Sec. 6.5-66. Best management practices.**

Erosion and sediment control plans shall utilize the following best management practices, and shall conform to the provisions of the *Stormwater Manual*, to minimize erosion and control sedimentation.

(a) *Nonstructural best management practices.* The following nonstructural practices shall be incorporated into all erosion and sediment control plans.

(1) *Avoidance of the floodplain.*

- a. Temporary sediment control in a permanent pond shall be allowed in the post-development floodplain, but not in the stream.
- b. Roadways and utilities may only cross the floodplain at angles within ten (10) degrees of perpendicular to the water.

c. In order to protect floodplains, streams and watercourses during grading, stripping, excavating, filling or other disturbance of the natural ground cover, a vegetative buffer strip of twenty-five (25) feet, measured horizontally from the edge of the stream bank, shall be provided on each side of the stream, or in absence of clear stream banks, twenty-five (25) feet, measured horizontally from the centerline of the stream. Within the vegetative buffer strip, there shall be no grading, filling, removal of vegetation, or other disturbance of the natural ground cover or natural features.

(2) *Construction of on-site measures prior to soil disturbance.* All on-site measures required by the erosion and sediment control plan shall be made functional prior to commencing soil disturbance on the site. Except as is necessary to establish such on-site measures, clearing shall not begin until all on-site measures have been installed.

(3) *Reduced exposure time.* Permanent and temporary soil stabilization, as provided in the *Stormwater Manual*, shall be applied to all disturbed areas within fourteen (14) days after final grade is reached. Soil stabilization also shall be applied to all disturbed areas not at final grade which have been inactive for fourteen (14) days.

(b) *Structural best management practices for soil stabilization.* The following best management practices shall be used to achieve soil stabilization.

(1) *Slope stabilization.* To minimize the adverse effects of steep embankment slopes, constructed fill slopes and cut slopes shall not be steeper than three (3) feet horizontal to one (1) foot vertical. For slopes of four (4) feet horizontal to one (1) foot vertical or steeper, with slope lengths of greater than one hundred (100) feet, temporary diversion ditches shall be constructed at the top of the slope and every one hundred (100) feet horizontally down the slope.

(2) *Mulch.* Mulch shall be used as soil stabilization for any disturbed area inactive for fourteen (14) days or longer. Areas requiring stabilization during December through February shall receive only mulch held in place with bituminous material. Mulch shall be used whenever permanent or temporary seeding is used.

(3) *Temporary seeding.* Temporary seeding shall be used for soil stabilization when grades are not ready for permanent seeding, except during December through February. Only rye grain or annual rye grass seed shall be used for temporary seeding.

(4) *Permanent seeding.* Permanent seeding shall be applied within fourteen (14) days after final grade has been reached, except during December through February. Permanent seeding shall be applied on any areas that will not be disturbed again for a year, even if final grades have not been reached.

(5) *Sod.* Sod shall be used for disturbed areas that require immediate vegetative cover as specified in the *Stormwater Manual*. Sod may be installed throughout the year.

(6) *Construction entrance.* A stabilized construction entrance, as provided in the *Stormwater Manual*, shall be constructed wherever vehicles are leaving a construction site to enter a public road, or at any unpaved entrance/exit location. The construction entrance shall be a minimum of fifty (50) feet long, and shall be an on-site measure to be constructed prior to commencing further construction.

(7) *Road and parking stabilization.* Gravel or paving material, as provided in the *Stormwater Manual*, shall be used to stabilize permanent roads and parking areas, as well as temporary roads and parking areas used repeatedly by construction traffic. Stabilization shall be accomplished within fourteen (14) days of grading or beginning use for construction traffic.

(8) *Dust control.* Dust control, as provided in the *Stormwater Manual*, shall be provided in conjunction with all grading, stripping, excavating, filling or other disturbance of the natural ground cover, and in areas with frequent construction traffic.

(9) *Geotextiles*. Mulch netting, erosion control matting, or turf reinforcement matting shall be used on sloping areas, and may be used in other areas as specified in the *Stormwater Manual*.

(10) *Gabion mattresses*. Gabion mattresses shall be used at the outlets of all culverts and storm drains with an exit velocity greater than five (5) feet per second when flowing full, except where paved ditches are used. Gabion mattresses shall also be used at the outlet of impact stilling basins.

(11) *Temporary diversion ditches*. Temporary diversion ditches shall be used to collect sediment-laden runoff from disturbed areas, and to direct it to a sediment pond, where applicable. Because temporary diversion ditches are expected to be used for less than one (1) year, no stabilization is required.

(12) *Level spreaders*. Level spreaders shall be constructed at the outlets of temporary diversion ditches, and at the outlets of permanent constructed waterways where they terminate on undisturbed areas.

(13) *Permanent vegetated waterways*. Permanent constructed waterways shall be used to divert stormwater runoff from upland undisturbed areas, around or away from areas to be disturbed during construction. Constructed waterways that are expected to be in place for at least one (1) year shall be considered permanent. Permanent waterways shall be lined with sod, nets or mats, or have permanent seeding as provided in the *Stormwater Manual*.

(14) *Pipe slope drains*. Whenever it is necessary to convey water down a slope which is not stabilized or which is prone to erosion, pipe slope drains shall be used, unless a paved ditch is used.

(15) *Impact still basins*. Impact stilling basins shall be used at the outlet of culverts and storm sewers with calculated exit velocities greater than fifteen (15) feet per second when flowing full.

(c) *Structural best management practices for sediment control*. The following best management practices shall be used to achieve sediment control.

(1) *Check dams*. Check dams shall be constructed, as provided in the *Stormwater Manual*, prior to the establishment of vegetation in newly constructed, unpaved, open channels which are used to drain ten (10) acres or less.

(2) *Sediment traps*. Sediment traps shall be installed, as provided in the *Stormwater Manual*, below all disturbed areas of less than five (5) acres which do not drain into a sediment pond.

(3) *Sediment ponds*. Sediment ponds shall be installed, as provided in the *Stormwater Manual*, below all disturbed areas of five (5) acres or more. The maximum area for a single pond shall be one hundred (100) acres. The pond shall be designed to reduce peak discharges during construction to the pre-development level for the ten (10) year and one hundred (100) year storms.

(4) *Silt fences*. Silt fences shall be installed, as provided in the *Stormwater Manual*, down-slope of areas to be disturbed prior to clearing, grading, stripping, excavating, filling or other disturbance of the natural ground cover. The silt fence must be located such that the total area draining to the fence is not greater than one-fourth (1/4) acre per one hundred (100) feet of fence. Silt fences shall be used for storm drain drop-inlet protection and around soil stockpiles.

(5) *Storm drain inlet protection*. Storm drain inlet protection shall only be used around drop-inlets when the up-slope areas draining to the inlet has no other sediment control.

(6) *Filter strips*. Filter strips, as provided in the *Stormwater Manual*, shall be used on each side of streams, wetlands, sinkholes and permanent constructed waterways.

(7) *Stream-crossing structures*. Stream-crossing structures shall be used at locations where construction traffic, permanent traffic or utilities must cross a stream.

(8) *Pump-around flow diversions*. Pump-around flow diversions shall be used to divert flow-around construction activities occurring in a stream, when those activities are reasonably expected to cause the erosion or deposit of sediment in a stream.

(Ord. No. 1674, 2-28-05)

### **Sec. 6.5-67. Requirements for low density residential projects.**

(a) Construction of, or an addition to, a residential structure of four (4) units or less, including an accessory structure for such a residential structure, shall not require the submission of a separate erosion and sediment control plan as a condition to the issuance of a building permit.

(b) However, the following shall be required during construction.

(1) *Installation of a silt fence or other sediment control*. In order to prevent sediment from washing into streets, catch basins, storm sewers, grassed open channels and adjacent properties, sediment controls shall be installed. Such controls shall include silt fences, diversion ditches, earthen berms, grass strips at least ten (10) feet wide, or other controls as specified in the *Stormwater Manual*. Disturbed areas that drain directly to a sediment pond or a sediment trap by means of a temporary diversion ditch do not require additional sediment controls.

(2) *Seeding and mulching*. All disturbed areas shall be seeded and mulched within fourteen (14) days after final grading of the property.

(3) *Temporary gravel pad*. A temporary gravel pad, thirty (30) feet wide, shall be installed from the edge of the street at least twenty (20) feet into the property, to provide a temporary construction entrance.

(Ord. No. 1674, 2-28-05)

### **Sec. 6.5-68. Violations and penalties.**

(a) *Violations*. Whenever the City Engineer finds that a person has violated a prohibition or has failed to meet a requirement of this article, the City Engineer may order compliance by sending a written notice of violation to the property owner. All violations shall be corrected within the time period specified in the notice, but in no case shall such time period be less than twenty-four (24) hours. The notice of violation shall be mailed to the property owner at the last known address listed on the current tax assessment roll, or by personally serving, or by causing to be personally served, the property owner with a written notice of violation. If the violation is not corrected as specified, the City Engineer may, without limitation:

(1) Order such work as is necessary to leave the site in a safe condition and to achieve compliance with this article and the *Stormwater Manual*;

(2) Order the stoppage of work which is determined to have created, or to have contributed to, any dangerous conditions;

(3) Call the letter of credit that was posted for the site and initiate corrective action by work forces under control of the City Engineer, with the cost of such work being recoverable from the letter of credit.

(b) *Penalties*. The city may commence appropriate legal action and/or seek equitable relief, including injunctive relief, against any person who fails to abate a violation and/or to restore an affected property prior to the deadline established in the notice of violation. Any person who conducts grading, stripping, excavation, filling or other disturbance of the natural ground cover in violation of this article, or who violates, neglects, omits or refuses to

comply with any provision of this article shall, upon conviction, be fined not less than two hundred dollars (\$200.00) nor more than one thousand dollars (\$1,000.00) for each offense. The time of violation shall be measured from the time written notice to correct is given to the owner. Each day a violation is maintained shall constitute a separate offense. Any recoverable cost of corrective action shall be in addition to fines imposed as a penalty. The imposition of any penalty shall not exempt the violator from compliance with the provisions of this article.

(Ord. No. 1674, 2-28-05)

***Secs. 6.5-69 - 6.5-75. Reserved.***