

Erosion and Sediment Control Model Ordinance

Section I. Introduction/ Purpose

During the construction process, soil is highly vulnerable to erosion by wind and water. 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 repair of sewers and ditches and the dredging of lakes. In addition, clearing and grading during construction cause the loss of native vegetation necessary for terrestrial and aquatic habitat.

As a result, the purpose of this local regulation is to safeguard persons, protect property, and prevent damage to the environment in _____ (*municipality*). This ordinance will also promote the public welfare by guiding, regulating, and controlling the design, construction, use, and maintenance of any development or other activity that disturbs or breaks the topsoil or results in the movement of earth on land in _____ (*municipality*).

Section II. Definitions

Certified Contractor A person who has received training and is licensed by _____ (*state or local environmental agency*) to inspect and maintain erosion and sediment control practices.

Clearing Any activity that removes the vegetative surface cover.

Drainage Way Any channel that conveys surface runoff throughout the site.

Erosion Control A measure that prevents erosion.

Erosion and Sediment Control Plan A set of plans prepared by or under the direction of a licensed professional engineer

indicating the specific measures and sequencing to be used to control sediment and erosion on a development site during and after construction.

Grading Excavation or fill of material, including the resulting conditions thereof.

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

Phasing Clearing a parcel of land in distinct phases, with the stabilization of each phase completed before the clearing of the next.

Sediment Control Measures that prevent eroded sediment from leaving the site.

Site A parcel of land or a contiguous combination thereof, where grading work is performed as a single unified operation.

Site Development Permit A permit issued by the municipality for the construction or alteration of ground improvements and structures for the control of erosion, runoff, and grading.

Stabilization	The use of practices that prevent exposed soil from eroding.
Start of Construction	The first land-disturbing activity associated with a development, including land preparation such as clearing, grading, and filling; installation of streets and walkways; excavation for basements, footings, piers, or foundations; erection of temporary forms; and installation of accessory buildings such as garages.
Watercourse	Any body of water, including, but not limited to lakes, ponds, rivers, streams, and bodies of water delineated by _____ (<i>municipality</i>).
Waterway	A channel that directs surface runoff to a watercourse or to the public storm drain.

Section III. Permits

- A) No person shall be granted a site development permit for land-disturbing activity that would require the uncovering of *10,000 or more square feet* without the approval of an Erosion and Sediment Control Plan by _____ (*erosion and sediment control agency*).



The size of the site regulated under the erosion and sediment control ordinance varies widely. The proposed Phase II of USEPA's National Pollutant Discharge Elimination System (NPDES) rules regulates disturbances greater than 1 acre, but communities may regulate sites as small as 2,000 square feet.

- B) No site development permit is required for the following activities:
- 1) Any emergency activity that is immediately necessary for the protection of life, property, or natural resources.
 - 2) Existing nursery and agricultural operations conducted as a permitted main or accessory use.



Communities may choose to exempt other activities, such as mining, from an erosion and sediment control permit, or in some cases include the exempted uses cited above.

- C) Each application shall bear the name(s) and address(es) of the owner or developer of the site, and of any consulting firm retained by the applicant together with the name of the applicant's principal contact at such firm and shall be accompanied by a filing fee.
- D) Each application shall include a statement that any land clearing, construction, or development involving the movement of earth shall be in accordance with the Erosion and Sediment Control Plan and that a certified contractor shall be on site on all days when construction or grading activity takes place.



Some states have "Certified Contractor" programs, in which contractors successfully complete a training course in basic erosion and sediment control. This person would be responsible for ensuring the regular maintenance and proper installation of erosion and sediment control measures.

- E) The applicant will be required to file with _____ (*municipality*) a faithful performance bond, letter of credit, or other improvement security in an amount deemed sufficient by _____ (*erosion and sediment control agency*) to

cover all costs of improvements, landscaping, maintenance of improvements for such period as specified by _____ (*municipality*), and engineering and inspection costs to cover the cost of failure or repair of improvements installed on the site.

Section IV. Review and approval

- A) _____ (*erosion and sediment control agency*) will review each application for a site development permit to determine its conformance with the provisions of this regulation. Within 30 days after receiving an application, _____ (*erosion and sediment control agency*) shall, in writing:
- 1) Approve the permit application;
 - 2) Approve the permit application subject to such reasonable conditions as may be necessary to secure substantially the objectives of this regulation, and issue the permit subject to these conditions; or
 - 3) Disapprove the permit application, indicating the reason(s) and procedure for submitting a revised application and/or submission.
- B) Failure of the _____ (*erosion and sediment control agency*) to act on an original or revised application within 30 days of receipt shall authorize the applicant to proceed in accordance with the plans as filed unless such time is extended by agreement between the applicant and _____ (*erosion and sediment control agency*). Pending preparation and approval of a revised plan, development activities shall be allowed to proceed in accordance with conditions established by _____ (*erosion and sediment control agency*).

Section V. Erosion and Sediment Control Plan

- A) The Erosion and Sediment Control Plan shall include the following:
- 1) A natural resources map identifying soils, forest cover, and resources protected under other chapters of this code.



This map should be at a scale no smaller than 1"=100'. For a more detailed discussion, see the buffer ordinance.

- 2) A sequence of construction of the development site, including stripping and clearing; rough grading; construction of utilities, infrastructure, and buildings; and final grading and landscaping. Sequencing shall identify the expected date on which clearing will begin, the estimated duration of exposure of cleared areas, areas of clearing, installation of temporary erosion and sediment control measures, and establishment of permanent vegetation.
 - 3) All erosion and sediment control measures necessary to meet the objectives of this local regulation throughout all phases of construction and after completion of development of the site. Depending upon the complexity of the project, the drafting of intermediate plans may be required at the close of each season.
 - 4) Seeding mixtures and rates, types of sod, method of seedbed preparation, expected seeding dates, type and rate of lime and fertilizer application, and kind and quantity of mulching for both temporary and permanent vegetative control measures.
 - 5) Provisions for maintenance of control facilities, including easements and estimates of the cost of maintenance.
- B) Modifications to the plan shall be processed and approved or disapproved in the same

manner as Section IV of this regulation, may be authorized by _____
(*erosion and sediment control agency*) by written authorization to the permittee, and shall include

- 1) Major amendments of the erosion and sediment control plan submitted to _____
_____ (*erosion and sediment control agency*)
- 2) Field modifications of a minor nature

Section VI. Design Requirements

- A) Grading, erosion control practices, sediment control practices, and waterway crossings shall meet the design criteria set forth in the most recent version of _____
_____ (*erosion and sediment control manual*), and shall be adequate to prevent transportation of sediment from the site to the satisfaction of _____ (*erosion and sediment control agency*). Cut and fill slopes shall be *no greater than 2:1*, except as approved by _____ (*erosion and sediment control agency*) to meet other community or environmental objectives.
- B) Clearing and grading of natural resources, such as forests and wetlands, shall not be permitted, except when in compliance with all other chapters of this Code. Clearing techniques that retain natural vegetation and drainage patterns, as described in _____ (*erosion and sediment control manual*), shall be used to the satisfaction of _____ (*erosion and sediment control agency*).
- B) Clearing, except that necessary to establish sediment control devices, shall not begin until all sediment control devices have been installed and have been stabilized.



For example, the stream buffer codes as well as the forest conservation code in the "Miscellaneous Ordinances" section would also restrict clearing.

- C) Phasing shall be required on all sites disturbing greater than 30 acres, with the size of each phase to be established at plan review and as approved by _____ (*erosion and sediment control agency*).



Although many communities encourage phasing, few actually require it. Phasing construction can reduce erosion significantly when well designed. (See Claytor, 1997.)

- D) Erosion control requirements shall include the following:

- 1) Soil stabilization shall be completed within *five days* of clearing or inactivity in construction.
- 2) If seeding or another vegetative erosion control method is used, it shall become established within *two weeks* or _____ (*erosion and sediment control agency*) may require the site to be reseeded or a nonvegetative option employed.



Numerical standards regarding the time to stabilization will vary. In particular, the time to establish seeding will depend on the climate.

- 3) Special techniques that meet the design criteria outlined in _____ (*erosion and sediment control manual*) on steep slopes or in drainage ways shall be used to ensure stabilization.
- 4) Soil stockpiles must be stabilized or covered at the end of each workday.
- 5) The entire site must be stabilized, using a heavy mulch layer or another method

that does not require germination to control erosion, at the close of the construction season.

- 6) Techniques shall be employed to prevent the blowing of dust or sediment from the site.



Dust control is most important in arid regions of the country

- 7) Techniques that divert upland runoff past disturbed slopes shall be employed.
- D) Sediment controls requirements shall include
- 1) Settling basins, sediment traps, or tanks and perimeter controls.
 - 2) Settling basins that are designed in a manner that allows adaptation to provide long term stormwater management, if required by _____ (*erosion and sediment control agency*)
 - 3) Protection for adjacent properties by the use of a vegetated buffer strip in combination with perimeter controls
- E) Waterway and watercourse protection requirements shall include
- 1) A temporary stream crossing installed and approved by _____ (*approving agency, e.g., Waterways Division, ESC agency*) if a wet watercourse will be crossed regularly during construction
 - 2) Stabilization of the watercourse channel before, during, and after any in-channel work
 - 3) All on-site stormwater conveyance channels designed according to the criteria outlined in _____ (*erosion and sediment control manual*)
 - 4) Stabilization adequate to prevent erosion located at the outlets of all pipes and paved channels
- F) Construction site access requirements shall include
- 1) a temporary access road provided at all sites
 - 2) other measures required by _____ (*erosion and sediment control agency*) in order to ensure that sediment is not tracked onto public streets by construction vehicles or washed into storm drains

Section VII. Inspection

- A) _____ (*erosion and sediment control agency*) or designated agent shall make inspections as hereinafter required and either shall approve that portion of the work completed or shall notify the permittee wherein the work fails to comply with the Erosion and Sediment Control Plan as approved. Plans for grading, stripping, excavating, and filling work bearing the stamp of approval of the _____ (*erosion and sediment control agency*) shall be maintained at the site during the progress of the work. To obtain inspections, the permittee shall notify _____ (*erosion and sediment control agency*) at least two working days before the following:
- 1) Start of construction
 - 2) Installation of sediment and erosion measures
 - 3) Completion of site clearing
 - 4) Completion of rough grading
 - 5) Completion of final grading
 - 6) Close of the construction season
 - 7) Completion of final landscaping



The "Certified Inspector Program" in Delaware allows developers to hire an inspector who has passed a state licensing program. This person would inspect the site at regular intervals and file reports to the erosion and sediment control agency. The agency would then be responsible for spot checks on these reports.

- B) The permittee or his/her agent shall make regular inspections of all control measures in accordance with the inspection schedule outlined on the approved Erosion and Sediment Control Plan(s). The purpose of such inspections will be to determine the overall effectiveness of the control plan and the need for additional control measures. All inspections shall be documented in written form and submitted to _____ (erosion and sediment control agency) at the time interval specified in the approved permit.
- C) _____ (erosion and sediment control agency) or its designated agent shall enter the property of the applicant as deemed necessary to make regular inspections to ensure the validity of the reports filed under Section B.

Section VIII. Enforcement

A) Stop-Work Order; Revocation of Permit

In the event that any person holding a site development permit pursuant to this ordinance violates the terms of the permit or implements site development in such a manner as to materially adversely affect the health, welfare, or safety of persons residing or working in the neighborhood or development site so as to be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood, _____ (erosion and sediment control agency) may suspend or revoke the site development permit.

B) Violation and Penalties

No person shall construct, enlarge, alter, repair, or maintain any grading, excavation, or fill, or cause the same to be done, contrary to or in violation of any terms of this ordinance. Any person violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and each day during which any violation of any of the provisions of this ordinance is committed, continued, or permitted, shall constitute a separate offense. Upon conviction of any such violation, such person, partnership, or corporation shall be punished by a fine of not more than \$ _____ for each offense. In addition to any other penalty authorized by this section, any person, partnership, or corporation convicted of violating any of the provisions of this ordinance shall be required to bear the expense of such restoration.



Specific penalties will vary between communities and should reflect enforceable penalties given the political realities of a jurisdiction.

Section IX. Separability

The provisions and sections of this ordinance shall be deemed to be separable, and the invalidity of any portion of this ordinance shall not affect the validity of the remainder.

References

Claytor, R. 1997. Practical Tips for Construction Site Phasing. *Watershed Protection Techniques* 2(3): 413-

417.