

User's Guide

IOWA MODEL CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL MODEL ORDINANCE

To meet your water quality goals



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Summary

Construction Site Erosion and Sediment Control Model Ordinance (COSESCO) 3/8/2005

Background for Model Ordinance

This model or “example” ordinance is based on parts of existing models from other states and will provide the guidance that Iowa cities and other entities need to develop stormwater ordinances. The ordinance will require periodic updating to reflect the evolution that will occur in stormwater management in Iowa as it becomes a more widely understood aspect of protection of water quality.

Water quality is greatly affected by erosion and sedimentation caused by urban activities in watersheds. During construction, land is highly susceptible to erosion and/or sedimentation especially when Best Management Practices (BMPs) for erosion and sediment control are not installed and maintained properly.

- Erosion control BMPs are designed to intercept precipitation and prevent movement of soil particles. Practices that prevent erosion include construction staging, protection of existing vegetation and tracking of disturbed slopes. Products designed for these practices include straw, mulch, compost, vegetated ground covers, fiber blankets and hydro-seeding.
- Sediment control BMPs are designed to capture soil particles after they have been dislodged and are carried from the site. Products designed for this include silt fences, filter socks, check dams and sedimentation ponds.

Sediment is considered to be one of the most damaging pollutants in Iowa and is the major pollutant by volume in state surface waters. Runoff from construction sites is by far the largest source of sediment in urban areas under development. Sediment-loading rates from construction sites are 5 to 500 times greater than those from undeveloped land (USEPA, 1977). Another major source of sediment is streambank erosion, which is accelerated by increases in peak rates and volumes of runoff due to urbanization. Proper design and installation of BMPs, monitoring BMP effectiveness, and maintaining BMPs are issues that are critical in reducing the effects of erosion and are best addressed at the local level.

Regulating erosion and sediment losses before, during and after construction is a powerful and effective local government tool for protecting water quality in urban areas. Erosion and sediment control is regulated in a number of ways in Iowa. Some communities rely primarily on the Iowa Department of Natural Resources (IDNR) to administer and enforce federal and state regulations known as the National Pollutant Discharge Elimination System (NPDES) permit program. Other communities defer erosion and sediment control authority to local government organizations such as Natural Resources Conservation Districts and Soil and Water Conservation Districts (SWCDs). Now, through the NPDES Phase II stormwater permit program, communities are required to create meaningful localized regulations and programs that protect water quality, property values, recreational resources, and natural habitats.

Communities are critical to enforcing erosion and sediment control regulation because state and federal agencies simply cannot track the development activities happening to the landscape on a day-to-day basis. They keep track of local development under building code, permitting processes, and general protection of health, safety, and welfare issues. Many communities have some erosion and sediment control performance standards with minimal permitting processes in place. Water quality analysis is showing, however, that these standards frequently fail to protect water quality. The NPDES Phase II program requires many communities to update their erosion and sediment control standards. The Iowa SUDAS (Statewide Urban Design Standards and Specifications) program has standards and specifications for erosion and sediment control best management practices. These practices will provide guidance and uniformity for those involved with construction site activities along with those that enforce and inspect construction sites for erosion and sediment control. As communities incorporate the new permitting requirements into local regulation, they can take the opportunity to adopt and utilize the SUDAS standards and specifications to address specific local considerations and priorities in managing erosion and sedimentation.

IOWA MODEL CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL ORDINANCE (COSESCO) 3/8/2005

Ordinance Contents:

Section 1. Findings

Section 2. Application Procedure for Obtaining and Maintaining a Permitting Authority
Construction Site Erosion and Sediment Control (COSESCO) Permit

Section 3. Inspection Procedures for Permitting Authority COSESCO Permits

Section 4. Monitoring Procedures for Permitting Authority COSESCO Permits

Section 5. Enforcement

Section 6. Performance Bond or Cash Security

Section 7. Appeal

Appendix.

ORDINANCE PURPOSE AND SCOPE

- A. Purpose.** The purpose of the ordinance is to control or minimize stormwater pollution along with soil erosion and sedimentation within the jurisdiction. It references the SUDAS standards and specifications for conservation practices and planning activities designed to minimize non-point source pollution, soil erosion and sedimentation.
- B. Scope.** Any person, firm, sole proprietorship, partnership, corporation, state agency or political subdivision proposing a land disturbance activity of **one acre or more**, and/or requiring site planning, subdivision and/or NPDES construction permit approval, within the jurisdiction, shall apply to the permitting authority. Land disturbing activities shall not begin until the plan conforms to the standards set forth in the ordinance and is approved by the permitting authority.

MODEL DESIGN MANUAL

- ❑ Iowa SUDAS and Standards and Specifications for Erosion and Sediment Control: www.iowasudas.com (Recommended Controls with references to select manuals are provided on this website until the Iowa Standards and Specifications are completed).

Additional Resources:

- *Twin Cities (Metro Council)*
www.metrocouncil.org/enviroment/watershed/BMP/manual.htm.
- *Kansas City APWA* www.kcapwa.net/docs/test_document.pdf
- *FHWA* <http://199.79.179.19/OLPFiles/FHWA/009340.pdf>
- *Virginia* www.dcr.state.va.us/sw/e&s-ftp.htm

DEFINITIONS

1. "**Best Management Practices (BMPs)**" – Erosion and **sediment control** and water quality management practices that are the most effective and practicable means of controlling, preventing and minimizing degradation of **surface water**, including avoidance of impacts, construction-phasing, minimizing the length of time soil areas are exposed, prohibitions and other management practices published by state or designated area-wide planning agencies. They can include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States.

Individual **BMPs** found in this permit are described in the **Iowa SUDAS Standards and Specifications for Erosion and Sediment Control and the recommendations provided on the SUDAS website: www.iowasudas.com**. **BMPs** must be adapted to the site and can be adopted from other sources.

2. "**Common Plan of Development or Sale**" – A contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, on different schedules, but under one proposed plan. One plan is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land-disturbing activities may occur.
3. "**Construction Activity**" – For this permit, **construction activity** includes **construction activity** as defined in 40 C.F.R. part 122.26(b)(14)(x) and **small construction activity** as defined in 40 C.F.R. part 122.26(b)(15). This includes a disturbance to the land that results in a change in the topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography that may result in accelerated **stormwater** runoff, leading to soil erosion and movement of sediment into **surface waters** or drainage systems. Examples of construction activity may include clearing, grading, filling and excavating. **Construction activity** includes the disturbance of less than one (1) acre of total land area that is a part of a larger **common plan of development or sale** if the larger common plan will ultimately disturb one (1) acre or more.
4. "**Dewatering**" – The removal of water for **construction activity**. It can be a discharge of appropriated surface or groundwater to dry and/or solidify a construction site. It may require Iowa Department of Natural Resources permits to be appropriated and if contaminated may require other permits to be discharged.
5. "**Energy Dissipation**" – Methods employed at pipe outlets to prevent erosion. Examples include, but are not limited to, concrete aprons, riprap, splash pads and gabions that are designed to prevent erosion.
6. "**Erosion Prevention**" – Measures employed to prevent erosion including, but not limited to, soil stabilization practices, limited grading, mulch, temporary or **permanent cover** and construction phasing.

7. "**Final Stabilization**" means that either:
 - a. All soil disturbing activities at the site have been completed and a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70% of the native background vegetative cover as measured by the line transect method for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed;
 - b. For individual lots in residential construction by either: (a) The homebuilder completing **final stabilization** as specified above, or (b) the homebuilder establishing temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, **final stabilization** (Homeowners typically have an incentive to put in the landscaping functionally equivalent to **final stabilization** as quick as possible to keep mud out of their homes and off sidewalks and driveways.); or
 - c. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land) **final stabilization** may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to **surface waters** and drainage systems and areas which are not being returned to their preconstruction agricultural use must meet the **final stabilization** criteria in (a) or (b) above.
8. "**General Contractor**" – The party who signs the construction contract with the **owner** to construct the project described in the final plans and specifications. Where the construction project involves more than one contractor, the **general contractor** will be the party responsible for managing the project on behalf of the **owner**. In some cases, the **owner** may be the **general contractor**. In these cases, the **owner** may contract an individual as the **operator** who would become the Co-Permittee.
9. "**Impervious Surface**" – A constructed hard surface that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development. Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads.
10. "**National Pollutant Discharge Elimination System (NPDES)**" – The program for issuing, modifying, revoking, reissuing, terminating, monitoring and enforcing permits under the Clean Water Act (Sections 301, 318, 402, and 405) and United States Code of Federal Regulations Title 33, Sections 1317, 1328, 1342, and 1345.
11. "**Normal Wetted Perimeter**" – The area of a conveyance, such as a ditch, channel or pipe that is in contact with water during flow events that are expected to occur once every year.

12. "**Notice of Discontinuation**" – Notice to discontinue coverage under this permit after construction is complete, the site has undergone **final stabilization**, and maintenance agreements for all permanent facilities have been established in accordance with all applicable conditions of this permit.
13. "**Notice of Intent**" –A discharger is required to submit a Notice of Intent in accordance with the Iowa Department of Natural Resources requirements for stormwater discharge associated with industrial activity for construction activities pursuant to general permit number 2.
14. "**Operator**" – The person (usually the **general contractor**), designated by the **owner**, who has day to day operational control and/or the ability to modify project plans and specifications related to the **SWPPP**. The person must be knowledgeable in those areas of the permit for which the **operator** is responsible, (Part II.B. and Part IV.) and must perform those responsibilities in a workmanlike manner.
15. "**Owner**" – The person or party possessing the title of the land on which the construction activities will occur; or if the **construction activity** is for a lease holder, the party or individual identified as the lease holder; or the contracting government agency responsible for the **construction activity**.
16. "**Permanent Cover**" = **Final Stabilization**. Examples include grass, gravel, asphalt, and concrete.
17. "**Permittee**" – A person or persons, firm or governmental agency or other institution that signs the application submitted to the IDNR and is responsible for compliance with the terms and conditions of this permit.
18. "**Runoff Coefficient**" –This is the fraction of total rainfall that will appear at the conveyance as runoff.
19. "**Saturated Soil**" – The highest seasonal elevation in the soil that is in a reduced chemical state because of soil voids being filled with water. **Saturated soil** is evidenced by the presence of redoximorphic features such as mottles or other information.
20. "**Sediment Control**" – Methods employed to prevent sediment from leaving the site. **Sediment control** practices include silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection and temporary or permanent sedimentation basins.
21. "**Sensitive Waters**" – Sensitive waters might include cold-water trout streams, wetlands, or other high quality water streams and lakes. Extra precautions should be taken when disturbing site soils near or on these areas to minimize impacts on water quality.
22. "**Stabilized**" – The exposed ground surface has been covered by appropriate materials such as mulch, staked sod, riprap, wood fiber blanket or other material that prevents erosion from occurring. Grass seeding is not stabilization.

23. "**Stormwater**" – Includes precipitation runoff, **stormwater** runoff, snowmelt runoff and any other surface runoff and drainage.
24. "**Stormwater Pollution Prevention Plan (SWPPP)**" – A plan for **stormwater** discharge that includes **erosion prevention** measures and **sediment controls** that, when implemented, will decrease soil erosion on a parcel of land and decrease off-site nonpoint pollution.
25. "**Surface Water or Waters**" – All streams, lakes, ponds, marshes, **wetlands**, reservoirs, springs, rivers, drainage systems, waterways, watercourses and irrigation systems whether natural or artificial, public or private.
26. "**Temporary Erosion Protection**" – Methods employed to prevent erosion. Examples of temporary cover include; straw, wood fiber blanket, wood chips and erosion netting.
27. "**Underground Waters**" – Water contained below the surface of the earth in the saturated zone including, without limitation, all waters whether under confined, unconfined, or perched conditions, in near surface unconsolidated sediment or regolith, or in rock formations deeper underground. The term ground water shall be synonymous with underground water.
28. "**Waters of the State**" Iowa Code 455B.381 (10): "Waters of the state" means rivers, streams, lakes and any other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased or otherwise controlled by a single person or by two or more persons jointly or as tenants in common. "Waters of the state" includes waters of the United States lying within the state. (22).
29. "**Wetland**" or "**Wetlands**" According to Iowa Code 456.1(5): "Wetlands" means an area of two or more acres in a natural condition that is mostly under water or waterlogged during the spring growing season and is characterized by vegetation of hydric soils. **Wetlands** generally include swamps, marshes, bogs and similar areas. Constructed **wetlands** designed for wastewater treatment are not **waters of the state**. **Wetlands** must have the following attributes:
 - a. A predominance of hydric soils;
 - b. Inundated or saturated by **surface water** or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in a **saturated soil** condition; and
 - c. Under normal circumstances support a prevalence of such vegetation.

JOINT APPLICATION GUIDANCE

Construction, excavation or filling in streams, lakes, wetlands, or on the floodplains may require permits from both the Corps and IDNR. A Joint Application Form (Protecting Iowa Waters) shall be submitted to both agencies to begin the permit process for any of the following activities:

- cutting the bank of a river, stream, or lake; any excavation or dredging in a wetland, lake, stream or river;**
- channel changes or relocations (including stream straightening);**
- construction of any permanent dock, pier, wharf, seawall, boat ramp, beach, intake or outfall structure on a stream, river or lake;**
- placement of any fill, riprap, or similar material in a stream, river, lake, or wetland;**
- construction of a dam across any waterway;**
- placement of fill, construction of levees, roadways and bridges; and similar activities on a floodplain; or**
- construction of buildings on a floodplain.**

The Iowa Department of Natural Resources also requires permits for the construction and operation of water and wastewater treatment facilities, water withdrawal, water storage, and solid waste disposal and should be contacted for information about these permits."

The joint application covers 3 permitting entities (Flood Plain, Sovereign Lands, and the Army Corps of Engineers) and one certification program (Section 401 Water Quality Certification which the Corps needs to issue their 404 permit).

Refer to the following links for additional guidance:

Joint application form:

<http://www.iowadnr.com/other/files/jointpermit.pdf> (preferred - via SL & FP)

<http://www.iowadnr.com/water/section401/files/Form36a.pdf> (via wetlands)

Army Corp of Engineering (COE):

<http://www.mvr.usace.army.mil/Regulatory/RegulatoryDivisionHomePage.htm>
(Rock Island District)

<http://www.nwo.usace.army.mil/html/pa/pahm/links.htm> (Omaha District)

FP Development program:

<http://www.iowadnr.com/water/floodplain/index.html>

Sovereign Lands Program:

<http://www.iowadnr.com/other/slands.html>

401 Water Quality Certification program:

<http://www.iowadnr.com/water/section401/info.html>

RECOMMENDED BMPS FOR SENSITIVE WATERS

1. **During construction.**
 - a. All exposed soil areas with a slope of 3:1 or steeper, that have a continuous positive slope to a special water, should have **temporary erosion protection** or **permanent cover** within three (3) days after the area is no longer actively being worked. All other slopes that have a continuous positive slope to a special water should have **temporary erosion protection** or **permanent cover** within seven (7) days after the area is no longer actively being worked.
 - b. Temporary sediment basin requirements should be used for common drainage locations that serve an area with five (5) or more acres disturbed at one time.
2. **Buffer zone.** An undisturbed buffer zone of not less than 100 linear feet from the sensitive water (not including tributaries) should be maintained at all times. Exceptions from this for areas, such as water crossings or limited water access, are allowed if the **Permittee** fully documents in the **SWPPP** the circumstances and reasons that the buffer encroachment is necessary. All potential water quality, scenic and other environmental impacts of these exceptions, should be minimized and documented in the **SWPPP** for the project.
3. **Temperature Controls.** The permanent **stormwater** management system should be designed such that the discharge from the project will minimize any increase in the temperature of the receiving waters. resulting from the 1 and 2-year, 24-hour precipitation events. Projects that discharge to sensitive waters should minimize the impact using one or more of the following measures, in order of preference:
 - a. Minimize new **impervious surfaces**.
 - b. Minimize the discharge from connected **impervious surfaces** by discharging to vegetated areas, or grass swales and through the use of other non-structural controls.
 - c. Other methods that will minimize any increase in the temperature of the trout stream.
4. **Wetlands guidance in order of preference.**
 - a. Avoid all significant adverse impacts to **wetlands** from the project and post project discharge.
 - b. Minimize any unavoidable impacts from the project and post project discharge.
 - c. Provide compensatory mitigation when the **Permittee** determines that there is no reasonable and practicable alternative to having a significant adverse impact on a **wetland**. For compensatory mitigation, wetland restoration or creation should be of the same type, size and whenever reasonable and practicable in the same watershed as the impacted wetland.