Resources and more information

Iowa Department of Natural Resources | storm water program
www.state.ia.us/epd/wastewtr/stormwtr/stormwtr.htm
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U.S. Environmental Protection Agency (EPA) | storm water program
www.epa.gov/ebtpages/watestormwater.html

URBAN
Urban Resources & Borderland Alliance Network
www.urbanwaterquality.org
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The Iowa Association of Municipal Utilities
www.iamu.org

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— remember —

Improved water quality
is a responsibility we all share,
and a benefit we all enjoy.

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storm water pollution prevention plans

Keys to pollution prevention

- NPDES regulations
- sediment control
- erosion control planning
- inspections and record-keeping

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Keys to pollution prevention | **NPDES regulations**

*If you are involved with land disturbing activities of one acre or more, you are responsible for protecting water resources. A storm water **pollution prevention plan** is required by the NPDES permit and must be followed for the entire life of the project. Planning, applying and maintaining a good pollution prevention plan will keep you in compliance and protect water resources.*

The challenge — preventing soil erosion
With new construction comes soil loss due to runoff. Soil erosion is a serious problem and construction sites are a primary cause. Sediment is the most common pollutant in our streams, rivers and lakes. Pollutants are often carried with the soil into streams, rivers and lakes.

Sediment pollution — cause for concern
Water quality in area lakes, streams and rivers is threatened.The cost of cleaning sediment and pollution from streets, sewers, ditches, streams, rivers and lakes adds up quickly. Preventing soil erosion in the first place is the easiest way to deal with the problem.

It's the law — developers must limit soil erosion
Any project that disturbs one acre or more is subject to NPDES permit requirements. Developers are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit from the Iowa (DNR) Department of Natural Resources for each site. A **pollution prevention plan** is required by the permit to help identify practices that reduce erosion and prevent sediment loss from construction sites.

Use the 'checklists' in this packet
Inspections are required by law — on a weekly basis and after each rainfall of one-half inch or more. The checklist is a guideline for you to use to make sure you've covered the basics of an inspection.

Pollution prevention planning is not just a way to be responsible and protect water quality, but it is required by law.

Developers are ultimately responsible for compliance, and should ensure that contractors use proper soil conservation procedures during all construction and development activities.

Keys to pollution prevention | **sediment control**

Runoff, erosion and sedimentation become a concern when soil is disturbed for construction
An unfortunately-timed rainfall can be devastating. In fact, millions of dollars are spent each year restoring slopes, rebuilding drainage channels, and dredging and cleaning ponds and streams.

Lack of compliance with local and federal environmental regulations can also result in costly delays and fines. Much of this is preventable.

Erosion control vs. sediment control
Erosion controls are used to prevent soil erosion from occurring at construction sites with bare soils. Practices include mulch, compost blankets, temporary and permanent seeding, minimized land clearing, and blankets (rolled erosion control products).

Sediment controls are used to control eroded or eroding sediments and keep them on-site and away from surface waters. Practices include silt fences, sediment basins, compost berms, and compost socks.

Timing is critical to prevent accelerated erosion
- Minimize the time soils are left exposed
- Reduce areas of exposed soil during rainy seasons
- Protect critical areas — streams, drainage channels
- Stabilize exposed areas quickly

Sediment is the largest pollutant from construction sites, but other pollutants also include fertilizer, oil and grease, construction debris, and construction chemicals. The sediment in the street will be washed into nearby streams and lakes through storm drains.

Keys to pollution prevention | **erosion control planning**

The key to stopping soil erosion is planning
Plan the development to fit the site. Divide the site into natural drainage areas. Land has natural slopes and waterways. Ask engineers and architects to consider them. Designing to fit the natural patterns of the landscape reduces grading costs, disturbs less soil and results in a more visually interesting and pleasing development.

Determine the limits of clearing and grading
Identify vegetative buffer areas between the construction site and sensitive areas. Set borders around work areas, and clearly mark areas to be protected during construction. Protect tree roots from compaction by construction equipment with the grading limits.

Select erosion and sediment control measures
Discuss the specifics of erosion and sediment control measures in a pre-construction meeting. Know the practices, implement them, and stick to a rigorous schedule of inspections. The result will be significant reduction in erosion and sedimentation. It's the developer or landowner's responsibility to develop and follow an adequate *pollution prevention plan.* Discuss it at pre-bid meetings or clearly explain it in bid documents. Contractors should include costs in their bid, and then do the work, but, ultimately, it is the developer's responsibility to ensure compliance with NPDES requirements.

Stopping erosion requires planning, accommodating the natural drainage patterns on the land, and proper timing of excavation.

Prepare a sequence of major activities
Installation of controls, grading activities, stabilization activities, and maintenance of controls must be planned and sequenced. Helpful tips include installing perimeter (down slope) controls before land-disturbing activities occur; not disturbing an area until necessary; covering or stabilizing disturbed areas as soon as possible; timing construction activities to limit the impact of seasonal climate changes and weather events; not removing temporary perimeter controls until after all upstream areas are fully stabilized.

Sediment retention basics
The key to effective sediment retention is to slow or impound runoff. A sediment basin is one of the best methods for retaining sediment on site, and it must be used when drainage locations serve an area of more than 10 disturbed acres. Sediment controls must provide storage for 3,600 cubic feet of storage per acre drained.

Keys to pollution prevention | **inspections and record-keeping**

Construction activity records
While the ownership of a property may change hands between the developer, home builder or new home owners, compliance is required until all house construction is completed. Every storm water permit requires that erosion and sediment controls are in place during the home construction phase.

Developers can transfer storm water permit and pollution prevention plan responsibility to the home builder or new lot owners. But to do this, the new owner must sign a contract agreeing to the terms of the existing storm water permit. Signing a contract requires that the new owner implement all necessary erosion and sediment control measures. Without a contract transfer, the developer remains responsible for compliance on any lot that has been sold.

Keep construction activity records
Erosion and sediment controls must be inspected weekly and after each rainfall of one-half inch or more. Every site is required to maintain an up-to-date pollution prevention plan and a record of all construction activities (with a copy kept on site) including:
- implementation of any practice in the pollution prevention plan
- when major grading activities occur
- when construction activities temporarily cease
- when construction activities permanently cease
- when stabilization measures are initiated

| one |

| two |

photo one | *Mulching is the placement of material (straw, wood chips, compost) over the surface of disturbed soil. Mulch is very important for erosion control and to help establish vegetation.*

photo two | *Controls must be in place and properly maintained in order to function.*

Site inspection sheet

Regular, timely inspections are critical — conduct inspections weekly and after every rainfall event of 1/2 inch or more.

Inspection data

Site location _____

Routine inspection for week ending _____

Pre-rain I during I post rain inspection and time elapsed since rain _____

Date _____

Time _____

Inspected by (name and title) _____

Signature _____

	Date	OK?	problem identified I action taken
1. Erosion control practices in place and functioning? (mulch, seeding, blankets)			
2. Sediment traps, barriers and basins clean and functioning properly?			
3. Sediment controls in place at site perimeter and storm drain inlets?			
4. Discharge points free of any noticeable pollutant discharges?			
5. Sediment, mud and debris being cleaned from public roads? Is there a stable, rocked entrance to the site? Are there adequate provisions to prevent mud tracking off site?			
6. All exposed slopes protected from erosion through acceptable soil stabilization practices?			
7. Temporary stockpiles or construction materials located in approved areas and protected from erosion?			
8. Is the site seeded and mulched or blanketed? Include dates seeded and estimated percentage of cover established.			
9. Are dust control measures appropriately implemented?			
10. Material handling and storage, and equipment storage and maintenance areas clean and free of spills and leaks?			
11. On-site traffic routes, parking and storage restricted to designated areas?			
12. Are ALL erosion control devices in place and functioning in accordance with the site's erosion control plan?			