CITY OF YANKTON CONTRACTORS STORM WATER GUIDE

**Does your
Construction Site Need Storm Water Permit Coverage?**

City of Yankton SOUTH DAKOTA
Ideas flow here

Purpose:

The Purpose of the Program is to Improve Water Quality By Reducing Pollutants in Storm Water Discharges

Construction activities produce many different kinds of pollutants which may cause storm water contamination. Grading activities remove grass, rocks, pavement and other protective ground cover resulting in the exposure of underlying soil. Because the soil surface is unprotected, soil and sand particles are easily picked up by wind and/or washed by rain or snow melt. Water carrying these particles eventually reaches a stream, river or lake where it slows down, allowing the particles to fall to the bottom. This process is called sedimentation.

Gradually, sediment builds up in the stream beds where it impacts fish, aquatic plants and affects the quality of the water. In addition, the construction of buildings and roads may require the use of toxic or hazardous materials such as petroleum products, asphalt, sealants and concrete which may pollute storm water running off the construction site. These types of pollutants often contain small amounts of metals and other toxic materials which may be harmful to humans, plants and fish.

This document is not inclusive of the entire program.

Definitions:

BMP, Best Management Practices: General good house keeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters or storm water conveyance systems. BMPs included treatment practices, operating procedures, and practices that control site runoff, dust, spillage, leaks, sludge, water disposal, and drainage from raw materials storage.

MS4, Municipal Separate Storm Sewer System: (The City's Storm Sewer System which conveys untreated storm water)

NOI, Notice of Intent: A Storm Water Permit Application for obtaining coverage under a General Storm Water Permit for construction activities that disturbs one or more acres or is required by a municipal jurisdiction.

NOT, Notice of Termination A form that is required to be submitted when a General Storm Water Permit for constructing activities is no longer required.

Operator: The owner, party, person, general contractor, sub-contractor, or other entity that has operational control over the construction project. The operator is responsible for ensuring compliance with all conditions for the elimination of dust and storm water pollution.

Storm Water: Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation.

SWPPP, Storm Water Pollution Prevention Plan: A document which describes the "Best Management Practices" and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and actions to eliminate or reduce pollutant discharges to a Storm Water Conveyance System.

What is Storm Water Runoff?

Storm water is water from precipitation that flows across the ground or pavement when it rains or when snow and ice melt. The water seeps into the ground or drains into storm sewers. Storm sewer "inlets" are drains that you see at street corners or at low points on the sides of your streets. Collectively, the draining of these waters is called "storm water runoff" and is a concern to us in on commercial and industrial sites as well as residential neighborhoods because of the potential pollutants it can carry to the natural waterways in the area.

What are the Impacts of Storm Water?

Storm water runoff can be responsible for notable changes in water quality. As development occurs, areas are converted to land uses that typically have increased areas of impervious surfaces, resulting in increased surface runoff rates, volumes, and pollutant loadings.

Phase I of the Clean Water Act (CWA):

In 1990 Congress passed Phase I of the CWA regulating storm water discharges associated with industrial and construction activities. Starting October 1, 1992, all operators of storm water discharges from large or medium municipalities where activities disturbed five or more acres of land were required to apply for a National Pollutant Discharge Elimination System Permit.

Phase II of the Clean Water Act:

In December of 1999, The EPA published Phase II of its storm water regulations extending permitting requirements to storm water discharges from construction sites where one or more acres of land is disturbed. *Phase II requires "Small" municipalities servicing populations of 10,000 people to obtain coverage under the National Pollutant Discharge Elimination System. Phase II of the Storm Water Act went into effect March 10, 2003.*

March 14, 2005: The Yankton Board of Commissioners officially adopted Phase II of the Clean Water Act as mandated by the South Dakota Department of Environment and Natural Resources. Under this mandate, the City of Yankton now requires certain construction and industrial activities to apply for a "Storm Water Permit" and follow "Best Management Practices" as outlined under the National Pollutant Discharge Elimination System.

Who Must File a Permit: The City of Yankton Department of Public Works now requires permit coverage for the following construction/industrial activities:

- ***Single family dwellings***
- ***Residential additions and garages***
- ***Multiple family dwellings***
- ***Commercial Buildings***
- ***Commercial Additions***
- ***Commercial parking lots***
- ***New Subdivisions, and***
- ***Other construction projects that disturb 5,000 square feet or more of concrete, asphalt or soil.***

All construction sites disturbing one or more acres need storm water permit coverage from both the South Dakota Department of Agriculture and Natural Resources and the City of Yankton.

Do I Need to Develop a Storm Water Pollution Prevention Plan (SWPPP)?

The SWPPP is a plan detailing how an operator will manage erosion, dust, sediment and other pollutants that have the potential to enter the storm water conveyance system. Typically, a SWPPP is not required to be submitted with the "*Notice of Intent*" for sites that are under one acre in size. However, a SWPPP must be developed and available on site.

If I Need Permit Coverage, Where Do I Start?

If your construction project is going to disturb one or more acres of land through clearing, grading, excavating, or stockpiling of fill material *(this includes the acreage of the entire project, even if you are responsible for only a small portion),* you will need permit coverage with the South Dakota Department of Agriculture and Natural Resources and the City of Yankton.

If your construction activities include any of the following: single family dwellings, residential additions, garages, multi-family dwellings, multi-family additions, commercial buildings, commercial additions, commercial parking lots, new subdivisions and other construction projects that disturb 5,000 square feet or more of concrete, asphalt or soil, you will need permit coverage from the City of Yankton.

If I need permit coverage from the State, who do I contact?

Department of Agriculture and Natural Resources
Surface Water Quality Program
Joe Foss Building
523 East Capitol
Pierre, SD 57501
Phone 1-800-737-8676

If I need permit coverage from the City, who do I contact?

Department of Community and Economic Development
416 Walnut, PO BOX 176
Yankton, SD 57078
(605) 668-5251

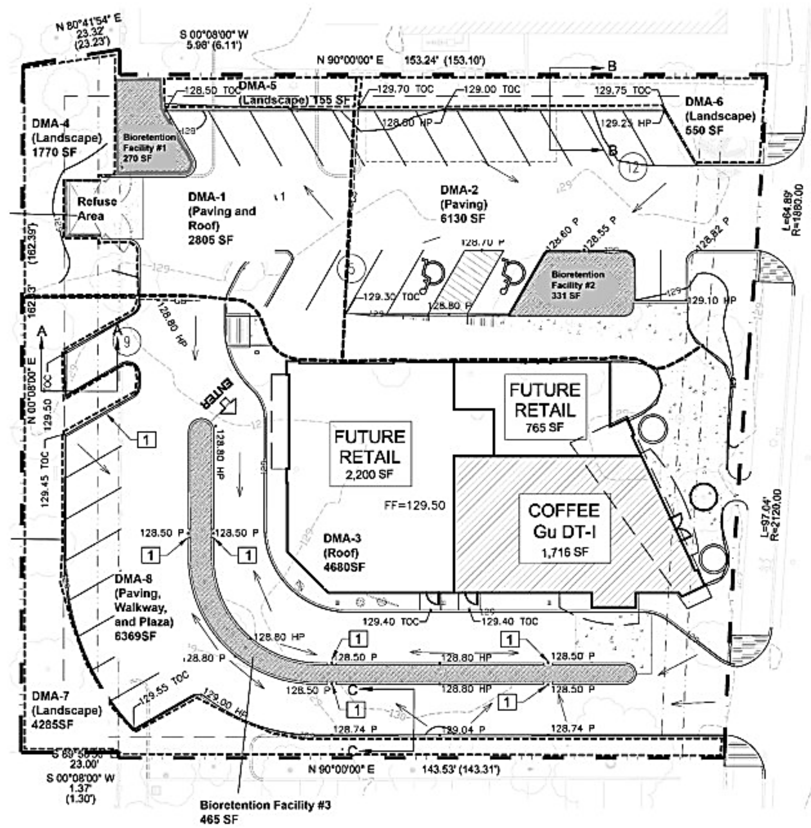
What is a Storm Water Pollution Prevention Plan (SWPPP)?

A Storm Water Pollution Prevention Plan, or "SWPPP" serves two main purposes. ***First it provides a site description that identifies sources of "Storm Water Pollution", and second, it identifies appropriate measures that must be implemented to reduce pollutants in storm water discharges in order to ensure compliance with the permit requirements.***

The EPA considers the Storm Water Pollution Prevention Plan to be the "heart" of compliance with the "Notice of Intent" and views an incomplete or inaccurate SWPPP as a significant violation of the permit requirements. The EPA may assess substantial penalties against a builder or developer who does not prepare a SWPPP, or prepares a SWPPP that lacks the specified requirements. Strict compliance with the SWPPP specifications is critical to ensure compliance with the **"Notice of Intent".**

Riprap can be used to stabilize drainageways and outlets to prevent erosion.

Sample Storm Water Pollution Prevention Plan (SWPPP)



Storm Water Pollution Prevention Plan

Preserving Existing Vegetation

· Wherever possible, preserve existing trees, shrubs, and other vegetation.
· To prevent root damage, do not grade, place soil piles, or park vehicles near trees marked for preservation.
· Place plastic mesh or snow fence barriers around trees to protect the area below their branches.

Re-vegetation

· Seed, sod or mulch bare soil as soon as possible.

Seeding and Mulching

· Spread four to six inches of topsoil.
· Fertilize according to soil test.
· Seed with an appropriate mix for the site.
· Rake lightly to cover seed with 1/4" of soil, roll lightly
· Mulch with straw.
· Anchor mulch by punching two inches into the soil with a dull, weighted disk or by using netting or other measures on steep slopes, or windy areas.
· Water gently every day or two to keep soil moist. Less watering is needed once grass is two inches tall.

Sod

· Spread five to six inches of topsoil.
· Fertilize according to soil test.
· Lightly water the soil.
· Lay sod. Tamp or roll lightly.
· On slopes, lay sod starting at the bottom and work toward the top. Peg each piece down in several places.
· Initial watering should wet soil six inches deep (or until water stands 1 inch deep in a straight-sided container. Then water lightly every day or two for two weeks.
· If Construction is completed after September 15, seeding or sodding may be delayed. Applying mulch or temporary seed (such as grain rye or winter wheat) is recommended if weather permits. Straw bales or silt fences must be maintained until final seeding or sodding is completed in spring March 1-June 1.

Straw Bale or Silt Fence

· Put up before any other work is done.
· Install on down slope side(s) of site with ends extended upside slopes a short distance.
· Place parallel to the contour of the land to allow water to pond behind fence
· Trench four inches deep.
· Stake (two stakes per bale or one stake every three feet for silt fence)
· Leave no gaps between bales or sections of silt fence
· Inspect and repair once a week and after every 1/2-inch rain. Remove sediment if deposits reach half the fence or straw bale height.
· Maintain until a lawn is established.

Soil Piles

· Locate away from any down slope street, driveway, stream, lake, wetland, ditch or drainage way.
· Temporary seed such as annual rye is recommended for topsoil piles.
· Surround with straw bales or silt fence.

Gravel Drive

· Install a single access drive using 3-to-5-inch aggregate over a geotextile material.
· Lay gravel is 6 inches deep and 10 feet wide from the foundation to the street.
· Use to prevent tracking dirt onto the road by all vehicles.
· Maintain throughout construction until driveway is paved.
· Park all construction vehicles on the street and off of the site and do not drive across neighboring lots for access to the site.

Sediment Cleanup

· By the end of each workday, sweep or scrape up soil tracked onto the road.
· By the end of the next workday after a storm, clean up soil washed off-site, and check straw bales and silt fence from damage or sediment buildup.

Downspout Extenders:

· Install as soon as gutters and downspouts are completed.
· Route water to a grassed or paved area.
· Maintain until a lawn is established.

Inspections and Maintenance: Am I Required to Inspect My Construction Site?

Inspection and maintenance of vegetation, erosion and sediment control measures must be performed on a regular basis. For example, EPA's Construction General Permit requires the discharger to inspect his construction site at least once every seven days or at least once every 14 days and within 24 hours of a storm event which is 1/2 inches or greater.

An operator must also look for evidence of pollutants entering the drainage system in material storage areas, and locations where vehicles enter and exit the site, as well as operation of erosion and sediment control devices.

Exposed soils can be temporarily stabilized by driving a tractor over the surface.

What are Best Management Practices?

On-Site Infiltration:
Measures such as trenches or basins, can reduce the volume and pollutant loading of storm water discharges from a site. Infiltration structures tend to reduce impacts to an area's natural characteristics. Properly designed infiltration structures can reduce high flows, recharge the groundwater, reduce storm water discharge volumes and inhibit downstream erosion.

Flow Reduction by Vegetation or Natural Depressions:
Vegetation or natural depressions can remove pollutants, improve filtration, and reduce erosion. The use of vegetation can protect habitats and enhance the appearance of a site. These measures include grass swales, filter strips as well as trees that are either preserved or planted during construction.

Outfall Velocity Reduction Devices:
Include riprap, stone, concrete flow spreaders, silt fence, and bales. They slow the flow of water discharged from a site, reducing erosion.

Retention Structures/Artificial Wetlands:
Retention structures are ponds and artificial wetlands that are designed to maintain a permanent pool of water. Properly installed and maintained, these ponds can achieve a high removal rate of sediment. On large projects, they can be very cost effective. These structures rely on settling and biological processes to remove pollutants. Retention ponds can also become wildlife habitats.

What are Best Management Practices?

Stabilization:
Stabilization of exposed soil is one of the best means to minimize erosion and sedimentation, Stabilization refers to covering or maintaining an existing vegetation cover including grass, trees, vines, shrubs etc. Examples of stabilization measures include:

Temporary Seeding:
Provides a vegetative cover in area where earth disturbing activities have temporarily ceased, but will resume later in the construction project. Temporary seeding practices have been found to be up to 95% effective in reducing erosion.

Mulching:
Is often combined with permanent and temporary seeding. Mulching in conjunction with seeding provides erosion protection prior to the onset of plant growth. Mulching protects newly applied seeds, providing a higher likelihood of successful vegetation. To maintain its effectiveness, mulch should be anchored to resist wind and rain displacement.

Sod Stabilization: Involves establishing long term stands of grass by planting sod on exposed surfaces. Sod is very effective in reducing erosion; however, the cost of sod stabilization typically limits its use to situations where quick vegetative cover is desired.

Vegetative Buffer Strips: Vegetative buffer strips are areas where the natural vegetation has been left undisturbed. Vegetative buffer strips can slow runoff at critical locations, decreasing erosion. It is very useful for narrow linear construction projects such as underground utilities or pipelines.

Contouring: Contouring refers to the practice of building with the natural flow of the land. By minimizing changes in the natural contour of the land, existing drainage patterns are preserved as much as possible, reducing erosion.

What are Best Management Practices?

Structural Practices:
Structural Practices are designed to divert water from flowing on disturbed areas where erosion may occur. Examples of structural practices include:

Earth Dikes:
Earth dikes are temporary berms or ridges of compacted soil that channel water to a desired location.

Drainage Swales:
Are channel lined with grass, riprap, asphalt, concrete or other materials. Swales are installed to convey runoff without causing erosion

Sediment Traps:
Sediment traps are installed in drainage pathways at storm drain inlets or other discharge points.

Check Dams:
Are small temporary dams constructed across a swale or drainage ditch to reduce the velocity of runoff, thereby reducing erosion.

Level Spreader:
Level spreaders are outlets for dikes and flow channels consisting of excavated depressions that convert a concentrated runoff into a diffused flow.

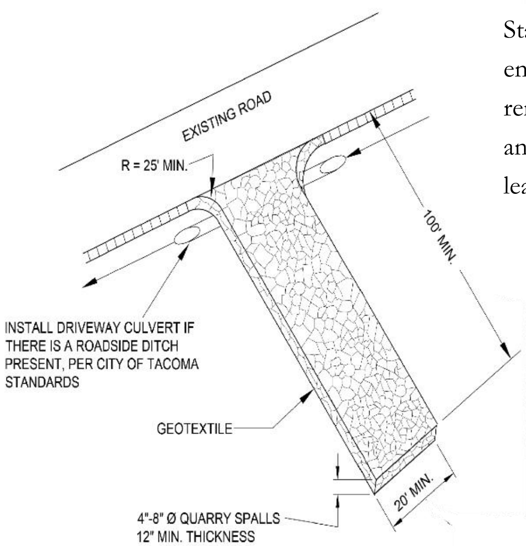
Rock Outlet Protection:
Rock protection placed at a storm water outlet can reduce the depth and velocity of water to help minimize scouring and down stream erosion.

Subsurface Drain:
Subsurface drains transport runoff to an area where the water can be managed effectively. Drains are made of tile, pipe or tubing.

Best Management Practices (BMPs)

Concrete Truck Wash Out Area

Construction Site Entrance

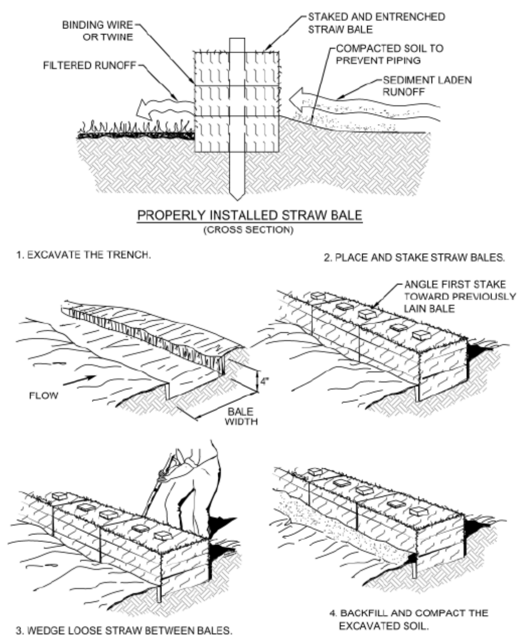


Stabilized construction entrances allow dirt to be removed from tire treads and collected as trucks leave construction sites.

Best Management Practices (BMPs)

Drop Inlet Protection

Straw Bales



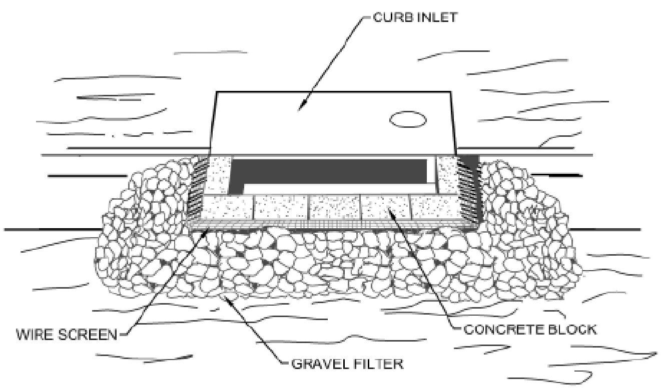
Best Management Practices (BMPs)

Diversion Dikes

Diversion dikes can be used to contain storm water onsite.

Coarse Gravel and Cinder Blocks

Coarse gravel and cinder blocks are often used to keep sediment and other pollutants out of storm drains.



Best Management Practices (BMPs)

Leaving Vegetation in Place

Safety Fencing

Natural vegetation is protected from heavy equipment with safety fencing.

Best Management Practices (BMPs)

Grass Lined Channel

A grass lined channel can be used to filter and convey storm water runoff.

Catch Basin Protection

Laying a silt fence around a catch basin can prevent storm water from entering the basin.

For More Information,
Contact:

City of Yankton
Department of Community and Economic Development
416 Walnut Street
PO Box 176
Yankton, SD 57078

Phone: (605) 668-5251

Website:
https://www.cityofyankton.org/

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