



City of Wichita
Public Works & Utilities
Stormwater Management Division

455 N. Main 8th Floor
Wichita, KS 67202

PLEASE READ

Important information regarding FEMA flood map changes for the Big Slough South.

Any questions can be directed to the Stormwater Management Division at 316-268-4498.

Get Informed, Be Informed, Stay Informed!



Dear Resident:

The purpose of this notice is to inform you that the recent FEMA flood map changes for the Big Slough South have been approved and will go into effect on:

June 19, 2014

If anyone needs assistance getting the necessary mapping information please call the Stormwater Management Office at 316-268-4498 or email rbatchman@wichita.gov.













Tad
Stormwater
Spokesfrog

CLEAN AND CLEAR.
JUST HOW I LIKE IT!

CLEAN WATER BEGINS AT HOME

Did you know many pollutants around our homes are washed down the storm drains directly into our waterways? The same waterways our children swim in and explore.

[Learn how you can help.](#)





Tad
Stormwater
Spokesfrog

DON'T LET YOUR HOUSE BECOME HAZARDOUS TO MINE

Let Tad show you some safe practices to keep our neighborhoods clean and hazard free.



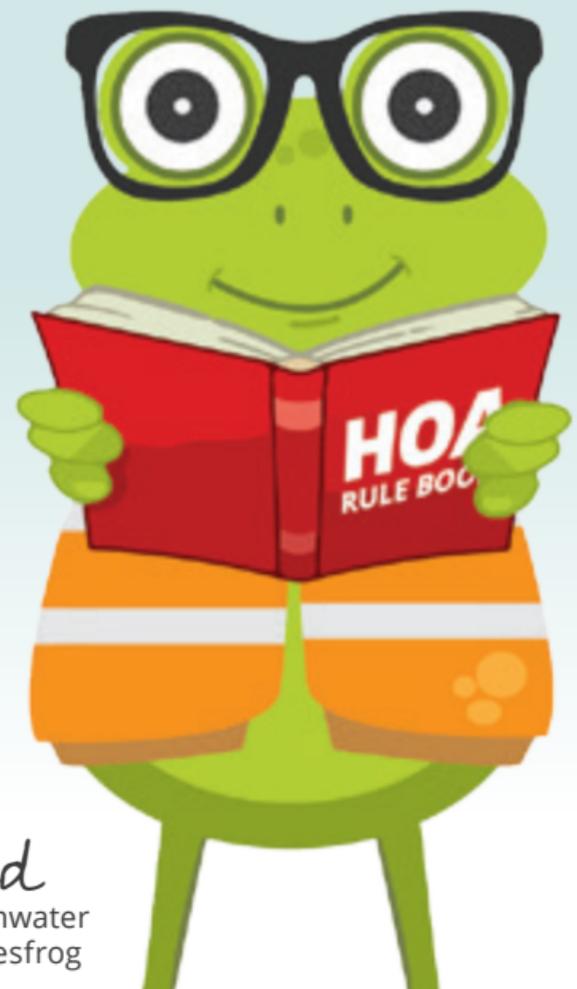


Tad
Stormwater
Spokesfrog

LET'S KEEP OUR NEIGHBORHOOD POND CLEAN

Proper maintenance of neighborhood detention ponds is necessary to preserve the natural vegetation and wildlife in our community.

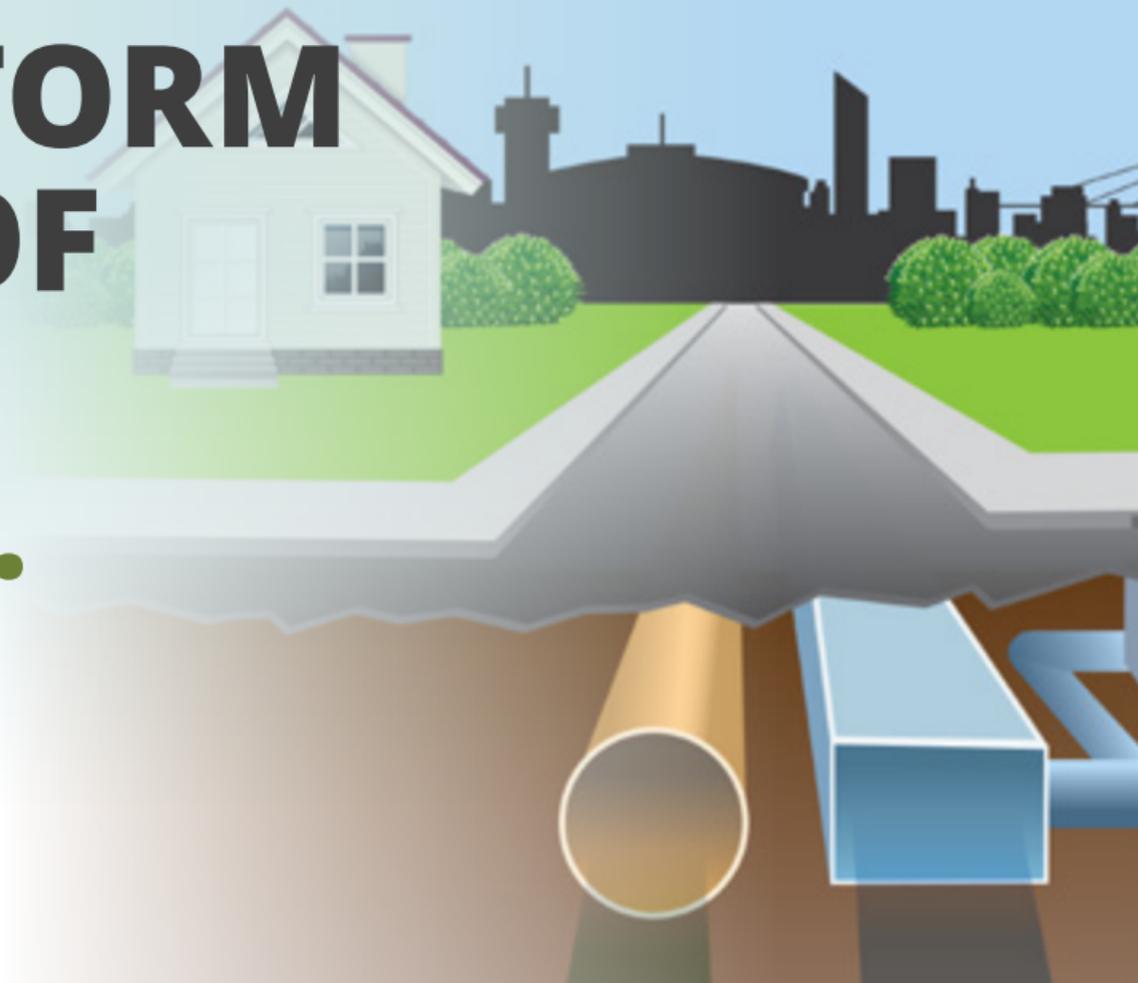


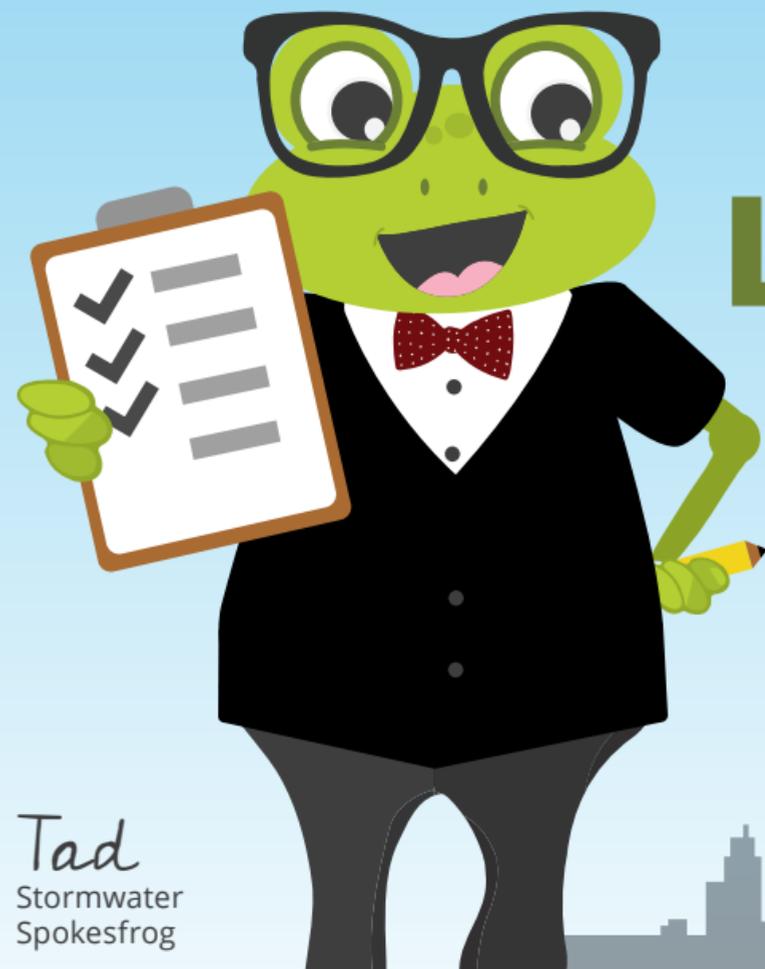


Tad
Stormwater
Spokesfrog

DOWN THE STORM DRAIN. OUT OF YOUR LIFE? **THINK AGAIN.**

Make sure your sump pump discharge leads to the proper location. And no, it's not the storm drain or your neighbor's yard.





LET'S AGREE NOT TO MERGE

Avoiding a merger between your business and my local waterways is in our community's best interest!

Tad
Stormwater
Spokesfrog



Tad
Stormwater
Spokesfrog

YOUR POST CONSTRUCTION BMP HELPS KEEP MY WATER CLEAN

The best way to mitigate stormwater impacts from new developments is to follow best practices to treat, store and infiltrate runoff onsite before it can affect water bodies downstream.

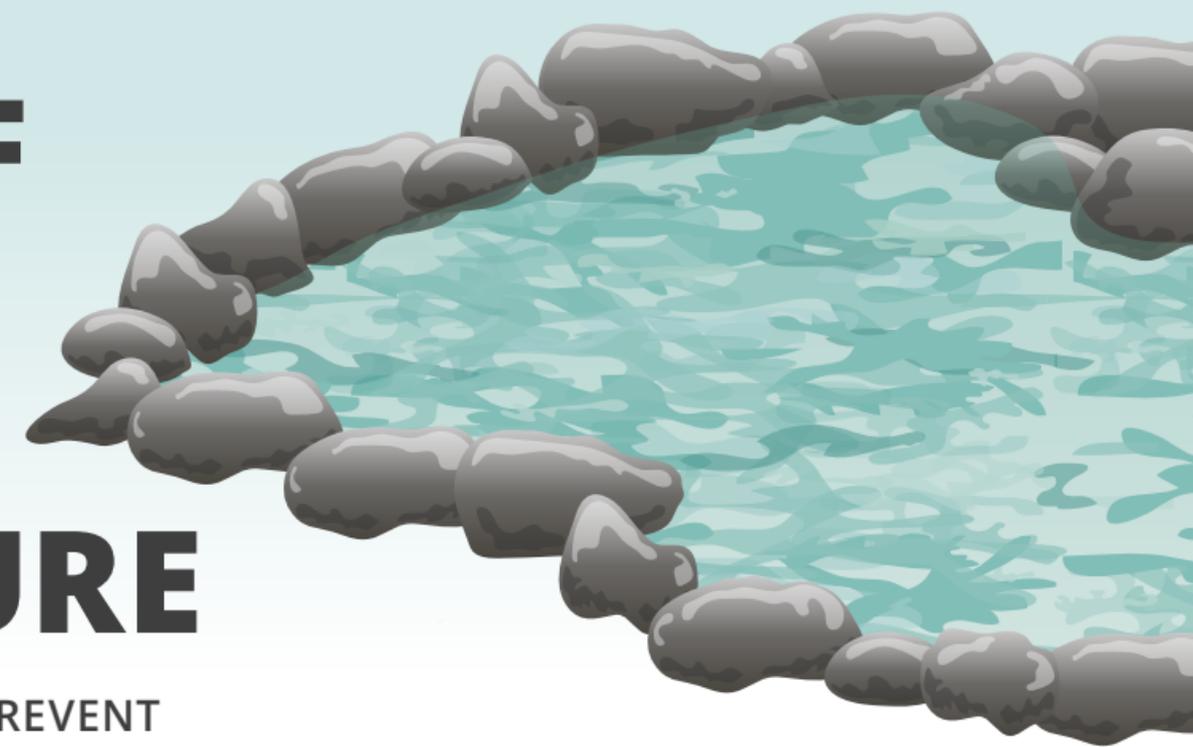




Tad
Stormwater
Spokesfrog

AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE

It's far more efficient and cost-effective to PREVENT pollution than to try to correct problems later.



























INSPECTION MANUAL

STORM WATER POLLUTION PREVENTION ORDINANCE



Prepared by

**DEPARTMENT OF PUBLIC WORKS
STORM WATER MANAGEMENT OFFICE**

DECEMBER 1998

Table of Contents

Table of Contents

Introduction

Letter of Introduction	1
------------------------------	---

Ordinance

See current 16.32 stormwater Ordinance at

www.wichita.gov

Pages 3-31 contained an out dated version of chapter 16.32

Therefore they have been removed from updated manual.

Best Management Practices (BMP)

Best Management Practices	32
Temporary Seeding	33
Mulching	36
Geotextiles	38
Chemical Stabilization	40
Permanent Seeding and Planting	41
Buffer Zones	43
Preservation of Natural Vegetation	45
Sod Stabilization	48
Stream Bank Stabilization	50
Soil Retaining Measures	53
Dust Control	55
Earth Dike	57
Drainage Swale	59
Interceptor Dikes and Swales	61
Temporary Stream Crossing	63
Temporary Storm Drain Diversion	67
Pipe Slope Drains	68
Subsurface Drains	70
Silt Fence	72
Gravel or Stone Filter Berm	74
Storm Drain Inlet Protection	76
Sediment Trap	78
Temporary Sediment Basin	80
Outlet Protection	83
Check Dams	85
Surface Roughening	87
Gradient Terraces	90

Right of Entry Guidelines

Right-of-Entry Guidelines 92

Enforcement

Enforcement Mechanisms 94

Illegal Actions

Illegal Dumping 95
Illegal Connections 97
Industrial Violations 98

Inspections

Individual Building Sites 99
Subdivisions 101
Subdivision Street and Utility Construction 102
Subdivision Building Sites 103
Sites of Earthwork Activity 105

Courtroom Procedures

File Documentation 106
Pre-Court Preparation 106
Trial Date and Courtroom Procedures 107
Sample Questions 108

Forms

Incident Report Form	110
Notice of Violation	111
Order of Compliance	112

Introduction

The Storm Water Pollution Prevention Ordinance defines permissible and illegal discharges into rivers, lakes, and storm drain systems according to the City of Wichita's storm water discharge permit as issued by the Kansas Department of Health & Environment. A copy of the Ordinance can be found beginning on page three (3). The purpose of this manual is to provide guidance to inspectors who will be responsible for enforcing the various provisions of Wichita's storm water management program.

Several Departments in the City will be responsible for enforcing the various ordinance provisions. Those responsibilities are outlined in more detail in the following sections of this manual. The principal Departments involved will be the Storm Water Management Office, the Storm Water Utility Field Office, the Office of Central Inspection, City-County Health Department, and the Storm Water Specialist in the Department of Water and Sewer. The City of Wichita Storm Water Pollution Prevention Ordinance establishes the following as violations:

1. Illegal dumping or discharging.
2. Illegal connections.
3. Failure to get a State NPDES permit.
4. Failure to prepare a storm water pollution prevention plan .
5. Failure to install Best Management Practice (BMP) devices.
6. Failure to maintain BMP devices.
7. Failure to comply with any order or directive issued under the Ordinance

Listed below are the telephone numbers of the key Departments or individuals that will be involved in the enforcement effort:

Jim Hardesty

Stormwater Specialist

316-268-8317 (office)

316-312-5464 (cell)

Mark Hall

Stormwater Compliance Officer

316-268-8337 (office)

316-393-1492 (cell)

Storm Water Management
8th Floor, City Hall
268-4498

Storm Water Utility Field Office
Central Maintenance Facility
268-4090

Office of Central Inspection
7th floor, City Hall
268-4461

City-County Health Department
1900 E. 9th Street
268-8351

City Engineer's Office
7th Floor, City Hall
268-4501

Best Management Practices (BMP)

Current storm water rules and regulations do not require that storm water be treated to improve its quality. Instead, the E.P.A. has taken the approach that “Best Management Practices” should be employed in an effort to improve water quality. As those practices are implemented, the City is required to continue water quality testing. Hopefully, as more BMP’s are installed, water quality will improve.

What are B.M.P.’s? Simply put, they are any practice that will reduce the potential for storm water pollution, and, in a general sense, can be broken down into the following categories:

1. Good housekeeping.
2. Preventative maintenance.
3. Visual inspections.
4. Spill prevention and response.
5. Sediment and erosion control.
6. Management of runoff.
7. Employee training.
8. Record keeping and reporting.

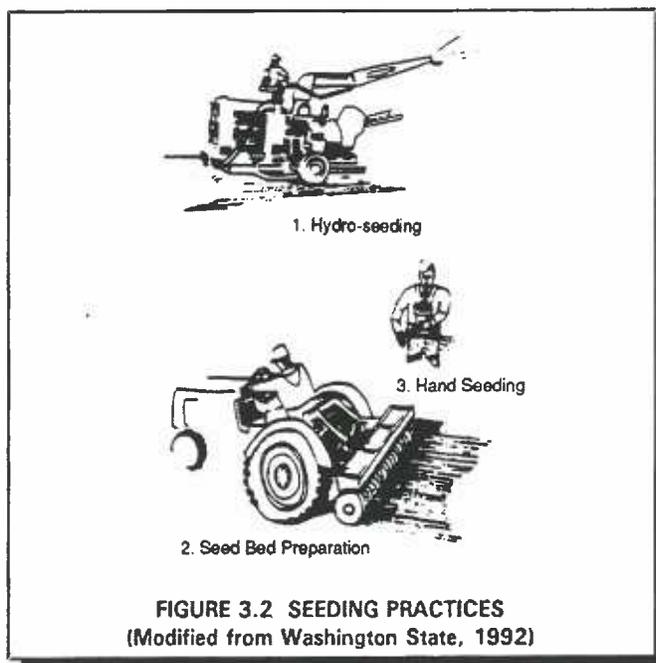
Although we will have the occasion to be involved with all of the above BMP’s at one time or another, in most cases we will be dealing with runoff management, good housekeeping, and sediment control. The following pages show some typical BMP devices and their uses for sediment and erosion control.

Other good housekeeping practices to look at will include: Litter Control, fuel storage areas, construction material storage areas, and any practices on a site that could result in storm water pollution.

Temporary Seeding

What Is It

Temporary seeding means growing a short-term vegetative cover (plants) on disturbed site areas that may be in danger of erosion. The purpose of temporary seeding is to reduce erosion and sedimentation by stabilizing disturbed areas that will not be stabilized for long periods of time or where permanent plant growth is not necessary or appropriate. This practice uses fast-growing grasses whose root systems hold down the soils so that they are less apt to be carried offsite by storm water runoff or wind. Temporary seeding also reduces the problems associated with mud and dust from bare soil surfaces during construction.



When and Where to Use It

Temporary seeding should be performed on areas which have been disturbed by construction and which are likely to be redisturbed, but not for several weeks or more. Typical areas might include denuded areas, soil stockpiles, dikes, dams, sides of sediment basins, and temporary roadbanks. Temporary seeding should take place as soon as practicable after the

last land disturbing activity in an area. Check the requirements of your permit for the maximum amount of time allowed between the last disturbance of an area and temporary stabilization. Temporary seeding may not be an effective practice in arid and semi-arid regions where the climate prevents fast plant growth, particularly during the dry seasons. In those areas, mulching or chemical stabilization may be better for the short-term (see sections on Mulching, Geotextiles, and Chemical Stabilization).

What to Consider

Proper seed bed preparation and the use of high-quality seed are needed to grow plants for effective erosion control. Soil that has been compacted by heavy traffic or machinery may need to be loosened. Successful growth usually requires that the soil be tilled before the seed is applied. Topsoiling is not necessary for temporary seeding; however, it may improve the chances of establishing temporary vegetation in an area. Seed bed preparation may also require applying fertilizer and/or lime to the soil to make conditions more suitable for plant growth. Proper fertilizer, seeding mixtures, and seeding rates vary depending on the location of the site, soil types, slopes, and season. Local suppliers, State and local regulatory agencies, and the USDA Soil Conservation Service will supply information on the best seed mixes and soil conditioning methods.

Seeded areas should be covered with mulch to provide protection from the weather. Seeding on slopes of 2:1 or more, in adverse soil conditions, during excessively hot or dry weather, or where heavy rain is expected should be followed by spreading mulch (see section on Mulching). Frequent inspections are necessary to check that conditions for growth are good. If the plants do not grow quickly or thick enough to prevent erosion, the area should be reseeded as soon as possible. Seeded areas should be kept adequately moist. If normal rainfall will not be enough, mulching, matting, and controlled watering should be done. If seeded areas are watered, watering rates should be watched so that over-irrigation (which can cause erosion itself) does not occur.

Advantages of Temporary Seeding

- Is generally inexpensive and easy to do
- Established plant cover fast when conditions are good
- Stabilizes soils well, is aesthetic, and can provide sedimentation controls for other site areas
- May help reduce costs of maintenance on other erosion controls (e.g., sediment basins may need to be cleaned out less often)

Disadvantages of Temporary Seeding

- Depends heavily on the season and rainfall rate for success
- May require extensive fertilizing of plants grown on some soils, which can cause problems with local water quality
- Requires protection from heavy use, once seeded
- May produce vegetation that requires irrigation and maintenance

Mulching

What Is It

Mulching is a temporary soil stabilization or erosion control practice where materials such as grass, hay, woodchips, wood fibers, straw, or gravel are placed on the soil surface. In addition to stabilizing soils, mulching can reduce the speed of storm water runoff over an area. When used together with seeding or planting, mulching can aid in plant growth by holding the seeds, fertilizers, and topsoil in place, by helping to retain moisture, and by insulating against extreme temperatures.

When and Where to Use it

Mulching is often used alone in areas where temporary seeding cannot be used because of the season or climate. Mulching can provide immediate, effective, and inexpensive erosion control. On steep slopes and critical areas such as waterways, mulch matting is used with netting or anchoring to hold it in place.

Mulch seeded and planted areas where slopes are steeper than 2:1, where runoff is flowing across the area, or when seedlings need protection from bad weather.

What to Consider

Use of mulch may or may not require a binder, netting, or the tacking of mulch to the ground. Final grading is not necessary before mulching. Mulched areas should be inspected often to find where mulched material has been loosened or removed. Such areas should be reseeded (if necessary) and the mulch cover replaced immediately. Mulch binders should be applied at rates recommended by the manufacturer.

Advantages of Mulching

- Provides immediate protection to soils that are exposed and that are subject to heavy erosion
- Retains moisture, which may minimize the need for watering
- Requires no removal because of natural deterioration of mulching and matting

Disadvantages of Mulching

- May delay germination of some seeds because cover reduces the soil surface temperature
- Mulch can be easily blown or washed away by runoff if not secured
- Some mulch materials such as wood chips may absorb nutrients necessary for plant growth

Geotextiles

What are They

Geotextiles are porous fabrics known in the construction industry as filter fabrics, road rugs, synthetic fabrics, construction fabrics, or simply fabrics. Geotextiles are manufactured by weaving or bonding fibers made from synthetic materials such as polypropylene, polyester, polyethylene, nylon, polyvinyl chloride, glass and various mixtures of these. As a synthetic construction material, geotextiles are used for a variety of purposes in the United States and foreign countries. The uses of geotextiles include separators, reinforcement, filtration and drainage, and erosion control. We will discuss the use of geotextiles in preventing erosion at construction sites in this section.

Some geotextiles are also biodegradable materials such as mulch matting and netting. Mulch mattings are materials (jute or other wood fibers) that have been formed into sheets of mulch that are more stable than normal mulch. Nettings is typically made from jute, other wood fiber, plastic, paper, or cotton and can be used to hold the mulching and matting to the ground. Netting can also be used alone to stabilize soils while the plants are growing; however, it does not retain moisture or temperature well. Mulch binders (either asphalt or synthetic) are sometimes used instead of netting to hold loose mulches together.

When and Where to Use Them

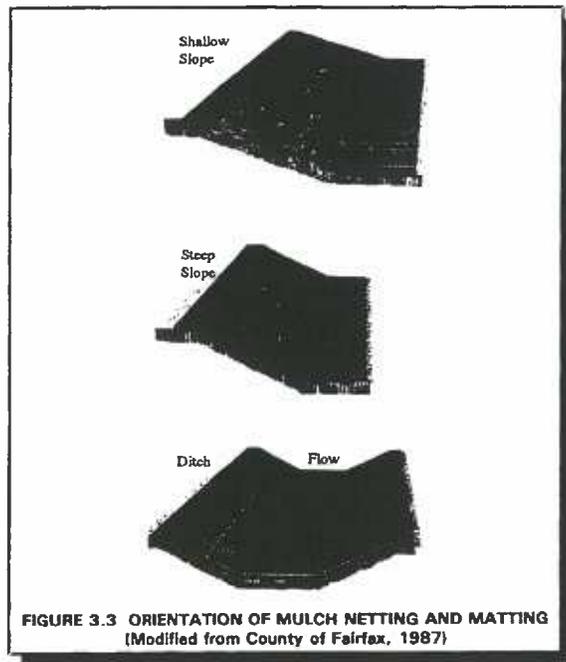
Geotextiles can be used for erosion control by using it alone. Geotextiles, when used alone, can be used as matting. Mattings are used to stabilize the flow on channels and swales. Also, matting is used on recently planted slopes to protect seedlings until they become established. Also, matting may be used on tidal or stream banks where moving water is likely to wash out new plantings.

Geotextiles are also used as separators. An example of such a use is geotextile as a separator between riprap and soil. This "sandwiching" prevents the soil from being eroded from beneath the riprap and maintaining the riprap's base.

What to Consider

As stated above, the types of geotextiles available are vast, therefore, the selected fabric should match its purpose. Also, State or local requirements, design procedures, and any other applicable requirements should also be consulted. In the field, important concerns include regular inspections to determine if cracks, tears, or breaches are present in the fabric and appropriate repairs should be made.

Effective netting and matting require firm, continuous contact between the materials and the soil. If there is no contact, the material will not hold the soil and erosion will occur underneath the material.



Advantages of Geotextiles	
•	Fabrics are relatively inexpensive for certain applications
•	Offer convenience to the installer
•	Design methodologies for the use of geotextiles are available
•	A wide variety of geotextiles to match specific needs are available
•	Mulch matting and netting are biodegradable
Disadvantages of Geotextiles	
•	If the fabric is not properly selected, design, or installed, the effectiveness may be reduced drastically
•	Many synthetic geotextiles are sensitive to light and must be protected prior to installation

Chemical Stabilization

What Is It

Chemical stabilization practices, often referred to as a chemical mulch, soil binder, or soil palliative, are temporary erosion control practices. Materials made of vinyl, asphalt, or rubber are sprayed onto the surface of the soil to hold the soil in place and protect against erosion from storm water runoff and wind. Many of the products used for chemical stabilization are human-made, and many different products are on the market.

When and Where to Use It

Chemical stabilization can be used as an alternative in areas where temporary seeding practices cannot be used because of the season or climate. It can provide immediate, effective, and inexpensive erosion control anywhere erosion is occurring on a site.

What to Consider

The application rates and procedures recommended by the manufacturer of a chemical stabilization product should be followed as closely as possible to prevent the products from forming ponds and from creating large areas where moisture cannot get through.

Advantages of Chemical Stabilization

- Is easily applied to the surface of the soil
- Is effective in stabilizing areas where plants will not grow
- Provides immediate protection to soils that are in danger of erosion

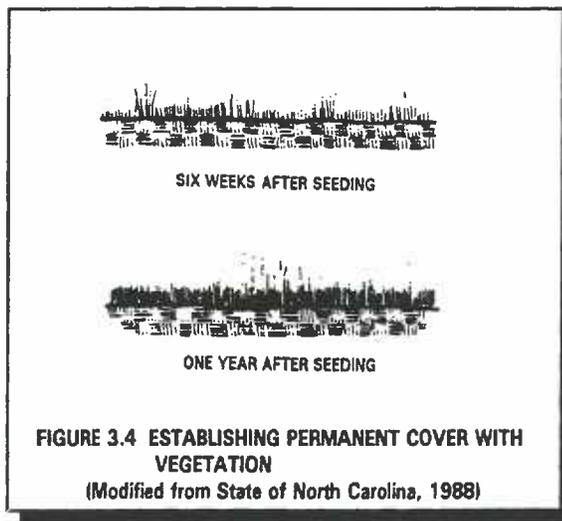
Disadvantages of Chemical Stabilization

- Can create impervious surfaces (where water cannot get through), which may in turn increase the amount and speed of storm water runoff
- May cause harmful effects on water quality if not used correctly
- Is usually more expensive than vegetative cover

Permanent Seeding and Planting

What Is It

Permanent seeding of grass and planting trees and brush provides stabilization to the soil by holding soil particles in place. Vegetation reduces sediments and runoff to downstream areas by slowing the velocity of runoff and permitting greater infiltration of the runoff. Vegetation also filters sediments, helps the soil absorb water, improves wildlife habitats, and enhances the aesthetics of a site.



When and Where to Use It

Permanent seeding and planting is appropriate for any graded or cleared area where long-lived plant cover is desired. Some areas where permanent seeding is especially important are filter strips, buffer areas, vegetated swales, steep slopes, and stream banks. This practice is effective on areas where soils are unstable because of their texture, structure, a high water table, high winds, or high slope.

What to Consider

For this practice to work, it is important to select appropriate vegetation, prepare a good seedbed, properly time planting, and to condition the soil. Planting local plants during their

regular growing season will increase the chances for success and may lessen the need for watering. Check seeded areas frequently for proper watering and growth conditions.

When seeding in cold climates during fall or winter, cover the area with mulch to provide a protective barrier against cold weather (see Mulching). Seeding should also be mulched if the seeded area slopes 4:1 or more, if soil is sandy or clayey, or if weather is excessively hot or dry.

Plant when conditions are most favorable for growth. When possible, use low-maintenance local plant species.

Topsoil should be used on areas where topsoils have been removed, where the soils are dense or impermeable, or where mulching and fertilizers alone cannot improve soil quality. Topsoiling should be coordinated with the seeding and planting practices and should not be planned while the ground is frozen or too wet. Topsoil layers should be at least 2 inches deep (or similar to the existing topsoil depth).

To minimize erosion and sedimentation, remove as little existing topsoil as possible. All site controls should be in place before the topsoil is removed. If topsoils are brought in from another site, it is important that its texture is compatible with the subsoils onsite; for example, sandy topsoils are not compatible with clay subsoils.

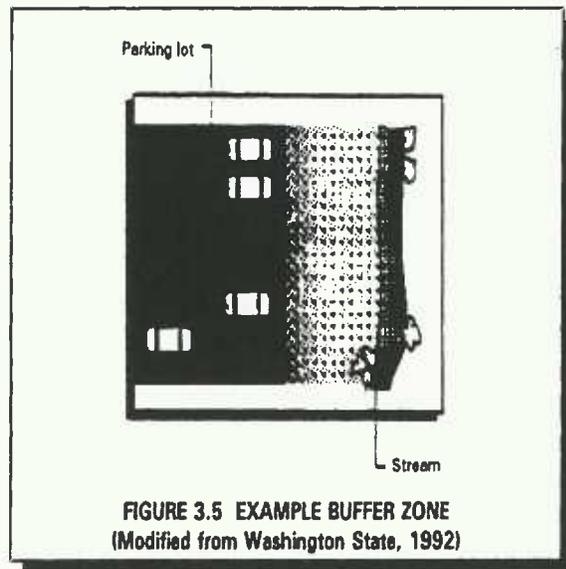
Stockpiling of topsoils onsite requires good planning so soils will not obstruct other operations. If soil is to be stockpiled, consider using temporary seeding, mulching, or silt fencing to prevent or control erosion. Inspect the stockpiles frequently for erosion. After topsoil has been spread, inspect it regularly, and reseed or replace areas that have eroded.

Advantages of Permanent Seeding and Planting
<ul style="list-style-type: none">• Improves the aesthetics of a site• Provides excellent stabilization• Provides filtering of sediments• Provides wildlife habitat• Is relatively inexpensive
Disadvantages of Permanent Seeding and Planting
<ul style="list-style-type: none">• May require irrigation to establish vegetation• Depends initially on climate and weather for success

Buffer Zones

What are They

Buffer zones are vegetated strips of land used for temporary or permanent water quality benefits. Buffer zones are used to decrease the velocity of storm water runoff, which in turn helps to prevent soil erosion. Buffer zones are different from vegetated filter strips (see section on Vegetated Filter Strips) because buffer zone effectiveness is not measured by its ability to improve infiltration (allow water to go into the ground). The buffer zone can be an area of vegetation that is left undisturbed during construction, or it can be newly planted.



When and Where to Use Them

Buffer zones technique can be used at any site that can support vegetation. Buffer zones are particularly effective on floodplains, next to wetlands, along stream banks, and on steep, unstable slopes.

What to Consider

If buffer zones are preserved, existing vegetation, good planning, and site management are needed to protect against disturbances such as grade changes, excavation, damage from equipment, and other activities. Establishing new buffer strips requires the establishment of a good dense turf, trees, and shrubs (see Permanent Seeding and Planting). Careful maintenance is important to ensure healthy vegetation. The need for routine maintenance such as mowing, fertilizing, liming, irrigating, pruning, and weed and pest control will depend on the species of plants and trees involved, soil types and climatic conditions. Maintaining planted areas may require debris removal and protection against unintended uses or traffic.

Advantages of Buffer Zones
<ul style="list-style-type: none">• Provide aesthetic as well as water quality benefits• Provide areas for infiltration, which reduces amount and speed of storm water runoff• Provide areas for wildlife habitat• Provide areas for recreation• Provide buffers and screens for onsite noise if trees or large bushes are used• Low maintenance requirements• Low cost when using existing vegetation
Disadvantages of Buffer Zones
<ul style="list-style-type: none">• May not be cost effective to use if the cost of land is high• Are not feasible if land is not available• Require plant growth before they are effective

Preservation of Natural Vegetation

What Is It

The preservation of natural vegetation (existing trees, vines, brushes, and grasses) provides natural buffer zones. By preserving stabilized areas, it minimizes erosion potential, protects water quality, and provides aesthetic benefits. This practice is used as a permanent control measure.

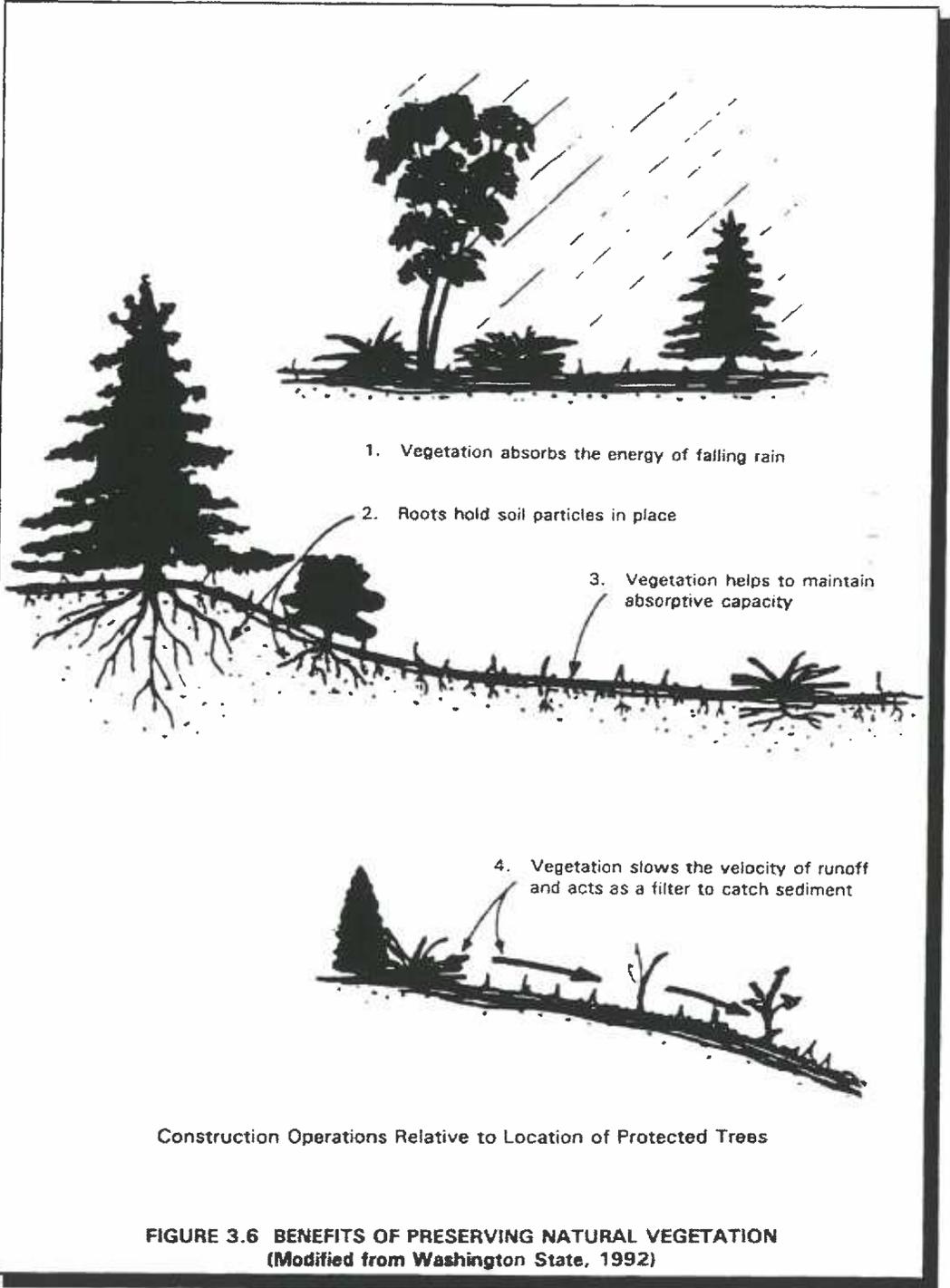
When and Where to Use It

This technique is applicable to all types of sites. Areas where preserving vegetation can be particularly beneficial are floodplains, wetlands, stream banks, steep slopes, and other areas where erosion controls would be difficult to establish, install, or maintain.

What to Consider

Preservation of vegetation on a site should be planned before any site disturbance begins. Preservation requires good site management to minimize the impact of construction activities on existing vegetation. Clearly mark the trees to be preserved and protect them from ground disturbances around the base of the tree. Proper maintenance is important to ensure healthy vegetation that can control erosion. Different species, soil types, and climatic conditions will require different maintenance activities such as mowing, fertilizing, liming, irrigation, pruning, and weed and pest control. Some State/local regulations require natural vegetation to be preserved in sensitive areas; consult the appropriate State/local agencies for more information on their regulations. Maintenance should be performed regularly, especially during construction.

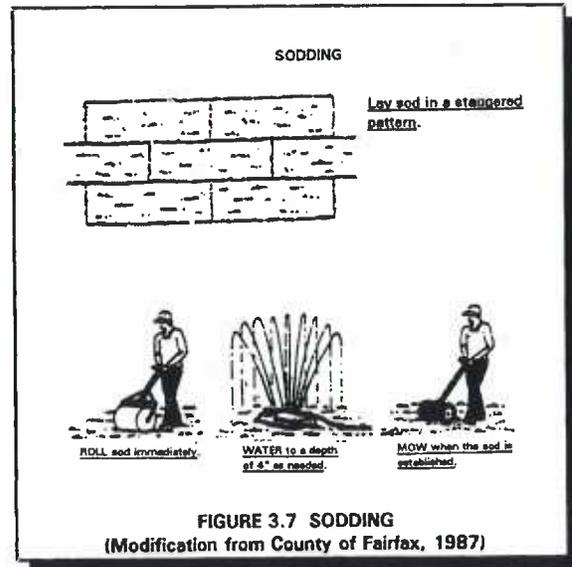
Advantages of Preservation of Natural Vegetation
<ul style="list-style-type: none">• Can handle higher quantities of storm water runoff than newly seeded areas• Does not require time to establish (i.e., effective immediately)• Increases the filtering capacity because the vegetation and root structure are usually denser in preserved natural vegetation than in newly seeded or base areas• Enhances aesthetics• Provides areas for infiltration, reducing the quantity and velocity of storm water runoff• Allows areas where wildlife can remain undisturbed• Provides noise buffers and screens for onsite operations.• Usually requires less maintenance (e.g., irrigation, fertilizer) than planting new vegetation
Disadvantages of Preservation of Natural Vegetation
<ul style="list-style-type: none">• Requires planning to preserve and maintain the existing vegetation• May not be cost effective with high land costs• May constrict area available for construction activities



Sod Stabilization

What Is It

Sodding stabilizes an area by immediately covering the surface with vegetation and providing areas where storm water can infiltrate into the ground.



When and Where to Use It

Sodding is appropriate for any graded or cleared area that might erode and where a permanent, long-lived plant cover is needed immediately. Examples of where sodding can be used are buffer zones, stream banks, dikes, swales, slopes, outlets, level spreaders, and filter strips.

What to Consider

The soil surface should be fine-graded before laying down the sod. Topsoil may be needed in areas where the soil textures are inadequate (see topsoil discussion in section on Permanent Seeding and Planting). Lime and fertilizers should be added to the soil to promote good growth conditions. Sodding can be applied in alternating strips or other patterns, or alternate areas can be seeded to reduce expense. Sod should not be planted

during very hot or wet weather. Sod should not be placed on slopes that are greater than 3:1 if they are to be mowed. If placed on steep slopes, sod should be laid with staggered joints and/or be pegged. In areas such as steep slopes or next to running waterways, chicken wire, jute, or other netting can be placed over the sod for extra protection against lifting (see Mulching and Geotextiles). Roll or compact immediately after installation to ensure firm contact with the underlying topsoil. Inspect the sod frequently after it is first installed, especially after large storm events, until it is established as permanent cover. Remove and replace dead sod. Watering may be necessary after planting and during periods of intense heat and/or lack of rain (drought).

Advantages of Sod Stabilization
<ul style="list-style-type: none">• Can provide immediate vegetative cover and erosion control• Provides more stabilizing protection than initial seeding through dense cover formed by sod• Produces lower weed growth than seeded vegetation• Can be used for site activities within a shorter time than can seeded vegetation• Can be placed at any time of the year as long as moisture conditions in the soil are favorable
Disadvantage of Sod Stabilization
<ul style="list-style-type: none">• Purchase and installation costs are higher than for seedings• May require continued irrigation if the sod is placed during dry seasons or on sandy soils

Stream Bank Stabilization

What Is It

Stream bank stabilization is used to prevent stream bank erosion from high velocities and quantities of storm water runoff. Typical methods include the following:

- **Riprap**—Large angular stones placed along the stream bank or lake
- **Gabion**—Rock-filled wire cages that are used to create a new stream bank
- **Reinforced Concrete**—Concrete bulkheads and retaining walls that replace natural stream banks and create a nonerosive surface
- **Log Cribbing**—Retaining walls built of logs to anchor the soils against erosive forces. Usually built on the outside of stream bends
- **Grid Pavers**—Precast or poured-in-place concrete units that are placed along stream banks to stabilize the stream bank and create open spaces where vegetation can be established

When and Where to Use It

Stream bank stabilization is used where vegetative stabilization practices are not practical and where the stream banks are subject to heavy erosion from increased flows or disturbance during construction. Stabilization should occur before any land development in the watershed area. Stabilization can also be retrofitted when erosion of a stream bank occurs.

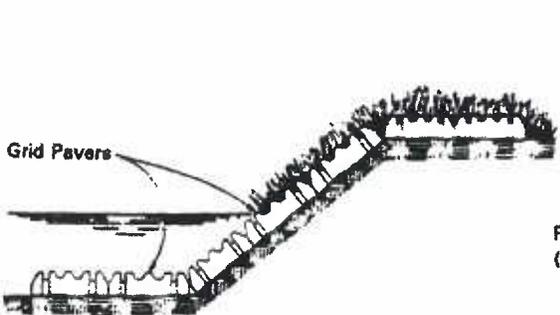
What to Consider

Stream bank stabilization structures should be planned and designed by a professional engineer licensed in the State where the site is located. Applicable Federal, State and local requirements should be followed, including Clean Water Act Section 404 regulations. An important design feature of stream bank stabilization methods is the foundation of the structure; the potential for the stream to erode the sides and bottom of the channel should be considered to make sure the stabilization measure will be supported properly. Structures can be designed to protect and improve natural wildlife habitats; for example, log structures and grid pavers can be designed to keep vegetation. Only pressure-treated wood should be used

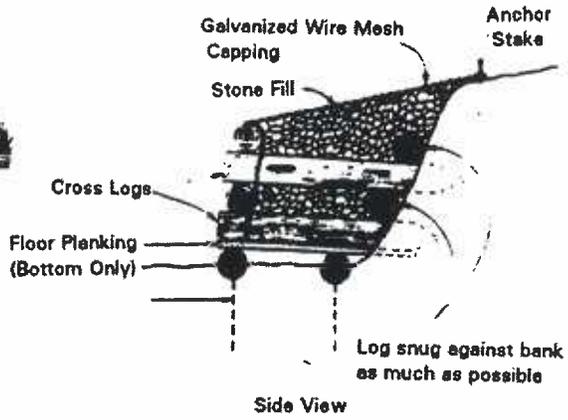
in log structures. Permanent structures should be designed to handle expected flood conditions. A well-designed layer of stone can be used in many ways and in many locations to control erosion and sedimentation. Riprap protects soil from erosion and is often used on steep slopes built with fill materials that are subject to harsh weather or seepage. Riprap can also be used for flow channel liners, inlet and outlet protection at culverts, stream bank protection, and protection of shore lines subject to wave action. It is used where water is turbulent and fast flowing and where soil may erode under the design flow conditions. It is used to expose the water to air as well as to reduce water energy. Riprap and gabion (wire mesh cages filled with rock) are usually placed over a filter blanket (i.e., a gravel layer or filter cloth). Riprap is either a uniform size or graded (different sizes) and is usually applied in an even layer throughout the stream. Reinforced concrete structures may require positive drainage behind the bulkhead or retaining wall to prevent erosion around the structure. Gabion and grid pavers should be installed according to manufacturers' recommendations.

Stream bank stabilization structures should be inspected regularly and after each large storm event. Structures should be maintained as installed. Structural damage should be repaired as soon as possible to prevent further damage or erosion to the stream bank.

Advantages of Stream Bank Stabilization	
<ul style="list-style-type: none"> • Can provide control against erosive forces caused by the increase in storm water flows created during land development • Usually will not require as much maintenance as vegetative erosion controls • May provide wildlife habitats • Forms a dense, flexible, self-healing cover that will adapt well to uneven surfaces (riprap) 	
Disadvantages of Steam Bank Stabilization	
<ul style="list-style-type: none"> • Does not provide the provide the water quality or aesthetic benefits that vegetative practices could • Should be designed by qualified professional engineers, which may increase project costs • May be expensive (materials costs) • May require additional permits for structure • May alter stream dynamics which cause changes in the channel downstream • May cause negative impacts to wildlife habitats 	

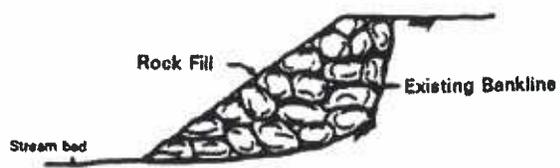


Grid Pavers

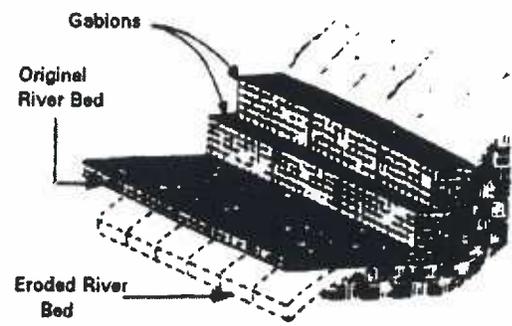


Side View

Log Cribbing



Riprap



Gabion

FIGURE 3.8 EXAMPLES OF STREAM BANK STABILIZATION PRACTICES
 (Modified from Commonwealth of Virginia, 1980, and Commonwealth of Pennsylvania, 1990)

Soil Retaining Measures

What Are They

Soil retaining measures refer to structures or vegetative stabilization practices used to hold the soil firmly to its original place or to confine as much as possible within the site boundary. There are many different methods for retaining soil; some are used to control erosion while others are used to protect the safety of the workers (i.e., during excavations). Examples of soil retaining measures include reinforced soil retaining systems, wind breaks, and stream bank protection using shrubs and reeds.

Reinforced soil retaining measures refer to using structural measures to hold in place loose or unstable soil. During excavation, for example, soil tiebacks and retaining walls are used to prevent cave-ins and accidents. But these same methods can be used to retain soils and prevent them from moving. While detailed discussion of soil retaining methods is beyond the scope of this manual, several are briefly described.

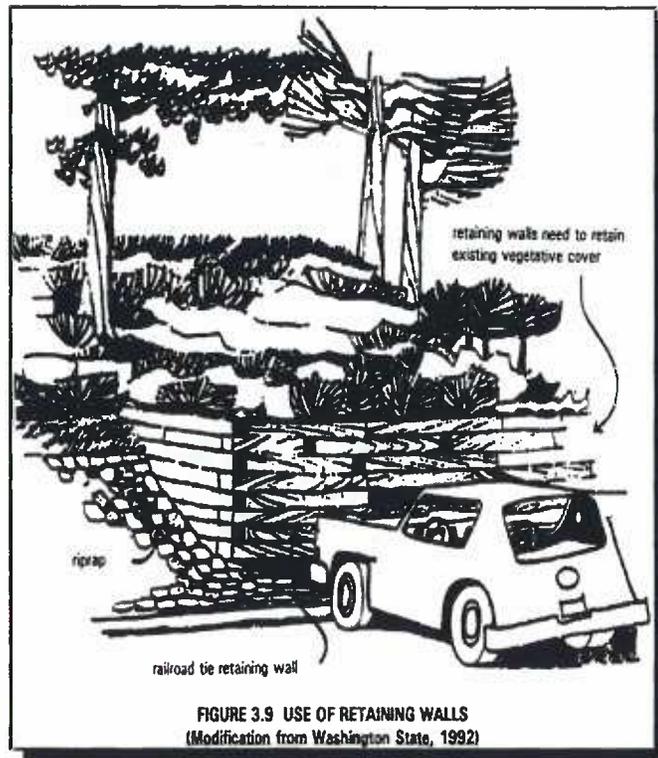
- **Skeleton Sheeting**—Skeleton sheeting, the least expensive soil bracing system, requires the soil to be cohesive (i.e., like clay). Construction grade lumber is used to brace the excavated face of the slope.
- **Continuous Sheeting**—Continuous sheeting involves using a material that covers the face of the slope in a continuous manner. Struts and boards are placed along the slope which provide continuous support to the slope face. The material used can be steel, concrete, or wood.
- **Permanent Retaining Walls**—Permanent construction walls may be necessary to provide support to the slope well after the construction is complete. In this instance, concrete masonry or wood (railroad tie) retaining walls can be constructed and left in place.

When and Where to Use Them

Use reinforced soil retaining methods where using other methods of soil retention (e.g., vegetation) is not practical. Some sites may have slopes or soils that do not lend themselves to ordinary practices of soil retention. In these instances, a reinforced soil retaining measure should be considered.

What to Consider

As emphasized earlier, the use of reinforced soil retaining practices serve both safety and erosion control purposes. Since safety is the first concern, the design should be performed by qualified and certified engineers. Such design normally involves understanding the nature of soil, location of the ground water table, the expected loads, and other important design considerations.



Advantages of Soil Retaining Measures

- Provide safety to workers, and some types of reinforced retention can be left as permanent structures
- Prevent erosion of soil difficult to stabilize using conventional methods

Disadvantages of Soil Retaining Measures

- Require the expertise of a professional engineer and may be expensive to design and install

Dust Control

What Is It

Wind is capable of causing erosion, particularly in dry climates or during the dry season. Wind erosion can occur wherever the surface soil is loose and dry, vegetation is sparse or absent, and the wind is sufficiently strong. Wind erodes soils and transports the sediments offsite, where they may be washed into the receiving water by the next rainstorm. Therefore, various methods of dust control may need to be employed to prevent dust from being carried away from the construction site. There are many ways to accomplish this and some are described below:

- **Vegetative Cover**—For disturbed areas not subject to traffic, vegetation provides the most practical method of dust control (see Temporary Seeding and Permanent Seeding and Planting).
- **Mulch (Including Gravel Mulch)**—When properly applied, mulch offers a fast, effective means of controlling dust (see Mulching).
- **Spray-on Adhesive**—Asphalt emulsions, latex emulsions, or resin in water can be sprayed onto mineral soil to prevent their blowing away (see Chemical Stabilization).
- **Calcium Chloride**—Calcium chloride may be applied by mechanical spreader as loose, dry granules or flakes at a rate that keeps the surface moist but not so high as to cause water pollution or plant damage.
- **Sprinkling**—The site may be sprinkled until the surface is wet. Sprinkling is especially effective for dust control on haul roads and other traffic routes.
- **Stone**—Used to stabilize construction roads; can also be effective for dust control.
- **Barriers**—A board fence, wind fence, sediment fence, or similar barrier can control air currents and blowing soil. All of these fences are normally constructed of wood and they prevent erosion by obstructing the wind near the ground and preventing the soil from blowing offsite.

Barriers can be part of long-term dust control strategy in arid and semiarid areas; however, they are not a substitute for permanent stabilization. A wind barrier generally protects soil downward for a distance of 10 times the height of the

barrier. Perennial grass and stands of existing trees may also serve as wind barriers.

When and Where to Use It

The above measures for dust control should be used when open dry areas of soil are anticipated on the site. Clearing and grading activities create the opportunity for large amounts of dust to be blown, therefore, one or several dust control measures should be considered prior to clearing and grading. One should also note that many of the water erosion control measures indirectly prevent wind erosion.

As the distance across bare soil increases, wind erosion becomes more and more severe. In arid and semiarid regions where rainfall is insufficient to establish vegetative cover, mulching may be used to conserve moisture, prevent surface crusting, reduce runoff and erosion, and help establish vegetation. It is a critical treatment on sites with erosive slopes.

What to Consider

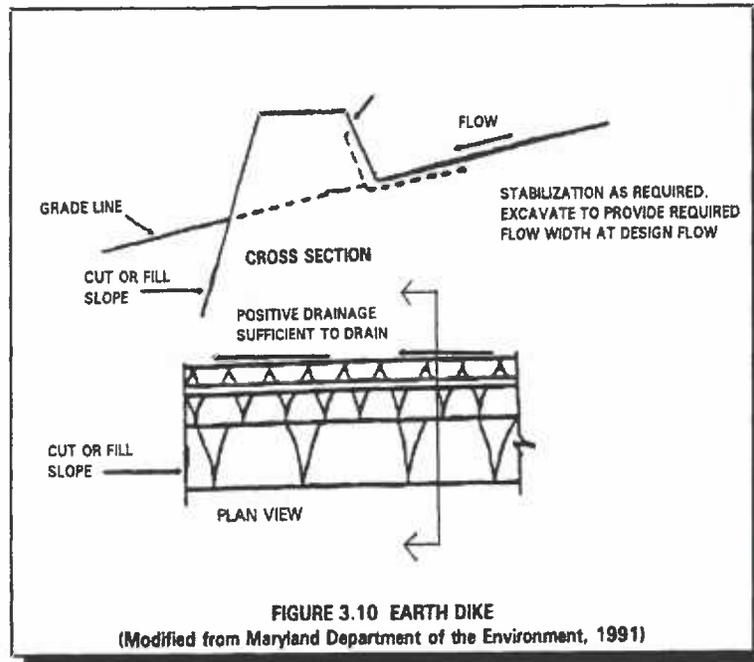
The direction of the prevailing winds and careful planning of clearing activities are important considerations. As a standard practice, any exposed area should be stabilized using vegetation to prevent both wind and water erosion. If your site is located in an arid or semiarid area, you may wish to contact the USDA Soil Conservation Service representative in your area or the appropriate State/local government agency for additional information.

Advantages of Dust Control
<ul style="list-style-type: none">• Reduces movement of soil to offsite areas
Disadvantages of Dust Control
<ul style="list-style-type: none">• Excessive sprinkling may result in non-storm water discharges from the site

Earth Dike

What Is It

An earth dike is a ridge or ridge and channel combination used to protect work areas from upslope runoff and to divert sediment-laden water to appropriate traps or stable outlets. The dike consists of compacted soil and stone, riprap, or vegetation to stabilize the channel.



When and Where to Use It

Earth dikes are used in construction areas to control erosion, sedimentation, or flood damage. Earth dikes can be used in the following situations:

- Above disturbed existing slopes and above cut or fill slopes to prevent runoff over the slope
- Across unprotected slopes, as slope breaks, to reduce slope length
- Below slopes to divert excess runoff to stabilized outlets
- To divert sediment laden water to sediment traps

- At or near the perimeter of the construction area to keep sediment from leaving the site
- Above disturbed areas before stabilization to prevent erosion and maintain acceptable working conditions
- Temporary diversions may also serve as sediment traps when the site has been overexcavated on a flat grade or in conjunction with a sediment fence.

What to Consider

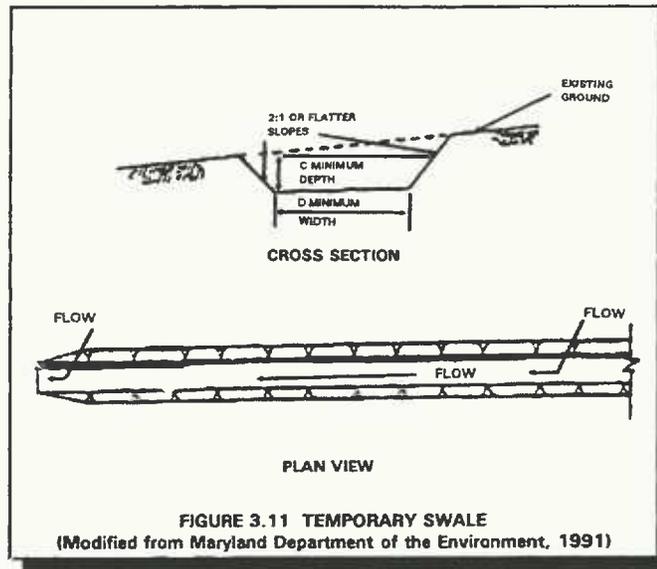
Despite an earth dike's simplicity, improper design can limit its effectiveness; therefore, the State or local requirements should be consulted. Some general considerations include proper compaction of the earth dike, appropriate location to divert the intercepted runoff, and properly design ridge height and thicknesses. Earth dikes should be constructed along a positive grade. There should be no dips or low points in an earth dike where the storm water will collect (other than the discharge point). Also, the intercepted runoff from disturbed areas should be diverted to a sediment-trapping device. Runoff from undisturbed areas can be channeled to an existing swale or to a level spreader. Stabilization for the dike and flow channel of the drainage swale should be accomplished as soon as possible. Stabilization materials can include vegetation or stone/riprap.

Advantages of an Earth Dike
<ul style="list-style-type: none"> • Can be constructed from materials and equipment which are typically already present on a construction site
Disadvantages of an Earth Dike
<ul style="list-style-type: none"> • Frequent inspection and maintenance required

Drainage Swale

What Is It

A drainage swale is a channel with a lining of vegetation, riprap, concrete, or other material. It is constructed by excavating a channel and applying the appropriate stabilization.



When and Where to Use It

A drainage swale applies when runoff is to be conveyed without causing erosion. Drainage swales can be used to convey runoff from the bottom or top of a slope. Drainage swales accomplish this by intercepting and diverting the flow to a suitable outlet. For swales draining a disturbed area, the outlet can be to a sediment trapping device prior to its release.

What to Consider

Since design flows, channel linings, and appropriate outlet devices will need to be considered, consult your State's requirements on such erosion control measures prior to constructing a drainage swale. General considerations include:

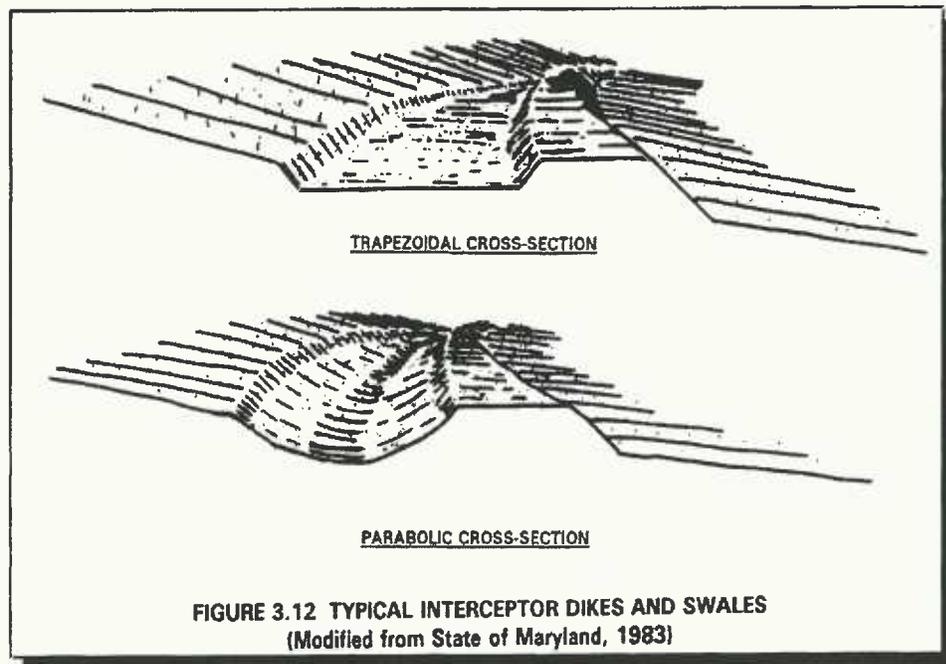
- Divert the intercepted runoff to an appropriate outlet.
- The swale should be lined using geotextiles, grass, sod, riprap, asphalt, or concrete. The selection of the liner is dependent upon the volume and the velocity of the anticipated runoff.
- The swale should have a positive grade. There should be no dips or low points in the swale where the storm water will collect.

Advantages of a Drainage Swale	
•	Excavation of swale can be easily performed with earth moving equipment
•	Can transport large volumes of runoff
Disadvantages of a Drainage Swale	
•	Stabilization and design costs can make construction expensive
•	Use is restricted to areas with relatively flat slopes

Interceptor Dikes and Swales

What Are They

Interceptor dikes (ridges of compacted soil) and swales (excavated depressions) are used to keep upslope runoff from crossing areas where there is a high risk of erosion. They reduce the amount and speed of flow and then guide it to a stabilized outfall (point of discharge) or sediment trapping area (see sections on Sediment Traps and Temporary Sediment Basins). Interceptor dikes and swales divert runoff using a combination of earth dike and vegetated swale. Runoff is channeled away from locations where there is a high risk of erosion by placing a diversion dike or swale at the top of a sloping disturbed area. Dikes and swales also collect overland flow, changing it into concentrated flows. Interceptor dikes and swales can be either temporary or permanent storm water control structures.



When and Where to Use Them

Interceptor dikes and swales are generally built around the perimeter of a construction site before any major soil disturbing activity takes place. Temporary dikes or swales may also be used to protect existing buildings; areas, such as stockpiles; or other small areas that have

not yet been fully stabilized. When constructed along the upslope perimeter of a disturbed or high-risk area (though not necessarily all the way around it), dikes or swales prevent runoff from uphill areas from crossing the unprotected slope. Temporary dikes or swales constructed on the down slope side of the disturbed or high-risk area will prevent runoff that contains sediment from leaving the site before sediment is removed. For short slopes, a dike or swale at the top of the slope reduces the amount of runoff reaching the disturbed area. For longer slopes, several dikes or swales are placed across the slope at intervals. This practice reduces the amount of runoff that accumulates on the face of the slope and carries the runoff safely down the slope. In all cases, runoff is guided to a sediment trapping area or a stabilized outfall before release.

What to Consider

Temporary dikes and swales are used in areas of overland flow; if they remain in place longer than 15 days, they should be stabilized. Runoff channeled by a dike or swale should be directed to an adequate sediment trapping area or stabilized outfall. Care should be taken to provide enough slope for drainage but not too much slope to cause erosion due to high runoff flow speed. Temporary interceptor dikes and swales may remain in place as long as 12 to 18 months (with proper stabilization) or be rebuilt at the end of each day's activities. Dikes or swales should remain in place until the area they were built to protect is permanently stabilized. Interceptor dikes and swales can be permanent controls. However, permanent controls: should be designed to handle runoff after construction is complete; should be permanently stabilized; and should be inspected and maintained on a regular basis. Temporary and permanent control measures should be inspected once each week on a regular schedule and after every storm. Repairs necessary to the dike and flow channel should be made promptly.

Advantages of Interceptor Dikes and Swales	
•	Are simple and effective for channeling runoff away from areas subject to erosion
•	Can handle flows from large drainage areas
•	Are inexpensive because they use materials and equipment normally found onsite
Disadvantages of Interceptor Dikes and Swales	
•	If constructed improperly, can cause erosion and sediment transport since flows are concentrated
•	May cause problems to vegetation growth if water flow is too fast
•	Require additional maintenance, inspections, and repairs

Temporary Stream Crossing

What Is It

A temporary stream crossing is a bridge or culvert across a stream or watercourse for short-term use by construction vehicles or heavy equipment. Vehicles moving over unprotected stream banks will damage the bank, thereby releasing sediments and degrading the stream bank. A stream crossing provides a means for construction vehicles to cross streams or watercourses without moving sediment to streams, damaging the streambed or channel, or causing flooding.

When and Where to Use It

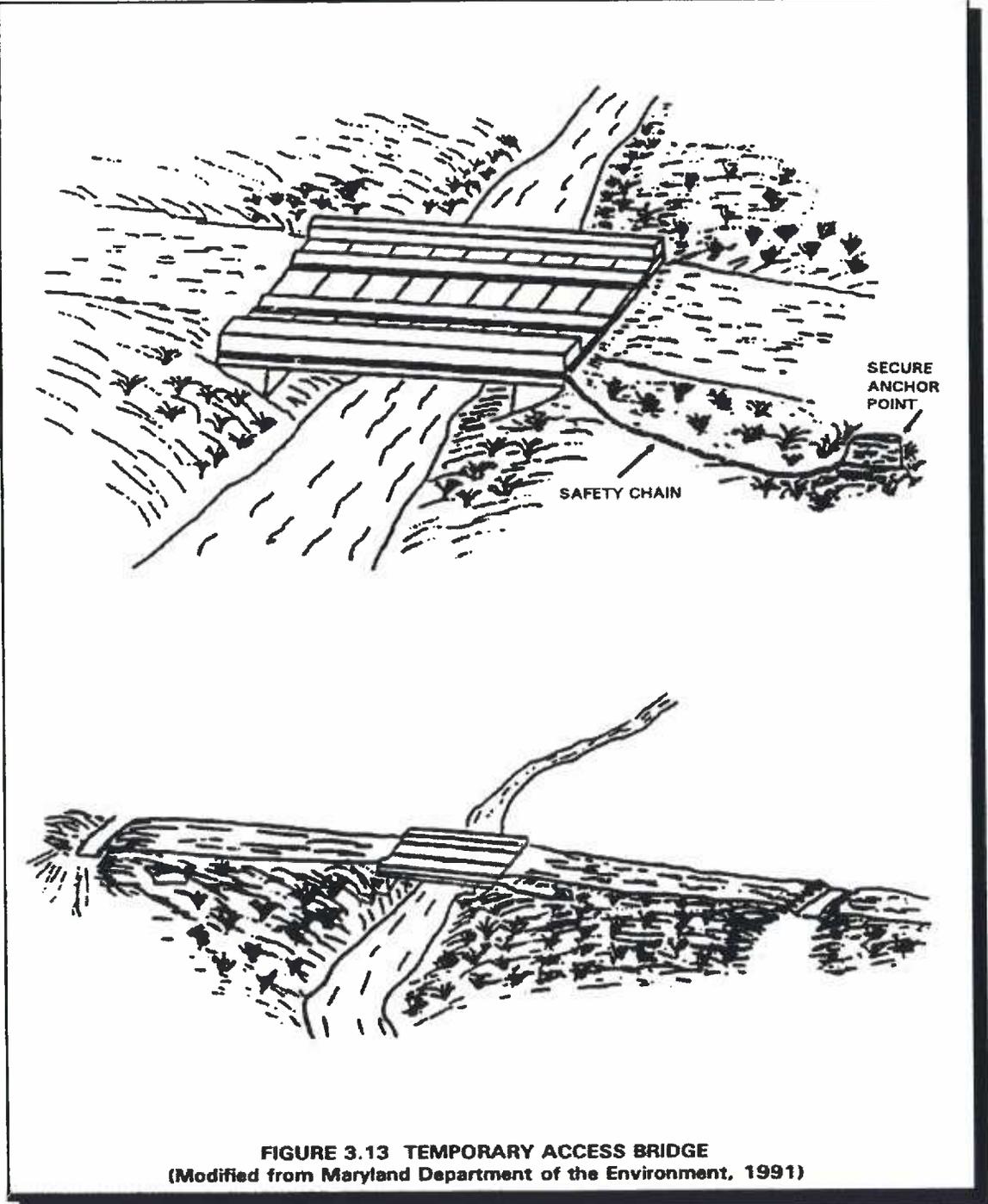
A temporary stream crossing is used when heavy equipment should be moved from one side of a stream channel to another, or where light-duty construction vehicles have to cross the stream channel frequently for a short period of time. Temporary stream crossings should be constructed only when it is necessary to cross a stream and a permanent crossing is not yet constructed.

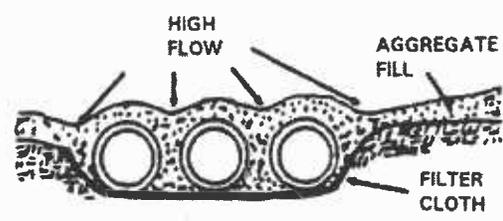
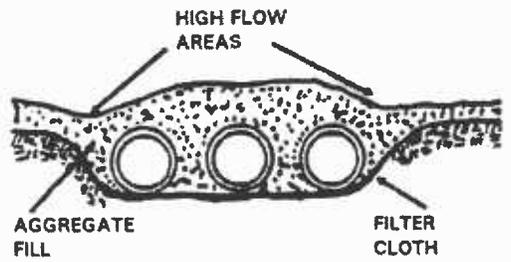
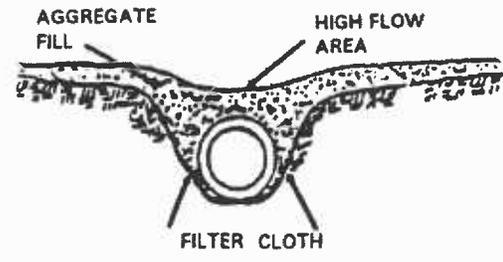
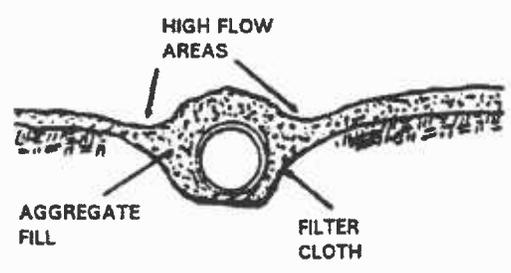
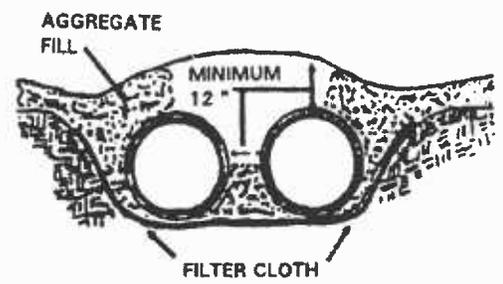
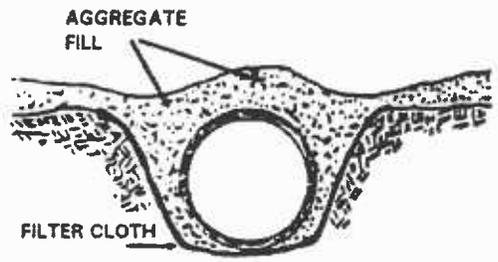
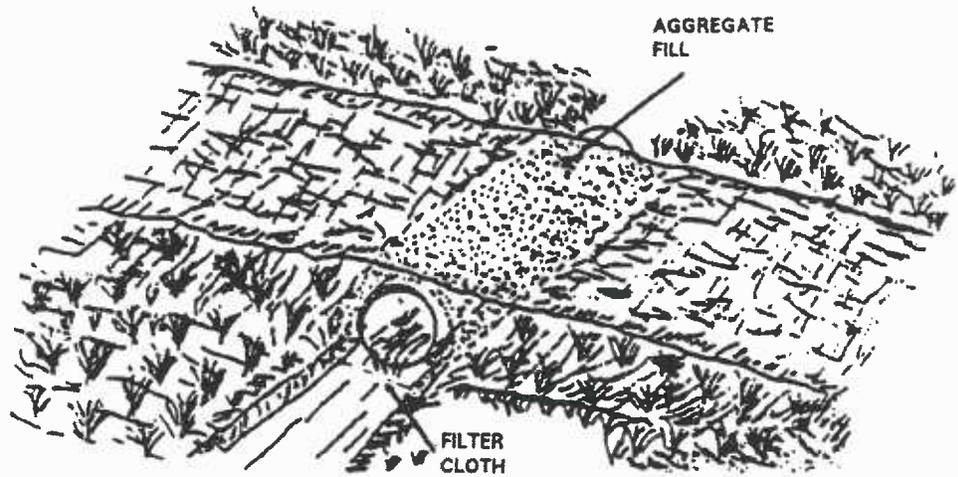
- **Bridges**—Where available materials and designs are adequate to bear the expected loadings, bridges are preferred as a temporary stream crossing.
- **Culverts**—Culverts are the most common type of stream crossings and are relatively easy to construct. A pipe, which is to carry the flow, is laid into the channel and covered by gravel.

What to Consider

When feasible, one should always attempt to minimize or eliminate the need to cross streams. Temporary stream crossings are a direct source of pollution; therefore, every effort should be made to use an alternate method (e.g., longer detour), when feasible. When it becomes necessary to cross a stream, a well planned approach will minimize the damage to the stream bank and reduce erosion. The design of temporary stream crossings requires knowledge of the design flows and other information; therefore, a professional engineer and specific State and local requirements should be consulted. State/local jurisdictions may require a separate permit for temporary stream crossings; contact them directly to learn about their exact requirements.

The specific loads and the stream conditions will dictate what type of stream crossing to employ. Bridges are the preferred method to cross a stream as they provide the least obstruction to flows and fish migration.





MULTIPLE PIPES

MULTIPLE PIPES

FIGURE 3.14 TEMPORARY ACCESS CULVERT
 (Modified from Maryland Department of the Environment, 1991)

Advantages of a Temporary Stream Crossing
<ul style="list-style-type: none">• Bridges provide the least obstruction to flow and fish migration and the construction material can be salvaged• Culverts are inexpensive and easily installed structures
Disadvantages of a Temporary Stream Crossing
<ul style="list-style-type: none">• Bridges are expensive to design and install• Culverts cause greater disturbances during installation and removal

Temporary Storm Drain Diversion

What Is It

A temporary storm drain is a pipe which redirects an existing storm drain system or outfall channel to discharge into a sediment trap or basin.

When and Where to Use It

Use storm drain diversions to temporarily divert flow going to a permanent outfall. This diverted flow should be directed to a sediment-trapping device. A temporary storm drain diversion should remain in place as long as the area draining to the storm sewer remains disturbed. Another method is to delay completion of the permanent outfall and instead using temporary diversions to a sediment trapping device before discharge. Finally, a sediment trap or basin can be constructed below a permanent storm drain outfall. The basin would be designed to trap any sediment before final discharge.

What to Consider

Since the existing storm draining systems will be modified, careful consideration to piping configuration and resulting impact of installing a temporary storm drain diversion should be given. The temporary diversions will also need to be moved, once the construction has ceased and it is necessary to restore the original storm drainage systems. Therefore, appropriate restoration measures such as flushing the storm drain prior to removal of the sediment trap or basin, stabilizing the outfall, restoration of grade areas, etc. should be taken. And finally, the State or local requirements should be consulted for detailed requirements.

Advantages of a Temporary Storm Drain Diversion

- Requires little maintenance once installed

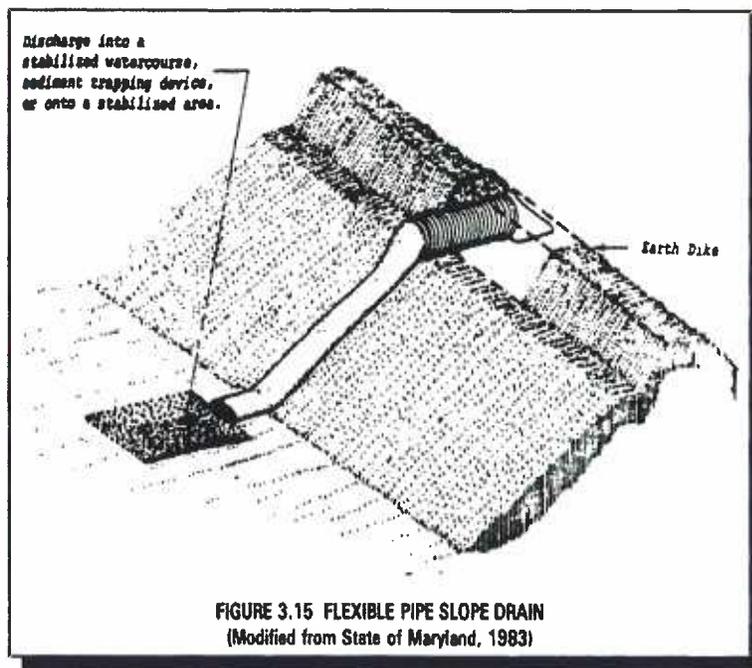
Disadvantages of a Temporary Storm Drain Diversion

- Disturbs existing storm drainage patterns

Pipe Slope Drains

What Are They

Pipe slope drains reduce the risk of erosion by discharging runoff to stabilized areas. Made of flexible or rigid pipe, they carry concentrated runoff from the top to the bottom of a slope that has already been damaged by erosion or is at high risk for erosion. They are also used to drain saturated slopes that have the potential for soil slides. Pipe slope drains can be either temporary or permanent depending on the method of installation and material used.



When and Where to Use Them

Pipe slope drains are used whenever it is necessary to convey water down a slope without causing erosion. They are especially effective before a slope has been stabilized or before permanent drainage structures are ready for use. Pipe slope drains may be used with other devices, including diversion dikes or swales, sediment traps, and level spreaders (used to spread out storm water runoff uniformly over the surface of the ground). Temporary pipe slope drains, usually flexible tubing or conduit, may be installed prior to the construction of

permanent drainage structures. Permanent slope drains may be placed on or beneath the ground surface; pipes, sectional downdrains, paved chutes, or clay tiles may be used.

Paved chutes may be covered with a surface of concrete or other impenetrable material. Subsurface drains can be constructed of concrete, PVC, clay tile, corrugated metal, or other permanent material.

What to Consider

The drain design should be able to handle the volume of flow. The inlets and outlets of a pipe slope drain should be stabilized. This means that a flared end section should be used at the entrance of the pipe. The soil around the pipe entrance should be fully compacted. The soil at the discharge end of the pipe should be stabilized with riprap (a combination of large stones, cobbles, and boulders). The riprap should be placed along the bottom of a swale which leads to a sediment trapping structure or another stabilized area.

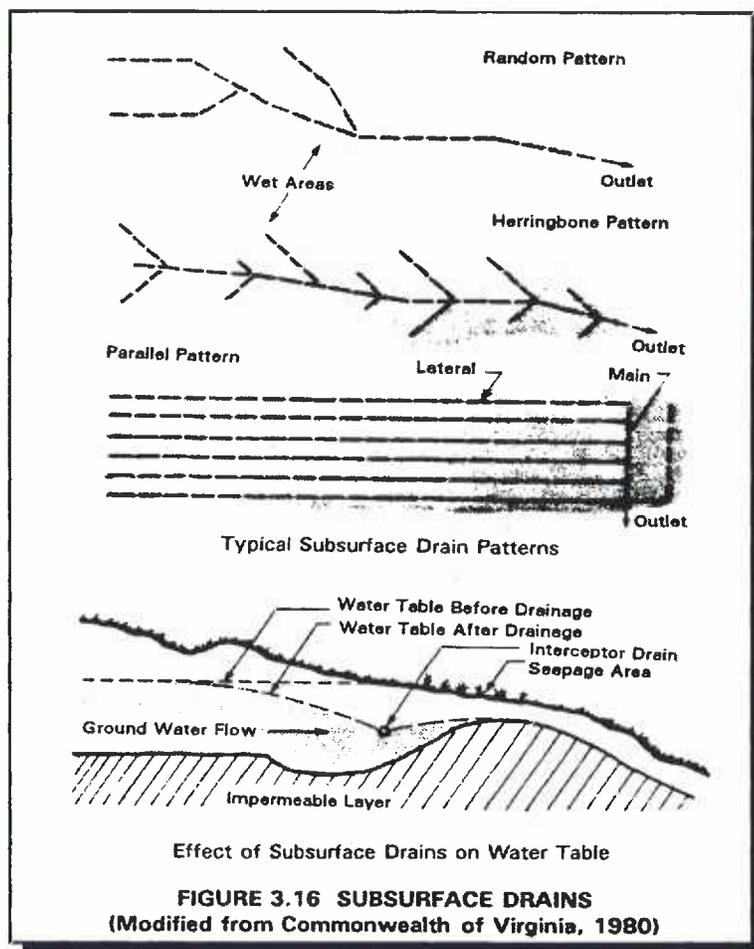
Pipe slope drains should be inspected on a regular schedule and after any major storm. Be sure that the inlet from the pipe is properly installed to prevent bypassing the inlet and undercutting the structure. If necessary, install a headwall, riprap, or sandbags around the inlet. Check the outlet point for erosion and check the pipe for breaks or clogs. Install outlet protection if needed and promptly clear breaks and clogs.

Advantages of Pipe Slope Drains	
•	Can reduce or eliminate erosion by transporting runoff down steep slopes or by draining saturated soils
•	Are easy to install and require little maintenance
Disadvantages of Pipe Slope Drains	
•	Require that the area disturbed by the installation of the drain should be stabilized or it, too, will be subject to erosion
•	May clog during a large storm

Subsurface Drains

What Are They

A subsurface drain is a perforated pipe or conduit placed beneath the surface of the ground at a designed depth and grade. It is used to drain an area by lowering the water table. A high water table can saturate soils and prevent the growth of certain types of vegetation. Saturated soils on slopes will sometimes “slip” down the hill. Installing subsurface drains can help prevent these problems.



When and Where to Use Them

There are two types of subsurface drains: relief drains and interceptor drains. Relief drains are used to dewater an area where the water table is high. They may be placed in a gridiron, herringbone, or random pattern. Interceptor drains are used to remove water where sloping soils are excessively wet or subject to slippage. They are usually placed as single pipes instead of in patterns. Generally, subsurface drains are suitable only in areas where the soil is deep enough for proper installation. They are not recommended where they pass under heavy vehicle crossings.

What to Consider

Drains should be placed so that tree roots will not interfere with drainage pipes. The drain design should be adequate to handle the volume of flow. Areas disturbed by the installation of a drain should be stabilized or they, too, will be subject to erosion. The soil layer must be deep enough to allow proper installation.

Backfill immediately after the pipe is placed. Material used for backfill should be open granular soil that is highly permeable. The outlet should be stabilized and should direct sediment-laden storm water runoff to a sediment trapping structure or another stabilized area.

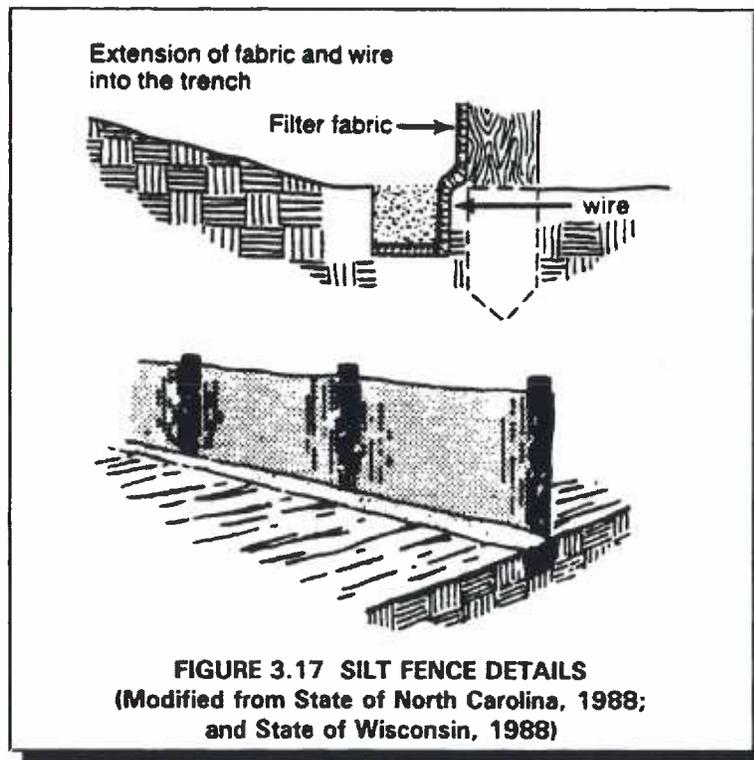
Inspect subsurface drains on a regular schedule and check for evidence of pipe breaks or clogging by sediment, debris, or tree roots. Remove blockage immediately, replace any broken sections, and restabilize the surface. If the blockage is from tree roots, it may be necessary to relocate the drain. Check inlets and outlets for sediment or debris. Remove and dispose of these materials properly.

Advantages of Subsurface Drains
<ul style="list-style-type: none">• Provide an effective method for stabilizing wet sloping soils• Are an effective way to lower the water table
Disadvantages of Subsurface Drains
<ul style="list-style-type: none">• May be pierced and clogged by tree roots• Should not be installed under heavy vehicle crossings• Cost more than surface drains because of the expenses of excavation for installation

Silt Fence

What Is It

A silt fence, also called a “filter fence,” is a temporary measure for sedimentation control. It usually consists of posts with filter fabric stretched across the posts and sometimes with a wire support fence. The lower edge of the fence is vertically trenched and covered by backfill. A silt fence is used in small drainage areas to detain sediment. These fences are most effective where there is overland flow (runoff that flows over the surface of the ground as a thin, even layer) or in minor swales or drainageways. They prevent sediment from entering receiving waters. Silt fences are also used to catch wind blown sand and to create an anchor for sand dune creation. Aside from the traditional wooden post and filter fabric method, there are several variations of silt fence installation including silt fence which can be purchased with pockets presewn to accept use of steel fence posts.



When and Where to Use It

A silt fence should be installed prior to major soil disturbance in the drainage area. The fence should be placed across the bottom of a slope along a line of uniform elevation (perpendicular to the direction of flow). It can be used at the outer boundary of the work area. However, the fence does not have to surround the work area completely. In addition, a silt fence is effective where sheet and rill erosion may be a problem. Silt fences should not be constructed in streams or swales.

What to Consider

A silt fence is not appropriate for controlling runoff from a large area. This type of fence can be more effective than a straw bale barrier if properly installed and maintained. It may be used in combination with other erosion and sediment practices.

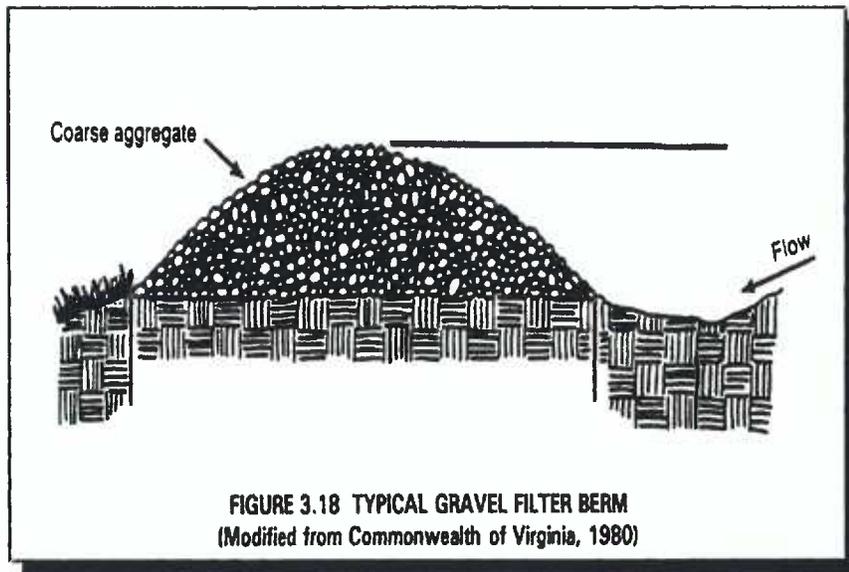
The effective life span for a silt fence depends upon the material of construction and maintenance. The fence requires frequent inspection and prompt maintenance to maintain its effectiveness. Inspect the fence after each rainfall. Check for areas where runoff eroded a channel beneath the fence, or where the fence was caused to sag or collapse by runoff flowing over the top. Remove and properly dispose of sediment when it is one-third to one-half the height of the fence or after each storm.

Advantages of a Silt Fence	
•	Removes sediments and prevents downstream damage from sediment deposits
•	Reduces the speed of runoff flow
•	Minimal clearing and grubbing required for installation
•	Inexpensive
Disadvantages of a Silt Fence	
•	May result in failure from improper choice of pore size in the filter fabric or improper installation
•	Should not be used in streams
•	Is only appropriate for small drainage areas with overland flow
•	Frequent inspection and maintenance is necessary to ensure effectiveness

Gravel or Stone Filter Berm

What Is It

A gravel or stone filter berm is a temporary ridge constructed of loose gravel, stone, or crushed rock. It slows and filters flow, diverting it from an exposed traffic area. Diversions constructed of compacted soil may be used where there will be little or no construction traffic within the right-of-way. They are also used for directing runoff from the right-of-way to a stabilized outlet.



When and Where to Use It

This method is appropriate where roads and other rights-of-way under construction should accommodate vehicular traffic. Berms are meant for use in areas with gentle slopes. They may also be used at traffic areas within the construction site.

What to Consider

Berm material should be well graded gravel or crushed rock. The spacing of the berms will depend on the steepness of the slope: berms should be placed closer together as the slope increases. The diversion should be inspected regularly after each rainfall, or if breached by

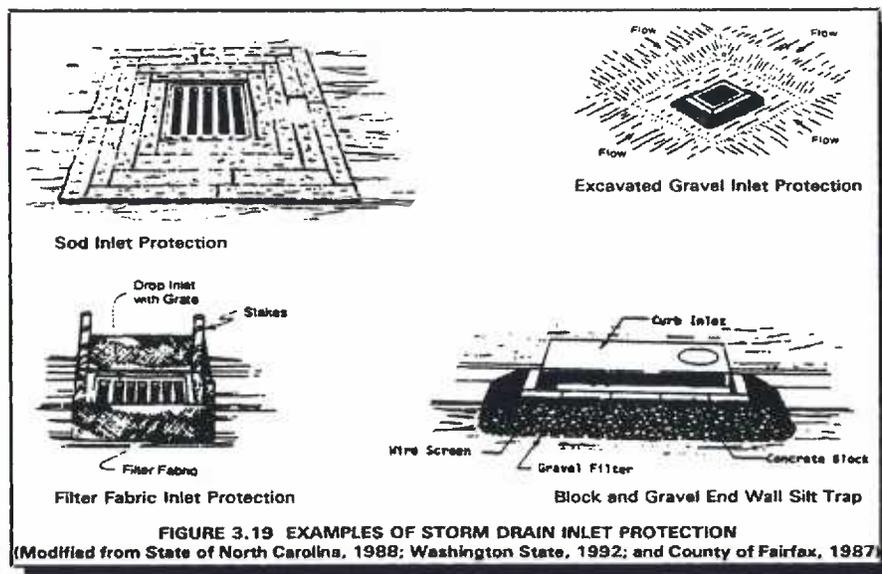
construction or other vehicles. All needed repairs should be performed immediately. Accumulated sediment should be removed and properly disposed of and the filter material replaced, as necessary.

Advantages of a Gravel or Stone Filter Berm
<ul style="list-style-type: none">• Is a very efficient method of sediment control• Reduces the speed of runoff flow
Disadvantages of a Gravel or Stone Filter Berm
<ul style="list-style-type: none">• Is more expensive than methods that use onsite materials• Has a very limited life span• Can be difficult to maintain because of clogging from mud and soil on vehicle tires

Storm Drain Inlet Protection

What Is It

Storm drain inlet protection is a filtering measure placed around any inlet or drain to trap sediment. This mechanism prevents the sediment from entering inlet structures. Additionally, it serves to prevent the silting-in of inlets, storm drainage systems, or receiving channels. Inlet protection may be composed of gravel and stone with a wire mesh filter, block and gravel, filter fabric, or sod.



When and Where to Use It

This type of protection is appropriate for small drainage areas where storm drain inlets will be ready for use before final stabilization. Storm drain inlet protection is also used where a permanent storm drain structure is being constructed onsite. Straw bales are not recommended for this purpose. Filter fabric is used for inlet protection when storm water flows are relatively small with low velocities. This practice cannot be used where inlets are paved because the filter fabric should be staked. Block and gravel filters can be used where velocities are higher. Gravel and mesh filters can be used where flows are higher and subject to disturbance by site traffic. Sod inlet filters are generally used where sediments in the storm water runoff are low.

What to Consider

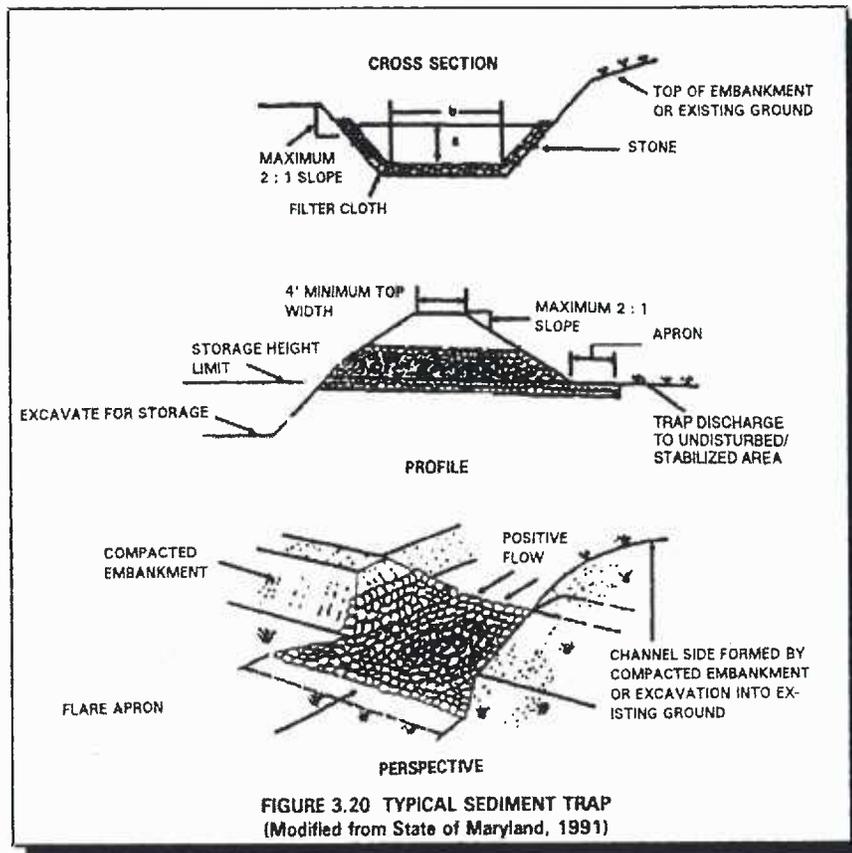
Storm drain inlet protection is not meant for use in drainage areas exceeding 1 acre or for large concentrated storm water flows. Installation of this measure should take place before any soil disturbance in the drainage area. The type of material used will depend on site conditions and the size of the drainage area. Inlet protection should be used in combination with other measures, such as small impoundments or sediments traps, to provide more effective sediment removal. Inlet protection structures should be inspected regularly, especially after a rainstorm. Repairs and silt removal should be performed as necessary. Storm drain inlet protection structures should be removed only after the disturbed areas are completely stabilized.

Advantages of Storm Drain Inlet Protection	
<ul style="list-style-type: none">• Prevents clogging of existing storm drainage systems and the siltation of receiving waters• Reduces the amount of sediment leaving the site	
Disadvantages of Storm Drain Inlet Protection	
<ul style="list-style-type: none">• May be difficult to remove collected sediment• May cause erosion elsewhere if clogging occurs• Is practical only for low sediment, low volume flows (disturbed areas less than one acre)	

Sediment Trap

What Is It

A sediment trap is formed by excavating a pond or by placing an earthen embankment across a low area or drainage swale. An outlet or spillway is constructed using large stones or aggregate to slow the release of runoff. The trap retains the runoff long enough to allow most of the silt to settle out.



When and Where to Use It

A temporary sediment trap may be used in conjunction with other temporary measures, such as gravel construction entrances, vehicle wash areas, slope drains, diversion dikes and swales, or diversion channels.

What to Consider

Sediment traps are suitable for small drainage areas, usually no more than 10 acres. The trap should be large enough to allow the sediments to settle and should have a capacity to store the collected sediment until it is removed. The volume of storage required depends upon the amount and intensity of expected rainfall and on estimated quantities of sediment in the storm water runoff. Check your Permit to see if it specifies a minimum storage volume for sediment traps.

The effective life of a sediment trap depends upon adequate maintenance. The trap should be readily accessible for periodic maintenance and sediment removal. Traps should be inspected after each rainfall and cleaned when no more than half the design volume has been filled with collected sediment. The trap should remain in operation and be properly maintained until the site area is permanently stabilized by vegetation and/or when permanent structures are in place.

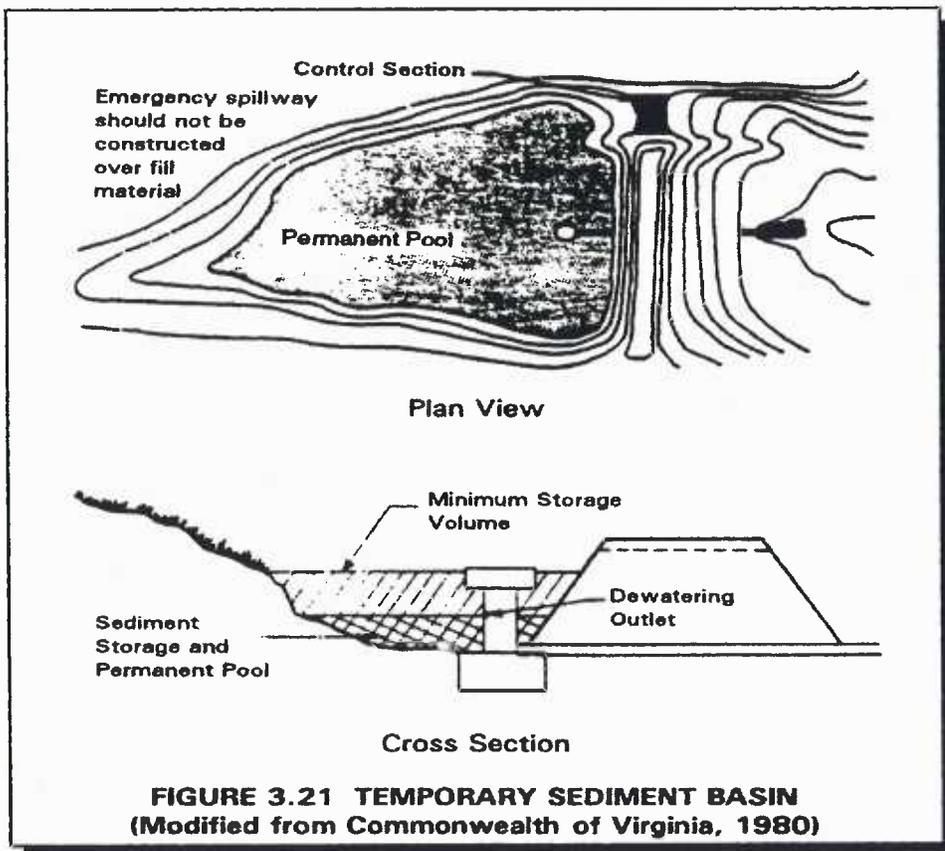
Advantages of a Temporary Sediment Trap
<ul style="list-style-type: none">• Protects downstream areas from clogging or damage due to sediment deposits• Is inexpensive and simple to install• Can simplify the design process by trapping sediment at specific spots onsite
Disadvantages of a Temporary Sediment Trap
<ul style="list-style-type: none">• Is suitable only for a limited area• Is effective only if properly maintained• Will not remove very fine silts and clays

Temporary Sediment Basin

What Is It

A temporary sediment basin is a settling pond with a controlled storm water release structure used to collect and store sediment produced by construction activities. A sediment basin can be constructed by excavation and/or by placing an earthen embankment across a low area or drainage swale. Sediment basins can be designed to maintain a permanent pool or to drain completely dry. The basin detains sediment-laden runoff from larger drainage areas long enough to allow most of the sediment to settle out.

The pond has a riser and pipe outlet with a gravel outlet or spillway to slow the release of runoff and provide some sediment filtration. By removing sediment, the basin helps prevent clogging of offsite conveyance systems and sediment-loading of receiving waterways. In this way, the basin helps prevent destruction of waterway habitats.



When and Where to Use It

A temporary sediment basin should be installed before clearing and grading is undertaken. It should not be built on an embankment in an active stream. The creation of a dam in such a site may result in the destruction of aquatic habitats. Dam failure can also result in flooding. A temporary sediment basin should be located only if there is sufficient space and appropriate topography. The basin should be made large enough to handle the maximum expected amount of site drainage. Fencing around the basin may be necessary for safety or vandalism reasons.

A temporary sediment basin used in combination with other control measures, such as seeding or mulching, is especially effective for removing sediments.

What to Consider

Temporary sediment basins are usually designed for disturbed areas larger than 5 acres. The pond should be large enough to hold runoff long enough for sediment to settle. Sufficient space should be allowed for collected sediments. Check the requirements of your permit to see if there is a minimum storage requirement for sediment basins. The useful life of a temporary sediment basin is dependent upon adequate maintenance.

Sediment trapping efficiency is improved by providing the maximum surface area possible. Because finer silts may not settle out completely, additional erosion control measures should be used to minimize release of fine silt. Runoff should enter the basin as far from the outlet as possible to provide maximum retention time.

Sediment basins should be readily accessible for maintenance and sediment removal. They should be inspected after each rainfall and be cleaned out when about half the volume has been filled with sediment. The sediment basin should remain in operation and be properly maintained until the site area is permanently stabilized by vegetation and/or when permanent structures are in place. The embankment forming the sedimentation pool should be well compacted and stabilized with vegetation. If the pond is located near a residential area, it is recommended for safety reasons that a sign be posted and that the area be secured by a fence. A well built temporary sediment basin that is large enough to handle the post construction runoff volume may later be converted to use as a permanent storm water management structure.

The sediment basins outlet pipe and spill way should be designed by an engineer based upon an analysis of the expected runoff flow rates from the site. Consult your state/local requirements to determine the frequency of the storm for which the outlet must be designed.

EPA BASELINE GENERAL PERMIT REQUIREMENTS

Sediment Basin Requirements

Part IV.D.2.a.(2).(a).

For common drainage locations that serve an area with 10 or more disturbed acres at one time, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. The 3,600 cubic feet of storage area per acre drained does not apply to flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around the sediment basin. For drainage locations which serve 10 or more disturbed acres at one time and where a temporary sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent controls is not attainable, sediment traps, silt fences, or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area.

Advantages of a Temporary Sediment Basin

- Protects downstream areas from clogging or damage due to sediment deposits generated during construction activities
- Can trap smaller sediment particles than sediment traps can because of the longer detention time
- Can be converted to a permanent storm water detention structure, once construction is complete

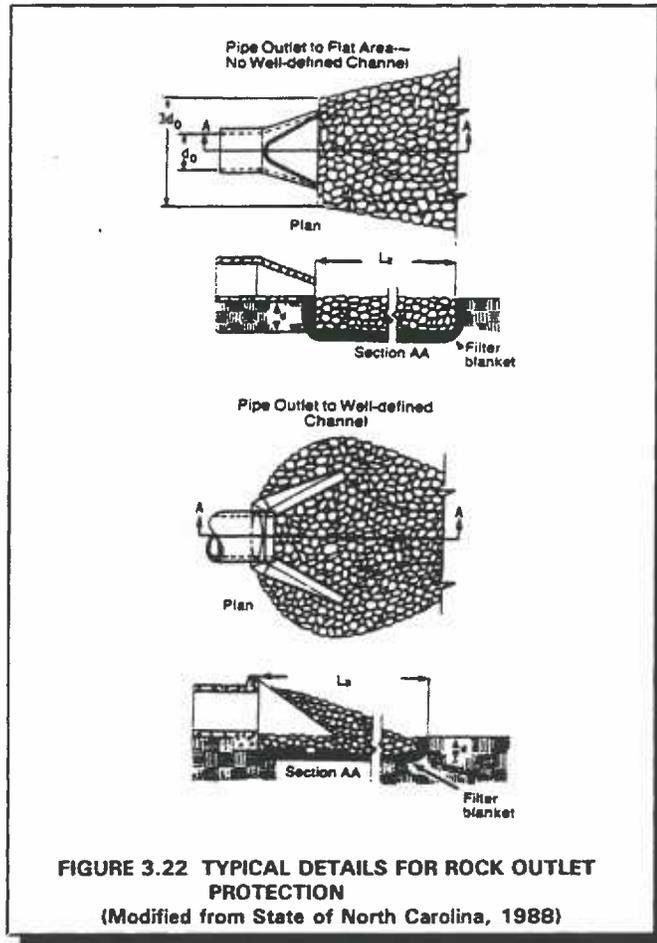
Disadvantages of a Temporary Sediment Basin

- Is generally suitable for small areas
- Requires regular maintenance and cleaning
- Will not remove very fine silts and clays unless used in conjunction with other measures
- Is a more expensive way to remove sediment than several other methods
- Requires careful adherence to safety practices since ponds are attractive to children

Outlet Protection

What Is It

Outlet protection reduces the speed of concentrated storm water flows and therefore it reduces erosion or scouring at storm water outlets and paved channel sections. In addition, outlet protection lowers the potential for downstream erosion. This type of protection can be achieved through a variety of techniques, including stone or riprap, concrete aprons, paved sections and settling basins installed below the storm drain outlet.



When and Where to Use It

Outlet protection should be installed at all pipe, interceptor dike, swale, or channel section outlets where the velocity of flow may cause erosion at the pipe outlet and in the receiving channel. Outlet protection should also be used at outlets where the velocity of flow at the design capacity may result in plunge pools (small permanent pools located at the inlet to or the outfall from B.M.P.'s). Outlet protection should be installed early during construction activities, but may be added at any time, as necessary.

What to Consider

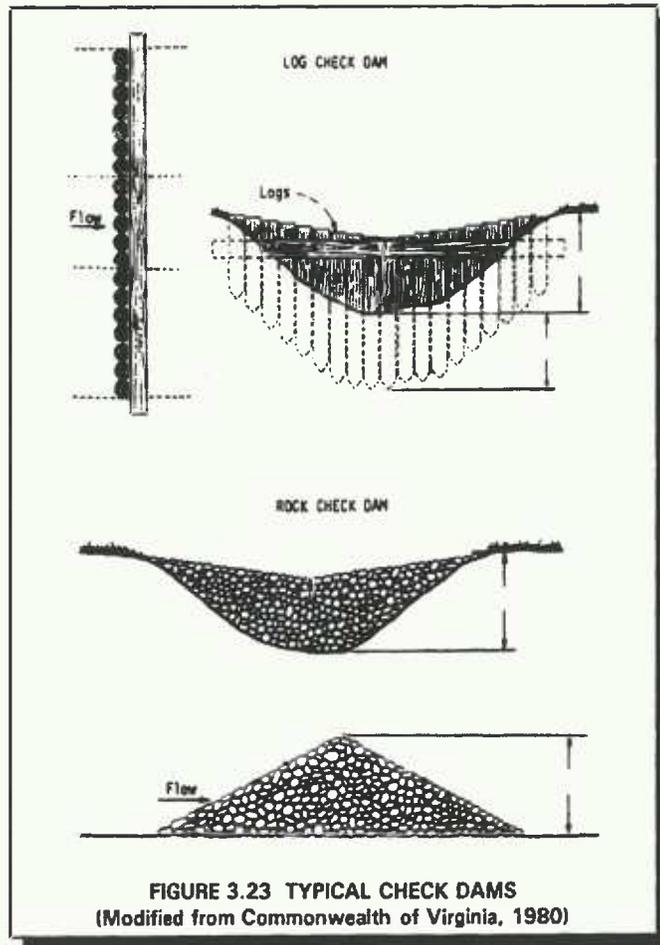
The exit velocity of the runoff as it leaves the outlet protection structure should be reduced to levels that minimize erosion. Outlet protection should be inspected on a regular schedule to look for erosion and scouring. Repairs should be made promptly.

Advantages of Outlet Protection	
<ul style="list-style-type: none">• Provides, with riprap-line apron (the most common outlet protection), a relatively low cost method that can be installed easily on most sites• Removes sediment in addition to reducing flow speed• Can be used at most outlets where the flow speed is high• Is an inexpensive but effective measure• Requires less maintenance than many other measures	
Disadvantages of Outlet Protection	
<ul style="list-style-type: none">• May be unsightly• May cause problems in removing sediment (without removing and replacing the outlet protection structure itself)• May require frequent maintenance for rock outlets with high velocity flows	

Check Dams

What Are They

A check dam is a small, temporary or permanent dam constructed across a drainage ditch, swale, or channel to lower the speed of concentrated flows. Reduced runoff speed reduces erosion and gullying in the channel and allows sediments to settle out.



When and Where to Use Them

A check dam should be installed in steeply sloped swales, or in swales where adequate vegetation cannot be established. A check dam may be built from logs, stone, or pea gravel-filled sandbags.

What to Consider

Check dams should be used only in small open channels which will not be overtopped by flow once the dams are considered. The dams should not be placed in streams (unless approved by appropriate State authorities). The center section of the check dam should be lower than the edges. Dams should be spaced so that the toe of the upstream dam is at the same elevation as the top of the downstream dam.

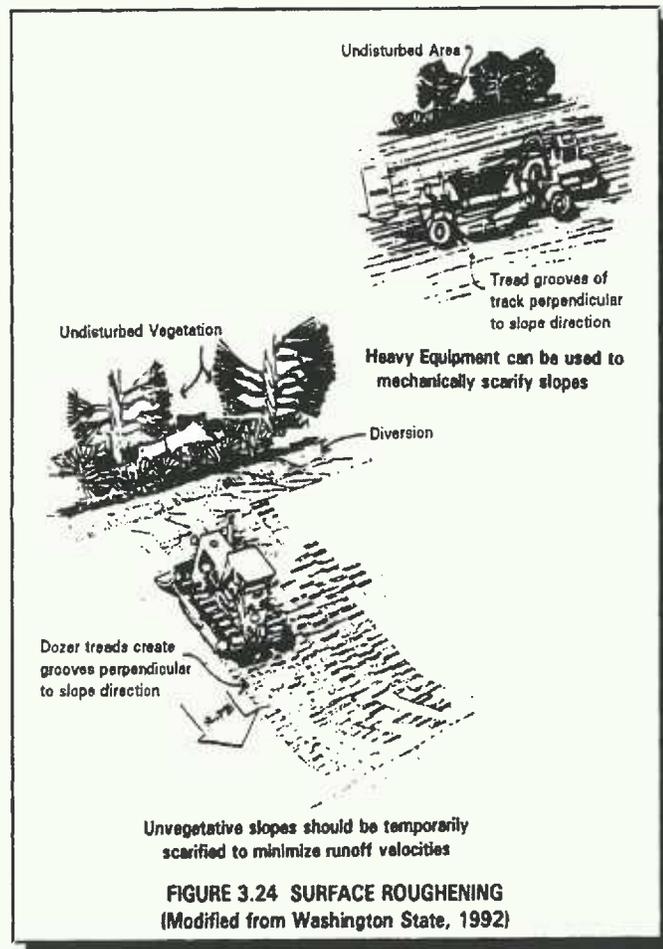
After each significant rainfall, check dams should be inspected for sediment and debris accumulation. Sediment should be removed when it reaches one half the original dam height. Check for erosion at edges and repair promptly as required. After construction is complete, all stone and riprap should be removed if vegetative erosion controls will be used as a permanent erosion control measure. It will be important to know the expected erosion rates and runoff flow rate for the swale in which this measure is to be installed. Contact the State/local storm water program agency or a licensed engineer for assistance in designing this measure.

Advantages of Check Dams
<ul style="list-style-type: none">• Are inexpensive and easy to install• May be used permanently if designed properly• Allow a high proportion of sediment in the runoff to settle out• Reduce velocity and may provide aeration of the water• May be used where it is not possible to divert the flow or otherwise stabilize the channel
Disadvantages of Check Dams
<ul style="list-style-type: none">• May kill grass linings in channels if the water level remains high after it rains or if there is significant sedimentation• Reduce the hydraulic capacity of the channel• May create turbulence which erodes the channel banks

Surface Roughening

What Is It

Surface roughening is a temporary erosion control practice. The soil surface is roughened by the creation of horizontal grooves, depressions, or steps that run parallel to the contour of the land. Slopes that are not fine-graded and that are left in a roughened condition can also control erosion. Surface roughening reduces the speed of runoff, increase infiltration, and traps sediment. Surface roughening also helps establish vegetative cover by reducing runoff velocity and giving seed an opportunity to take hold and grow.



When and Where to Use It

Surface roughening is appropriate for all slopes. To slow erosion, roughening should be done as soon as possible after the vegetation has been removed from the slope. Roughening can be used with both seeding and planting and temporary mulching to stabilize an area. For steeper slopes and slopes that will be left roughened for longer periods of time, a combination of surface roughening and vegetation is appropriate. Surface roughening should be performed immediately after grading activities have ceased (temporarily or permanently) in an area.

What to Consider

Different methods can be used to roughen the soil surface on slopes. They include stair-step grading, grooving (using disks, spring harrows, or teeth on a front-end loader), and tracking (driving a crawler tractor up and down a slope, leaving the cleat imprints parallel to the slope contour). The selection of an appropriate method depends on the grade of the slope, mowing requirements after vegetative cover is established, whether the slope was formed by cutting or filling, and type of equipment available.

Cut slopes with a gradient steeper than 3:1 but less than 2:1 should be stair-step graded or groove cut. Stair-step grading works well with soils containing large amounts of small rock. Each step catches material discarded from above and provides a level site where vegetation can grow. Stairs should be wide enough to work with standard earth moving equipment. Grooving can be done by any implement that can be safely operated on the slope, including those described above. Grooves should not be less than 3 inches deep nor more than 15 inches apart. Fill slopes with a gradient steeper than 3:1 but less than 2:1 should be compacted every 9 inches of depth. The face of the slope should consist of loose, uncompacted fill 4 to 6 inches deep that can be left rough or can be grooved as described above, if necessary.

Any cut or filled slope that will be mowed should have a gradient less than 3:1. Such a slope can be roughened with shallow grooves parallel to the slope contour by using normal tilling. Grooves should be close together (less than 10 inches) and not less than 1 inch deep. Any gradient with a slope greater than 2:1 should be stair-stepped.

It is important to avoid excessive compacting of the soil surface, especially when tracking, because soil compaction inhibits vegetation growth and causes higher runoff speed. Therefore, it is best to limit roughening with tracked machinery to sandy soils that do not compact easily and to avoid tracking on clay soils. Surface roughened areas should be seeded as quickly as possible. Also, regular inspections should be made of all surface roughened areas, especially after storms. If rills, (small watercourses that have steep sides

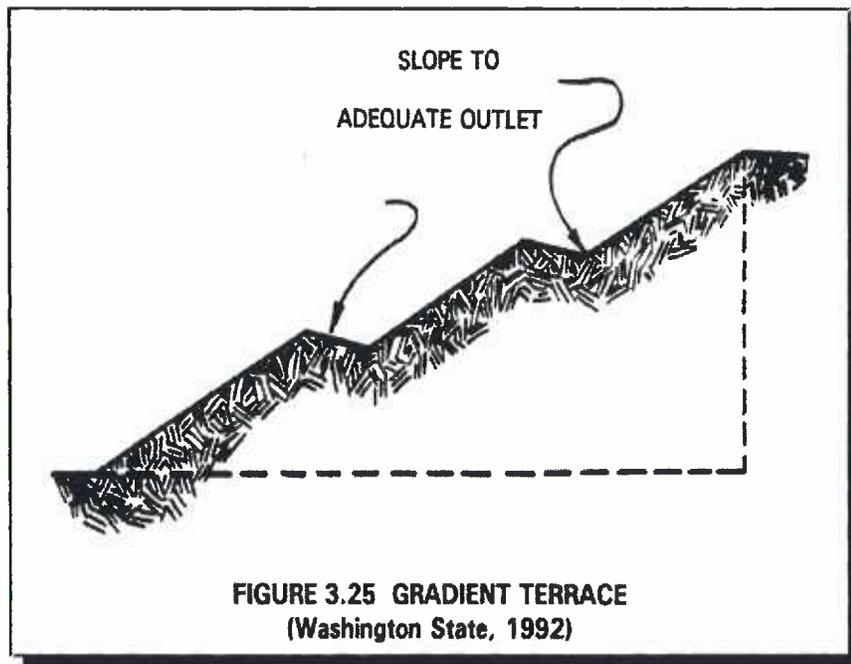
and are usually only a few inches deep) appear, they should be filled, graded again, and reseeded immediately. Proper dust control procedures should be followed when surface roughening.

Advantages of Surface Roughening	
•	Provides a degree of instant erosion protection for bare soil while vegetative cover is being established
•	Is inexpensive and simple for short-term erosion control
Disadvantages of Surface Roughening	
•	Is of limited effectiveness in anything more than a gentle rain
•	Is only temporary; if roughening is washed away in a heavy storm, the surface will have to be re-roughened and new seed laid

Gradient Terraces

What Are They

Gradient terraces are earth embankments or ridge-and-channels constructed along the face of a slope at regular intervals. Gradient terraces are constructed at a positive grade. They reduce erosion damage by capturing surface runoff and directing it to a stable outlet at a speed that minimizes erosion.



When and Where to Use Them

Gradient terraces are usually limited to use on long, steep slopes with a water erosion problem, or where it is anticipated that water erosion will be a problem. Gradient terraces should not be constructed on slopes with sandy or rocky soils. They will be effective only where suitable runoff outlets are or will be made available.

What to be Consider

Gradient terraces should be designed and installed according to a plan determined by an engineering survey and layout. It is important that gradient terraces are designed with

adequate outlets, such as a grassed waterway, vegetated area, or tile outlet. In all cases, the outlet should direct the runoff from the terrace system to a point where the outflow will not cause erosion or other damage. Vegetative cover should be used in the outlet where possible. The design elevation of the water surface of the terrace should not be lower than the design elevation of the water surface in the outlet at their junction, when both are operating at design flow. Terraces should be inspected regularly at least once a year and after major storms. Proper vegetation/stabilization practices should be followed while constructing these features.

Advantages of Gradient Terraces	
•	Reduce runoff speed and increase the distance of overland runoff flow
•	Hold moisture better than do smooth slopes and minimize sediment loading of surface runoff
Disadvantages of Gradient Terraces	
•	May significantly increase cut and fill costs and cause sloughing if excessive water infiltrates the soil
•	Are not practical for sandy, steep, or shallow soils

Right-of-Entry Provisions

- A. Treat each and every citizen/property owner with respect and decency.
- B. When a citizen requests the name and/or identification number of any inspector, he/she is required to tell the citizen his/her first name, last name, and ID number.
- C. Be attentive to complaints and/or requests by citizens, and take action on them, or refer the person(s) to the proper agencies or individuals.
- D. Before entering onto any private property for the purpose of inspection, your City ID badge should be clearly displayed by being pinned or clipped to exterior clothing in a clearly visible manner.
- E. Introduction Speech:

Hello, my name is _____. I am an inspector with the _____ Department of the City of Wichita. I am performing inspections regarding the discharge of storm water from your property. I would like permission to inspect your storm water drainage facilities (or sample storm water).

- F. Clearly identify yourself by name, position and employer. Show the occupant or owner your City Identification.
- G. Attempt to ascertain whether the resident, builder, developer, owner/manager or other individual in charge of the property is present prior to beginning any inspection.
- H. Ascertain the relationship of the individual to the structure. If the person is anyone other than the owner, manager, builder, developer, job foreman or adult tenant, do not enter the structure for an inspection. Leave your card and attempt to find out when the person in charge might return to the premises.
- I. Clearly state the purpose of your visit:
 - 1. Why are you there?
To discover and verify storm water drainage or compliance with Best Management Practice standards
- J. Explain to the individual the inspection procedures.
 - 1. What are you going to be doing?

- K. If the person is the appropriate person in charge, ask for permission to inspect. Permission must be given before entering the structure or private portion of a business.
- L. If the individual refuses permission to enter the premises for inspection or testing, the inspector will politely thank the resident and leave the premises. Do not attempt entry or argue with any uncooperative occupant. The inspector may inform the occupant of the inspector's right to enter to inspect, and examine records. Additionally, the inspector may inform the occupant of his/her right to request an administrative search warrant, if access is denied. If there is a refusal to permit entry, however, the inspector must leave the private portion of the premises.
- M. Once entry has been denied, you may request that an administrative search warrant be prepared. You may make an exterior inspection of the premises which are in plain view and can be noted from public property.
- N. If the property is unoccupied, and if the property or structure is clearly marked with "No Trespassing" signs, you may proceed to make an exterior inspection of the premises which are in plain view and can be noted from public property.
- O. If the property is vacant and is not posted with a "No Trespassing" sign, you may proceed to make an exterior inspection by walking around the property. If however, there is a locked fence, or gate, you should not attempt to open the gate or fence and should not climb the fence. You may make whatever exterior inspection from areas outside the fence, on public property, or on adjoining private properties where proper permission has been obtained.
- P. Protection of Private Property:
- Damage to private property must be avoided at all times. Great care should be exercised to avoid damage to yard, trees, bushes, flowers, etc.
- Q. Unless specifically allowed by the Code of the City of Wichita or emergency circumstances exist, all inspections are to be made during regular and usual business hours.
- R. All inspections shall be conducted in a reasonable manner and be concluded with a reasonable period of time.
- S. Inspections should be conducted only as are necessary to enforce the provisions of the City codes regarding the discharge of storm water.

Enforcement Mechanisms

The Ordinance generally provides for the following enforcement mechanisms:

1. Criminal Penalty
2. Stop Work Order
3. Administrative Penalty

These will generally apply as follows:

1. Criminal Penalty:
 - A. Illegal Dumping
 - B. Individual Building Sites
 - C. Illegal Connections
 - D. Subdivision developers on sites disturbing less than five acres
 - E. City contractors and Utility Companies on sites disturbing less than five acres

2. Stop Work Orders:
 - A. Individual Building Sites
 - B. Subdivision developers on sites disturbing less than five acres

3. Administrative Penalty:
 - A. Subdivision developers on sites disturbing five acres or more
 - B. Subdivision developers and contractors with multiple Criminal Penalties
 - C. Industrial Violations
 - D. Individual building sites disturbing five (5) acres or more
 - E. Illegal Connections
 - F. City contractors and Utility Companies on sites disturbing five acres or more

The Ordinance also provides for some additional enforcement mechanisms that are implemented at the discretion of the Public Works Director, including performance bonds and insurance requirements.

The Criminal Penalty and Stop Work Order mechanisms will generally be the same as what City Inspectors currently use. Separate "Notice of Violation" and "Citation" forms will be provided by the Storm Water Management Office, for use with this Ordinance.

Illegal Dumping

The Storm Water Pollution Prevention Ordinance defines permissible and illegal discharges. Illegal dumping occurs any time a substance is dumped or discharged into a lake, drain, or storm sewer that is not a permitted discharge. These violations will generally be found by citizen complaint or by field crews.

The procedures to be used in dealing with illegal dumping situations are as follows:

1. Fill out a "Incident Report" form to document the occurrence.
2. Determine what the substance is. Call the Storm Water Specialist, if necessary, for an analysis. Take pictures of the violation for later court documentation, if possible.
3. Determine the responsible party, if possible. Should this not be possible, it may be necessary to do additional site monitoring in an effort to determine who is responsible. If the party responsible cannot be determined, the situation should be called into the Storm Water Utility Field Office so that it can be cleaned up.
4. If the responsible party can be determined, issue a "Notice of Violation" and send a copy to the Storm Water Management Office. On the "Notice of Violation", inform the responsible party that it is their duty to clean up the situation. Use judgement on the amount of time you give them to complete this. A minimum time of 24 hours and possibly three to four days for larger infractions is recommended. Reinspect violation for compliance within five days of remediation date in the "Notice of Violation".
5. If the responsible party cleans up the situation, this would end the enforcement activity but the site should be monitored periodically for any additional reoccurrences. A citation is not issued at this point.
6. If the site is not cleaned up or the responsible party fails to bring the property into compliance, a citation should be issued. Send Storm Water Management a copy of the citation.
7. If necessary, call the Storm Water Utility Field Office to have the situation cleaned up. Storm Water Utility will bill the responsible party.
8. Complete the "Incident Report" form. Send to the Storm Water Management Office.

9. Monitor the site periodically to watch for any reoccurrences. If a reoccurrence occurs, issue a citation immediately.

Illegal Connections

An illegal connection is defined as any connection to a storm sewer or outfall to a ditch or pond that discharges any prohibited substance. These connections can be reported by citizens or found by field employees. Typically, the work dealing with illegal connections will be done by the Storm Water Management Office, the Storm Water Utility Field Office, the City-County Health Department, and the Storm Water Specialist.

The process to use on illegal connections is generally as follows:

1. Report all illegal connections to the Storm Water Specialist.
2. The Storm Water Specialist will fill out the appropriate "Incident Report" and determine the nature of the substance being discharged as well as the responsible party. Pictures shall be taken for court documentation, if possible.
3. If the substance is not a prohibited discharge, the investigation will end. Submit a completed "Incident Report" to the Storm Water Management Office.
4. If the substance is determined to be a prohibited discharge, the Storm Water Specialist will notify the Storm Water Management Office. If the substance is found to be a hazardous substance, the Storm Water Specialist will also notify the City-County Health Department immediately.
5. The Storm Water Specialist will contact the owner, issue a "Notice of Violation", explain the problem, and set a date by which we expect the connection to be eliminated. If any subsequent clean up is warranted, the time frame for that to be completed should be established in the "Notice of Violation". Use your judgement on the amount of time you give them. A minimum time of 24 hours and possibly several weeks for longer infractions is recommended. If deadlines are established in the "Notice of Violation", a reinspection must be made within 5 days of said deadline.
6. Follow the procedure as outlined for Industrial Violations on page 98. Take photographs of the violation for later use in Court, if necessary.
7. If the clean up of the substance is not completed upon reinspection, call the Storm Water Utility Field Office to make arrangements to have the substance cleaned up. The Storm Water Utility will bill the responsible party for the cost of the clean up.
8. When the situation is resolved, complete the "Incident Report" and file it with the Storm Water Management Office.

Industrial Violations

These violations will occur at industrial sites and will usually involve illegal connections or discharges. Enforcement in this area will be the responsibility of the Storm Water Management Office and the Storm Water Specialist, although either the Health Department, O.C.I., or the Storm Water Utility Office could receive the complaint or find the violation.

The procedures to follow in dealing with industrial violations is as follows:

1. Report all possible violations to the Storm Water Specialist.
2. The Storm Water Specialist will determine the responsible party and the nature of the substance being discharged. Fill out the "Incident Report". Take photos of the violation for court documentation, if possible.
3. If the substance is a permissible discharge, terminate the investigation and complete the "Incident Report". Send the "Incident Report" to the Storm Water Management Office.
4. If the discharge constitutes an Ordinance violation, report it to the Storm Water Management Office. If the discharge is a hazardous material, also notify the City-County Health Department immediately for assistance.
5. The Storm Water Management Office will follow the process in the Ordinance for industrial violations. A "Notice of Violation" will be issued to the owner stating whether or not a clean up will be required and establishing deadlines for same. Reinspect within five days of deadline.
6. If a clean-up is required but the owner refuses to do so, contact the Storm Water Utility Field Office to have the situation cleaned up. The Storm Water Utility Office will bill the responsible party for the cost of the clean up.
7. When the situation is resolved, the Storm Water Management Office will complete the "Incident Report".

Individual Building Sites

Individual building sites must also comply with the Storm Water Management provisions. On these sites, the Office of Central Inspection personnel will be the front line inspectors. Remember that ALL construction sites are required to use BMP devices to prevent pollutants from entering storm sewers, drains, and streets. In addition, for construction that disturbs five acres or more, the site must have its own State NPDES permit and storm water pollution prevention plan, in which case all BMP devices must be as specified in said plan.

Inspection procedures at individual building sites should be as follows:

1. Do not conduct NPDES inspections for 24 hours following a rain of 0.25 inches or more.
2. Examine the perimeter of the construction site. Determine if eroded soil or any other pollutant has entered into any storm sewer, drain, or street. If it has not, look to see if any BMP devices are present at the site. If these devices are present and there is no evidence of any pollutant being discharged, no violation has occurred, document and end the inspection. If pollutants have been discharged and/or if BMP devices are not being used, a violation has occurred.
3. Issue a "Notice of Violation" to the owner and contractor immediately, with a copy to the Storm Water Management Office. Give them 48 hours to come into compliance. Compliance will be realized when effective BMP devices are installed to solve the problem. Reinspect the site within five days of any deadline established in the "Notice of Violation" to determine compliance.
4. If, using your judgement, the pollutants need to be cleaned up, the "Notice of Violation" shall also state a specific deadline for that to occur. Reinspect in accordance with paragraph 3., above.
5. If a contractor or utility company fails to comply with the stipulation in any "Notice of Violation", a citation will be issued. A copy of the citation shall be sent to the Storm Water Management Office. Photographs should be taken of all violations for later court documentation.
6. Notify the Storm Water Utility Field Office if a clean up is needed. The Storm Water Utility will bill the contractor or utility company for the cost of the clean up.
7. If any particular contractor or utility company continues to violate the terms and condition of the Ordinance and receives multiple citations (3 or more per

year), the administrative penalty process shall also apply. Contact the Storm Water Management Office if that occurs.

8. On individual building sites that disturb five acres or more, the owner/contractor is also subject to the administrative penalty clause in the Ordinance. In all likelihood, this would be invoked only in cases of repeated violations by the same owner/contractor. Also, on those sites, the site is required to have a State NPDES permit and a Storm Water Pollution Prevention Plan(SWP3). When violations occur on these larger sites, the inspector should ask to see the pollution prevention plan and self-inspection reports. If these do not exist, additional violations have occurred for which a citations can be issued, after issuing the appropriate "Notice of Violation".

SUBDIVISIONS

Inspection in subdivisions can be quite complicated due to the number of people involved. The Storm Water Pollution Prevention Ordinance generally outlines the various responsibilities as follows:

1. **Owner (Subdivider or Developer):** The owner is required to get a State NPDES permit if the project will disturb five acres or more, and must prepare and implement a storm water pollution prevention plan that would address overall construction in the subdivision as well as construction on individual lots. The owner is also responsible to insure that all those working in the subdivision are familiar with the BMP requirements, the SWP3, and that they use BMP devices where called for. All contractors working on a permitted site are required to sign a certification statement agreeing to comply with the owners plan.
2. **General Contractors - Individual Building Sites:** Any contractor working on a building site must always comply with the owner's storm water pollution prevention plan, if one was prepared, and install minimum BMP devices on site. Best management practice (BMP) devices must be effective. If the construction disturbs five acres or more, the owner must obtain a State NPDES permit and prepare an individual storm water pollution prevention plan for that particular site.
3. **City Contractors:** Often times, contractors working for the City will be involved in installing public infrastructure at the site. They must agree to comply with the owner's storm water pollution prevention plan and, where applicable, utilize BMP's. City contractors may be required to obtain an individual State NPDES permit and prepare a separate storm water pollution prevention plan if the construction will disturb five acres or more.
4. **Utility Companies:** Utility companies are often times involved in installing public infrastructure at the site. They must also agree to comply with the owners storm water pollution prevention plan, where applicable, and always utilize best management practices. They may also be required to obtain a State NPDES permit and prepare a storm water pollution prevention plan if the project will disturb five acres or more.

Different people in the City's organizational structure will be involved in the enforcement work at the subdivision. Usually, the first stage in subdivision development is the installation of streets and public utilities. Since the Office of Central Inspection is not involved at this point, primary enforcement will be through the Public Works personnel

(Inspectors and Storm Water Management Staff). The developer also has a responsibility to insure that the work at this point complies with his NPDES permit and storm water pollution prevention plan.

SUBDIVISION STREET AND UTILITY CONSTRUCTION

Inspection procedures for street and utility construction will be as follows:

1. Do not conduct NPDES inspections for 24 hours following a rain of 0.25 inches or more.
2. Examine the perimeter of the construction site. Determine if eroded soil or any other pollutant has entered into any storm sewer, drain, or street. Determine if BMP devices are present at the site. If BMP devices are not present or if the discharge of a pollutant has occurred, a violation exists. Photos of the violation should be taken for later court documentation.
3. Issue a "Notice of Violation" to the contractor or utility company immediately, with a copy to the Storm Water Management Office. Give them 48 hours to come into compliance. Compliance will be realized when BMP devices are installed to solve the problem.
4. If, using your judgement, the pollutants need to be cleaned up, the "Notice of Violation" shall also state a specific deadline for that to occur. This deadline should be 24 hours to 3 days from the inspection date. If any deadlines are established in said "Notice", reinspect the site within five days of the deadline to determine compliance.
5. If a contractor or utility company fails to comply with the conditions of the "Notice of Violation", a citation should be issued. A copy of the citation shall be sent to the Storm Water Management Office.
6. Notify the Storm Water Utility Field Office if a clean-up is needed. The Storm Water Utility Office will bill the contractor or utility company for the cost of the clean up.
7. If any particular contractor or utility company continues to violate the terms and condition of the Ordinance and receives multiple citations (3 or more per year), and on construction sites disturbing five acres or more, the administrative penalty process shall also apply. Contact the Storm Water Management Office if that occurs.

Once streets and public utilities are installed, building construction begins. During the building phase, the Office of Central Inspection personnel will become the principal inspectors. Each individual building site is to be looked at separately. ALL building sites

in Wichita are required to use BMP devices to prevent pollutants from entering storm sewers, drains, and streets. In addition, for construction that disturbs five acres or more, the site must have its own State NPDES permit and storm water pollution prevention plan, in which case all BMP devices would be as specified in said plan. In all cases, work in subdivisions must comply with owners State NPDES permit and storm water pollution prevention plan, as applicable.

SUBDIVISION BUILDING SITES

Inspection procedures for building sites in subdivisions should be as follows:

1. Do not conduct NPDES inspections for 24 hours following a rain of 0.25 inches or more.
2. Inspect individual construction sites periodically as other building code inspections are made.
3. Examine the perimeter of the site. Determine if eroded soil or any other pollutant has entered into any storm sewer, ditch, pond, or street. Determine if BMP devices are being used. If no BMP devices are present or if pollutants have been discharged, a violation has occurred. Get photos of the violation for later court documentation.
4. Issue the "Notice of Violation" to the builder immediately sending a copy to the Storm Water Management Office. Allow the builder 24 to 48 hours to come into compliance. Compliance will be achieved when BMP devices are installed that will solve the problem. Reinspect site within five days of any deadline established in the "Notice".
5. If, using your judgement, the pollutants need to be cleaned up, the "Notice of Violation" shall so state and specify a deadline for that to occur.
6. If the builder fails to comply with any condition of the "Notice of Violation", issue a citation. A copy of the citation must be sent to the Storm Water Management Office.
7. Notify the Storm Water Utility Field Office if a clean-up is needed. The Storm Water Utility Office will bill the builder for the cost of the clean-up.
8. If any particular builder or contractor continues to violate the terms of the Ordinance and receives multiple citations (3 or more per year), administrative penalties shall also apply. Contact the Storm Water Management Office if this occurs.

9. Each owner/developer is responsible for all construction that occurs in the subdivision and we expect him/her to be active in this process by ensuring that people working in the subdivision are aware of the NPDES requirements and are complying with them. Should this not occur, the owner or developer is also subject to administrative penalties. If, in any given subdivision, you notice less than 70% of the construction sites thereon are utilizing BMP's and, in fact, pollution has resulted, contact the Storm Water Management Office immediately. The administrative penalty process will be started by the Storm Water Management Office against the developer.

10. Do not forget that, in any subdivision in which five acres or more of land is disturbed, a State NPDES permit and a SWP3 is required. In subdivisions where there are a large number of violations, ask the owner to see a copy of his pollution prevention plan and self-inspection reports. If they do not exist, notify the Storm Water Management Office and the administrative penalty process will be started.

Sites of Earthwork Activity

Earthwork activities can often occur at sites not involving building construction. Since building permits may not be required in these cases, all inspection employees should watch for these sites. The enforcement procedures will be as follows:

1. Notify Storm Water Management Office of the location of work.
2. Storm Water Management will determine responsible party and whether or not the activity has been permitted.
3. If unpermitted, Storm Water Management will issue a "Stop Work Order" to responsible party demanding that all work cease until the proper permit is obtained. If work is not stopped, a citation will be issued.
4. If the site has been permitted, Storm Water Management will conduct periodic inspections of the site perimeter to determine whether or not BMP devices are installed and/or pollutants have entered any drain, storm sewer, or street. If BMP devices are present and no pollutants have been discharged, no violation has occurred and the inspection will end. If no BMP devices are being used or pollutants have been discharged, a violation has occurred. Get photos of the violation for later court documentation.
5. If a violation has occurred, ask the owner to see a copy of the site pollution prevention plan and self inspection documentation. If these do not exist, issue a citation for failure to prepare and implement a pollution prevention plan. Require that the responsible party clean up the pollutants and install BMP devices within a specified time frame. The deadline should be 24 hours to 3 days from the inspection date. Re-inspect the site at the end of said period. If not cleaned up, notify the Storm Water Utility Field Office that a clean up is needed. The field office will bill the responsible party for the clean-up.
6. If a violation has occurred and a pollution prevention plan exists, issue a "Notice of Violation" for failure to implement the plan or failure to maintain BMP devices, whichever is the case. Provide a certain amount of time for the responsible party to clean-up the problem. Reinspect. If the clean-up has been done and effective BMP devices installed, end inspection. If the clean-up has not been done or if BMP devices have not been installed, issue a citation and report to the Storm Water Utility Field Office that a clean up is needed. The field office will bill the responsible party for the clean-up cost.
7. If continued violations occur at the site, issue citations immediately.

Courtroom Procedures for Storm Water Investigations

Court Considerations:

I. File Documentation:

File documentation is very important, especially if you are ever required to testify regarding your inspection and the handling of a case.

A. In addition to information about each scheduled re-inspection, entries should also be made to document the following:

1. Any verbal or written acknowledgments by the owner or person in control of the property that they are the owner or person in control, and that the Notice was received.
2. Names, dates, and places concerning individuals spoken to concerning the case, both over the phone and out in the field.
3. The date of any time extensions, and the reason for any extensions.
4. Any progress in bringing the property into compliance and the extent of the progress made.
5. Any other significant events surrounding the case.
6. Always avoid any prejudicial or irrelevant remarks.
7. Entries in cryptic shorthand are not acceptable and should be avoided.

II. Pre-Court Preparation:

If you receive a subpoena, your case has been scheduled for a trial. These cases will be scheduled at one of the police substations. The location of the trial will be determined by the location of the citation. Below is an outline of the current locations.

East:	Thursday
West:	Tuesday
South:	Monday
North:	Wednesday

All trial dockets begin at 6:00 p.m..

Prior to court, an additional inspection should be completed to determine the status of the property. If not in compliance, additional photographs should be taken. These should be completed as closely to the trial date as possible.

After court, the inspector should enter the results of each of their cases in their files. If court action taken requires a follow-up inspection by the inspector in order to continue court activity, the inspector should enter a re-inspection date for approximately 30 days from the date of the court hearing.

III. Trial Date and Court Procedure:

A. Preparation for testimony:

1. The following is testimony that will be required of the inspector in court at the time of trial:
 - a. Name of inspector and position and department;
 - b. Address of property;
 - c. Initial date violations were observed;
 - d. Relationship of person charged to property; contractor, sub, developer;
 - e. Owner of property and how ownership determined;
 - f. Date notice of violation served;
 - g. Time stated in the order for compliance with the violations;
 - h. Dates of re-inspections after time of compliance with the violations remaining;
 - i. General description of violations;
 - j. Statements (admissions) by owner or responsible party as to ownership or control, or agreement that violations exists;
 - k. Agreement for Compliance;
2. Review your file and photographs so that you can testify as much as possible without reference to documents.
3. Always inspect the location to get pictures and current status of improvements, if any, on the day of or a few days before trial.
4. Be prepared to discuss case with the prosecutor. You will be asked about the status of the property and what actions you want the court to take regarding the property.

B. Testimony:

1. Outside the courtroom:
 - a. Do not discuss the case with the defendant or the defense attorney outside the presence or without the permission of the City Attorney.
 - b. Observe the proper rules of decorum.
2. Direct examination by the City Attorney:
 - a. Speak distinctly.
 - b. Answer questions precisely and to the point.
 - c. If you do not understand the question or know the answer, say so.
 - d. Be impartial and fair.
 - e. Do not volunteer information or opinions.
 - f. Avoid hearsay testimony (out of court statements made by someone who is not in court).
 - g. Do not testify in a conclusionary manner.
3. Cross examination:
 - a. Do not argue or get angry.
 - b. Do not volunteer information.
 - c. Try to answer questions precisely; if you can answer by “yes” or ” no”, do so. If you don’t know, say so.
 - d. Listen to the questions carefully before answering; don’t let the attorney or defendant misstate your testimony as part of a question.
 - e. If the City Attorney objects to a question, do not answer until the judge rules on the objection.
 - f. Do not make objections to the questions, let the City Attorney make any appropriate objections.

IV. Sample Questions:

1. What is your name:
2. What is your occupation and how long have you been so employed?
3. In your official capacity, did you inspect a property at (address)?
4. What was the date of that inspection?
5. Is this property in the corporate city limits of the City of Wichita?
6. What type of property/structure is at location?
7. Size of property i.e. less than five acres?

7. Size of property i.e. less than five acres?
8. What was the purpose of the initial inspection (citizen's complaint/routine inspection)?
9. Was there a written notice of violation issued to correct the condition? Date of notice? Compliance Date?
10. Was a determination made as to the ownership of the property in questions? How was this done? (Personal check of County tax records, city building records, or personal admission of defendant to you.)
11. Who was the notice of violation issued to: owner, contractor, developer?
12. How and when was the notice served?
13. Any conversations with defendant regarding responsibility for the property in question?
14. Can you identify the defendant?
15. What was the time in the notice in which to correct the violation?
16. Were any further extensions of time granted? (Yes or No)
17. Any conversation with defendant or representative regarding compliance?
18. Did you make a re-inspection of the property prior to issuing criminal complaint? What was the date?
19. Describe the condition of the property? Photographs?
20. How many inspections were made of the property in question in regard to this notice prior to filing UCC?
21. Any conversation with defendant regarding the violations?
22. Any attempts/efforts to bring property into compliance?

Notice of Violation
Storm Water Pollution Prevention
City Code Chapter 16.32

To: _____ Date: _____
Address: _____ Zip Code: _____

An inspection of property located at _____ detected the following violations of Chapter 16.32 of the Code of the City of Wichita, Kansas:

A. General Violations:

Section 16.32.020 (A) Illegal Discharge/Illegal Dumping into storm sewer system

B. Construction Site Violations:

Section 16.32.050 B(2) Failure to prepare or implement a Pollution Prevention Plan

Section 16.32.050 A(1) Failure to use Best Management Practices (owner)

Section 16.32.050 A(6) Failure to use Best Management Practices (contractor)

Section 16.32.050 A(7) Malicious destruction of Best Management Practice devices

Section 16.32.050 A(7) Failure to repair Best Management Practice devices

C. Industrial Sites:

Section 16.32.060 A(2) Failure to prepare or implement a Pollution Prevention Plan

Section 16.32.060 A(12) Failure to implement a sampling or testing program as required by N.P.D.E.S. Permit

D. Private Ditches or Ponds:

Section 16.32.070 (A) Failure to use Best Management Practice devices to minimize pollutant levels down stream

E. Other Violations:

Section _____

Violation Details: _____

You must take corrective action to bring this property into compliance before _____.

Clean-up: If this box is checked, you are hereby directed to cleanup the pollution which has resulted from this violation by _____.

Additional Remarks: _____

Failure to comply with any requirements of this Notice can result in the issuance of a criminal citation to you or subject you to administrative penalties pursuant to Section 16.32.100 of The Code of the City of Wichita.

Please contact me at _____ between the hours of _____, should you have any further questions.

This Notice of Violation issued this _____ day of _____, _____ at _____ A.M./P.M..

By: _____
Signature I.D. Number Telephone Number

Certified Mail Receipt Number

Order for Compliance
City of Wichita, Kansas
Department of Public Works

Date: _____

To: _____ Address: _____

Whereas, on _____, you were issued a "Notice of Violation" for violating certain sections of Chapter 16.32 of the Code of the City of Wichita, Kansas, dealing with storm water pollution at _____, to wit:

Section	Violation
_____	_____
_____	_____
_____	_____

The time period specified in said Notice for corrective action and/or cleanup has now expired. Further inspection of the property indicates that:

- No action has been taken to correct the violation, and/or
- Cleanup has not been accomplished as directed.

Now, therefore, the following order is hereby issued relative to the above noted violation(s):

Should you fail to comply with this Order, you will be subject to administrative penalties in the amount of \$1000 to \$2,500 per day for each continuing violation. Should you wish to appeal this Order, you must submit a written appeal to the Director of Public Works, within 7 days of the date of this order, at City Hall, 455 North Main, 8th Floor, Wichita, Kansas 67202.

Steve Lackey P.E., Director of Public Works

Certified Mail Receipt Number

Hardesty, James

From: Deutscher, Darrin
Sent: Friday, December 19, 2014 7:51 AM
To: Hardesty, James
Subject: updated reports from pump station 15
Attachments: wodetail.pdf; wosum.pdf

Here are the updated reports after fixing the issue with the billing costs on the 8" pumps. Scott wanted you to have these for the annual report.

*Darrin Deutscher
General Supervisor II
Stormwater Management
316-268-4037*

City of Wichita, Kansas

Stormwater Management Program 2014-2019



**Kansas Permit No. M-AR94-S001
Federal Permit No. KS0091049**

February 2015

Stormwater Management Program 2014-2019

City of Wichita, Kansas

February 2015

The City of Wichita (City or Permittee), Kansas has prepared this Stormwater Management Program (SWMP, SMP or Program) to outline the measures it will take to reduce the discharge of pollutants from the Municipal Separate Storm Sewer System (MS4) to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements and goals of the Clean Water Act, and the City's National Pollutant Discharge Elimination System (NPDES) Permit (Permit).

It is intended that this SMP, and all measures implemented herein, will reduce Total Maximum Daily Load (TMDL) pollutants, and all pollutants specified in the Permit, in both targeted (303d) and non-targeted streams to the MEP, within the entire MS4 service area. Therefore, all efforts undertaken in the 7 control measures listed in this SMP will apply toward reducing TMDL pollutants as well as non-TMDL pollutants.

This Program has been submitted in compliance with the requirements of both the Kansas Water Pollution Control MS4 Permit No. M-AR94-S001 and Federal Permit No. KS0091049 that is required for the term beginning August 1, 2014, and expiring July 31, 2019. This Program also operates using the legal authority as set forth in City Ordinance Chapter 16.32, and subsequent revisions.

Changes to this plan may be made as allowed by the Permit and approved by the Kansas Department of Health and Environment (KDHE). This Program is implemented within areas of the City's legal jurisdiction, boundaries and on its properties.

This Program provides a list of stormwater Best Management Practices (BMPs) that the City of Wichita agrees to implement as required by the KDHE NPDES Permit. Each BMP

will have goals and measurements to demonstrate compliance with the goals.

Other agencies and organizations may contribute to the implementation of these measures. Each of the contributions made by others as well as additional City actions will be documented in the Annual Report and will be counted towards goal attainment.

Management Plan for Six Minimum Control Measures (MCM)

Minimum Control Measure #1: Public Education and Outreach

The permittee shall implement a public education program which includes distribution of educational materials to the community or conducting equivalent outreach activities which address the impacts of stormwater discharges on water bodies and the steps the public can take to reduce pollutants in stormwater runoff.

A: Video messages and graphics will be placed on the City's Cable Channel 7, or other video outlets, for viewing by the community. This activity will take the form of periodic repeating video presentations or graphics informing citizens of the importance of preventing stormwater pollution and individual actions citizens can take to reduce their impact on stormwater.

Measurable Goal: A repeating video or graphic designed to inform the public on stormwater pollution prevention will be run at least twice per year on the City's Cable Channel 7, and continue for the Permit duration.

B: An informational brochure on stormwater quality designed for residents will be developed by the City.

Measurable Goal: Brochures have been developed and will be distributed by a variety of means, including brochure racks in City buildings, educational events, mailings, etc.

C: The City will continue to place stormwater education materials on the City of Wichita website ("www.wichita.gov").

Measurable Goal: Website is operational, currently includes educational material, and additional material will be added as it is developed.

D: Stormwater pollution prevention, water conservation and water quality education programs will continue to be developed and provided to schools and other interested organizations.

Measurable Goal: The City will continue contact with interested school officials and organization leaders. Programs and assistance will continue to be provided through ongoing programs at the W.A.T.E.R center and other locations, and will reach a minimum of 500 persons annually.

E: Annually, each BMP and corresponding measurable goal provided in this SMP will be evaluated and progress or actions will be reported in the Annual Report as required by the KDHE NPDES permit.

Measurable Goal: As required by the KDHE NPDES permit, an Annual Report will be submitted to KDHE by February 28, of each year for the previous calendar year. The

Annual Report will be posted on the City's stormwater website.

Minimum Control Measure #2: Public Involvement and Participation

The permittee shall implement a public involvement and participation program to solicit public comment and recommendations regarding the BMPs and measureable goals utilized by the Permittee to comply with the Permit. The Permittee shall comply with State and local public notice requirements when implementing a public involvement and participation program.

A: Public comments, recommendations and requested changes for this management plan will be solicited through the City's webpage. Citizens will be able to submit comments, questions, and recommendations directly to the office of Stormwater Management. Additionally, the webpage will have telephone and mail contact information.

Measureable Goal: Citizen input will be addressed when submitted, and results will be included in the Annual Report.

B: The City will conduct at least one volunteer cleanup day with citizen and group volunteers.

Measureable Goal: An Arkansas River (and/or tributaries) cleanup will be held at least once each year. Results will be documented in the Annual Report.

C: The City will sponsor monthly meetings of a Stormwater Management Advisory Board (SWAB). This advisory board will contain appointed representatives from the community, and is open to the public for comments as well.

Measurable Goal: SWAB information, including agendas and attendance information will be included in the Annual Report and on the City of Wichita website.

Minimum Control Measure #3: Illicit Discharge Detection and Elimination

The Permittee shall:

A: Develop, implement, and enforce a program to detect and eliminate illicit discharges into the MS4.

Measurable Goal: Each permit year the City will televise 45,000 linear feet of stormwater conduit in an effort to find illicit connections or discharges. Any illicit discharges found will be investigated with actions documented, and included in the Annual Report.

B: Develop a stormwater system map of the permittee's MS4, showing the location of all outfalls, either pipes or open channel drainage, showing the names and location of all streams or lakes that receive discharges from those outfalls. A copy of the map shall be submitted to KDHE. This map may be submitted as a PDF file(s) on a computer disk.

Measurable Goal: A complete GIS stormwater system map has been completed, and will be maintained, and updated throughout the year. A GIS map layer of the stormwater system will be made available for public use in 2015, and will be available on the City of Wichita website.

C: Enact ordinances or resolutions to prohibit non-stormwater discharges into the stormwater system and implement appropriate enforcement procedures and actions. A copy of the ordinances or resolutions shall be submitted to KDHE.

Measurable Goal: An ordinance prohibiting non-stormwater discharges is currently in place, Chapter 16.32, and will be maintained and updated as necessary throughout the effective dates of this permit. A copy of the ordinance will be provided in the Annual Report.

D: Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

Measureable Goals: A free, regional Household Hazardous Waste disposal site will be maintained for all residents to use. The number of citizens and quantity of materials disposed of, will be included in the Annual Report. Additionally, an informational HHW video will be aired at least 6 times on the City's Cable Channel 7.

E: Develop and implement a plan to detect and address prohibited non-stormwater discharges, including illegal dumping, as required by the current KDHE NPDES permit.

Measurable Goals: Permittee will perform at least 30,000 storm structure inspections and cleanings each year. Additionally, a minimum of 400,000 linear feet of sanitary sewer pipe will be televised in each year of the permit's duration. Results will be included in the Annual Report.

F: Inspect restaurants to verify that grease is not being discharged to the municipal storm drains. These inspections are incorporated into the regular restaurant inspection system and are accomplished by City inspectors.

Measurable Goals: Inspections of restaurant grease handling are an existing program within the Water & Sewer Department. There will be a minimum of 160 inspections performed each year of the Permit. Results will be reported in our Annual Report. If changes are necessary with this program, KDHE will be informed.

G: Regulate septic system installation and usage, via our existing Ordinance, and respond to complaints regarding improper discharges related to septic systems. The City will seek City Council approval to 'order in' municipal services as a result of failed septic systems.

Measurable Goals: Regulation of septic systems in accordance with Code of Ordinances Title 16 during the entire Permit term. Records will be maintained to document the number of complaints received and disposition of problems found will be reported in the Annual Report. The number of 'order in' requests is demand driven.

Minimum Control Measure #4: Construction Site Stormwater Runoff Control

The permittee shall develop, implement, and enforce a program to reduce pollutants in any stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. The program must include the development and implementation, at a minimum, of the following:

A: Permittees which have the authority to enact ordinances or resolutions shall enact such ordinances or resolutions to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State and local law.

Measurable Goal: Ordinance is currently in place, Chapter 16.32, and will be maintained and updated as necessary throughout the effective dates of this permit.

B: Requirements for construction site owners or operators to implement appropriate erosion and sediment control best management practices.

Measurable Goal: The governing ordinance, Chapter 16.32, contains the requirements specified, and will be submitted with the Annual Report.

C: Requirements for construction site owners and operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that are likely to cause adverse impacts to water quality.

Measurable Goal: The governing ordinance, Chapter 16.32, contains the requirements specified, and will be submitted with the Annual Report.

D: Procedures for site plan review which incorporate consideration of potential water quality impacts.

Measurable Goal: The procedure for plan approval includes review by City staff, and certification by the design engineer as to adherence to Chapter 16.32. The number of plans approved each year will be submitted in the Annual Report.

E: Procedure for receipt and consideration of information submitted by the public.

Measurable Goal: The City will sponsor monthly meetings of a Stormwater Advisory Board (SWAB). This advisory board will contain appointed representatives from the community, and is open to the public for comments as well. SWAB information, including public comments, meeting agendas and attendance information will be posted to the City of Wichita website, and will be included in the Annual Report.

F: Procedure for construction site inspection and enforcement of control measures.

Measurable Goals: An inspection procedures document will be included in the Annual Report. Additionally, the City will perform at least 600 inspections each year of the permit, and violations/citations will be written as necessary. Results will be included in the Annual Report.

Minimum Control Measure #5: Post-Construction Stormwater Management in New Development and Redevelopment

The permittee shall develop, implement, and enforce a program to address post-construction stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the MS4. The program must include the development and implementation, at a minimum, of the following:

- a:** Strategies which include a combination of structural and/or non-structural BMPs,
- b:** Measures to ensure adequate long-term operation and maintenance of BMPs,
- c:** Site owner or operator name and telephone responsible to ensure adequate long-term operation maintenance of BMP's,
- d:** BMPs to prevent or minimize adverse water impacts.

Measurable Goal: The governing ordinance, Chapter 16.32 contains these requirements as reflected in the City of Wichita/Sedgwick County Stormwater Manual, which is available in hard copy and on the City website. Occasional revisions are made to the Manual, and the Manual is updated. Revisions and updates will be included in the Annual Report. The

number of BMPs implemented in a reporting year, and the number of completed bi-annual BMP inspections will be reported in the Annual Report.

Minimum Control Measure #6: Pollution Prevention/Good Housekeeping for Municipal Operations

The permittee shall develop and implement an operation and maintenance program that includes employee training to prevent and reduce stormwater pollution from municipal operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

A: The City will continue a training program for employees on pollution prevention at all Municipal Industrial Facilities, and inspect those facilities annually.

Measurable Goals: In accordance with the Stormwater Pollution Prevention Plan for each City Municipal Industrial Facility, employee training and facility inspections will be documented and reported in the Annual Report.

B: City will continue the existing street sweeping program to reduce pollutant loadings to the storm sewer.

Measurable Goals: One round of residential street sweeping, four rounds of arterial street sweeping, and two rounds per week of downtown street sweeping will be completed annually by the City. This effort is currently underway, and will continue throughout the permit term.

C: Drainage control of Municipal snow piles.

Measurable Goals: In the event that large Municipal snow piles become necessary, the City will evaluate BMPs to control and mitigate effects of runoff pollution to the maximum extent practicable.

D. The City has a program to ensure proper application of pesticides and herbicides are applied at municipal parks and properties.

Measurable Goals: The City will continue the existing program that requires all City employed applicators of pesticides and/or herbicides to be licensed or directly supervised by licensed personnel. Records shall be maintained as required by local, state and federal laws for application events and licensed personnel shall be trained periodically to ensure proper management and application of the pesticides and/or herbicides.

Control Measure #7: Additional Control Measures: Monitoring Industrial and

High Risk Run-off, TMDLs, and Monitoring Requirements

Monitoring Industrial and High Risk Run-off

A program for monitoring industrial and high risk run-off to control pollutants from industrial facilities shall be developed and detailed within the SMP. This program for monitoring and controlling such run-off shall include the following:

A: Develop and maintain a list of industrial facilities that may be contributing a substantial pollutant loading to the MS4. The list shall include municipal industrial facilities and municipal landfills; hazardous waste treatment, disposal, or recovery facilities; and facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA).

Measurable Goal: List will be updated annually and included in the Annual Report.

B: Annually at least two facilities listed above shall be identified as high priority facilities and an inspection shall be conducted and sampling of stormwater run-off.

Measurable Goal: Inspections and wet weather sampling will be completed at two facilities.

TMDLs

The Permittee shall continue to review, update, implement and develop, when necessary, structural and non-structural BMPs which reduce to the Maximum Extent Practicable the discharge of the TMDL regulated pollutants from the MS4 as listed in Part II.

C: The permittee shall provide an updated SMP document which discusses the structural and non-structural BMPs that have been or will be implemented to reduce discharge of TMDL pollutants from the MS4 significantly contributing to or causing an exceedance of the water quality standard.

Measurable Goals: The governing ordinance, Chapter 16.32 contains the requirements listed in the Permit as reflected in the City of Wichita/Sedgwick County Stormwater Manual, which is available in hard copy and on the City website. Occasional revisions are made to the Manual, and the Manual is updated. Revisions and updates will be included in the Annual Report. The number of BMPs implemented in a reporting year, and the number of completed bi-annual BMP inspections will be reported in the Annual Report. The most current SMP will be included in the Annual Report.

D: Measurable goals for reducing pollutants contributed by MS4s shall be expressed in quantifiable values to: reduce the concentration of pollutants, reduce the total mass of pollutants, a combination of the above methods and expressed as average and median values (percent reduction of inflow volume, reduction in pollutant concentration or mass loading) or for bacteria as a geometric mean.

Measurable Goals: WINSLAMM or other appropriate modeling software will be used to calculate the required values.

E: Maps illustrating: Permit area, boundaries of drainage basins and primary sub-basins, locations of structural BMPs, stormwater BMP influent/effluent, lake and stream monitoring locations, storm sewer collection system which includes the outfalls within the Permit area where the MS4 drains to TMDL listed impaired streams or lakes.

Measurable Goals: Updated GIS-based maps can be accessed at the City's FTP site upon request, and maps in PDF format will be included in the Annual Report.

Monitoring Requirements

F: Storm event monitoring shall be implemented in accordance with Part III of the Permit.

Measurable Goals: Instream monitoring of the 6 main streams entering and leaving the jurisdictional Permit area will occur as detailed in Part III of the Permit.

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

[Sec. 16.32.010. - General provisions.](#)

[Sec. 16.32.020. - General prohibition.](#)

[Sec. 16.32.030. - Specific prohibitions and requirements.](#)

[Sec. 16.32.040. - Release reporting and cleanup.](#)

[Sec. 16.32.050. - Stormwater discharges from construction activities.](#)

[Sec. 16.32.060. - Stormwater discharges associated with industrial activity.](#)

[Sec. 16.32.070. - Ditches and ponds.](#)

[Sec. 16.32.080. - Compliance monitoring.](#)

[Sec. 16.32.090. - Subdivision development.](#)

[Sec. 16.32.091. - Storm water quality management standards](#)

[Sec. 16.32.092. - Storm water quantity management standards](#)

[Sec. 16.32.093. - Other storm water management requirements](#)

[Sec. 16.32.094. - Waivers and exemptions from storm water management standards for new developments](#)

[Sec. 16.32.095. - General requirements for storm water design plans](#)

[Sec. 16.32.096. - Maintenance and inspection of storm water drainage paths and controls.](#)

[Sec. 16.32.097. - Special provisions for open channels.](#)

[Sec. 16.32.100. - Enforcement actions.](#)

[Sec. 16.32.110. - Applicability of enforcement actions.](#)

[Sec. 16.32.120. - Hearing and appeal.](#)

[Sec. 16.32.130. - Enforcement personnel authorized.](#)

[Sec. 16.32.140. - Other legal actions.](#)

[Sec. 16.32.150. - Falsifying information.](#)

[Sec. 16.32.160. - Supplemental enforcement actions.](#)

[Sec. 16.32.170. - Severability.](#)

Sec. 16.32.010. - General provisions.

A. *Purposes.* The purpose and objective of this chapter are as follows:

1. To maintain and improve the quality of surface water and groundwater within the city;

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

2. To attenuate the discharge of contaminated storm water runoff from industrial, commercial, residential, and construction sites into the municipal separate storm sewer system (MS4) and natural waters within the city;
3. To promote public awareness of the hazards involved in the improper discharge of hazardous substances, petroleum products, household hazardous waste, industrial waste, sediment from construction sites, pesticides, herbicides, fertilizers, and other contaminants into the storm sewers of the city;
4. To encourage recycling of used motor oil and safe disposal of other hazardous consumer products;
5. To facilitate compliance with state and federal standards and permits by owners of industrial and construction sites within the city;
6. To enable the city to comply with all federal and state laws and regulations applicable to its NPDES permit for storm water discharges.
7. To regulate the management of storm water for purposes of public safety, welfare and quality of life;
8. To manage and maintain local floodplains; and,
9. To facilitate compliance with city standards and permits by owners of developed, redeveloped and undeveloped properties within the city.

B. *Administration.* Except as otherwise provided herein, the director, or his appointed representative, shall administer, implement, and enforce the provisions of this chapter.

C. *Authority.* The Director may develop additional policies, criteria, specifications and standards in a Storm Water Manual and/or in other policy, master plans, watershed plans or guidance documents as necessary to effectively implement the requirements of this chapter. The policies, criteria and requirements of the Storm Water Manual and/or other policy, plans or guidance documents may be implemented and amended by the Director, are referenced in this chapter when required, and shall be enforceable, consistent with the provisions contained in this chapter. A public meeting shall be held bi-annually to allow public comment on this chapter and the Storm Water Manual.

In the event that a violation of any provision of this chapter has occurred, or that work does not have a required plan or permit, or that work does not comply with an approved plan or permit, the city may issue a Notice of Violation to the permittee, plan holder or property owner and/or any other person or entity having responsibility for the property or properties where the violation occurred under the provisions of subsection .100 B. of this chapter.

In the spirit of the purposes defined above for this chapter and in the administration of these requirements, the Director may consider the cost-effectiveness of storm water management controls provided that such controls meet the water quality, channel erosion protection and flood protection requirements of this chapter or are waived or exempted in accordance with the criteria defined in this chapter.

D. *Regulatory or legal conflicts.* This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, deed restrictions, or existing ordinances and regulations, except as specifically noted in this chapter. However, where the provisions of this ordinance and another regulation conflict or overlap, that provision which is more restrictive or imposes higher standards or requirements shall prevail.

E. *Abbreviations.* The following abbreviations when used in this chapter shall have the designated meanings:

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
 Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

BMP	Best Management Practices
CFR	Code of Federal Regulations
CLOMR	Conditional Letter of Map Revision
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
HHW	Hazardous Household Waste
KAR	Kansas Administrative Regulations
KSA	Kansas Statutes Annotated
LOMR	Letter of Map Revision
mg/l	Milligrams per liter
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
OCI	Office of Central Inspection
PST	Petroleum Storage Tank
SWP3	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
USC	United States Code

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

- F. *Definitions.* Unless a provision explicitly states otherwise, the following terms and phrases, as used in this chapter, shall have the meanings hereinafter designated.
1. *"As-built plan"* means a drawing showing the actual state of permanent storm water facilities as installed.
 2. *"Best management practices (BMP)"* means schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States or the city's MS4 and includes both temporary measures used during construction and permanent measures that are constructed in accordance with the provisions of this ordinance. Best management practices also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas. The BMPs required in this chapter will be sufficient to prevent or reduce the likelihood of pollutants entering storm sewers, ditches, or ponds.
 3. *"City"* means the City of Wichita.
 4. *"Commencement of construction"* means the disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.
 5. *"Commercial"* means pertaining to any business, trade, industry or other activity engaged in for profit.
 6. *"Construction general permit"* refers to the Kansas General Permit for Storm water Discharges from Construction Sites.
 7. *"Contractor"* means any person or firm performing construction work at a construction site, including any general contractor and subcontractors. Also includes, but is not limited to, earthwork, paving, building, plumbing, mechanical, electrical, landscaping contractors, and material suppliers delivering materials to the site.
 8. *"Development"* or *"new development"* means undisturbed property where improvements are planned or intended that will result in land disturbance activities or impervious areas either during or after construction.
 9. *"Director"* means the person appointed to the position of Public Works and Utilities Director by the City Manager of the City, or his/her duly authorized representative. Authorized representatives can include, but are not limited to, the City Engineer, the Storm Water Engineer, and others, as so authorized.
 10. *"Discharge"* means any addition or introduction of any pollutant, storm water, or any other substance whatsoever into the municipal separate storm sewer system (MS4) or into waters of the United States.
 11. *"Discharger"* means any person who causes, allows, permits, or is otherwise responsible for a discharge, including without limitation any owner of a construction site or industrial facility.
 12. *"Domestic sewage"* means human excrement, gray water (From home clothes washing, bathing, showers, dishwashing, and food preparation), other wastewater from household drains, and waterborne waste normally discharged from the sanitary conveyances of dwellings (including apartment houses and hotels), office buildings, factories, and institutions, that is free from industrial waste.
 13. *"Drainage plan"* refers to the detailed water quantity and quality calculations and plan that are required for final plat approval or for issuance of a building permit.

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

14. "*Earthwork*" means the disturbance of soils on a site associated with clearing, grading, or excavation activities.
15. "*Environmental Protection Agency (EPA)*" means the United States Environmental Protection Agency, the regional office thereof, any federal department, agency or commission that may succeed to the authority of the EPA, and any duly authorized official of EPA or such successor agency.
16. "*Extremely hazardous substance*" means any substance listed in the appendices to 40 CFR Part 355, Emergency Planning and Notification.
17. "*Facility*" means any building, structure, installation, process, or activity from which there is or may be discharge of a pollutant.
18. "*Fertilizer*" means a substance or compound that contains an essential plant nutrient element in a form available to plants and is used primarily for its essential plant nutrient element content in promoting or stimulating growth of a plant or improving the quality of a crop, or a mixture of two or more fertilizers.
19. "*Final stabilization*" means the status when all soil disturbing activities at a site have been completed. This would establish a uniform perennial vegetative cover with a density of seventy percent coverage for unpaved areas and those not covered by permanent structures or equivalent permanent stabilization measures (by employing riprap, gabions, or geotextiles).
20. "*Fire protection water*" means any water, and any substances or materials contained therein, used by any person to control or extinguish a fire, or to inspect or test fire equipment.
21. "*Garbage*" means putrescible animal and vegetable waste materials from the handling, preparation, cooking, or consumption of food, including waste materials from markets, storage facilities, and the handling and sale of produce and other food products.
22. "*Harmful quantity*" means the amount of any substance that will cause a violation of a State Water Quality Standard or any adverse impact to the city's drainage system.
23. "*Hazardous household waste (HHW)*" means any material generated in a household (including single and multiple residences) by a consumer which, except for the exclusion provided in 40 CFR Section 261.4(b)(1), would be classified as a hazardous waste under 40 CFR Part 261.
24. "*Hazardous substance*" means any substance listed in Table 302.4 of 40 CFR Part 302.
25. "*Hazardous waste*" means any substance identified or listed as a hazardous waste by the EPA pursuant to 40 CFR Part 261.
26. "*Hazardous waste treatment, disposal, and recovery facility*" means all contiguous land, and structures, other appurtenances and improvements on the land used for the treatment, disposal, or recovery of hazardous waste.
27. "*Impervious area*" or "*impervious cover*" means the number of square feet of hard surface areas which either prevent or retard the entry of water into soil mantle, as it entered under natural conditions as undisturbed property, and/or causes water to run off the surface in greater quantities or at an increased rate of flow from that present under natural conditions as undisturbed property, including, but not limited to, roofs, roof extensions, patios, porches, driveways, sidewalks, pavement, athletic courts, and compacted dirt or graveled areas.
28. "*Individual building sites*" means and includes sites of building construction or earthwork activities that are not a part of a new subdivision development and any individual lot within a newly developing subdivision.
29. "*Industrial general permit*. See "Kansas General Permit for Storm water Discharges Associated with Industrial Activity."

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

30. *"Industrial waste"* means any waterborne liquid or solid substance that results from any process of industry, manufacturing, mining, production, trade or business.
31. *"Industry"* means and includes: (a) municipal landfills; (b) hazardous waste treatment, disposal, and recovery facilities; (c) industrial facilities that are subject to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) 42, U.S.C. Section 11023; industrial facilities required to obtain NPDES storm water discharge permits due to their Standard Industrial Classification or narrative description; and (d) industrial facilities that the director determines are contributing a substantial pollutant loading to the MS4, which are sources of storm water discharges associated with industrial activity.
32. *"Kansas General Permit for Storm Water Discharges Associated with Industrial Activity (or industrial general permit)"* means the industrial general permit issued by KDHE and any subsequent modifications or amendments thereto, including group permits.
33. *"Kansas General Permit for Storm Water Discharges from Construction Sites (or construction general permit)"* means the construction general permit issued by KDHE and any subsequent modifications on amendments thereto, including group permits.
34. *"Land disturbance"* means the disturbance of soils on a site associated with clearing, grading, excavation, new development or redevelopment activities.
35. *"Landfill"* means an area of land or an excavation in which municipal solid waste is placed for permanent disposal, and which is not a land treatment facility, a surface impoundment, or an injection well.
36. *"Municipal separate storm sewer system (MS4)"* means the system of conveyances, (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned and operated by the city and designed or used for collecting or conveying storm water, and which is not used for collecting or conveying sewage.
37. *"Municipal solid waste"* means solid waste resulting from or incidental to municipal, community, commercial, institutional, or recreational activities, and includes garbage, rubbish, ashes, street cleanings, dead animals, abandoned automobiles, and other solid waste other than industrial waste.
38. *"NPDES permit"* means for the purpose of this chapter, this is a permit issued by EPA or the state of Kansas that authorizes the discharge of storm water pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis
39. *"Nonpoint source"* means the source of any discharge of a pollutant that is not a point source.
40. *"Notice of intent (NOI)"* means the notice of intent that is required by either the industrial general permit or the construction general permit.
41. *"Notice of termination (NOT)"* means the notice of termination that is required by either the industrial general permit or the construction general permit.
42. *"Notice of violation"* means a written notice provided to the owner or contractor detailing any violations of this chapter and any clean-up action expected of the violators.
43. *"OCI"* means office of central inspection and includes its superintendent and his or her authorized representatives.
44. *"Oil"* means any kind of oil in any form, including, but not limited to: petroleum, fuel oil, crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure, sludge, oil refuse, and oil mixed with waste.
45. *"Outfall" or "storm water outfall"* means the terminus of the storm water system for a development or redevelopment where the storm water runoff is released into a larger public or

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

private storm water management system, or into a stream, waters of the United States or other water body.

46. "*Owner*" means the person who owns a facility, part of a facility, or land.
47. "*Person*" means any individual, partnership, copartnership, firm, company, corporation, association, joint stock company, trust, estate, government entity, or any other legal entity; or their legal representatives, agents, or assigns, including all federal, state, and local government entities.
48. "*Pesticide*" means a substance or mixture of substances intended to prevent, destroy, repel, or migrate any pest, or substances intended for use as a plant regulator, defoliant, or desiccant.
49. "*Petroleum product*" means a petroleum product that is obtained from distilling and processing crude oil and that is capable of being used as a fuel for the propulsion of a motor vehicle, or aircraft, including motor gasoline, gasohol, other alcohol blended fuels, aviation gasoline, kerosene, distillate fuel oil, and #1 and #2 diesel.
50. "*Petroleum storage tank (PST)*" means any one or combination of aboveground or underground storage tanks that contain petroleum product and any connecting underground pipes.
51. "*Point source*" means any discernable, confined, and discrete conveyance including, but not limited to: any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.
52. "*Pollutant*" means dredged spoil, spoil waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil, yard waste, hazardous household wastes, used motor oil, anti-freeze, litter, and industrial, municipal, and agricultural waste discharged into water and/or any substance, debris, matter that may be carried downstream by storm water runoff, and/or any substance or matter that may be dissolved in storm water runoff.
53. "*Pollution*" means the alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.
54. "*Qualified personnel*" means persons who possess the required certification, license, or appropriate competence, skills, and ability as demonstrated by sufficient education, training, and/or experience to perform a specific activity in a timely and complete manner consistent with the regulatory requirements and generally accepted industry standards for such activity.
55. "*Redevelopment*" or "*redevelopment site*" means a change to previously existing improved property, including but not limited to the demolition or building structures, filling, grading, paving, or excavating.
56. "*Release*" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the municipal separate storm sewer system (MS4) or the waters of the United States.
57. "*Reportable quantity (RQ)*" means, for any hazardous substance, the quantity established and listed in Table 302.4 of 40 CFR Part 302; for any extremely hazardous substance, the quantity established in 40 CFR Part 355.
58. "*Rubbish*" means nonputrescible solid waste, excluding ashes, that consist of: (a) combustible waste materials, including paper, rags, cartons, wood, excelsior, furniture, rubber, plastics, yard trimmings, leaves, and similar materials; and (b) noncombustible waste materials, including

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

grass, crockery, tin cans, aluminum cans, metal furniture, and similar materials that do not burn at ordinary incinerator temperatures (one thousand six hundred to one thousand eight hundred degrees Fahrenheit).

59. "*Sanitary sewer*" means the system of pipes, conduits, and other conveyances which carry industrial waste and domestic sewage from residential dwellings, commercial buildings, industrial and manufacturing facilities, and institutions, whether treated or untreated, to the city sewage treatment plant (and to which storm water, surface water, and groundwater are not intentionally admitted).
60. "*Septic tank waste*" means any domestic sewage from holding tanks such as vessels, chemical toilets, campers, trailers, and septic tanks.
61. "*Service station*" means any retail establishment engaged in the business of selling fuel for motor vehicles that is dispensed from pumps.
62. "*Sewage*" means the domestic sewage and/or industrial waste that is discharged into the city sanitary sewer system and passes through the sanitary sewer system to the city sewage treatment plant for treatment.
63. "*Site*" means the land or water area where development or redevelopment is physically located or being conducted, including lands adjacent to the development that is not subject to land disturbing activities but that is used as a staging area or for other uses in connection with the new development or redevelopment.
64. "*Solid waste*" means any garbage, rubbish, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material including: solid, liquid, semi-solid, or contained gaseous material resulting from industrial, municipal, commercial, mining, agricultural operations, and community and institutional activities.
65. "*State*" means the state of Kansas.
66. "*Storm water*" means storm water runoff, snow melt runoff, and surface runoff and drainage.
67. "*Storm water discharge associated with industrial activity*" means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant which is listed as one of the categories of facilities in 40 CFR Section 122.26(b)(14), and which is not excluded from EPA's definition of the same term.
68. "*Storm water management facility*" or "*storm water control*" means any structure or installation used to manage storm water quality, flow rate, or volume.
69. "*Storm Water Manual*" refers to the latest version, as amended, of the document on file with the Director of Public Works entitled City of Wichita/Sedgwick County Storm Water Manual.
70. "*Storm water pollution prevention plan (SWP3)*." Means a plan required by an NPDES storm water permit and which describes and ensures the implementation of practices that are to be used to reduce the pollutants in storm water discharges associated with construction or other industrial activity.
71. "*Subdivision development*" means and includes activities associated with the platting of any parcel of land into two or more lots and includes all construction taking place thereon.
72. "*Undisturbed property*" means real property which has not been altered from its natural condition so that the entrance of water into the soil mantle is prevented or retarded through changes to the topography or soils.

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

73. *"Used oil (or used motor oil)"* means any oil that has been refined from crude oil a synthetic oil that, as a result of use, storage, or handling; has become unsuitable for its original purpose because of impurities or the loss of original properties.
74. *"Water of the state (or water)"* means any groundwater, percolating or otherwise, lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, inside the territorial limits of the state, and all other bodies of surface water, natural or artificial, navigable or non-navigable, and including the beds and banks of all water courses and bodies of surface water, that are wholly or partially inside or bordering the state or inside the jurisdiction of the state.
75. *"Water quality standard"* means the designation of a body or segment of surface water in the state for desirable uses and the narrative an numerical criteria deemed by the state to be necessary to protect those uses.
76. *"Waters of the United States"* means all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and the flow of the tide; all interstate waters, including interstate wetlands; all other waters the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce; all impoundments of waters otherwise defined as waters of the United States under this definition; all tributaries of waters identified in this definition; all wetlands adjacent to waters identified in this definition; and any water within the federal definition of "waters of the United States" at 40 CFR Section 122.2; but not including any waste treatment systems, treatment ponds, or lagoons designed to meet the requirements of the Federal Clean Water Act.
77. *"Watershed"* means the cumulative area that drains to a common point.
78. *"Watershed plan"* means an engineering and planning study for the drainage system and/or land areas of a watershed that may include a plan for storm water management in the watershed. Watershed plans can include, but are not limited to, the analysis of flooding problems, water quality problems, potential storm water capital improvements, land use patterns, and regulatory issues for existing and potential future land use conditions and address solutions to these problems.
79. *"Wetland"* means any area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.
80. *"Yard waste"* means leaves, grass clippings, yard and garden debris, and brush that results from landscaping maintenance and land-clearing operations.

(Ord. No. 44-123 § 1; Ord. No. 48-904, § 1, 11-16-2010)

Sec. 16.32.020. - General prohibition.

- A. No person shall introduce or cause to be introduced into the municipal separate storm sewer system (MS4) any discharge that is not composed entirely of stormwater, except as allowed in subsection B.
- B. The following nonstormwater discharges are deemed acceptable and not a violation of this section:
1. A discharge authorized by, and in full compliance with, an NPDES permit (other than the NPDES permit for discharges from the MS4);
 2. A discharge or flow resulting from emergency fire fighting;

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

3. A discharge or flow of fire protection water that does not contain oil or hazardous substances or materials;
 4. A discharge from water line flushing;
 5. A discharge or flow from lawn watering, landscape irrigation, or other irrigation water;
 6. A discharge or flow from a diverted stream flow or natural spring;
 7. A discharge or flow from uncontaminated pumped groundwater or rising groundwater;
 8. Uncontaminated groundwater infiltration;
 9. Uncontaminated discharge or flow from a foundation drain, crawl space pump, footing drain, or sump pump;
 10. A discharge or flow from a potable water source not containing any harmful substance or material from the cleaning or draining of a storage tank or other container;
 11. A discharge or flow from air conditioning condensation that is unmixed with water from a cooling tower, emissions scrubber, emissions filter, or any other source of pollutant;
 12. A discharge or flow from individual residential car washing;
 13. A discharge or flow from a riparian habitat or wetland or natural spring;
 14. A discharge or flow from water used in street washing that is not contaminated with any soap, detergent, degreaser, solvent, emulsifier, dispersant, or any other harmful cleaning substance;
 15. Stormwater runoff from a roof that is not contaminated by any runoff or discharge from an emissions scrubber or filter or any other source of pollutant;
 16. Swimming pool water, excluding filter backwash; that has been dechlorinated so that it contains no harmful quantity of chlorine, muriatic acid or other chemical used in the treatment or disinfection of the swimming pool water or in pool cleaning;
 17. Heat pump discharge waters (residential only).
- C. Notwithstanding the provisions of subsection B of this section, any discharge shall be prohibited by this section if the discharge in question has been determined by the director to be a source of a pollutants to the waters of the United States or to the MS4, written notice of such determination has been provided to the discharger, and the discharge has occurred more than ten days beyond such notice.

(Ord. No. 44-123 § 2)

Sec. 16.32.030. - Specific prohibitions and requirements.

- A. The specific prohibitions and requirements in this section are not necessarily inclusive of all the discharges prohibited by the general prohibition in [Section 16.32.020](#)
- B. No person shall introduce or cause to be introduced into the MS4 any discharge that causes or contributes to causing the city to violate a KDHE water quality standard, the city's NPDES stormwater permit, or any state-issued discharge permit for discharges from its MS4.
- C. No person shall dump, spill, leak, pump, pour, emit, empty, discharge, leach, dispose, or otherwise introduce or cause, allow, or permit to be introduced the following substances into the MS4:
 1. Any used motor oil, antifreeze or any other petroleum product or waste;
 2. A harmful quantity of industrial waste;

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

3. Any hazardous waste, including household hazardous waste;
 4. Any domestic sewage or septic tank waste, grease trap waste, or grit trap waste;
 5. Any garbage, rubbish, or yard waste;
 6. Wastewater that contains a harmful quantity of soap, detergent, degreaser, solvent, or surfactant based cleaner from a commercial carwash facility; from any vehicle washing, cleaning, or maintenance at any new or used automobile or other vehicle dealership, rental agency, body shop, repair shop, or maintenance facility; or from any washing, cleaning, or maintenance of any business or commercial or public service vehicle, including a truck, bus or heavy equipment, by a business or public entity that operates more than five such vehicles;
 7. Wastewater from the washing, cleaning, de-icing, or other maintenance of aircraft;
 8. Wastewater from a commercial mobile power washer or from the washing or other cleaning of a building exterior that contains any harmful quantity of soap, detergent, degreaser, solvent, or any surfactant based cleaner;
 9. Any wastewater from commercial floor, rug, or carpet cleaning;
 10. Any wastewater from the washdown or other cleaning of pavement that contains any harmful quantity of soap, detergent solvent, degreaser, emulsifier, dispersant, or any other harmful cleaning substance; or any wastewater from the wash-down or other cleaning of any pavement where any spill, leak, or other release of oil, motor fuel, or other petroleum or hazardous substance has occurred, unless all harmful quantities of such released material have been previously removed;
 11. Any effluent from a cooling tower, condenser, compressor, emissions scrubber, emission filter, or the blowdown from a boiler;
 12. Any ready-mixed concrete, mortar, ceramic, asphalt base material or hydromulch material, or discharge resulting from the cleaning of vehicles or equipment containing or used in transporting or applying such material;
 13. Any runoff, washdown water or waste from any animal pen, kennel, fowl or livestock containment area;
 14. Any filter backwash from a swimming pool or fountain;
 15. Any swimming pool water containing a harmful level of chlorine, muriatic acid or other chemical used in the treatment or disinfection of the swimming pool water or in pool cleaning;
 16. Any discharge from water line disinfection by super chlorination if it contains a harmful level of chlorine at the point of entry into the MS4 or waters of the United States;
 17. Any water from a water curtain in a spray room used for painting vehicles or equipment;
 18. Any contaminated runoff from a vehicle wrecking yard;
 19. Any substance or material that will damage, block, or clog the MS4;
 20. Any release from a petroleum storage tank (PST), or any leachate or runoff from soil contaminated by leaking PST; or any discharge of pumped, confined, or treated wastewater from the remediation of any such PST release, unless the discharge has received an NPDES permit from the state.
- D. No person shall introduce or cause to be introduced into the MS4 any harmful quantity of sediment, silt, earth, soil, or other material associated with clearing, grading, excavation or other construction activities in excess of what could be retained on site or captured by employing sediment and erosion control measures to the maximum extent practicable under prevailing circumstances.

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

- E. No person shall connect a line conveying sanitary sewage, domestic or industrial, to the MS4, or allow such a connection to continue.
- F. Regulation of Pesticides and Fertilizers.
 - 1. No person shall use or cause to be used any pesticide or fertilizer in any manner that the person knows, or reasonably should know, is likely to cause, or does cause, a harmful quantity of the pesticide or fertilizer to enter the MS4 or waters of the United States.
 - 2. No person shall dispose of, discard, store, or transport a pesticide or fertilizer, or its container, in a manner that the person knows, or reasonably should know, is likely to cause, or does cause, a harmful quantity of the pesticide or fertilizer to enter the MS4 or waters of the United States.
- G. Used Oil Regulation.
 - 1. No person shall discharge used oil into the MS4 or a sewer, drainage system, septic tank, surface water, groundwater, or water course.
- H. Cleanup. Should it be determined by the director that any person or business has allowed any pollutant into the MS4 or waters of the United States, immediate measures will be taken by the responsible party to remove the pollutants. If the pollutants are not removed within the time period specified by the director, the city may remove the pollutants and assess the cost thereof to the responsible party. The city may use any legal means to collect said cost, should the responsible party fail to pay said cost within forty-five days.

(Ord. No. 44-123 § 3)

Sec. 16.32.040. - Release reporting and cleanup.

- A. Any person responsible for any release of any hazardous material that may flow, leach, enter, or otherwise be introduced into the MS4 or waters of the United States shall comply with all state, federal, and any other local law requiring reporting, clean-up, containment, and any other appropriate remedial action in response to the release.
- B. Within thirty days following such release, the Wichita fire department shall submit a written report to the public works department detailing spill information and the methods used to remedy the problem.

(Ord. No. 44-123 § 4)

Sec. 16.32.050. - Stormwater discharges from construction activities.

- A. *General requirements (all sites).*
 - 1. The owners of construction sites shall ensure that best management practices are used to control and reduce the discharge of pollutants into the MS4 and waters of the United States to the maximum extent possible under the circumstances.
 - 2. Qualified personnel (provided by the owner of the construction site) shall inspect disturbed areas that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site, at least once every seven calendar days and within twenty-four hours of the end of a storm that is one-half inch or greater. All erosion and sediment control measures and other identified best management practices shall be observed in order to ensure that they are operating correctly and are effective in preventing significant impacts to receiving waters and the MS4. Based on the results of the inspection, the best management practices shall be revised as appropriate as

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

soon as practicable. These inspections, along with a description of revisions, will be documented in writing and available for inspection by the director and OCI upon request.

3. Should it be found that soil or pollutants have already or may be carried into the MS4 or waters of the United States, immediate measures will be taken by the owner to remedy the violation and/or remove the pollutants. If the owner fails to remove pollutants within the time period prescribed in the notice of violation from the city, the city may remove the pollutants and assess the cost thereof to the responsible owner. Failure of the owner to pay said costs will be grounds for the denial of further approvals or the withholding of occupancy certificates.
 4. When determined to be necessary for the effective implementation of this section, the director may require any plans and specifications that are prepared for the construction of site improvements to illustrate and describe the best management practices required by subsection A.1 of this section above that will be implemented at the construction site. Should the proper BMP's not be installed or if the BMP's are ineffective, upon reasonable notice to the owner, the city may deny approval of any building permit, grading permit, subdivision plat, site development plan, or any other city approval necessary to commence or continue construction, or to assume occupancy.
 5. The owner of a site of construction activity is responsible for compliance with the requirements in this subsection. In the case of new subdivisions, builders on individual lots can operate under the developers NPDES permit if the developer's SWP3 deals with individual lots and the contractors certification has been signed.
 6. Any contractor on a construction site will also be required to use best management practices so as to minimize pollutants that enter into the MS4.
 7. All persons shall avoid damaging BMP devices once in place. Any person damaging a BMP device shall be responsible for the repair of the damaged BMP device. Malicious destruction of a BMP device or failure of such responsible person to repair BMP device will be deemed a violation of this chapter.
- B. *Sites Requiring Federal and/or State NPDES Stormwater Discharge Permits.* All owners of and contractors on sites of construction activity, that require a federal or state NPDES stormwater discharge permit, or that are part of a common plan of development or sale requiring said permit(s), shall comply with the following requirements (in addition to those in subsection A):
1. Any owner who intends to obtain coverage for stormwater discharges from a construction site under the Kansas General Permit for Stormwater Discharges From Construction Sites ("the construction general permit") shall submit a signed copy of its notice of intent (NOI) to OCI when a building permit application is made. If the construction activity is already underway upon the effective date of this chapter, [January 1, 1999] the NOI shall be submitted within thirty days. When ownership of the construction site changes, a revised NOI shall be submitted within fifteen days of the change in ownership.
 2. A stormwater pollution prevention plan (SWP3) shall be prepared and implemented in accordance with the requirements of the construction general permit or any individual or group NPDES permit issued for stormwater discharges from the construction site, and with any additional requirement imposed by or under this chapter and any other city ordinance.
 3. The SWP3 shall be prepared by a qualified person and shall comply with State NPDES requirements. The signature of the preparer shall constitute his/her attestation that the SWP3 fully complies with the requirements of the permit issued.
 4. The SWP3 shall be completed prior to the submittal of the NOI to OCI and for new construction, prior to the commencement of construction activities. The SWP3 shall be updated and modified as appropriate and as required by the NPDES permit.

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

5. The director and/or OCI may require any owner who is required by subsection B.2 of this section to prepare a SWP3, to submit the SWP3, and any modifications thereto, to the Director and/or OCI for review at any time.
6. Upon the director's review of the SWP3 and any site inspection that he/she may conduct, if the SWP3 is not being fully implemented, the director may upon reasonable notice to the owner, deny approval of any building permit, grading permit, site development plan, final occupancy certificate, or any other city approval necessary to commence or continue construction. A stop work order may also be issued.
7. All contractors working on a site subject to an NPDES permit shall sign a copy of the following certification statement before beginning work on the site:

I certify under penalty of law that I understand the terms and conditions of the National Pollutant Discharge Elimination System (NPDES) permit that authorizes the stormwater discharges associated with construction activity from the construction site identified as part of this certification and with the Stormwater Pollution Prevention Plan Chapter of the city, and I agree to implement and follow the provisions of the Stormwater Pollution Prevention Plan (SWP3) for the construction site;

The certification must include the name and title of the person providing the signature; the name, address, and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification is made.

All contractors will be responsible for their own activities to ensure that they comply with the owners' SWP3. Failure to comply with the SWP3 or malicious destruction of BMP devices is hereby deemed to be a violation of this chapter.

8. The SWP3 and the certifications of contractors required by subsection B.7 of this section, and with any modifications attached, shall be retained at the construction site or at a local office in Wichita from the date of construction commencement through the date of final stabilization.
9. The director may notify the owner at any time that the SWP3 does not meet the requirements of the NPDES permit issued or any additional requirement imposed by or under this chapter. Such notification shall identify those provisions of the permit or chapter which are not being met by the SWP3, and identify which provisions of the SWP3 require modification in order to meet such requirements. Within thirty days of such notification from the director, the owner shall make the required changes to the SWP3 and shall submit to the director a written certification from the owner that the requested changes have been made.
10. The owner shall amend the SWP3 whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the MS4 or to the waters of the United States, and which has not otherwise been addressed in the SWP3, or if the SWP3 proves to be ineffective in eliminating or significantly minimizing pollutants, or in otherwise achieving the general objective of controlling pollutants in stormwater discharges.
11. Qualified personnel (provided by the owner of the construction site) shall inspect disturbed areas that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site, at least once every seven calendar days and within twenty-four hours of the end of the storm that is one-half inch or greater. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWP3 shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

are effective in preventing significant impacts to receiving waters or the MS4. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.

12. Based on the results of the inspections required by subsection B.11 of this section, the pollution prevention measures identified in the SWP3 shall be revised as appropriate. Such modifications shall provide for timely implementation of any changes to the SWP3 within ten calendar days following the inspection.
13. A report summarizing the scope of any inspection required by subsection B.11 of this section, and the names(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWP3, and actions taken in accordance with subsection B.12 of this section above shall be made and refined on site or at a local office in Wichita as part of the SWP3. Such report shall identify any incidence of noncompliance. Where a report does not identify any incidence of noncompliance, the report shall contain a certification that the facility is in compliance with the SWP3, the facility's NPDES permit, and this chapter. The report shall be certified and signed by the person responsible for making it.
14. The owner shall retain copies of any SWP3 and all reports required by this chapter or by the NPDES permit for the site, and records of all data used to complete the NOI for a period of at least three years from the date that the site is finally stabilized.
15. Upon final stabilization of the construction site, the owner shall submit written certification to the director and OCI that the site has been finally stabilized. The city may withhold the final occupancy or use permit for any premises constructed on the site until such certification of final stabilization has been filed and the director has determined, following any appropriate inspection, that final stabilization has occurred and that any required permanent structural controls have been completed.

(Ord. No. 44-123 § 5)

Sec. 16.32.060. - Stormwater discharges associated with industrial activity.

- A. All operators of: (1) municipal landfills; (2) hazardous waste treatment, disposal, and recovery facilities; (3) industrial facilities that are subject to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) 42, U.S.C. Section 11023; industrial facilities required to obtain NPDES stormwater discharge permits due to their Standard Industrial Classification or narrative description; and (4) industrial facilities that the director determines are contributing a substantial pollutant loading to the MS4, which are sources of stormwater discharges associated with industrial activity, shall comply with the following requirements:
 1. Any owner who intends, after the effective date of this chapter, ^[69] to obtain coverage for a stormwater discharge associated with industrial activity under the Kansas General Permit for Stormwater Discharges Associated With Industrial Activity ("the industrial general permit") shall submit a signed copy of its notice of intent (NOI) to the director.
 2. When required by their NPDES permit, all industries listed in this section shall prepare a stormwater pollution prevention plan (SWP3) and implement said plan in accordance with the requirements of their state or federal NPDES permit.
 3. The SWP3, when required, shall be prepared and signed by a qualified individual and will comply with all state NPDES requirements. The signature of the preparer shall constitute his/her attestation that the SWP3 fully complies with the requirements of the NPDES permit.
 4. The SWP3, when required, shall be updated and modified as appropriate and as required by the NPDES permit and this chapter.

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

5. A copy of any NOI that is required by subsection A.1 of this section shall be submitted to the city in conjunction with any application for a permit or any other city approval necessary to commence or continue operation of the industrial facility.
6. The Director may require any operator who is required by subsection A.2 of this section to prepare a SWP3, to submit the SWP3, and any modifications thereto, to the director for review.
7. Upon the director's review of the SWP3 and any site inspection that he/she may conduct, the director may upon reasonable notice to the owner deny approval necessary to commence or continue operation of the facility, on the grounds that the SWP3 does not comply with the requirements of the NPDES permit, or any additional requirement imposed by or under this chapter. Also, if at any time the director determines that the SWP3 is not being fully implemented, upon reasonable notice to the owner, he/she may deny approval of any application for a permit or other city approval necessary to commence or continue operation of the facility.
8. The SWP3, if required, with any modifications attached, shall be retained at the industrial facility from the date of commencement of operations until all stormwater discharges associated with industrial activity at the facility are eliminated and the required notice of termination (NOT) has been submitted.
9. The director may notify the owner at any time that the SWP3 does not meet the requirements of the NPDES permit, or any additional requirement imposed by or under this chapter. Such notification shall identify those provisions of the permit or chapter which are not being met by the SWP3, and identify which provisions require modification in order to meet such requirements. Upon thirty days of such notification from the director, the owner shall submit to the director a written certification that the requested changes have been made.
10. The owner shall amend the SWP3, if required, whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the MS4 or to the waters of the United States, or if the SWP3 proves to be ineffective in eliminating or significantly minimizing pollutants, or in otherwise achieving the general objective of controlling pollutants in stormwater discharges.
11. As may be required by the facilities NPDES permit, qualified personnel (provided by the owner) shall inspect equipment and areas of the facility specified in the SWP3 at appropriate intervals or as may be specified in their NPDES permit. A set of tracking or follow up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspection shall be maintained.
12. Industrial facilities will implement a sampling and testing program as required by their individual NPDES permits. The director may require written reports of any such monitoring and testing to be submitted to him/her.
13. The owner shall retain the SWP3 and all sampling and testing reports until at least one year after stormwater discharges associated with industrial activity at the facility are eliminated, or the operator is no longer operating the facility, and a notice of termination (NOT) has been submitted.
14. For discharges subject to the semi-annual or annual monitoring requirements of the industrial general permit, in addition to the records-retention requirements of the paragraph above, owners are required to retain for a six year period from the date of sample collection, records of all sampling and testing information collected. Owners must submit such monitoring results, and/or a summary thereof, to the director upon his/her request.

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

15. After the effective date of this chapter, [\[70\]](#) no stormwater discharge shall contain any hazardous metals in a concentration that would result in the violation of any Kansas Surface Water Quality Standard.

(Ord. No. 44-123 § 6)

Sec. 16.32.070. - Ditches and ponds.

- A. **Duty to Maintain.** The owner of any private drainage ditch or pond that empties into the city's MS4 or the waters of the United States has a duty to use BMP's on the ditches or pond to minimize the pollutant levels downstream. Such BMP's include, but are not limited to, removing excessive build-up of silt, repairing bank erosion, maintaining vegetative cover, the cleaning of inlet and outlet works, and the like.
- B. **Inspection and Notice by City.** The city will periodically inspect these privately owned ditches and ponds. Should conditions be found that cause the pollution of downstream receiving waters, the director shall so notify the owners, and state what actions are expected by the owners to remedy the problem.
- C. **Failure to Repair.** Should the owners fail to make the necessary repair within one hundred twenty days after notice, the city is authorized to do the repairs at the expense of the owner. Should the owner fail to reimburse the city for the cost of the repairs upon demand, the city may assess the cost thereof to the owner and initiate any collection proceedings authorized by law.

(Ord. No. 44-123 § 7)

Sec. 16.32.080. - Compliance monitoring.

- A. **Right of entry.** The Director, the Superintendent of OCI and the City Health Officer, or their authorized representatives, shall have the right to enter the premises of any person discharging storm water to the municipal separate storm sewer system (MS4) or to waters of the United States at any reasonable time to determine if the discharger is complying with all requirements of this chapter, and with any state or federal discharge permit, limitation, or requirement. Dischargers shall allow the inspectors ready access to all parts of the premises for the purposes of inspection, sampling, records examination and copying, and for the performance of any additional duties.
- B. **Records.** Subject to the requirements of subsection A, dischargers shall make available, upon request, any SWP3's, modifications thereto, self-inspection reports, monitoring records, compliance evaluations, notice of intent, and any other records, reports, and other documents related to compliance with this chapter and with any state or federal discharge permit.
- C. **Sampling.** The Director shall have the right to set up on the discharger's property such devices that are necessary to conduct sampling of storm water discharges.

(Ord. No. 44-123 § 8; Ord. No. 48-904, § 2, 11-16-2010)

Sec. 16.32.090. - Subdivision development.

- A. The developer of any subdivision requiring a federal or state NPDES stormwater discharge permit will be responsible for obtaining the required permit and developing and implementing an overall SWP3 for the subdivision. Said SWP3 shall include BMP's to be used on individual lot building sites.
- B. City contractors installing public streets; water, sanitary sewer, storm sewer lines; and/or sidewalks will be required to comply with the developers SWP3's and sign the appropriate contractor

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

certification statement. For work in public right-of-way or easements requiring a federal or state NPDES stormwater discharge permit, the city shall be responsible for obtaining the required permit and preparing and implementing the required SWP3's.

- C. Any utility company installing utilities within a new subdivision will also be required to comply with the developers SWP3's and sign the appropriate contractor certification statement. For work in public rights-of-way or easements requiring a federal or state NPDES stormwater discharge permit, the utility company shall be responsible for obtaining the required permit and preparing and implementing the required SWP3's.
- D. The purchasers or individual lots within the subdivision for construction purposes shall comply with the developers SWP3 and shall sign a certification statement agreeing to do so.

(Ord. No. 44-123 § 9)

Sec. 16.32.091. - Storm water quality management standards

A. *Applicability.*

- 1. Water quality treatment and downstream channel protection shall be required of owners of new developments and redevelopments that cause a land disturbance greater than or equal to one acre, including projects that cause a land disturbance less than one acre that are part of a larger common plan of development or sale.
- 2. The requirements of [16.32.091](#) shall not apply to:
 - i. new developments or redevelopments that have a construction plan approved by January 1, 2011 and will have completed construction of all storm water management facilities within 90 days of January 1, 2011. This does not exempt such new developments from water quality management regulations that may be required in the future by EPA or KDHE; or,
 - ii. redevelopment projects that consist solely of ordinary maintenance activities, remodeling of buildings on the existing foundation, resurfacing (milling and overlay) of existing paved areas, and exterior changes or improvements.

B. *Water quality treatment standard for new developments.* Storm water runoff from applicable new developments must be treated for water quality prior to discharge from the development site in accordance with the storm water treatment standards and criteria provided in the Storm Water Manual.

C. *Water quality treatment standard for redevelopments.* Owners of applicable redevelopments must adhere to one of the following requirements.

- 1. The total impervious cover of the property after redevelopment shall be reduced by at least 20% from the total impervious cover of the property prior to the proposed redevelopment.
- 2. Storm water runoff from at least 30% of the site's existing impervious cover and for 100% of any new land disturbance that will result from the proposed redevelopment shall be treated for water quality prior to discharge from the redevelopment site in accordance with the storm water treatment standards and criteria provided in the Storm Water Manual.
- 3. The owner shall provide storm water controls at an alternative location in the same watershed as the proposed redevelopment. The level of storm water control provided shall be equivalent to what would have been provided at the proposed redevelopment for either requirement 1 or 2 above, at a minimum.

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

4. In agreement and partnership with the City of Wichita, the owner shall provide engineering design and/or construction activities to address one or more known downstream water quality or channel erosion issues located within the same watershed as the proposed redevelopment, through stream restoration and/or other off-site remedies approved by the Director.
 5. The owner shall pay a fee in-lieu-of water quality control and channel protection control, in an amount to be determined by the city in accordance with the in-lieu-of fee schedule as adopted by the City Council of the City of Wichita per the watershed plan which covers the redevelopment.
 6. Any combination of (1) through (5) above may be acceptable to the City of Wichita or other solution(s) approved by the Director that meets the intent of this chapter.
- D. *Downstream stabilization standard.* Downstream long-term channel protection shall be provided for applicable new developments and redevelopments prior to discharge from the new/redevelopment site in accordance with the downstream stabilization standards and criteria provided in the Storm Water Manual.

(Ord. No. 48-904, § 3, 11-16-2010)

Sec. 16.32.092. - Storm water quantity management standards

- A. *Applicability.* Storm water runoff peak discharge analysis and control shall be required for new developments and redevelopments that will create or add one acre or greater of impervious cover, including projects that have less than one acre in impervious cover that are part of a larger common plan of development or sale that will result in one acre or greater of impervious cover.
- B. *Water quantity management standard.* Storm water runoff peak discharge analysis and control shall be required for applicable new developments or redevelopments in accordance with the storm water quantity standards and criteria provided in the Storm Water Manual.

(Ord. No. 48-904, § 4, 11-16-2010)

Sec. 16.32.093. - Other storm water management requirements

- A. *Applicability.* [Section 16.32.093](#) is applicable to new developments and redevelopments that are required to comply with [section 16.32.091](#) and/or [section 16.32.092](#)
- B. *Alternative standards for individual watersheds.* Alternative storm water management standards, either lesser or greater than those specified in this chapter, may be required by the Director in those areas or watersheds where water quality, flooding or erosion problems are known to exist, or in individual watersheds where a watershed plan or storm water master plan, approved by the City Council of the City of Wichita, specifies such alternative standards.
- C. *Other requirements for storm water discharges.*
 1. Storm water discharges shall be managed in consideration of the erosion control measures detailed in the Storm Water Manual.
 2. Any discharge of storm water runoff to groundwater must meet all applicable local, State and Federal requirements, permits, plans and programs. The owner is responsible for complying with all local State and Federal permits that are applicable to the site.
- D. *Requirement to stabilize banks.* Banks of all streams, channels, ditches and other earthen storm water conveyances shall be left in a stabilized condition upon completion of the new development or

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

redevelopment. No actively eroding, bare or unstable vertical banks shall remain after completion of construction.

- E. *Requirement to use the Storm Water Manual.* All storm water facilities and systems, including those designed and constructed for water quality treatment, downstream channel stabilization, and peak discharge control shall be designed, constructed and maintained in accordance with the criteria, standards, and specifications presented in this chapter and in the Storm Water Manual. The standards for water quality treatment, downstream channel stabilization and peak discharge analysis and control shall be achieved through the use of one or more storm water quality management facilities that are designed and constructed in accordance with the design criteria, guidance, and specifications provided in the Storm Water Manual. Methods, designs or technologies for storm water quality management facilities that are not provided in the Storm Water Manual may be submitted for approval by the city if it is proven that such methods, designs or technologies will meet or exceed the storm water treatment standards set forth in the Storm Water Manual and this ordinance. Proof of such methods, designs, or technologies must meet the minimum testing criteria set forth in the Storm Water Manual.
- F. *Storm water facilities on public property.* Storm water management facilities shall not be installed within public rights-of-way or on public property unless a permit has been issued by the city engineer.

(Ord. No. 48-904, § 5, 11-16-2010)

Sec. 16.32.094. - Waivers and exemptions from storm water management standards for new developments

- A. *Exemptions.* Owners of properties where the following activities are undertaken are exempt from the requirements of sections [16.32.091](#), [16.32.092](#), [16.32.093](#) and [16.32.094](#) of this chapter.
1. Minor land disturbing activities at individual locations, such as gardening, building or grounds maintenance and landscaping, provided that the activity does not result in equal to or greater than one (1) acre of land disturbance;
 2. Individual utility service connections, unless such activity is carried-out in conjunction with the clearing, grading, excavating, transporting, or filling of a lot or lots for which a grading permit would otherwise be required by regulation;
 3. Installation, maintenance or repair of individual septic tank lines or drainage fields, unless such activity is carried out in conjunction with the clearing, grading, excavating, transporting, or filling of a lot or lots for which a grading permit would otherwise be required by the regulation;
 4. Installation of posts or poles;
 5. Farming activities;
 6. Unplanned emergency work and emergency repairs necessary to protect life or property.
- B. *Waivers.* All or some of the storm water management standards required in [section 16.32.091](#) and/or [16.32.092](#) of this chapter may be waived by the Director under the following circumstances.
1. *Existing Downstream Facilities.* A waiver may be provided for one or more storm water management standards if the waived standard(s) are met by discharging the storm water runoff to an existing storm water management facility, whether public or private, that is:
 - i. provided in accordance with an existing watershed plan that is approved by the city; and,
 - ii. already in existence, or will be in existence at the time of construction of the new development or redevelopment; and,

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

- iii. designed, constructed and maintained to provide a level of storm water control that is equal or greater than that which would be afforded by on-site storm water management facilities.
 - iv. If a waiver is provided for this reason, the owner of the new development or redevelopment will be required to pay a fee in-lieu-of water quality control, downstream channel stabilization and peak discharge control, in an amount to be determined by the city in accordance with an adopted in-lieu-of fee schedule as adopted by the City Council of the City of Wichita per the watershed plan which covers the new development or redevelopment.
2. *Adverse Impact.* A waiver may be provided if engineering studies determine that installing a storm water management facility in order to meet the storm water management standard being considered for waiver will cause adverse impact to water quality, or cause increased channel erosion, or downstream flooding.
 3. *Technical Criterion.* A waiver may be provided if the technical criterion required to waive the storm water management standard, as presented in the Storm Water Manual, is met. In any case, a waiver is subject to satisfaction of the following requirements, which shall be shown in drainage plans submitted for the new development or redevelopment:
 - i. the waiver applicant shall provide an engineering study, as defined in [16.32.094.C](#) that proves the adequacy of downstream or shared off-site storm water management facilities to offer equivalent or greater protection than the standard(s) for which a waiver is requested; and,
 - ii. the waiver applicant obtains any necessary CLOMR prior to construction, and a LOMR upon completion of construction; and,
 - iii. the waiver applicant obtains all State and Federal permits that may be applicable to the site.
- C. *Engineering study required.* In the event that a waiver from storm water management control requirements is requested, the adequacy of downstream or shared off-site storm water management facilities to control storm water runoff shall be determined, reviewed and approved by an engineering study that is performed in accordance with the calculation methods presented in the Storm Water Manual. The engineering studies shall be performed at the expense of the owner(s) of the proposed new development or redevelopment, unless a study has already been or is being performed by the city as part of a watershed plan or other land use plan.

(Ord. No. 48-904, § 6, 11-16-2010)

Sec. 16.32.095. - General requirements for storm water design plans

- A. *[Design information.]* Storm water design information shall be submitted as part of the preliminary plat, final plat and construction plans, in accordance with the site development process established by the city.
- B. *[Building permit.]* A building permit shall not be issued for the land development activity until the required storm water design information and corresponding plans are approved by the city.
- C. *[Submission.]* At a minimum, the storm water design information submitted at each stage of the city development process shall include the specific required elements that are listed and/or described in the Storm Water Manual, and shall be prepared in accordance with the policies, guidance and calculation methods (unless equivalent methods are pre-approved by the city) presented in the Storm Water Manual. Additional storm water design information may be required as necessary to allow an adequate review of the existing or proposed site conditions.

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

- D. The submittal of storm water design information shall be subject to the requirements set forth in the minimum subdivision regulations, zoning ordinance, or other city regulations.
- E. *[Supervision.]* Storm water design information shall be prepared under the supervision of and stamped by a professional engineer licensed to practice in the State of Kansas.
- F. *[Viability.]* The portions of the new development or redevelopment on which storm water management facilities and systems are located shall be shown on the preliminary and final plats for all residential subdivisions and recorded with the plat as permanent reserves or easements consistent with the policies stated in the Storm Water Manual. Non-residential plats and/or subdivisions having a total area less than or equal to 15 acres shall be required to demonstrate the viability of proposed storm water management facilities and systems. In such cases, the Director is authorized to allow contingent dedications for storm water facilities providing that the owner/developer enters into an agreement with the City guaranteeing the construction of the said facilities in accordance with a schedule approved in the said agreement.
- G. *Conformity to the approved plans.*
 - 1. Grading designs shown on approved master grading plans and the design of storm water facilities and controls shown on approved design plans shall be adhered to during grading and construction activities. Under no circumstance is the owner or operator of land development activities allowed to deviate from the approved plans without prior approval of a plan amendment by the city.
 - 2. Grading and storm water design plans shall be amended to meet all local ordinances and standards if the proposed site conditions change after plan approval is obtained, or if it is determined by the city during the course of grading or construction that the approved plan is inadequate.
- H. *Duty to provide an operations and maintenance plan.*
 - 1. An Operations and Maintenance Plan shall be included with the storm water design information submitted with the construction plan. The Operations and Maintenance Plan shall include the required operation and maintenance provisions for each storm water management facility and water quality volume reduction area that is serving, or will serve, the development or redevelopment. The Operations and Maintenance Plan shall include all of the required elements that are listed and/or described in the Storm Water Manual, and shall be prepared in accordance with the policies and guidance provided in the Storm Water Manual.
 - 2. The Operations and Maintenance Plan shall include an executed legal document entitled "Restrictive Covenants for Storm Water Facilities" (Covenants). The property owner shall record the Covenants with the deed for the property. The location of the storm water management facility(s) and water quality volume reduction areas, the recorded location of the Covenants document, and inspection and maintenance guidance outlining the property owner's responsibility shall be shown on a plat that is recorded for the property
- I. *Duty to provide storm water construction information on as-built drawings.*
 - 1. Prior to the release of the performance bond, complete As-Built Drawings shall be provided to the Director, and shall include sufficient design information to show that the storm water facilities will operate as designed under the approved drainage plan.
 - 2. The As-Built Drawings shall include the required elements that are listed and/or described in the Storm Water Manual, and shall be prepared in accordance with the policies and guidance provided in the Storm Water Manual.
 - 3. The As-Built Drawings shall be prepared and stamped by a professional engineer licensed to practice in the State of Kansas.

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

(Ord. No. 48-904, § 7, 11-16-2010)

Sec. 16.32.096. - Maintenance and inspection of storm water drainage paths and controls.

- A. *Duty to inspect and maintain storm water systems and controls.* Property owners shall at all times properly maintain and shall at intervals in accordance with the Operations and Maintenance Plan inspect all storm water facilities, systems, conveyances, pipes, channels, ditches, swales, inlets, catchbasins, water quality volume credit areas, and other facilities and systems of storm water treatment and control (and related appurtenances) so that they operate at their full function. Maintenance and inspection of privately-owned storm water management facilities, systems, conveyances, pipes, channels, ditches, swales, inlets, catchbasins, water quality volume credit areas, and other facilities and systems of storm water treatment and control (and related appurtenances) shall be performed at the expense of the owner(s) of such facilities.
- B. *Duty to provide inspection reports.* After construction of each storm water management facility on the property is complete, property owners shall provide to the Director on a bi-annual basis a completed and signed copy of the inspection report for each storm water management facility that is included with the Operations and Maintenance Plan for the property. The inspection report is due every two years no later than the date (month and day) of approval of the as-built plan for the property.
- C. *Duty to preserve approved grading designs.* Re-grading an individual lot or lots, or portions of a lot or lots, in a manner that is in not accordance the approved master grading plan, such that the direction(s) of storm water runoff is altered from the direction that would occur under the approved master grading plan, shall be considered a violation of this chapter.
- D. *Duty to preserve existing drainage paths.* Blockage of a channel, ditch, stream or any other drainage path or storm water system appurtenance that is located in a storm water easement or drainage easement shall be considered a violation of this chapter.
- E. *Pollutant removal for maintenance.* The removal of pollutants, sediment and/or other debris for the purpose of maintenance of storm water management facilities shall be performed in accordance with all city, State, and Federal laws.
- F. *Inspection during grading or construction.*
1. During grading or construction, the property owner or his/her appointed designee shall conduct site inspections in accordance with the requirements stated in the Kansas General Permit for Storm Water Discharges from Construction Sites. The property owner will also ensure construction conformance with the approved drainage and construction plans. More stringent inspection requirements may be imposed as necessary for purposes of water quality protection and public safety and to pursue total conformance of the site with the approved plans.
 2. The following areas and items must be inspected throughout grading and construction to ensure that land disturbance activities do not cause adverse impacts to the performance of storm water management facilities and/or water quality volume reduction areas:
 - i. all unstabilized areas that drain to a permanent storm water facility or water quality volume reduction area;
 - ii. temporary and permanent storm water management facilities; and,
 - iii. all erosion prevention and sediment control measures.
- G. *Inspection after construction.* Once the site has been stabilized and construction has ceased, the property owner or his/her appointed designee shall conduct routine inspections for the storm water management facilities and water quality reduction areas, based on the guidance provided in the

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

Operations and Maintenance Plan and the requirements of the "Restrictive Covenants for Storm Water Facilities" for the property, as set forth in [section 16.32.095.H.2.](#) of this ordinance.

- H. *Inspection records.* Property owners shall make available upon request any self-inspection reports, monitoring/maintenance records, compliance evaluations, notices of intent, and any other records, reports, receipts, and other documents related to compliance with this chapter and with any related local, State or Federal permit.
- I. *Right-of-entry.* The Director or his/her designee shall have the right to enter the premises of any person discharging storm water to the MS4 or to waters of the United States at any reasonable time to determine if the discharger is complying with all requirements of this chapter, and with any State or Federal discharge permit, limitation, or requirement. Dischargers shall allow the Director or his/her designee ready access to all parts of the premises for the purposes of inspection, sampling, records examination and copying, and for the performance of any additional duties. Failure of a property owner to allow entry onto a property for the purposes set forth in this section shall be cause for the issuance of a stop work order, withholding of a certificate of occupancy, and/or civil penalties and/or damage assessments in accordance with the enforcement provisions of this chapter.
- J. *Inspection and notice by City.* The city may periodically inspect these privately owned storm water controls. If the facility is not operating as shown in the approved As-Built Drawing, or should conditions be found that cause or may cause the pollution of downstream receiving waters or the erosion of downstream channels or the flooding of adjacent or downstream properties, the Director may issue a notice of violation in accordance with the enforcement provisions stated in this chapter and shall notify the property owner(s) of the potential violation(s). The Director may order the property owner(s) to perform corrective actions as are necessary to facilitate the proper operation of these facilities for the purposes of flood prevention, downstream channel stabilization, water quality treatment and/or public safety, and/or to ensure compliance with jurisdictional regulatory conditions.
- K. *Failure to perform corrective actions.* If property owner(s) fail to make the necessary corrective actions in the timeframe specified in the enforcement provisions of this chapter, the city is authorized to perform the corrective actions at the expense of the owner(s). If the owner(s) fail to reimburse the city for the corrective actions upon demand, the city may assess the cost of the corrective actions to the owner and initiate any collection proceedings authorized by law.
- L. *Access to adjacent properties.* This ordinance does not authorize access by a property owner or site operator to private property adjacent to or downstream of the owner's property. Arrangements concerning removal of sediment or pollutants on adjoining property must be settled by the owner or operator with the adjoining landowner.

(Ord. No. 48-904, § 8, 11-16-2010)

Sec. 16.32.097. - Special provisions for open channels.

- A. No structure or land shall hereafter be developed, redeveloped, located, extended, converted, or structurally altered without full compliance with the terms of this section, the City of Wichita Floodplain Management Ordinance (Chapter [27.06](#)) and other applicable local, state or federal regulations.
- B. Requirements for vegetative buffer zones or maintenance access areas that have been established in approved and adopted watershed plans have priority over the provisions of this section.
- C. Closure of open channels. Existing or proposed open channels may be enclosed if a maintenance plan approved by the City is provided; if the closed conduit conforms to the design criteria set in the Storm Water Manual.

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

- D. Access easement required. All open channels must have a minimum twenty (20) foot wide maintenance access on each side of the stream as measured from the top-of-bank on each side of the stream, except as required by KSA 24-126 as amended, and KAR 5-45-12 as amended for "streams" defined in KAR 5-45-1 as amended.

(Ord. No. 48-904, § 9, 11-16-2010)

Sec. 16.32.100. - Enforcement actions.

- A. The discharge of, or potential discharge of, any pollutant to the MS4 or waters of the United States and/or the failure to comply with the provisions of this chapter and/or the failure to comply with and directive, citation, or order issued under this chapter; are violations of this chapter for which enforcement action may be taken.
- B. Prior to taking any enforcement action as specified in this section, a violator will be issued a notice of violation except when, in the opinion of the Director, an owner or contractor has repeatedly ignored the requirements of this chapter and has not made any reasonable intent to comply with these provisions. When issued, the notice of violation will detail the nature of the violation, actions to be taken to remedy the violation, actions to be taken to clean-up any pollutants, and any specific time periods within which to accomplish said actions. Failure to successfully comply with the notice of violation may result in enforcement action.
- C. The enforcement actions to be taken under this chapter, as provided in [Section 16.32.110](#) are as follows:
1. *Criminal penalty.* Any person violating any provision of this chapter is guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not more than one thousand dollars. Each and every day during which any violation of any provision of this chapter is committed, continue, or permitted is a separate violation.
 2. *Stop work order.* Notwithstanding other penalties provided by this chapter, whenever the Director or OCI, or their designees, finds that any owner or contractor on a construction site has violated, or continues to violate, any provision of this chapter or any order issued thereunder, the Director or OCI may after reasonable notice to the owner or contractor issue a stop work order to the owner and contractors by posting such order at the construction site. Said order shall also be distributed to all city departments and divisions whose decisions may affect any activity at the site. Unless express written exception is made, the stop work order shall prohibit any further construction activity at building permit, grading permit, site development plan approval, or any other approval necessary to commence or to continue construction or to assume occupancy at the site. Issuance of a stop work order shall not be a bar against, or a prerequisite for, taking any other action against the violator. Failure to comply with the requirements of any stop work order is a violation of this chapter.
 3. *Administrative penalty process.*
 - a. When the Director finds that any person has violated or continues to violate the provisions set forth in this chapter, or the person's NPDES permit or any order issued thereunder, the Director may issue an order for compliance to the person. Such orders may contain any requirements as might be reasonably necessary and appropriate to address noncompliance including, but not limited to, the installation of best management practices, additional self-monitoring, and/or disconnection from the MS4.
 - b. The Director is empowered to enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with any person responsible for noncompliance. Such orders shall include specific action to be taken by the person to correct the noncompliance within a time period specified by the order.

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

- c. Notwithstanding any other remedies or procedures available to the city, any person who is found to have violated any provision of this chapter, or any NPDES permit or any order issued under this chapter, may be assessed an administrative penalty as follows:
 - 1. The minimum administrative penalty for any violation shall be no less than \$500.00 per day the violation is maintained and not more than \$2,500.00 per day for each day the violation is maintained;
 - 2. Failure to obtain required NPDES permit: up to \$2,500.00 per violation;
 - 3. Failure to prepare stormwater pollution prevention plan: up to \$2,500.00 per violation;
 - 4. Failure to install best management practices: up to \$2,500.00 per violation;
 - 5. Failure to maintain best management practices: up to \$2,500.00 per violation;
 - 6. Failure to perform required sampling and testing or provide testing reports: up to \$1,000.00 per violation.
 - 7. Commencement of construction without an approved drainage plan: up to \$2,500.00 per day of noncompliance;
 - 8. Failure to comply with approved drainage plan: up to \$2,500.00 per day of noncompliance;
 - 9. Failure to maintain storm water management facilities: up to \$2,500.00 per day of noncompliance.
- d. Each day on which noncompliance shall occur or continue shall be deemed a separate and distinct violation.
- e. Separate but multiple violations (except for violations under subsection C.3.d) by the same person(s) on one or more sites within any period of twelve consecutive months shall be cause to double the amount of penalty assessed under section C.3.c above for each violation after the first.
- f. Upon assessment of any administrative penalty, the city will bill the violator for said charge and the Director shall have such collection remedies as are available at law.

(Ord. No. 44-123 § 10; Ord. No. 48-904, § 10, 11-16-2010)

Sec. 16.32.110. - Applicability of enforcement actions.

- A. Illegal dumping will be subject to criminal penalties process.
- B. Illegal connections will be subject to either the criminal or administrative penalty processes.
- C. Industrial violations will be subject to the administrative penalty process.
- D. Individual building sites not requiring a federal or state NPDES permit will be subject to the criminal penalty and the stop work order processes; however, any owner or contractor of such site found with multiple violations of this chapter will also be subject to the administrative penalty process.
- E. Individual building sites requiring a federal or state NPDES permit will be subject to the administrative penalty process.
- F. Subdivision developers in subdivisions not requiring a federal or state NPDES permit will be subject to the criminal penalty and stop work order processes; however, any such developer found with multiple violations of this chapter will also be subject to the administrative penalty process.

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

- G. Subdivision developers of subdivisions requiring a federal or state NPDES permit will be subject to the administrative penalty process.
- H. City contractors and utility companies working on projects not requiring a federal or State NPDES permit will be subject to the criminal penalty process.
- I. City contractors and utility companies working on projects requiring federal or state NPDES permit will be subject to the administrative penalty process.
- J. Property owners, subdivision developers, commercial and industrial developers, and city contractors working on new developments and redevelopments requiring compliance with the City of Wichita storm water quality or quantity management standards will be subject to the criminal penalty, stop work order and administrative penalty processes.
- K. Owners of storm water management facilities and systems that are required to be maintained in accordance with an approved Operations and Maintenance Plan will be subject to the criminal penalty and administrative penalty processes.

(Ord. No. 44-123 § 11; Ord. No. 48-904, § 11, 11-16-2010)

Sec. 16.32.120. - Hearing and appeal.

- A. Persons who desire to appeal an administrative requirement, violation or penalty invoked under this chapter may request a hearing and appeal as follows:
 - 1. Any party affected by a penalty, order, directive or determination issued or made, pursuant to this chapter may, within fourteen days of the issuance of such penalty, order, directive, or determination request a hearing before the Director to show cause why such should be modified or made to not apply to such person. Such request shall be in writing and addressed to the Director of Public Works and Utilities at 455 North Main Street, Wichita, Kansas, 67202. The Director or his designee shall hold the requested hearing as soon as practical after receiving the request, at which time the person affected shall have an opportunity to be heard. At the conclusion of the hearing, the Director shall issue a written response to the person requesting the hearing affirming, modifying, or rescinding the penalty, order, directive, or determination issued or made.
 - 2. Any party aggrieved by the decision of the Director may appeal such decision to the City Council within fourteen days of receipt of the decision by filing notice of appeal with the city clerk. Upon hearing, the City Council may affirm, modify, or reverse the decision of the Director.

(Ord. No. 44-123 § 12; Ord. No. 48-904, § 12, 11-16-2010)

Sec. 16.32.130. - Enforcement personnel authorized.

- A. The following personnel employed by the city shall have the power to issue notices of violations, criminal citations and implement other enforcement actions under this chapter:
 - 1. All deputies under the supervision of the Superintendent of the Office of Central Inspections;
 - 2. All authorized personnel under the supervision of the Director of Public Works and Utilities;
 - 3. All authorized personnel under the supervision of the City Health Officer.

(Ord. No. 44-123 § 13; Ord. No. 48-904, § 13, 11-16-2010)

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

Sec. 16.32.140. - Other legal actions.

Notwithstanding any other remedies or procedures available to the city, if any person discharges into the MS4 in a manner that is contrary to the provisions of this chapter, or any NPDES permit or order issued hereunder, the city attorney may commence an action for appropriate legal and equitable relief including damages and costs in the district court of Sedgwick County. The city attorney may seek a preliminary or permanent injunction or both which restrains or compels the activities on the part of the discharger.

(Ord. No. 44-123 § 14)

Sec. 16.32.150. - Falsifying information.

Falsifying information is a separate offense and deemed a misdemeanor. Any person who knowingly makes false statements, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this chapter or any NPDES permit, or who falsifies, or tampers with any monitoring device or method required under this chapter shall, upon conviction, be punished by a fine of not more than one thousand dollars or by imprisonment for not more than six months, or by both.

(Ord. No. 44-123 § 15)

Sec. 16.32.160. - Supplemental enforcement actions.

- A. Performance Bonds. Where necessary for the reasonable implementation of this chapter, the director may, by written notice, order any owner of a source of stormwater discharge associated with construction or industrial activity effected by this chapter to file a satisfactory bond, payable to the city, in a sum not to exceed a value determined by the director to be necessary to achieve consistent compliance with this chapter. The city may deny approval of any building permit, grading permit, subdivision plat, site development plan, or any other city permit or approval necessary to commence or continue construction or industrial activity at the site, or to assume occupancy, until such a performance bond has been filed.
- B. Liability Insurance. Where necessary for the reasonable implementation of this chapter, the director may, by written notice, order any owner of a source of stormwater discharge associated with construction or industrial activity effected by this chapter to submit proof that it has obtained liability insurance, or other financial assurance, in an amount not to exceed a value reasonably determined by the director, that is sufficient to remediate, restore, and abate any damage to the MS4, the waters of the United States, or any other aspect of the environment that is caused by the discharge.

(Ord. No. 44-123 § 16)

Sec. 16.32.170. - Severability.

If any provision of this chapter is invalidated by any court of competent jurisdiction, the remaining provisions shall not be affected and shall remain in full force and effect.

(Ord. No. 44-123 § 17)

- CODE OF ORDINANCES CITY OF WICHITA, KANSAS
Title 16 - SEWERS, SEWAGE DISPOSAL AND DRAINS

CHAPTER 16.32. - STORMWATER POLLUTION PREVENTION

FOOTNOTE(S):

⁽⁶⁹⁾ **Editor's note**— Ordinance 44-123, which enacted Chapter 16.32, is effective on January 1, 1999. ([Back](#))

⁽⁷⁰⁾ **Editor's note**— Ordinance 44-123, which enacted Chapter 16.32, is effective on January 1, 1999. ([Back](#))

Hardesty, James

From: Lewis, Rebecca
Sent: Wednesday, April 23, 2014 4:32 PM
To: Lewis, Rebecca
Subject: WIRE/WRAPS (Clean Streams Wichita)

Please try and attend Monday's WIRE/Wichita Clean Streams (aka RiverCity WRAPS) Stakeholder meeting on Monday at 5:30. There are lots of opportunities to get involved, including Riverfest Flotilla, Rain Barrel Sales, planting events and much more. Hope to see you there. Also don't forget this Saturday's River Trash Roundup event. Also if you have any free time, Celebrate Earth Day at the Zoo tomorrow, April 24th.



KEEP'R CALM AND PUT TRASH IN ITS PLACE

April 26 • 9:00 a.m. – Noon

2014 ARKANSAS RIVER TRASH ROUNDUP

Bring your Friends, Family, Coworkers!

Registration starts at 8:30 AM at South End of Lawrence-Dumont Stadium Parking Lot

- Like us on Facebook at Arkansas River Trash Roundup (Print off the waiver, read & sign it—Bring it with you to get registered)
- For additional information, contact: Dianna_McMillan@cargill.com
- For Spirit Aerosystems Employees please contact: Brenda_K_Reiling@spirit.aero.com

Transportation provided by:  

Sponsors:      

Free T-shirts • Free Food • Clean River

First Come, First Served—While Supplies Last

Rebecca Lewis
City of Wichita

Public Works & Utilities
Sewage Treatment Superintendent
316-303-8702