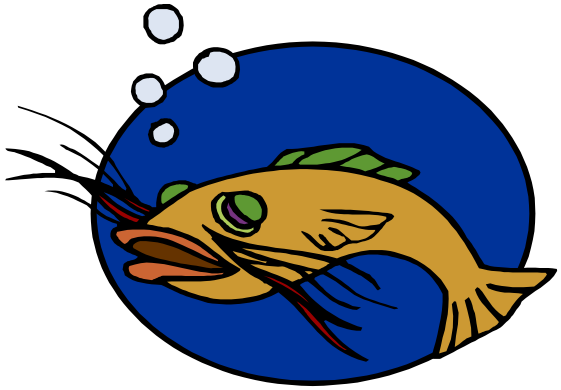
Erosion and Sediment Control

A Guide for Individual Building Sites

Abilene: Our Environment, Our Water

Abilene is a growing city that is fortunate to have several lakes (Fort Phantom, Kirby, Abilene, Lytle) that provide the city with diverse water sources. All stormwater runoff in the City of Abilene eventually empties into Lake Fort Phantom, which is Abilene's primary source of drinking water. Fort Phantom is supplied through several creeks (Catclaw, Cedar, Elm, Little Elm, and Rainey) that flow through the City of Abilene. These creeks carry stormwater to Fort Phantom by way of conveyances (roadways, flumes, storm drains, borrow ditches, etc.) located throughout the City. As a growing community, it is the City of Abilene and its resident's responsibility to protect the water quality that serves in keeping Abilene a healthy environment for the present and our future.



Construction activities are the principal contributors of a major stormwater contaminant – dirt. Therefore, developers and builders must implement and maintain appropriate sediment and erosion controls to diminish the impacts of silted runoff on local conveyances. The city will conduct routine inspections to confirm that effective controls are implemented to deter pollutant stormwater runoff.

Why is Dirt Considered a Contaminant?

- Silted runoff is highly turbid or "murky". This turbidity can choke out aquatic life and hinder photosynthesis.
- As dirt settles, it can smother fish eggs and other bottom dwelling organisms.
- Many pollutants readily adhere to dirt and will be washed into our lakes with the sediment.
- Silt settles out in slow moving sections of creeks and is a major cause of concern of flooding in the City. Additionally, the accumulation of silt in lakes and creeks may require expensive dredging activities.

Protecting Water Quality

Construction activities without proper erosion and sediment control protection can contribute large amounts of sediment and other pollutants to streams, creeks, and lakes.

Following the Law

It is illegal to discharge sediment-laden water and other construction-related pollutants to City water conveyances, storm sewers or waterways. These laws are established by the City of Abilene's Ordinance, the Texas Commission on Environmental Quality (TCEQ), and the U.S. Environmental Protection Agency (EPA).

Common Pollutants at Construction Sites

- Sediment from grading operations and bare soil
- Concrete wash from tools and trucks
- Sanitary waste and pathogens from porta-potties
- Debris from discarded building materials
- Oil and grease from equipment and vehicles
- Paint, chemicals and solvents
- Litter

Understanding Your Legal Liability

Construction projects that disturb one acre of land or more, or are part of a larger common plan of development (e.g. sub-division, strip-mall, shopping center) are subject to permit requirements. A Stormwater Pollution Prevention Plan (SWP3) is required to receive a permit. SWP3's must identify practices that will reduce erosion, prevent sediment loss from construction sites and address pollution prevention.

Under the Clean Water Act, it is illegal to have a point source discharge of pollutants (soil is considered a pollutant) to a water of the United States that is not authorized by a permit. In the case of construction site activities the corresponding permit is the TCEQ's TPDES General Permit TXR150000. Information explaining this permit can be found at the following websites:

www.tceq.state.tx.us/nav/permits/wq_construction.html

www.tceq.state.tx.us/assistance/sblga/sw.html

www.cicacenter.org/stormwater.html

While the ownership of residential property may change hands during development, compliance is required until all construction is completed. Stormwater permits require that erosion and sediment controls are in place on each lot during the home construction phase. The homebuilder is responsible for installing temporary stabilization or full stabilization (70% of disturbed land stabilized) prior to the transfer of the ownership of the home to the buyer. The homebuilder must also inform the homeowner of the need for, and benefits of, final stabilization

Does my construction site activity require a Stormwater permit?

Any construction activity that disturbs one acre of land (through clearing, grading, excavating, demolition or stockpiling) must obtain permit coverage through the TCEQ. Remember to count the acreage of the entire project, even if the project is phased with less than one acre disturbed at any given time. There are a few exceptions when permit coverage is not required. To determine whether your site requires a permit please visit the website provided in the previous section.

Stormwater Pollution Prevention Plan (SWP3)

If you have determined that your construction site requires permit coverage under the TCEQ, a site specific SWP3 must be prepared and signed prior to submittal of the Notice of Intent (NOI) and/or a Construction Site Notice (CSN). The SWP3 shall contain Best Management Practices (BMPs) that the operator will implement to effectively lessen the pollutants discharged during stormwater events. The SWP3 must comply with the terms and conditions of the General Permit. These websites are available to aid the operator in preparing a site-specific SWP3.

www.epa.gov/reg3wapd/stormwater/pdfs/construction.pdf

www.tceq.state.tx.us/assistance/sblga/sw.html

www.epa.gov/npdes/pubs/owm0307.pdf

Notice

Prior to commencement of construction, all parties that meet the definition of operator as defined by the TPDES TXR150000 shall submit required notification which may include a copy of the Notice of Intent filed with TCEQ and/or a CSN. Copies of these notices shall be provided to the City of Abilene Stormwater Utility Division. The NOI can be found at:

www.tceq.state.tx.us/assets/public/permitting/waterquality/forms/2022.pdf

The CSNs can be found at:

www.tceq.state.tx.us/assets/public/permitting/waterquality/attachments/stormwater/txr150000.pdf

Site Inspection

It is the responsibility of the operator to assure that the BMPs implemented are inspected at least once every fourteen days and within 24 hours after a precipitation event of 0.5 inches or greater, or weekly.

Additionally, the City of Abilene will perform construction site inspections to evaluate whether BMPs established in the SWP3 are effectively implemented. The inspector will also ensure that requirements established in the General Permit are being put into operation. The City will indiscriminately conduct inspections following receipt of the NOI/CSN, citizen complaint and/or following rainfalls of greater than 0.5 inches.

Non-Compliance

If during a City inspection it is determined that the construction site is in non-compliance with the Permit or City ordinance; enforcement actions will be imposed. The enforcement procedures will be implemented according to the following schedule:

- *Correspond with the site operator to achieve voluntary compliance.*
- *Issuance of a stop-work order*
- *Monetary penalties*

Terminating Coverage

Upon completion of the construction activity it is the responsibility of the site operator to complete final stabilization activities, which were proposed in the SWP3.

The primary operator of a large construction site shall submit a Notice of Termination (NOT) to TCEQ and the operator of the MS4 (City). The NOT may be found at the websites provided in previous sections. The secondary operator of a large construction site or a small construction site operator shall remove the CSN and submit the completed CSN to the City.

Understanding the Differences: Sediment and Erosion Controls

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

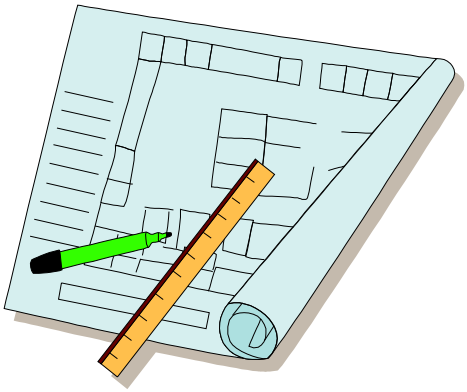
Sediment Control Captures
Sediment control practices are used to capture eroded or eroding sediments and keep them on-site and away from surface waters. Practices include silt fences, sediment basins, compost berms, and compost socks.

Both erosion and sediment control practices are required on construction sites to prevent excessive sediment from leaving the site.

Preventing Erosion

Evaluate the Site

Every building site is unique and should be evaluated for potential erosion and sediment loss. It is not difficult to predict where soil will erode. Rain falling and water flowing over bare ground will create erosion. Understanding the drainage on the site and where storm water runoff will flow is critical in planning for erosion control.



Re-vegetate the Site

Prevent erosion on individual lots with ground cover. The soils should not be left bare during home construction. Sites should be covered with straw mulch and/or vegetation to prevent erosion from occurring. For smaller lots, rolled erosion control products (RECP's) may be used to prevent erosion and keep the streets clean while homes are being built. A sediment barrier is needed until vegetative cover is established.

Grass mulching is applied to stabilize exposed soils and to reduce stormwater runoff velocity

Protecting Streets and Inlets

Rock Entrances

Rock entrances are a best management practice (BMP) used to reduce tracking of sediment onto roadways. All traffic off and onto a construction site should use rock entrances. Routing traffic onto the driveway will protect areas with seed and mulch along the curb and prevent sediment loss into the street and storm drain inlets.

Storm Drain Inlet Protection

Special care should be given to street storm drain inlets, as they are a direct conduit to local waterways. Inlet protection should be the last line of defense for protecting local streams and surface water.

PHOTO: KRISTAR

Effective Individual Lot Best Management Practices

Temporary Mulching and Seeding

- Establish vegetation to protect soils from erosion and keep sites clean.
- Protect exposed soils from erosion until vegetation is established.
- Use straw or wood mulch, compost, hydroseeding, or RECP's when temporary seeding is not practical. Mulch can be utilized in any weather at any time.

Sediment Control Practices

Install straw wattles (fiber rolls), silt fences, compost socks, or other sediment controls on the contour to prevent concentrated flow and protect perimeters.

Construction Entrances and Tracking

- As vehicles leave construction sites, sediment is tracked onto adjacent roads. Those pollutants can get washed into storm drains, are a nuisance to drivers and vehicles, and can cause accidents.
- Stabilize driveways with a rock base over geotextile fabric to prevent tracking onto roadways.
- Immediately clean up tracking in streets with brooms, shovels, or a skid loader. Do not use water to clean pavements.

Effective Individual Lot Best Management Practices (cont'd)

Concrete Washout

- Use a designated concrete washout area to avoid the introduction of concrete wash water from entering storm drains.
- Maintain the pollutant discharge controls around the concrete washout area and dispose of concrete waste on a regular basis.

An example of a self-installed concrete washout structure.

Waste Containment

- Keep your site clean by picking up construction waste each day. Potential pollutants should be stored so they do not become sources of stormwater contamination
- Building material waste can be disposed of at one of the local regional landfills. Call for questions regarding asbestos and other hazardous construction materials.
- Oil-based paints, thinners, glues, and other hazardous materials should be disposed of properly at an approved hazardous waste center. Do NOT pour these items on the ground or bury them.

Soil Stockpile Placement and Protection

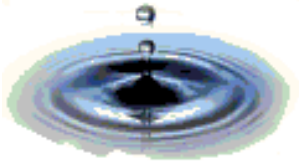
Place stockpiled soil away from critical areas such as creeks, drainage ways, streets, and storm drain inlets. Temporarily seed or mulch the stockpiles, or areas around the stockpiles, immediately to protect against erosion. Use sediment control around the base of stockpiled soil.

Unprotected stockpiles can cause sediment to wash down the street.

Training and Inspections

- Site must be inspected weekly or every fourteen days and within 24 hours after each precipitation event of 0.5 inches or greater. Maintain BMP's on a regular basis and replace as necessary.
- Train and educate on-site construction crews to better understand the effects of stormwater pollution from construction projects and learn ways to prevent or minimize pollution on the job.

Sediment is the biggest source of pollution from construction sites, but other pollutants include concrete washout, petroleum products, construction chemicals and construction debris



Our Environment, Our Water

Take it Personally!

For Additional Information and Assistance

City of Abilene

Stormwater Utility Division
P.O. Box 60
555 Walnut Street, Ste. 207
Abilene, Texas 79604-0060
(325) 676-6281
www.abilenetx.com/stormwaterservices

CITY OF ABILENE
STORMWATER UTILITY

Texas Commission on Environmental Quality
(Region 3 Local Office - Abilene)

Stormwater & Pretreatment Team
Texas Commission on Environmental Quality
1977 Industrial Boulevard
Abilene, Texas 79602
(325) 698-9674

Texas Commission on Environmental Quality
(State Office - Austin)

Stormwater & Pretreatment Team
Texas Commission on Environmental Quality
P.O. Box 13087, MC-148
Austin, Texas 78711-3087
(512) 239-4671

TCEQ