Caltrans
Maintenance
STORM WATER POLLUTION PREVENTION BULLETIN
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This bulletin is published monthly by the Storm Water Compliance Review Task Force to support the Caltrans maintenance staff in its efforts to achieve and maintain compliance with storm water pollution prevention regulatory requirements.

Temporary Sediment Controls for Maintenance Activities

Sediment control is a key element in any storm water pollution prevention program. Sediment introduced into storm water is eventually transported to rivers, lakes, reservoirs, and the ocean. Once deposited into a water system, excessive sediment upsets the natural structure and balance of the habitat. Aquatic plants die because sunlight cannot penetrate through cloudy water. Fish habitat is destroyed as silt fills in gravel beds and hiding areas that are critical for spawning and survival.

Potential sources of sediment from maintenance activities include:

- Unpaved bare soil areas lacking protection from storm water run-on and runoff.
- Stockpiles of erodible materials that cannot be covered, such as sand, cinders, sweeper waste, and slide material and debris.

The best way to control sediment is first by permanently stabilizing erodible areas using controls such as vegetative cover; paving may be considered for high-traffic areas in maintenance yards. And secondly by installing permanent sediment controls such as containment berms and clarifiers. Interim or temporary controls should be considered when permanent solutions are unavailable or delayed. This bulletin discusses temporary controls that can be used until permanent controls are constructed.

Slow the Flow/Dam the Water

The purpose of sediment control measures is to slow or intercept the flow of sediment-laden storm water so that sediment settles or is filtered out.The ponding that results from this process can cause flooding, so care should be taken in the selection and placement of these BMPs.

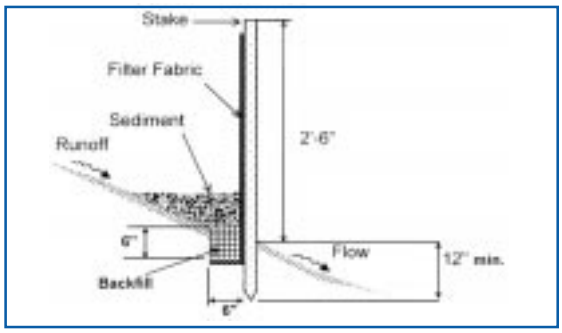
Common **temporary** Best Management Practices (BMPs) designed for this purpose include:

- Silt fences
- Straw bale barriers
- Sand bag/gravel bag barriers
- Storm drain inlet protection

Silt Fences

Silt fences are constructed of permeable fabric designed to slow and pond water so that sediment is trapped by the fence. If the silt fence does not pond water, it will not be effective and another BMP, or additional BMPs, should be implemented. Installation guidelines for silt fences include:

- Install the fence on a level contour on an unpaved surface.
- Key in the fabric properly, six inches below ground, and six inches parallel to the ground towards the flow of water (see figure).
- Attach wood fence posts a maximum of 10 feet apart. (Many silt fence products come with posts pre-attached)
- Drive fence posts into the ground a minimum of 12 inches.
- Turn the silt fence up at the ends to keep water from flowing around sides or use sand bags or straw bales at the edges to ensure water ponding.



The key to proper installation of a silt fence is burying the fabric a minimum of 6 inches.

Straw Bale Barriers

A straw bale barrier is also intended to pond storm water flow and trap sediment. To be effective, straw bale barriers should be installed as follows:

- Tightly abut adjacent bales; fill any gaps between bales with straw.
- Ensure that the bales are bound by wire, nylon, or polypropylene string. Jute or cotton binding is unacceptable. Place bales on end to avoid premature rotting of the wire.
- Embed bales a minimum of four inches if installed on an unpaved area. Drive two stakes through each bale, with one angled toward the previous bale to ensure a tight fit.
- Straw bales should be replaced every 3 months or sooner if deteriorated.

Sand Bag/Gravel Bag Barriers

Sand bag/gravel bag barriers should be installed as follows:

- Abut bags closely and eliminate gaps.
- When stacking stagger each additional row similar to normal bricklaying bond.
- For each additional vertical row, add an additional row to the width.

Storm Drain Inlet Protection

Although it is best to trap sediment at the source, it may be necessary to provide temporary sediment control at the drain inlet. Silt fences, straw bale barriers, and sand bag/gravel bag barriers are effective measures for this purpose. These guidelines apply to sediment controls for drain inlets:

- Install drain inlet protection only when ponding will not encroach into highway traffic or onto erodible slopes. During ***Storm Patrol*** be on the lookout for flooding caused by sediment controls.
- Consider the traffic problems of installing sediment controls in operation areas.

Inspect-Clean-Maintain

Remember that sediment controls, temporary or permanent, must be inspected, cleaned, and maintained regularly. Temporary sediment controls should be removed when not in use after sediment is cleaned up.

Additional information is available in the Caltrans Maintenance Manual, Chapter C-6, or from your District Maintenance Storm Water Coordinator. Questions or comments may be directed to Jack Broadbent, Maintenance Storm Water Coordinator, (916) 653-0361