

CHAPTER 5

DISPOSING OF THE SPOIL

Maintenance activities such as grading, culvert cleaning, slide debris removal and snow removal, require stable locations where excess spoil can be stored without contributing sediment to streams. Sites should be located and prepared before the need for disposal areas arise. The five counties involved with this manual are currently inventorying existing and potential disposal sites as part of the County Road Erosion Inventory Program. The spoil should be disposed of in a way that will prevent erosion. Disposal sites should be maintained periodically, depending on the season and type of material.



Temporary disposal sites, or stockpiles, are useful when materials can be reused for other County maintenance or construction activities. Stockpiles also require periodic maintenance to ensure no discharge into the stream system.

The primary Goals for this chapter are:

- Maintain public safety and open roads for the traveling public.
- Prevent or minimize delivery of sediment and chemicals to streams.
- Prevent or minimize the interruption of normal runoff into streams.
- Protect aquatic and riparian habitat.

5-A Spoil Disposal

5-B Stockpiling for Reuse

5-A

SPOIL DISPOSAL

Introduction:

Spoil disposal includes site selection, site permitting, maintaining the site to control erosion, and the temporary or final closure of the disposal site.



5-A-1 Site Selection

5-A-2 Disposal Site Maintenance

5-A-3 Disposal Site Closure

Description: This activity involves the selection of sites in advance of the need for long-term and short-term stockpiling of materials for County maintenance activities and disposing of excess materials from excavations, grading and culvert basin cleaning. The general watershed criteria for selecting any disposal site is a site where the material will not erode into any part of the channel network, and where it will not initiate a formerly dormant landslide.

Environmental Concerns:

- Filling wetlands with spoil material.
- Discharge of sediment or organic material into the stream or storm water discharge system.
- Damage to endangered or threatened plant species on site.
- Slope stability of both the disposal site and the spoil pile.

Best Management Practices:

1. Determine the location of existing disposal sites, potential disposal sites, and locations of significant spoil generation along county roads. Incorporate data collected from County Road Erosion Inventory as much as possible.
 - a. Conduct site investigations of existing and potentially suitable County disposal sites. Site investigations should include the disposal area size, distance to watercourses, potential slope instabilities, listed species habitat, archaeological sites, nearby residential areas, access, and other limiting factors.
 - b. Prepare a map and data set indicating sites (existing and potential) with acceptable site characteristics (see below). Prioritize acceptable sites and initiate the permitting process.
 - c. Develop site plans for sites adjacent to or near riparian areas or streams to identify erosion and sediment control needs, and to ensure stability of the material.
2. Follow these acceptable site characteristics in the site election & design process:
 - a. Seek a stable site where sediment cannot reach the stream during any high water event.
 - b. Avoid adjacent riparian corridors or any area within the 100-year floodplain.
 - c. Avoid all wetland sites as these sites are protected from disposal activities and permits will be required and may not be granted.
 - d. Avoid placing spoil on unstable slopes, where the added weight could trigger a land movement. Excessive loading of clay or silt soils could also trigger a failure.
 - e. Use wide, stable locations such as rock pits, ridges, and benches as places to dispose of fill. Avoid locations where ground water emerges or a thick organic layer is present.
 - f. Avoid sites with endangered or threatened plant species. Search the California Natural Diversity Database [[//www.dfg.ca.gov/whdab/html/cnddb.html](http://www.dfg.ca.gov/whdab/html/cnddb.html)] for any known listed plant sites in the area. Seek site evaluations by qualified botanists during the appropriate season before selecting a new site.

Permits Possibly Needed:

- A conditional use permit is often required from the County Planning Department. Coastal development permit may be needed in coastal zone.

- Grading permit may be required by County under Grading Ordinance.
- County Floodplain Development permit if located within 100 year floodplain
- An agreement must be executed with the landowner, such as an encroachment permit. USFS or BLM special use permits may be required if the site is on federal land; surveys of additional species of concern may be required by those agencies.
- Permits from State and Federal agencies are usually not required as long as waters outside of the “ordinary high water” zone are avoided.



A potential spoil disposal site identified in the County Road Erosion Inventory

DISPOSAL SITE MAINTENANCE 5-A-2

Description: This action involves disposing excess materials from excavations, grading and culvert basin cleaning at designated long-term disposal sites. Once the materials are properly disposed of, the site should be maintained on a regular basis. Long-term site maintenance is the emphasis here. See 5-B for short-term stockpile maintenance of materials intended for reuse.

Environmental Concerns:

- Discharge of sediment and organic material into stream or storm water drainage system.
- Introduction of noxious weeds, invasive plants, or plant disease to the site from imported materials.

Best Management Practices:

1. Avoid placing excess spoils into stream courses and adjacent riparian zones where it could potentially result in sediment delivery to streams.
2. Drain spoil piles to prevent the concentration of flow and to prevent rill and gully erosion.
3. Spread material not to be re-used in compacted layers and generally conforming to the local topography.
4. Separate organic material (e.g., roots, stumps) from the dirt fill and store separately. Place this material in long-term, upland storage sites, as it cannot be used for fill. Leave all organic material that can safely remain in adjacent riparian zones. Make stored woody debris available to others as large wood for placement in streams for habitat improvement.
5. Store “clean” material in a short-term disposal site (stockpile) if it will likely be re-used for fill or shoulder widening projects. Verify if material can be used for shoulder widening. [See: 5-B-1]
6. Where feasible, recycle asphalt material in embankments and shoulder backing. Place these materials where they will not enter the stream system. Asphalt that is 5 years old is considered “inert” (that is, all oils washed off).
7. Encourage stockpiling and reusing concrete materials when possible. [See: 5-B-1]

Permits Possibly Needed:

- Permits from State and Federal agencies are usually not required as long as wetlands and ordinary high water areas are avoided.
- Compliance with County Noxious Weeds Ordinance.
- A conditional use permit is often required from the County Planning Department.
- An agreement must be executed with the landowner. USFS permits may be required if the site is on national forest land.

Description: This action involves temporary and permanent closure of a disposal site. Temporary closure of a disposal site allows for reopening of the site if necessary. Permanent closure of a disposal site occurs when no additional material can be added to the site.

Environmental Concerns:

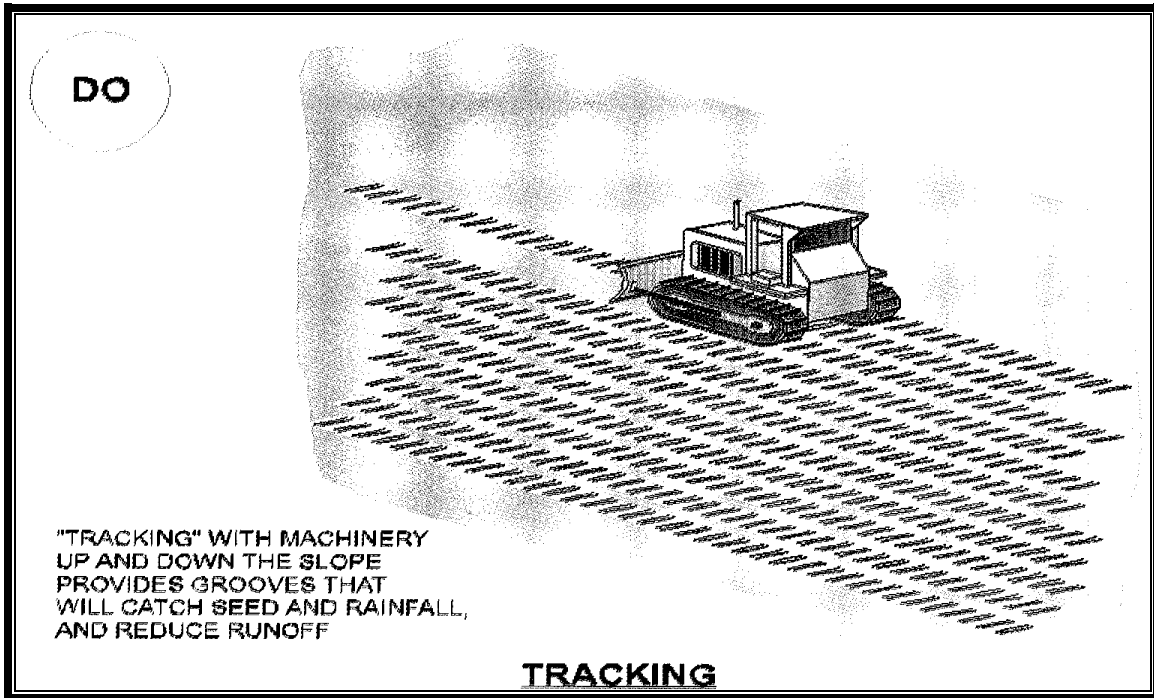
- Discharge of sediment and organic material into a stream or storm water drainage system.
- Introduction of noxious weeds or invasive plants to the site from imported materials.
- Slope stability of the closed disposal site.

Best Management Practices:

1. Do not add excess unusable material to permanently closed sites.
2. Spread material not to be re-used in compacted layers, generally conforming to the local topography.
3. Design the final disposal site reclamation topography to minimize the discharge of concentrated surface water and sediment off the site and into nearby watercourses.
4. Cover the compacted surfaces with a 6-inch layer of organic or fine-grained soil, if feasible.
5. After placement of the soil layer, track walk the slopes perpendicular to the contour to stabilize the soil until vegetation is established. Track walking creates indentations that trap seed and decrease erosion of the reclaimed surfaces. (See figure on next page.)
6. Revegetate the disposal site with a mix of native plant species. Cover the seeded and planted areas with straw compost, mulched with straw at a rate of 1 to 1 ½ tons per acre. Apply jute netting or similar erosion control fabric on slopes greater than 2:1 if site is erosive.

Permits Possibly Needed:

- Permits from State and Federal agencies are usually not required as long as “waters of the U.S.” are avoided.
- Compliance with County Noxious Weeds Ordinance.
- Notify permitting agencies and landowner that site is permanently closed.



Source: San Francisco RWQCB (1999) Erosion & Sediment Control Field Manual

5-B

STOCKPILING

Introduction

Temporary disposal sites, or stockpiles, are useful when materials can be reused for other County maintenance or construction activities. Proper management of stockpiles on site eliminates or minimizes the discharge of pollutants to the storm water drainage system and watercourses. Temporary stockpiling of certain spoil, such as asphalt or fine-grained sediments, may necessitate stringent drainage-related controls during the wet season.



5-B-1 Stockpile Maintenance

STOCKPILE MAINTENANCE 5-B-1

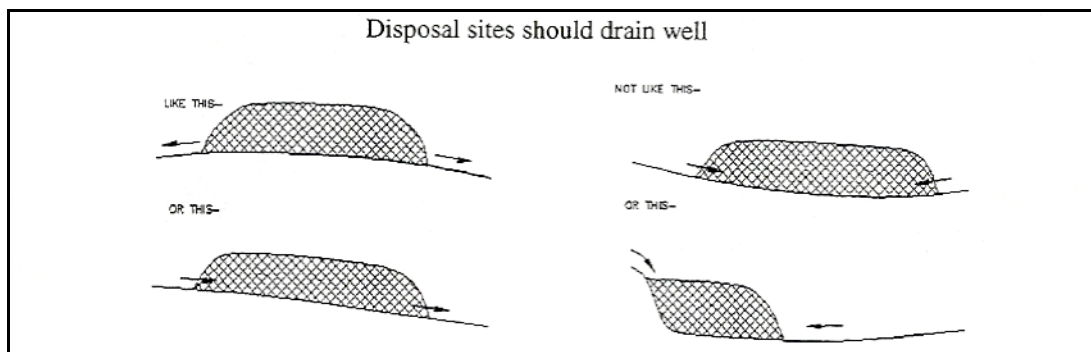
Description: Stockpiled materials at approved disposal sites, even those stored for a short time, need to be maintained. Some sites, particularly of clean fill material such as gravel and crushed rock, may need only short-term maintenance as the spoil is usually reused for other projects. All stockpile sites need to be “storm-proofed” to prevent slumping or erosion of stored material into the stream system.

Environmental Concerns:

- Discharge of sediment, organic material, concrete, or asphalt into the stream or storm water discharge system.

Best Management Practices:

1. Keep temporary disposal sites out of wetlands, adjacent riparian corridors, and ordinary high water areas as well as high risk zones, such as 100-year floodplain and unstable slopes.
2. Anticipate sufficient storage area with no risk for sediment delivery for piles that may slump. Stress cracks indicate that the pile is at risk of slumping. *See figure below.*
3. Follow BMPs in 6-D-4 (Outdoor Storage of Raw Materials), where possible.
4. Reuse and recycle concrete, asphalt, and other construction waste when possible.



Source: Choctawhatchee, Pea & Yellow Rivers Watershed Management Authority (2000)

Permits Possibly Needed:

- Discharge of pollutants into stream from stockpiles can lead to stiff fines from RWQCB or DFG.

Note: RWQCB issued a cleanup and abatement order (CAO 99-77) to the USFS for the discharge and threatened discharge of sediment from a 15,000 cu. yd. stockpile near a tributary of the South Fork Trinity River in 1999, with civil penalties of \$10,000 per day and \$2,000 per cubic yard (\$10 per gallon).

- Caltrans was also cited for having stockpiles in the 100-year floodplain.