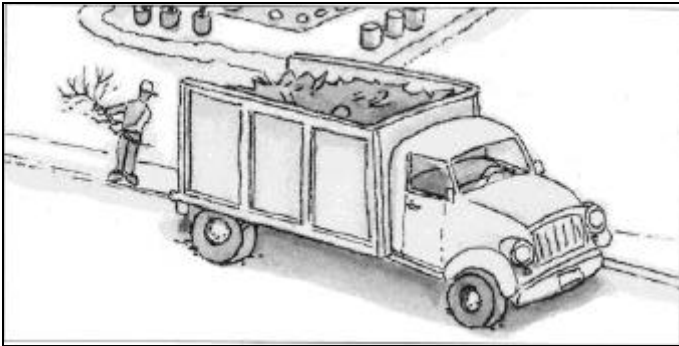


## Vegetation and Debris Management

## Debris Removal



Source: BASMAA

- Pollution Prevention
- Pollution Control
- Habitat & Wildlife Protection
- Erosion Control
- Public Safety

### *Description*

Methods for removing debris from channels to minimize pollution, protect habitat/wildlife, provide for public safety, and minimize erosion.

### *Applicability*

- This applies to any flood control channel activity that generates by-products, residuals, or wastes.
- Refer to BMPs EV-1, EV-2, NR-3, and VDM-2 for more information related to this BMP.

### *Approach and Standards*

- As appropriate, use small rubber tracked vehicles in the channel bottom to carry debris to the designated collection point. Avoid using heavy equipment in the channel bottom for debris removal as much as possible.
- When possible, pick up debris with equipment operated from the top of the bank or access road.
- Deposit woody debris or vegetation collected from the channel in areas that will not cause storm-related problems (e.g., away from storm drain inlets, drainage facilities, and other watercourses).
- When necessary divert runoff that comes into contact with solid waste into appropriate control measures such as trash racks in order to remove waste and debris. (See BMPs WD-1, WD-2, WD-3).
- Manage construction by-products, residuals, and other wastes by stockpiling and properly removing (see BMP SC-1). Leave the site cleaner than before the work started by removing all litter, construction containers, and other work related materials.

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- Consider leaving stumps in place after trees are cut to create essential creek habitat. If leaving the stump in place, position and anchor the stump into the bank to minimize movement. For fallen trees, stumps can be left if the bark is stabilized (when trees fall, their root structure tears out of the bank and can contribute to bank stabilization).
- Only remove from creeks or channels downed wood that is loose and can be washed downstream or that obstructs flow or diverts flow into a bank. Downed wood could potentially protect tree roots from being undermined.
- Salvage or recycle useful vegetation debris, packaging, and surplus building materials when practical. For example, native trees and shrubs from land clearing can be used as a brush barrier, or converted into wood chips, then used as mulch on graded areas (see BMPs VR-1, and VDM-3). Wood pallets, cardboard boxes, and construction scraps can also be recycled.
- Collect trash and rubbish regularly around the project site, daily during rainy and windy conditions.

### ***Limitations***

- Temporary stockpiling of certain construction wastes may necessitate extra drainage-related controls during the wet season (see BMP SC-1).

### ***Requirements***

### **Maintenance**

- Maintenance workers should perform daily good housekeeping at work site.
- Replace or exchange leaking dumpsters.
- Properly cover stockpiled material to avoid erosion of the stockpile.
- As appropriate, properly cover sediment trapping devices like the berm of a silt fence, to avoid sediment transport.
- Arrange for adequate debris disposal schedules to ensure that dumpsters or drop boxes do not overflow.
- Securely cover dumpsters or drop boxes used to collect debris at night and during rainy weather.

### **Costs**

Additional staff time and disposal costs may be necessary depending on the site. Actual additional costs are not known.

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### **Training**

- Instruct employees on identification of solid waste and hazardous waste.
- Train employees on how to respond to hazardous waste found at work sites.
- Educate employees on solid waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures.
- Train communities on the detrimental effects of dumping debris and garbage in creeks and urban flood control channels.

### ***References***

Santa Clara Valley Water District, "BMP/PMM List," February, 1999.

Caltrans, *Caltrans Storm Water Quality Handbooks, Construction Contractor's Guide and Specifications*, prepared by Camp Dresser & McKee, Woodward-Clyde, Aguilar Engineering, Psomas & Associates, MK Centennial, CD 13(2), April 1997.

California Regional Water Quality Control Board, San Francisco Bay Region, *Erosion and Sediment Control Field Manual*, 1998.