

## 4.5-l TOPSOIL SALVAGE

Alternative Names: Topsoil Stockpiling

### DESCRIPTION

This practice provides the proper means for salvaging and storing topsoil at construction sites. Salvaged topsoil can be reused in revegetating soils later on. Topsoil contains nutrients, seeds, other propagules, microorganisms, and living organisms, which, when salvaged and reused, will improve restoration of vegetative cover.

### APPLICABILITY

- Topsoil that has been salvaged from a site should be replaced only in close proximity to the location was it was removed.
- Topsoil stockpiles should be located where they will not be easily disturbed, erode, block drainage structures, or interfere with work on site.

### Advantages

- Minimizes damage to topsoil and its living components at construction sites.
- Increases the likelihood that vegetation restoration efforts will be successful.

### Disadvantages

- Considerable planning and coordination, topsoil analysis, stripping control, and experienced equipment operation are needed.
- Large equipment must be operated carefully and properly to salvage, stockpile, and replace topsoil.

### DESIGN CONSIDERATIONS

- Conduct topsoil removal, storage, and replacement in a manner that prevents soil erosion and stormwater contamination. Install all temporary and permanent BMPs as needed during both the excavation and replacement phases.
- Ensure that dust control measures are in place to prevent wind erosion of stockpiles. Refer to Section 4.5-g for more details regarding Dust Control.
- Salvage and replace topsoil in areas having the same plant community type.
- Replace topsoil as soon as possible, to prevent leaching of nutrients and loss of micro-organisms.
- Do not salvage topsoil when the ground is frozen.

### INSTALLATION CONSIDERATIONS

#### Topsoil Removal and Salvage

- Conduct a focused soil survey of the project area, as part of the pre-project site analysis to identify soil properties that indicate value for salvage. Excavation of test pits by backhoe is recommended. Soil properties indicating topsoil suitable for salvage are as follows:

BMP DESIGN APPROACH	
<input checked="" type="checkbox"/>	Pollutant Source Control
<input type="checkbox"/>	Hydrologic Source Control
<input type="checkbox"/>	Stormwater Treatment
SCALE OF APPLICATION	
<input checked="" type="checkbox"/>	All SFR and MFR < 1 acre
<input checked="" type="checkbox"/>	MFR 1-5 Acre and CICU < 5 acres
<input checked="" type="checkbox"/>	MFR and CICU > 5 acres and all WQIPs
TYPE OF APPLICATION	
<input checked="" type="checkbox"/>	Temporary
<input type="checkbox"/>	Permanent

- Location: Depth of topsoil is usually associated with its position in the landscape. Deeper topsoils can be generally expected in depositional settings, such as draws and valley floors, while ridge tops generally have shallower topsoils.
  - Color: Brownish earth tones indicate the presence of organic matter in mineral soil. The upper portion of soil having these colors should be considered for salvage. The top of the subsoil, indicated by a distinct color and texture change, indicates the appropriate depth limit of salvage.
  - Structure: Topsoil tends to have a more developed structure (blocky, sub-angular blocky, or granular) than the more-massive subsoil.
  - Texture: Topsoils that contain too much sand or clay may need to be excluded, because they may be too erodible, droughty, or poorly-drained, characteristics not suited to revegetation with many plant types.
  - Root Zone: Depth of extensive rooting of plants is often a good indicator of the limits of the topsoil.
- Establish topsoil salvage limits prior to salvage operations, and document the plant community type with which the topsoil is associated.
  - Ensure excavated topsoil is free of coarse debris (vegetation, rocks, and foreign materials).
  - Proceed from higher to lower topographical areas when stripping topsoil.
  - Remove topsoil as late as possible in the construction sequence.
  - After topsoil removal, establish and maintain a clear boundary delineating the area from which soil has been stripped. Apply erosion and sediment control measures to this area until construction ends and/or revegetation is successful.

### Topsoil Hauling and Storage

- Store excavated topsoil and any excavated subsoil separately.
- Store salvaged upland topsoil separately from wetland/SEZ topsoil.
- Limit steepness of topsoil piles to 3:1 (run to rise).
- Cover topsoil salvage piles with erosion control matting or geotextiles, not plastic.
- If topsoil will not be used for an extended amount of time, allow a cover of volunteer vegetation to establish. This plant cover enables some of the soil components to remain healthy and alive.

### Topsoil Replacement

- When feasible, replace topsoil immediately after grading operations end.
- Till, disc, harrow, or scarify subsoil to a depth of 6 inches prior to placement of topsoil, in order to loosen compacted layers and promote infiltration.
- Spread topsoil uniformly over the designated areas to the specified depth.
- Limit foot access and equipment traffic over top-soiled areas, to prevent compaction of replaced soil.

## INSPECTION AND MAINTENANCE

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- Verify that only topsoil is being removed during topsoil salvage operations.
- Verify that all applicable BMPs are in place. Repair/replace perimeter controls and stockpile covers as needed to keep them functioning properly.
- Inspect areas of newly-applied topsoil to gauge success of vegetation establishment. Re-apply topsoil to areas of erosion or settlement to achieve successful revegetation.

