

Practice: 384 - Woody Residue Treatment

Scenario: #1 - Orchard/Vineyard prunings/removals

Scenario Description:

Slash created from orchard/vineyard prunings is chipped or mulched and removed from the site in order to accomplish one or more purposes: reducing wildfire fuels and insect/disease substrate; improving access; and/or reducing potential risk to livestock and humans. Air emission reductions are achieved by chipping or shredding the materials in lieu of burning them. Material may be incorporated in the soil, used as a dust suppressant on unpaved roads or traffic areas.

Before Situation:

Wood waste from orchard pruning is either burned, creating an air quality issue, or left in place creating a wildfire hazard, an impediment to access, or a potential site for harboring pests. Energy conservation was not implemented. Resource concerns include wildfire hazard from excessive biomass accumulation and emissions of particulate matter.

After Situation:

Treatment of orchard pruning debris is chipped and removed from the site which results in the reduction in air pollutants, energy conservation occurred, improvement in access, and the reduction of sites that can harbor pests.

Scenario Feature Measure: Acres of orchard/vineyard with slash created from pruning

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$3,517.92

Scenario Cost/Unit: \$175.90

Cost Details (by category):

| Component Name | ID | Component Description | Unit | Price (\$/unit) | Quantity | Cost |
|-------------------------------|------|--|------|-----------------|----------|----------|
| Equipment/Installation | | | | | | |
| Brush Chipper, 6" capacity | 938 | Brush Chipper, 6" capacity, typically 35 HP. Includes chipper and power unit. Labor not included. | Hour | \$18.80 | 16 | \$300.80 |
| Truck, dump, 8 CY | 1401 | Dump truck for moving bulk material. Typically capacity is 12 ton or 8 cubic yards. Includes equipment only. | Hour | \$49.57 | 16 | \$793.12 |
| Skidsteer, 80 HP | 933 | Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included. | Hour | \$36.72 | 16 | \$587.52 |
| Labor | | | | | | |
| Equipment Operators, Light | 232 | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | \$20.15 | 48 | \$967.20 |
| General Labor | 231 | Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | \$18.11 | 48 | \$869.28 |

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Scenario: #2 - Restoration/conservation treatment following catastrophic events

Scenario Description:

The use of a combination of hand (chainsaw) and heavy equipment similar to those used in logging to treat slash resulting from catastrophic events such as fire, wind, severe pest outbreak, ice storm, etc. This scenario will remove/treat the larger material the size of which is consistent with the large equipment used. Treatment material is either chipped or logged and cannot be sold for profit.

Before Situation:

A large amount of slash and woody residue is created as a result of a non-silvicultural event such as a wind storm, wildfire, ice storm, pest outbreak, etc. Because the slash and residue is created by a catastrophic event that can cause tree-lodging, snags, broken tops, etc.; treatment is both difficult and dangerous. The presence of this material causes adverse effects on the forest include limiting access for management purposes, increasing the wildfire hazard, increasing the risk of potential harm to humans and livestock, and providing harboring sites for pests. Resource concerns include: excessive plant pest pressure, potential emissions of particulate matter, wildfire hazard from excessive biomass accumulation, and habitat degradation.

After Situation:

The material resulting from the catastrophic event is reduced to a level that will minimize the resource concerns.

Scenario Feature Measure: Acres of affected forest

Scenario Unit: Acres

Scenario Typical Size: 20

Scenario Cost: \$9,426.30

Scenario Cost/Unit: \$471.32

Cost Details (by category):

| Component Name | ID | Component Description | Unit | Price (\$/unit) | Quantity | Cost |
|-------------------------------|------|--|------|-----------------|----------|------------|
| Equipment/Installation | | | | | | |
| Chainsaw | 937 | Equipment and power unit costs. Labor not included. | Hour | \$5.36 | 10 | \$53.60 |
| Truck, Pickup | 939 | Equipment and power unit costs. Labor not included. | Hour | \$31.63 | 10 | \$316.30 |
| Log skidder | 942 | Equipment and power unit costs. Labor not included. | Hour | \$109.28 | 20 | \$2,185.60 |
| Mechanical cutter, chopper | 943 | Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included. | Hour | \$109.28 | 40 | \$4,371.20 |
| Labor | | | | | | |
| General Labor | 231 | Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | \$18.11 | 40 | \$724.40 |
| Equipment Operators, Heavy | 233 | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | \$23.61 | 40 | \$944.40 |
| Mobilization | | | | | | |
| Mobilization, large equipment | 1140 | Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits. | Each | \$415.40 | 2 | \$830.80 |

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Scenario: #3 - Woody residue/silvicultural slash treatment- light

Scenario Description:

Treating an area of forest slash to reduce hazardous fuels and the risk of insect and disease, improve organic matter and reduce erosion while improving water quality. Slash is treated with both hand (cutting, lopping, etc.) and mechanically (masticating, chipping, etc.). Typically done by hand and light equipment.

Before Situation:

Woody material resulting from a silvicultural practice such as pruning or a light thinning operation is causing both fire hazard and pest issues. Resource concerns include: wildfire hazard from excessive biomass accumulation and potential excessive plant pest pressure.

After Situation:

Fire and pest issues are reduced with woody material (slash) spread out and in contact with the ground.

Scenario Feature Measure: Acres treated

Scenario Unit: Acres

Scenario Typical Size: 40

Scenario Cost: \$8,320.00

Scenario Cost/Unit: \$208.00

Cost Details (by category):

| Component Name | ID | Component Description | Unit | Price (\$/unit) | Quantity | Cost |
|-------------------------------|-----|--|------|-----------------|----------|------------|
| Equipment/Installation | | | | | | |
| Truck, Pickup | 939 | Equipment and power unit costs. Labor not included. | Hour | \$31.63 | 40 | \$1,265.20 |
| Chainsaw | 937 | Equipment and power unit costs. Labor not included. | Hour | \$5.36 | 80 | \$428.80 |
| Mechanical cutter, chopper | 943 | Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included. | Hour | \$109.28 | 40 | \$4,371.20 |
| Labor | | | | | | |
| Equipment Operators, Light | 232 | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | \$20.15 | 40 | \$806.00 |
| General Labor | 231 | Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | \$18.11 | 80 | \$1,448.80 |

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Scenario: #4 - Chipping woody debris

Scenario Description:

Reducing woody waste created during forestry, agroforestry and horticultural activities by gathering and chipping to achieve management objectives. The chipped material cannot be transported from the property to a commercial facility or sold for wood products.

Before Situation:

Woody material resulting from a silvicultural practice such as pruning or a light thinning operation causes management issues including resource access, fire hazard and sites for harboring pests. Resource concerns include potential emissions of particulate matter, potential excessive plant pest pressure, and wildfire hazard from excessive biomass accumulation.

After Situation:

Fire and pest issues are reduced with woody material (slash) chipped and spread.

Scenario Feature Measure: Acres treated

Scenario Unit: Acres

Scenario Typical Size: 20

Scenario Cost: \$5,231.40

Scenario Cost/Unit: \$261.57

Cost Details (by category):

| Component Name | ID | Component Description | Unit | Price (\$/unit) | Quantity | Cost |
|-------------------------------|------|--|------|-----------------|----------|------------|
| Equipment/Installation | | | | | | |
| Log skidder | 942 | Equipment and power unit costs. Labor not included. | Hour | \$109.28 | 20 | \$2,185.60 |
| Truck, dump, 8 CY | 1401 | Dump truck for moving bulk material. Typically capacity is 12 ton or 8 cubic yards. Includes equipment only. | Hour | \$49.57 | 20 | \$991.40 |
| Brush Chipper, 6" capacity | 938 | Brush Chipper, 6" capacity, typically 35 HP. Includes chipper and power unit. Labor not included. | Hour | \$18.80 | 20 | \$376.00 |
| Chainsaw | 937 | Equipment and power unit costs. Labor not included. | Hour | \$5.36 | 20 | \$107.20 |
| Labor | | | | | | |
| Equipment Operators, Light | 232 | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | \$20.15 | 60 | \$1,209.00 |
| General Labor | 231 | Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | \$18.11 | 20 | \$362.20 |

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Scenario: #5 - Forest Slash Treatment - Med/Heavy

Scenario Description:

Treating an area of significant woody plant residues to reduce hazardous fuels and the risk of insect and disease, improve organic matter, decrease unwanted habitat, and reduce erosion while improving water quality. Slash is to be lopped/treated/crushed within a foot of the ground or moved off site to meet state fire hazard reduction standards. Typically heavy equipment are used such as masticators, mulchers, drum choppers, etc. Hand work with chainsaws are used on steep slopes.

Before Situation:

Heavy woody material (difficult to walk through) resulting from silvicultural/management operations caused both fire hazard, access, potential harm to humans and animals, and pest issues. Resource concerns include potential emission of particulate matter, wildfire hazard from excessive biomass accumulation, excessive plant pest pressure, and habitat degradation.

After Situation:

Fire, access, and pest issues are reduced with woody material (slash) spread out and in contact with the ground.

Scenario Feature Measure: Acres treated

Scenario Unit: Acres

Scenario Typical Size: 40

Scenario Cost: \$14,422.60

Scenario Cost/Unit: \$360.57

Cost Details (by category):

| Component Name | ID | Component Description | Unit | Price (\$/unit) | Quantity | Cost |
|---|------|--|------|-----------------|----------|------------|
| Equipment/Installation | | | | | | |
| Chainsaw | 937 | Equipment and power unit costs. Labor not included. | Hour | \$5.36 | 40 | \$214.40 |
| Truck, Pickup | 939 | Equipment and power unit costs. Labor not included. | Hour | \$31.63 | 40 | \$1,265.20 |
| Mechanical cutter, chopper | 943 | Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included. | Hour | \$109.28 | 40 | \$4,371.20 |
| Heavy mechanical site prep, drum chopping | 1316 | Mechanical operations that pushing trees and vegetation and crushing them with a water filled roller chopper. Requires heavy equipment such as dozers. Includes equipment, power unit and labor costs. | Acre | \$127.39 | 40 | \$5,095.60 |
| Labor | | | | | | |
| Equipment Operators, Light | 232 | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | \$20.15 | 80 | \$1,612.00 |
| General Labor | 231 | Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | \$18.11 | 80 | \$1,448.80 |
| Mobilization | | | | | | |
| Mobilization, large equipment | 1140 | Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits. | Each | \$415.40 | 1 | \$415.40 |