

Practice: 484 - Mulching

Scenario: #1 - Natural Material - Full Coverage

Scenario Description:

Application of straw mulch or other other state approved natural material to reduce erosion and facilitate the establishment of vegetative cover. Mulch provides full coverage and is typically used with critical area planting. Assumes 125 bales/acre (3 bales/1000 sq ft)

Before Situation:

Typical scenario ranges from a 0.1 to 1.0 acre disturbed site around a newly constructed structural practice. The potential for soil erosion is high and mulch is needed to stabilize the soil and facilitate the establishment of vegetative cover.

After Situation:

Straw mulch has been applied to areas needing mulch. Erosion and sedimentation is reduced, water and soil quality is protected, and vegetative cover is established.

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$531.61

Scenario Cost/Unit: \$531.61

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	\$36.36	0.5	\$18.18
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	\$22.96	10	\$229.60
Materials						
Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	\$113.53	2.5	\$283.83

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Scenario: #2 - Natural Material - Partial Coverage

Scenario Description:

Application of straw mulch or other other state approved natural material (such as wood chips, compost, or hay) to reduce erosion, moderate soil temperature and suppress weeds. Typically used to provide partial coverage (either in-row or between rows) to suppress weeds. Payment based on total acres mulched, assuming 3-5 ft. swatch and 10-12 ft. row spacing.

Before Situation:

Site conditions vary. Typically scenarios include new tree and shrub plantings, irrigated orchards or vineyards, or annual and perennial specialty crops. Water quantity and soil moisture is a concern.

After Situation:

Straw or other natural mulch is applied in rows by hand or by mechanized means. Soil moisture is conserved, energy use associated with irrigation is decreased, and weed growth is suppressed.

Scenario Feature Measure: Total Acres Mulched

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$520.98

Scenario Cost/Unit: \$52.10

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$22.93	5	\$114.65
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.50	5	\$122.50
Materials						
Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	\$113.53	2.5	\$283.83

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Scenario: #3 - Erosion Control Blanket

Scenario Description:

Installation of erosion control blanket on critical areas with steep slopes, grassed waterways or diversions.. Blanket is typically made of coconut coir, wood fiber, straw and is typically covered on both sides with polypropylene netting. Used to help control erosion and establish vegetative cover.

Before Situation:

There are areas of concentrated flow and a grassed waterway is being installed. Soil erosion is a concern and there is little to no vegetation.

After Situation:

The erosion control blanket is placed on concentrated flow areas and secured with ground stables. Soil erosion is minimized and vegetative cover is established.

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Square Foot

Scenario Typical Size: 5,000

Scenario Cost: \$823.08

Scenario Cost/Unit: \$0.16

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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	\$22.96	8	\$183.68
Materials						
Erosion Control Blanket, biodegradable	1213	Biodegradable erosion control blanket, typically a composite of natural fibers with reinforcing polymer netting. Materials and shipping only.	Square Yard	\$1.15	556	\$639.40

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Scenario: #4 - Synthetic Material

Scenario Description:

Installation of geotextile, biodegradable plastic, polyethylene plastic, or other state approved synthetic mulch to conserve soil moisture, moderate soil temperature, suppress weed growth and provide erosion control. Payment based on actual area covered by mulching material.

Before Situation:

Site conditions vary. Typically scenarios include new tree and shrub plantings, irrigated orchards or vineyards, or annual and perennial specialty crops. Water quantity and soil moisture is a concern.

After Situation:

Synthetic mulch is applied in rows with a mulch layer or by other mechanized means. Soil moisture is conserved, energy use associated with irrigation is decreased, and weed growth is suppressed.

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$11,761.20

Scenario Cost/Unit: \$11,761.20

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<i>Equipment/Installation</i>						
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.43	4840	\$11,761.20

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Scenario: #5 - Tree and Shrub

Scenario Description:

Weed barrier fabric or other suitable natural or synthetic mulch is installed with a new tree and shrub planting. Typically used to prevent weed competition during the installation of conservation practices. Rate is per tree/shrub and assumes 1 square yard of weed barrier fabric and 5 staples/tree.

Before Situation:

Site conditions vary. Typical scenario is an installation of 100 native trees and shrubs to enhance wildlife habitat. Sites are often remote and trees may not be planted in rows, requiring each tree to be mulched individually

After Situation:

Weed barrier fabric squares are installed with 5 sod staples each, around individual trees and shrubs to control weed competition. Weeds are controlled and tree/shrub growth is minimally influenced by weed competition.

Scenario Feature Measure: Number of Trees Mulched

Scenario Unit: Each

Scenario Typical Size: 100

Scenario Cost: \$243.00

Scenario Cost/Unit: \$2.43

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<i>Equipment/Installation</i>						
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.43	100	\$243.00

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Scenario: #6 - Leaf Mulching

Scenario Description:

Municipally collected leaves are loaded into a manure spreader with a front-end loader and spread on a 15 acre field that is annually planted to a low residue crop (such as vegetables, silage, and soybeans). The leaves are typically delivered and stockpiled no more than seven days then spread with a manure spreader at a rate of 8-10 tons/acre. The typical depth is 3 to 6 inches. The leaves provide a protective mulch layer over winter until it is time to prepare the field for the subsequent crop.

Before Situation:

An annually planted 15 acre field is planted with low residue crops such as vegetables, silage and soybeans. The field is tilled in the fall immediately following harvest resulting in bare soil subject to soil erosion and organic matter depletion over time.

After Situation:

Municipally collected leaves are spread on a 15 acre field with a typical depth of 3 to 6 inches. The leaves provide a protective mulch layer over winter until it is time to prepare the field for the subsequent crop. The leaf mulch layer provides soil cover which reduces soil erosion.

Scenario Feature Measure: Acre of land with applied leaf mulch

Scenario Unit: Acre

Scenario Typical Size: 15

Scenario Cost: \$1,124.44

Scenario Cost/Unit: \$74.96

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<i>Equipment/Installation</i>						
Manure, compost, application	955	Loading, hauling and spreading manure/compost by ground equipment. Includes equipment, power unit and labor costs.	Hour	\$99.95	11.25	\$1,124.44

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Scenario: #7 - Wood Chips

Scenario Description:

Application of wood chips around trees, shrubs, or potted grass plantings to reduce erosion, reduce weed competition, and facilitate the establishment of vegetative cover. Mulch provides full coverage and is typically used with critical area planting. Assumes one (1) cubic yard of wood chips per 100 square feet of area.

Associated practices: Hedgerow Planting (422), Windbreak (380), Waste Storage Facility (313),etc.

Before Situation:

Typical scenario ranges from a 0.1 to 1.0 acre of recently disturbed soil where vegetation has been planted or a structure has been built. The potential for soil erosion is high and mulch is needed to stabilize the soil and facilitate the establishment of vegetative cover.

After Situation:

Wood chips has been applied to areas needing mulch. Erosion and sedimentation is reduced, water and soil quality is protected, and vegetative cover is established. Weed competition has been reduced.

Scenario Feature Measure: Area Mulched

Scenario Unit: Square Foot

Scenario Typical Size: 1,000

Scenario Cost: \$293.92

Scenario Cost/Unit: \$0.29

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Aggregate, Wood Chips	1098	Includes materials, equipment and labor	Cubic yard	\$23.46	10	\$234.60
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$36.36	1	\$36.36
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	\$22.96	1	\$22.96