

Practice: 394 - Firebreak

Scenario: #1 - Bare Soil - Light Equipment

Scenario Description:

Installation of a bare-ground firebreak of a minimum width of 10' around a 20 acre field/farm using farm equipment (2 passes). Generally water control devices such as water bars are not needed due either to the lack of steep terrain or the temporary nature of the firebreak. Resource concerns include Wildfire hazard from excessive biomass accumulation, Undesirable plant productivity and health, Inadequate plant structure and composition, and Habitat degradation.

Before Situation:

Tract, field, or farm lacks adequate firebreaks to either reduce the spread of wildfires or contain a prescribed burn. Installation will be accomplished by making two passes with the use of typical farm equipment such as tractors, plows, disks, or similar implements.

After Situation:

The property is adequately protected from wildfire or can be safely prescribe burned.

Scenario Feature Measure: Length of firebreak

Scenario Unit: Feet

Scenario Typical Size: 3,000

Scenario Cost: \$496.88

Scenario Cost/Unit: \$0.17

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$60.66	6	\$363.96
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.52	2	\$19.04
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$18.98	6	\$113.88

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Scenario: #2 - Bare Soil - Medium Slope

Scenario Description:

Use of medium equipment such as dozers to blade, disk, plow, etc. bare-soil firebreaks on slopes less than 15% along the boundary line or edge of the forest. All necessary water bars and/or wing ditches must be installed according to specifications to control erosion. Payment calculated for one erosion control structure every 80 ft. in. addition to cost of fire break. This practice implemented ONLY in the areas where the slope meet these requirements. Firebreak should average at least 15 feet wide (not to be less than 10' wide)

Resource concerns include Wildfire hazards from excessive biomass accumulation, Undesirable plant productivity and health, Inadequate plant structure and composition, and Habitat degradation.

Before Situation:

Tract, field, or farm lacks adequate firebreaks to either reduce the spread of wildfires or contain a prescribed burn. Conditions such as topography, the presence of brush and trees, etc. make the use of typical farm equipment impractical.

After Situation:

The property is adequately protected from wildfire or can be safely prescribe burned and the potential for excessive erosion from the firebreak is negligible.

Scenario Feature Measure: Length of firebreak

Scenario Unit: Feet

Scenario Typical Size: 4,000

Scenario Cost: \$8,123.20

Scenario Cost/Unit: \$2.03

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Water Bars	1500	Installation of graded trail water controlling structures such as water bars, broad based dips for erosion control. Typical cross section is 1.5 feet high with 4:1 side slopes yielding about 0.33 CY/ft of length.	Foot	\$2.23	1500	\$3,345.00
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$27.72	24	\$665.28
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$33.55	7	\$234.85
Dozer, 140 HP	927	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	\$112.22	24	\$2,693.28
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	\$17.54	24	\$420.96
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	\$22.13	24	\$531.12
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$232.71	1	\$232.71

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Scenario: #3 - Bare soil - Steep Slope

Scenario Description:

Use of equipment such as dozers to blade bare-soil firebreaks 15' wide on slopes greater than 15% along the boundary line or edge of the forest. All necessary water bars and/or wing ditches must be installed according to specifications to control erosion with same equipment. Payment calculated for one erosion control structure every 40 ft. in. addition to cost of fire break. This practice implemented ONLY in the areas where the slope meet these requirements. Firebreak should average at least 15 feet wide (not to be less than 10' wide)

Resource concerns include Wildfire hazard from excessive biomass accumulation, Undesirable plant productivity and health, Inadequate plant structure and composition, Habitat degradation, Soil erosion, and Excessive sediment in surface waters.

Before Situation:

Tract, field, or farm lacks adequate firebreaks to either reduce the spread of wildfires or contain a prescribed burn. Conditions such as topography, the presence of brush and trees, etc. make the use of typical farm equipment impractical. As slopes increase, the potential for excessive erosion increases from soil disturbances. Therefore the installation of water control devices such as water bars will be important in protecting the resource base.

After Situation:

The property is adequately protected from wildfire or can be safely prescribe burned and the potential for excessive erosion from the firebreak is minimized.

Scenario Feature Measure: Length of firebreak

Scenario Unit: Feet

Scenario Typical Size: 4,000

Scenario Cost: \$12,938.63

Scenario Cost/Unit: \$3.23

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Dozer, 140 HP	927	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	\$112.22	32	\$3,591.04
Water Bars	1500	Installation of graded trail water controlling structures such as water bars, broad based dips for erosion control. Typical cross section is 1.5 feet high with 4:1 side slopes yielding about 0.33 CY/ft of length.	Foot	\$2.23	3000	\$6,690.00
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$33.55	8	\$268.40
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$27.72	32	\$887.04
Labor						
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	\$22.13	32	\$708.16
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	\$17.54	32	\$561.28
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$232.71	1	\$232.71

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Scenario: #4 - Vegetated - Light Equipment

Scenario Description:

Establishing a 30 - 50 foot wide strip of permanent vegetation that will serve as a green firebreak. Scenario includes clearing the site, preparing the seedbed, seeding (typically cool season grasses and/or legumes), and applying needed soil amendments. Clearing will be achieved with the use of a bush hog or similar equipment. Seedbed preparation and vegetation establishment will be accomplished with farm equipment. Soil amendments will be applied according to local FOTG guidance. This scenario does not include follow-up maintenance operations such as weed control, mowing, etc. Resource concerns include Wildfire hazard from excessive biomass accumulation, Soil erosion, and Excessive sediment in surface waters.

Before Situation:

Tract, field, or farm lacks adequate firebreaks to either reduce the spread of wildfires or contain a prescribed burn.

After Situation:

The property is adequately protected from wildfire or can be safely prescribe burned. Wildlife habitat will also be enhanced and the potential for erosion from the firebreak is minimized.

Scenario Feature Measure: Length of firebreak

Scenario Unit: Feet

Scenario Typical Size: 4,000

Scenario Cost: \$1,639.14

Scenario Cost/Unit: \$0.41

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.80	4	\$23.20
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$18.24		\$0.00
Seeding Operation, Broadcast, Ground	959	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$10.75	4	\$43.00
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.24	4	\$20.96
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$8.67	4	\$34.68
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$33.55	8	\$268.40
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$45.84	4	\$183.36
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.52	4	\$38.08
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$14.18	4	\$56.72
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	\$17.54		\$0.00
Materials						
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.47	160	\$75.20
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.29	200	\$58.00
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$90.38	4	\$361.52
Herbicide, Picloram	337	Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$19.37	4	\$77.48

Materials

One Species, Cool Season, Introduced Perennial Grass	2313	Introduced, cool season perennial grass. Includes material and shipping only.	Acre	\$30.44	4	\$121.76
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.28	200	\$56.00

Mobilization

Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$156.52	1	\$156.52
Mobilization, very small equipment	1137	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$64.26	1	\$64.26

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Scenario: #5 - Vegetated - Medium slope

Scenario Description:

Forest or grassland with a 30' wide firebreak cleared with dozer along the boundary line or edge of the forest with slope greater than 5% but less than 15% and planted with cool season native grasses. All necessary water bars and/or wing ditches must be installed according to Fire Break Practice 394 specifications to control erosion. Payment calculated for one erosion control structure every 80 ft. in addition to cost of fire break. This practice implemented ONLY in the areas where the slope meet these requirements. Cool season grasses must be established according to Critical Area Planting Practice 342. Warm Season grasses MUST NOT be used!

Before Situation:

Tract, field, or farm lacks adequate firebreaks to either reduce the spread of wildfires or contain a prescribed burn.

After Situation:

The property is adequately protected from wildfire or can be safely prescribe burned. Wildlife habitat will also be enhanced and the potential for erosion from the firebreak is minimized.

Scenario Feature Measure:

Scenario Unit: Foot

Scenario Typical Size: 4,000

Scenario Cost: \$9,495.19

Scenario Cost/Unit: \$2.37

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Dozer, 140 HP	927	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	\$112.22	24	\$2,693.28
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$33.55	8	\$268.40
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.52	4	\$38.08
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$14.18	4	\$56.72
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.24	4	\$20.96
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.80	4	\$23.20
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$8.67	4	\$34.68
Seeding Operation, Broadcast, Ground	959	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$10.75	4	\$43.00
Water Bars	1500	Installation of graded trail water controlling structures such as water bars, broad based dips for erosion control. Typical cross section is 1.5 feet high with 4:1 side slopes yielding about 0.33 CY/ft of length.	Foot	\$2.23	1800	\$4,014.00
Labor						
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	\$22.13	24	\$531.12
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	\$17.54	24	\$420.96
Materials						
One Species, Cool Season, Introduced Perennial Grass	2313	Introduced, cool season perennial grass. Includes material and shipping only.	Acre	\$30.44	4	\$121.76
Herbicide, Picloram	337	Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$19.37	4	\$77.48

Materials

Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$90.38	4	\$361.52
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.29	200	\$58.00
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.28	200	\$56.00
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.47	160	\$75.20

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	\$444.31	1	\$444.31
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$156.52	1	\$156.52

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Scenario: #6 - Vegetative - Steep Slope

Scenario Description:

Forest or grassland with a 30' wide firebreak cleared with dozer along the boundary line or edge of the forest with slope greater than 15% and planted with cool season native grasses. All necessary water bars and/or wing ditches must be installed according to Fire Break Practice 394 specifications to control erosion. Payment calculated for one erosion control structure every 40 ft. in addition to cost of fire break. This practice implemented ONLY in the areas where the slope meet these requirements. Cool season grasses must be established according to Critical Area Planting Practice 342. Warm Season grasses MUST NOT be used

Before Situation:

Tract, field, or farm lacks adequate firebreaks to either reduce the spread of wildfires or contain a prescribed burn.

After Situation:

The property is adequately protected from wildfire or can be safely prescribe burned. Wildlife habitat will also be enhanced and the potential for erosion from the firebreak is minimized.

Scenario Feature Measure:

Scenario Unit: Foot

Scenario Typical Size: 4,000

Scenario Cost: \$14,501.31

Scenario Cost/Unit: \$3.63

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.24	4	\$20.96
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$33.55	8	\$268.40
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$14.18	4	\$56.72
Dozer, 140 HP	927	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	\$112.22	32	\$3,591.04
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.80	4	\$23.20
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$8.67	4	\$34.68
Seeding Operation, Broadcast, Ground	959	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$10.75	4	\$43.00
Water Bars	1500	Installation of graded trail water controlling structures such as water bars, broad based dips for erosion control. Typical cross section is 1.5 feet high with 4:1 side slopes yielding about 0.33 CY/ft of length.	Foot	\$2.23	3500	\$7,805.00
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.52	4	\$38.08
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	\$17.54	32	\$561.28
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	\$22.13	32	\$708.16
Materials						
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.47	160	\$75.20

Materials

Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.28	200	\$56.00
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.29	200	\$58.00
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$90.38	4	\$361.52
One Species, Cool Season, Introduced Perennial Grass	2313	Introduced, cool season perennial grass. Includes material and shipping only.	Acre	\$30.44	4	\$121.76
Herbicide, Picloram	337	Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$19.37	4	\$77.48

Mobilization

Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$156.52	1	\$156.52
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$444.31	1	\$444.31