

Practice: 342 - Critical Area Planting

Scenario: #1 - Grass or Grass/legume mix-normal tillage

Scenario Description:

Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural occurrence or a newly constructed conservation practice. Costs include seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application.

Before Situation:

Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from recent natural occurrences (fire, flood, wind, etc.) or due to newly constructed conservation practices such as waterways, terraces, water and sediment basins or dams. The exposed areas will be subject to wind erosion, sheet and rill erosion, or visible rills may have already occurred. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility.

After Situation:

This typical 1.0 acre critical area is stabilized by applying fertilizer, lime and seed. Soil amendments will be incorporated at a depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 90 lbs of nitrogen, 90 lbs of phosphorus, and 90 lbs of potassium, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Smooth Bromegrass (20 lbs/ac), Perennial Ryegrass (10 lbs/ac), and Red Clover (8 lbs/ac) with a nurse crop of oats at a seeding rate of 32 lbs per acre.

Scenario Feature Measure: area seeded

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$324.33

Scenario Cost/Unit: \$324.33

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.46	1	\$20.46
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.67	2	\$21.34
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	1	\$9.73
Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.12	1	\$8.12
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.52	1	\$6.52
Materials						
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	2	\$52.28
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.50	90	\$45.00
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	\$0.65	90	\$58.50
Nitrogen (N), Urea	71	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.62	90	\$55.80
Three Species Mix, Cool Season, Introduced Perennial Grass	2315	Cool season, introduced grass mix. Includes material and shipping only.	Acre	\$46.58	1	\$46.58

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Scenario: #2 - Grass or Grass/legume mix-moderate grading

Scenario Description:

Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural or human disturbance. Costs include a dozer for grading and shaping of small gullies, seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application.

Before Situation:

Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from natural occurrences (fire, flood, etc) or human disturbance. The exposed areas have visible rills and small gullies averaging 1 foot in depth and 1 foot in width. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility.

After Situation:

This typical 1.0 acre critical area is stabilized by grading and shaping the small gullies with a dozer (6 hours) and then applying fertilizer, lime and seed. Soil amendments will be incorporated at a depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 90 lbs of nitrogen, 90 lbs of phosphorus, and 90 lbs of potassium, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Smooth Bromegrass (20 lbs/ac), Perennial Ryegrass (10 lbs/ac), and Red Clover (8 lbs/ac) with a nurse crop of oats at a seeding rate of 32 lbs per acre.

Scenario Feature Measure: area seeded

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$894.39

Scenario Cost/Unit: \$894.39

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	1	\$9.73
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.46	1	\$20.46
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.52	1	\$6.52
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.67	2	\$21.34
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$68.04	6	\$408.24
Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.12	1	\$8.12
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	\$26.97	6	\$161.82
Materials						
Nitrogen (N), Urea	71	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.62	90	\$55.80
Three Species Mix, Cool Season, Introduced Perennial Grass	2315	Cool season, introduced grass mix. Includes material and shipping only.	Acre	\$46.58	1	\$46.58
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	2	\$52.28
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.50	90	\$45.00
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	\$0.65	90	\$58.50

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Scenario: #3 - Organic Grass or Grass/legume mix-normal tillage

Scenario Description:

Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural occurrence or a newly constructed conservation practice. Costs include seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application. Certified organic seed and fertilizer based upon NOP approved fertilizer inputs will be used where available.

Before Situation:

Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from recent natural occurrences (fire, flood, etc) or due to newly constructed conservation practices such as waterways, terraces, water and sediment basins or dams. The exposed areas will be subject to wind erosion, sheet and rill erosion, or visible rills may have already occurred. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility.

After Situation:

This typical 1.0 acre critical area is stabilized by applying fertilizer, lime and seed. Soil amendments will be incorporated at an depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. The plant nutrients will be supplied by a blend of organic soil amendments. Apply 90 lbs of nitrogen, 90 lbs of phosphorus, and 90 lbs of potassium, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Smooth Bromegrass (20 lbs/ac), Perennial Ryegrass (10 lbs/ac), and Red Clover (8 lbs/ac) with a nurse crop of oats at a seeding rate of 32 lbs per acre. Organic seed will be used where available.

Scenario Feature Measure: area seeded

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$246.03

Scenario Cost/Unit: \$246.03

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	1	\$9.73
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.46	1	\$20.46
Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.12	1	\$8.12
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.67	2	\$21.34
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.52	1	\$6.52
Materials						
Three Species Mix, Cool Season, Introduced Perennial Grass	2315	Cool season, introduced grass mix. Includes material and shipping only.	Acre	\$46.58	1	\$46.58
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	2	\$52.28
Nitrogen, Organic	266	ORGANIC Nitrogen	Pound	\$0.30	90	\$27.00
Potassium, Organic	268	ORGANIC Potassium	Pound	\$0.30	90	\$27.00
Phosphorus, Organic	267	ORGANIC Phosphorus	Pound	\$0.30	90	\$27.00

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Scenario: #4 - Organic Grass or Grass/legume mix-moderate grading

Scenario Description:

Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural or human disturbance. Costs include a dozer for grading and shaping of small gullies, seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application. Certified organic seed and fertilizer based upon NOP approved fertilizer inputs will be used where available.

Before Situation:

Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from natural occurrences (fire, flood, etc) or human disturbance. The exposed areas have visible rills and small gullies averaging 1 foot in depth and 1 foot in width. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility.

After Situation:

This typical 1.0 acre critical area is stabilized by grading and shaping the small gullies with a dozer (6 hours) and then applying fertilizer, lime and seed. Soil amendments will be incorporated at a depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. The plant nutrients will be supplied by a blend of organic soil amendments. Apply 90 lbs of nitrogen, 90 lbs of phosphorus, and 90 lbs of potassium, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Smooth Bromegrass (20 lbs/ac), Perennial Ryegrass (10 lbs/ac), and Red Clover (8 lbs/ac) with a nurse crop of oats at a seeding rate of 32 lbs per acre. Organic seed will be used where available.

Scenario Feature Measure: area seeded

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$654.27

Scenario Cost/Unit: \$654.27

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	\$68.04	6	\$408.24
Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.12	1	\$8.12
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.46	1	\$20.46
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	1	\$9.73
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.67	2	\$21.34
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.52	1	\$6.52
Materials						
Nitrogen, Organic	266	ORGANIC Nitrogen	Pound	\$0.30	90	\$27.00
Three Species Mix, Cool Season, Introduced Perennial Grass	2315	Cool season, introduced grass mix. Includes material and shipping only.	Acre	\$46.58	1	\$46.58
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	2	\$52.28
Phosphorus, Organic	267	ORGANIC Phosphorus	Pound	\$0.30	90	\$27.00
Potassium, Organic	268	ORGANIC Potassium	Pound	\$0.30	90	\$27.00

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Scenario: #5 - Small Area Disturbance

Scenario Description:

Establishment of permanent vegetation on a small site that is void or nearly void of vegetation due to a natural occurrence or a newly constructed conservation practice. Costs include seedbed preparation with typical tillage implements, grass seed, fertilizer and lime with application.

Before Situation:

Small area that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from recent natural occurrences (fire, flood, wind, etc.) or due to newly constructed conservation practices such as pipeline or seasonal high tunnel. The exposed areas will be subject to wind erosion, sheet and rill erosion, or visible rills may have already occurred. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility.

After Situation:

This typical 1000 sq ft critical area is stabilized by applying fertilizer, lime and seed. Soil amendments will be incorporated at a depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 90 lbs of nitrogen, 90 lbs of phosphorus, and 90 lbs of potassium, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, broadcast the following mixture for a vegetative cover: Tall Fescue (40 lbs/ac), Perennial Ryegrass (25 lbs/ac), and Kentucky Blue (20 lbs/ac).

Scenario Feature Measure: area seeded

Scenario Unit: 1,000 Square Foot

Scenario Typical Size: 1

Scenario Cost: \$7.02

Scenario Cost/Unit: \$7.02

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.67	0.023	\$0.25
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.52	0.023	\$0.15
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$9.73	0.023	\$0.22
Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.12	0.023	\$0.19
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	\$12.10	0.023	\$0.28
Materials						
Nitrogen (N), Urea	71	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.62	2.07	\$1.28
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	\$0.65	2.07	\$1.35
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.50	2.07	\$1.04
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$26.14	0.046	\$1.20
Three Species Mix, Cool Season, Introduced Perennial Grass	2315	Cool season, introduced grass mix. Includes material and shipping only.	Acre	\$46.58	0.023	\$1.07