Practice: 422 - Hedgerow Planting

Scenario: #1 - Pollinator Habitat

Scenario Description: Where pollinator habitat is an additional wildlife habitat concern this scenario addresses the resource concern of inadequate fish and wildlife habitat. It provides both physical habitat by providing areas that are not disturbed by annual tillage and provides pollen and nector throughout the growing season by establishing a diverse mixture of flowering plants. Typically a mixture of 5 or more species is planted to improve diversity so that pollen and nector are avaiable as long as possible. Typical installation is in or at the edge of cropland or pasture. Typical installation involves tillage to prepare the site for planting. Flowering trees and shrubs adapted for local climatic and edaphic conditions are typically planted at eight foot intervals (this will vary with species selection and density goals). A native grass adapted to the local climatic and edaphic conditions will be drilled into the site at a rate that will achieve a minimum of 20 seeds per square foot. A locally adapted mixture of at 3 pollen and nectar producing plants will be drilled into the site. The species list in the component section of this scenario are strictly for deriving a cost. Species adapted to local climatic and edaphic conditions will be listed in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence. Payment is based on the length of each hedgerow times the number of rows.

Before Situation: Pollen and nector sources are lacking or are only availble for part of the growing season. Large cropland tracks lack undisturbed areas for ground nesting bees

After Situation: Flowering plants supply pollen and nector throughout the growing season. Undisturbed areas provide nesting sites for bees and other native pollinators.

Scenario Feature Measure: Length of Hedgerow

Scenario Unit: Foot

Scenario Typical Size: 800

Total Scenario Cost: $1,982.28

Scenario Cost/Unit: $2.48

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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	$23.74	2.5	$59.34
Equipment Installation						
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$12.04	2.5	$30.11
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	$21.05	0.25	$5.26
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.36	0.25	$4.09
Materials						
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$32.68	0.25	$8.17
Three Species Mix, Native Forb	2333	Native forb mix. Includes material and shipping only.	Acre	$586.90	3	$1,760.71
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	100	$52.46
Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	$0.62	100	$62.14

Practice: 422 - Hedgerow Planting

Scenario: #2 - Contour Native

Scenario Description: Typically installation of this scenario is within an annually cropped field. The hedge row is planted on the contour to provide a physical and visual aid to contour farming. This scenario is used to facilitate additional measures that address the resource concerns of; sheet and rill soil erosion and Water Quality Degradation, excess sediment in surface waters. Trees, shrubs, and grasses adapted for local climatic and edaphic conditions are typically planted at eight foot intervals (this will vary with species selection and density goals). Species selected should be at least three feet tall at maturity. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence. Payment is based on the length of each hedgerow times the number of rows.

Before Situation: Contour farming practices are made difficult or less effective due to a lack of visual clues as to the location of the contours. Soil is lost to sheet and rill erosion. Sediments are deposited into surface waters.

After Situation: Hedgerow planted on the contour presents a physical and visual guide for tillage and planting operations on the contour. Soil erosion from sheet and rill sources is reduced and the resultant deposition of sediment to surface waters is in turn reduced.

Scenario Feature Measure: Length of Hedgerow

Scenario Unit: Foot

Scenario Typical Size: 800

Total Scenario Cost: $788.98

Scenario Cost/Unit: $0.99

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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	$23.74	2.5	$59.34
Equipment Installation						
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$12.04	2.5	$30.11
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	$21.05	0.25	$5.26
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.36	0.25	$4.09
Materials						
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$32.68	0.25	$8.17
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	100	$52.46
Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	$0.62	100	$62.14
Two Species Mix, Warm Season, Native Perennial Grass	2325	Native, warm season perennial grass. Includes material and shipping only.	Acre	$94.57	6	$567.41

Practice: 422 - Hedgerow Planting

Scenario: #3 - Contour Introduced

Scenario Description: Typically installation of this scenario is within an annually cropped field. The hedge row is planted on the contour to provide a physical and visual aid to contour farming. This scenario is used to facilitate additional measures that address the resource concerns of; sheet and rill soil erosion and Water Quality Degradation, excess sediment in surface waters. Trees, shrubs, and exotic grasses adapted for local climatic and edaphic conditions are selected. Typically woody species are planted at eight foot intervals (this will vary with species selection and density goals). Species selected should be at least three feet tall at maturity. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence. Payment is based on the length of each hedgerow times the number of rows.

Before Situation: Contour farming practices are made difficult or less effective due to a lack of visual clues as to the location of the contours. Soil is lost to sheet and rill erosion. Sediments are deposited into surface waters.

After Situation: Hedgerow planted on the contour presents a physical and visual guide for tillage and planting operations on the contour. Soil erosion from sheet and rill sources is reduced and the resultant deposition of sediment to surface waters is in turn reduced.

Scenario Feature Measure: Length of Hedgerow

Scenario Unit: Foot

Scenario Typical Size: 800

Total Scenario Cost: $594.17

Scenario Cost/Unit: $0.74

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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	$23.74	2.5	$59.34
Equipment Installation						
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$12.04	2.5	$30.11
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	$21.05	0.25	$5.26
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.36	0.25	$4.09
Materials						
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$32.68	0.25	$8.17
Three Species Mix, Cool Season, Introduced Perennial Grass	2315	Cool season, introduced grass mix. Includes material and shipping only.	Acre	$46.58	8	$372.61
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	100	$52.46
Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	$0.62	100	$62.14

Practice: 422 - Hedgerow Planting

Scenario: #4 - Wildlife, Handplanted Trees and Shrubs with Warm Season Grass

Scenario Description: Typically installed in or at the edge of cropland or pasture this scenario is used to address the Inadequate Habitat for Fish and Wildlife resource concern. Specifically, the establishment of dense vegetation in a linear design can be used to provide for several habitat elements depending on the needs identified in the habitat assessment. This scenario can provide: habitat conectivity, food, and cover for wildlife depending on design and plant species selection. The 422 standard for wildlife criteria calls for a minimum of two species of native plants.Typical installation involves tillage to prepare the site for planting. 2 Trees and/or shrubs adapted for local climatic and edaphic conditions are typically plant at eight foot intervals (this will vary with species selection and density goals). A mix of 2 native warm season grasses adapted to the local climatic and edaphic conditions will be drilled into the site at a rate that will achieve a minimum of 20 seeds per square foot. The species list in the component section of this scenario are strictly for deriving a cost. Plant species adapted to the local climatic and edaphic conditions that address the resource concern will be stated in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence. Payment is based on the length of each hedgerow times the number of rows.

Before Situation: Habitat patches lack connectivity. Cover is inadequate to allow wildlife to exploit cropland food resources. Berries and mast are limited.

After Situation: Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Trees and shrubs planted at 8 foot spacing. Food resources in crop fields are made availble by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed.

Scenario Feature Measure: Length of Hedgerow, per row of trees/shrubs

Scenario Unit: Foot

Scenario Typical Size: 800

Total Scenario Cost: $785.28

Scenario Cost/Unit: $0.98

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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	$23.74	2.5	$59.34
Equipment Installation						
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$12.04	2.5	$30.11
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	$21.05	0.25	$5.26
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.36	0.25	$4.09
Materials						
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$32.68	0.25	$8.17
Shrub, seedling or transplant, bare root, 18"-36"	1507	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	$0.58	90	$52.22
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	100	$52.46
Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	$0.62	10	$6.21
Two Species Mix, Warm Season, Native Perennial Grass	2325	Native, warm season perennial grass. Includes material and shipping only.	Acre	$94.57	6	$567.41

Practice: 422 - Hedgerow Planting

Scenario: #5 - Wildlife, Machine Planted Trees and Shrubs with Warm Season Grass

Scenario Description: This scenario is for machine planting of woody species.Typically installed in or at the edge of cropland or pasture this scenario is used to address the Inadequate Habitat for Fish and Wildlife resource concern. Specifically, the establishment of dense vegetation in a linear design can be used to provide for several habitat elements depending on the needs identified in the habitat assessment. This scenario can provide: habitat conectivity, food, and cover for wildlife depending on design and plant species selection. The 422 standard for wildlife criteria calls for a minimum of two species of native plants.Typical installation involves tillage to prepare the site for planting. 2 Trees and/or shrubs adapted for local climatic and edaphic conditions are typically plant at eight foot intervals (this will vary with species selection and density goals). A mix of 2 native grasses adapted to the local climatic and edaphic conditions will be drilled into the site at a rate that will achieve a minimum of 20 seeds per square foot. The species list in the component section of this scenario are strictly for deriving a cost. Plant species adapted to the local climatic and edaphic conditions that address the resource concern will be stated in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence. Payment is based on the length of each hedgerow times the number of rows.

Before Situation: Habitat patches lack connectivity. Cover is inadequate to allow wildlife to exploit cropland food resources. Berries and mast are limited.

After Situation: Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Trees and shrubs planted at 8 foot spacing. Food resources in crop fields are made availble by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed.

Scenario Feature Measure: Length of Hedgerow, per row of trees/shrubs

Scenario Unit: Foot

Scenario Typical Size: 800

Total Scenario Cost: $920.17

Scenario Cost/Unit: $1.15

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$23.96	2	$47.93
Equipment Installation						
Mechanical tree planter	1600	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	$6.84	1	$6.84
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	$21.05	0.25	$5.26
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.36	0.25	$4.09
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	$169.58	1	$169.58
Materials						
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$32.68	0.25	$8.17
Shrub, seedling or transplant, bare root, 18"-36"	1507	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	$0.58	90	$52.22
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	100	$52.46
Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	$0.62	10	$6.21
Two Species Mix, Warm Season, Native Perennial	2325	Native, warm season perennial grass. Includes material and shipping only.	Acre	$94.57	6	$567.41

Grass						

Practice: 422 - Hedgerow Planting

Scenario: #6 - Wildlife, Handplanted Trees and Shrubs with Cool Season Grass

Scenario Description: Typically installed in or at the edge of cropland or pasture this scenario is used to address the Inadequate Habitat for Fish and Wildlife resource concern. Specifically, the establishment of dense vegetation in a linear design can be used to provide for several habitat elements depending on the needs identified in the habitat assessment. This scenario can provide: habitat conectivity, food, and cover for wildlife depending on design and plant species selection. The 422 standard for wildlife criteria calls for a minimum of two species of native plants.Typical installation involves tillage to prepare the site for planting. 2 Trees and/or shrubs adapted for local climatic and edaphic conditions are typically plant at eight foot intervals (this will vary with species selection and density goals). A native cool season grass adapted to the local climatic and edaphic conditions will be drilled into the site at a rate that will achieve a minimum of 20 seeds per square foot. The species list in the component section of this scenario are strictly for deriving a cost. Plant species adapted to the local climatic and edaphic conditions that address the resource concern will be stated in the specification for the site. There is tremendous overlap between this practice and conservation practice 380 Windbreak/Shelterbelt establishment. The main difference is that conservation practice 380 is exclusively woody plants where practice 422 provides for the use of herbaceous materials. If a fence is needed to facilitate establishment use practice 382, Fence. Payment is based on the length of each hedgerow times the number of rows.

Before Situation: Habitat patches lack connectivity. Cover is inadequate to allow wildlife to exploit cropland food resources. Berries and mast are limited.

After Situation: Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Trees and shrubs planted at 8 foot spacing. Food resources in crop fields are made availble by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed.

Scenario Feature Measure: Length of Hedgerow, per row of trees/shrubs

Scenario Unit: Foot

Scenario Typical Size: 800

Total Scenario Cost: $540.46

Scenario Cost/Unit: $0.68

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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	$23.74	2.5	$59.34
Equipment Installation						
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$12.04	2.5	$30.11
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	$21.05	0.25	$5.26
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.36	0.25	$4.09
Materials						
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$32.68	0.25	$8.17
One Species, Cool Season, Native Perennial Grass	2312	Native, cool season perennial grass. Includes material and shipping only.	Acre	$161.29	2	$322.59
Shrub, seedling or transplant, bare root, 18"-36"	1507	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	$0.58	90	$52.22
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	100	$52.46
Tree, hardwood, seedling or transplant, bare root, 16-36"	1510	Bare root hardwood trees 18-36" tall. Includes materials and shipping only.	Each	$0.62	10	$6.21

Practice: 422 - Hedgerow Planting

Scenario: #7 - Poultry Trees

Scenario Description: Two or more 660 foot rows (125% of length of poultry house) of hardwood and conifer trees for wind protection, energy conservation, air quality, or to provide a visual screen. Trees are hand planted 8 feet apart in the row with rows 10 feet apart.This practice is typically applied to crop, pasture lands or headquarters. Resource Concerns to be addressed include: Soil Erosion (wind); Excess/Insufficient Water (drifted snow, inefficient moisture management); Water Quality Degradation (excess nutrients in surface waters, pesticides transported to surface waters, excessive sediment in surface waters,); Degraded Plant Condition (undesirable plant productivity and health); Inadequate habitat for Fish and Wildlife (food, cover/shelter, continuity); Livestock Production Limitation (inadequate shelter); Air Quality Impacts (emission of particulate matter, objectionable odors); Inefficient Energy Use (facilities, farming/ranching practices and field operations). Associated Practices: Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Heavy Use Area Protection (561). Payment is based on the length of each hedgerow times the number of rows.

Before Situation: Agricultural field near poultry headquarters which has one or more poultry houses requiring protection from wind, odor mitigation, and visual screen.

After Situation: Wind velocity suitably reduced to reduce soil erosion or reduce energy losses. Odors and other materials are reduced via capture of material by hedgerow(s) from poultry houses. Two or more hedgerows are comprised of conifer or hardwood trees.

Scenario Feature Measure: Length of Hedgerow

Scenario Unit: Foot

Scenario Typical Size: 1320

Total Scenario Cost: $3,262.85

Scenario Cost/Unit: $2.47

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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	$23.74	80	$1,898.90
Materials						
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$32.68	0.25	$8.17
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	164	$86.03
Tree, conifer, seedling or transplant, potted, 1/2 to 1 gal.	1536	Potted conifer, 1/2 to 1 gal. Includes materials and shipping only.	Each	$4.59	82	$376.17
Tree, hardwood, seedling or transplant, potted, 1/2 to 1 gal.	1531	Potted hardwood tree, 1/2 to 1 gal. Includes materials and shipping only.	Each	$5.02	82	$411.86
Equipment Installation						
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$12.04	40	$481.72

Practice: 422 - Hedgerow Planting

Scenario: #8 - Poultry Grasses

Scenario Description: One row, 600 feet, of potted grass seedlings are planted in the swale between two parallel poultry houses which are are 600 feet in length. At the end of the house are typically 4 tunnel ventilation fans which are 5 feet in diameter. Two rows of potted grass seedlings are planted in front of the tunnel fans plus an additional 20 feet to each side. Total length of the two rows is 120 feet (each row is 60 feet times 2 rows equals 120 feet). This practice is typically applied to crop, pasture lands or headquarters. Resource Concerns to be addressed include: Soil Erosion (wind); Excess/Insufficient Water (drifted snow, inefficient moisture management); Water Quality Degradation (excess nutrients in surface waters, pesticides transported to surface waters, excessive sediment in surface waters,); Degraded Plant Condition (undesirable plant productivity and health); Inadequate habitat for Fish and Wildlife (food, cover/shelter, continuity); Livestock Production Limitation (inadequate shelter); Air Quality Impacts (emission of particulate matter, objectionable odors); Inefficient Energy Use (facilities, farming/ranching practices and field operations). Associated Practices: Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Heavy Use Area Protection (561). Payment is based on the length of each hedgerow times the number of rows.

Before Situation: Agricultural field near poultry headquarters which has one or more poultry houses requiring protection from wind, odor mitigation, and visual screen.

After Situation: Wind velocity suitably reduced to reduce soil erosion or reduce energy losses. Odors and other materials are reduced via capture of material by hedgerow(s) from poultry houses. Grasses are planted in the swales and in front of the tunnels.

Scenario Feature Measure: Length of hedgerows

Scenario Unit: Foot

Scenario Typical Size: 720

Total Scenario Cost: $2,117.08

Scenario Cost/Unit: $2.94

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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	$23.74	40	$949.45
Equipment Installation						
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.36	0.1	$1.64
Materials						
Shrub, seedling or transplant, potted, 1 qt.	1524	Potted shrub, 1 quart. Includes materials and shipping only.	Each	$3.24	360	$1,166.00

Practice: 422 - Hedgerow Planting

Scenario: #9 - Poultry Trees &Grasses

Scenario Description: Two or more 660 foot rows (125% of length of poultry house) of hardwood, conifer trees and native grasses for wind protection, energy conservation, air quality, or to provide a visual screen. Trees are hand planted 8 feet apart in the row with rows 10 feet apart. Grasses are planted in front of the tunnel ventilation fans on 2 foot centers. This practice is typically applied to crop, pasture lands or headquarters. Resource Concerns to be addressed include: Soil Erosion (wind); Excess/Insufficient Water (drifted snow, inefficient moisture management); Water Quality Degradation (excess nutrients in surface waters, pesticides transported to surface waters, excessive sediment in surface waters,); Degraded Plant Condition (undesirable plant productivity and health); Inadequate habitat for Fish and Wildlife (food, cover/shelter, continuity); Livestock Production Limitation (inadequate shelter); Air Quality Impacts (emission of particulate matter, objectionable odors); Inefficient Energy Use (facilities, farming/ranching practices and field operations). Associated Practices: Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Heavy Use Area Protection (561). Payment is based on the length of each hedgerow times the number of rows.

Before Situation: Agricultural field near poultry headquarters which has one or more poultry houses requiring protection from wind, odor mitigation, and visual screen.

After Situation: Wind velocity suitably reduced to reduce soil erosion or reduce energy losses. Odors and other materials are reduced via capture of material by hedgerow(s) from poultry houses. Two or more hedgerows are comprised of conifer or hardwood trees, and grasses in front of the tunnels.

Scenario Feature Measure: Length of hedgerows

Scenario Unit: Foot

Scenario Typical Size: 1320

Total Scenario Cost: $3,392.39

Scenario Cost/Unit: $2.57

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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	$23.74	80	$1,898.90
Equipment Installation						
Hand tools, tree planting	1590	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$12.04	40	$481.72
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$16.36	0.6	$9.82
Materials						
Animal repellent, chemical	1907	Chemical animal repellent to protect trees from animal damage. Includes materials and shipping only.	Gallon	$32.68	0.25	$8.17
Shrub, seedling or transplant, potted, 1 qt.	1524	Potted shrub, 1 quart. Includes materials and shipping only.	Each	$3.24	60	$194.33
Tree shelter, mesh tree tube, 24"	1555	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.52	150	$78.69
Tree, conifer, seedling or transplant, potted, 1/2 to 1 gal.	1536	Potted conifer, 1/2 to 1 gal. Includes materials and shipping only.	Each	$4.59	75	$344.05
Tree, hardwood, seedling or transplant, potted, 1/2 to 1 gal.	1531	Potted hardwood tree, 1/2 to 1 gal. Includes materials and shipping only.	Each	$5.02	75	$376.70