

**Practice: 380 - Windbreak/Shelterbelt Establishment**

**Scenario: #1 - 1 row windbreak, hardwood, hand planted**

**Scenario Description:**

Single 500 foot row of shrubs for wind protection, wildlife habitat, or snow management. Hardwoods planted by hand 8 feet apart. This practice is typically applied to crop, pasture or range lands. Resource Concerns to be addressed may include: Soil Erosion (wind); Excess/Insufficient Water (drifted snow, inefficient moisture management); Water Quality Degradation (excess nutrients in 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); Inefficient Energy Use (facilities, farming/ranching practices and field operations).

Associated Practices: Herbaceous Weed Control (315), Mulching (484), Tree & Shrub Site Preparation (490)

**Before Situation:**

Agricultural field, livestock paddock, feedlot or farmstead needing protection from wind, additional wildlife food and cover, or management of snow deposition

**After Situation:**

Wind velocity suitably reduced to reduce soil erosion, or to manage snow deposition. Additional wildlife food and cover.

**Scenario Feature Measure:** length of windbreak row(s)

**Scenario Unit:** Feet

**Scenario Typical Size:** 500

**Scenario Cost:** \$688.05

**Scenario Cost/Unit:** \$1.38

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
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	\$11.62	2	\$23.24
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.72	2	\$75.44
<b>Labor</b>						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$42.74	2	\$85.48
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	\$22.22	2	\$44.44
<b>Materials</b>						
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	63	\$39.06
Wire flags	1586	Small vinyl flags attached to wire stakes, typically, 36" in length, for marking tree rows	Each	\$0.09	30	\$2.70
Stakes, wood, 3/4" x 3/4" x 60"	1583	3/4" x 3/4" x 60" wood stakes to fasten items in place. Includes materials only.	Each	\$1.56	63	\$98.28
Tree shelter, solid tube type, 4" x 60"	1567	4" x 60" tree tube for protection from animal damage. Materials only.	Each	\$5.07	63	\$319.41

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**Scenario: #2 - 1 row windbreak, conifers, hand planted**

**Scenario Description:**

Single 500 foot row of conifer tree seedlings for wind protection, wildlife habitat, or snow management. Trees planted by hand 8 feet apart. This practice is typically applied to crop, pasture or range lands. Resource Concerns to be addressed may include: Soil Erosion (wind); Excess/Insufficient Water (drifted snow, inefficient moisture management); Water Quality Degradation (excess nutrients in 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); Inefficient Energy Use (facilities, farming/ranching practices and field operations).

Associated Practices: Herbaceous Weed Control (315), Mulching (484), Tree & Shrub Site Preparation (490)

**Before Situation:**

Agricultural field, livestock paddock, feedlot or farmstead needing protection from wind, additional wildlife food and cover, or management of snow deposition

**After Situation:**

Wind velocity suitably reduced to reduce soil erosion, or to manage snow deposition. Additional wildlife food and cover.

**Scenario Feature Measure:** length of windbreak row(s)

**Scenario Unit:** Feet

**Scenario Typical Size:** 500

**Scenario Cost:** \$315.69

**Scenario Cost/Unit:** \$0.63

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
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	\$11.62	6	\$69.72
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.72	3	\$113.16
<b>Labor</b>						
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	\$22.22	1	\$22.22
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$42.74	2	\$85.48
<b>Materials</b>						
Wire flags	1586	Small vinyl flags attached to wire stakes, typically, 36" in length, for marking tree rows	Each	\$0.09	20	\$1.80
Tree, conifer, seedling, bare root, 3-0	1515	Bare root conifer trees, 3-0 (3 years old). Includes materials and shipping only.	Each	\$0.37	63	\$23.31

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**Scenario: #3 - 2-row windbreak, hardwoods**

**Scenario Description:**

Two 500 foot rows of shrubs for wind protection, energy conservation, wildlife habitat, air quality, snow management or to provide a visual screen. Hardwood trees planted with a tree planting machine 8 feet apart in the row with rows 16 feet apart. This practice is typically applied to crop, pasture or range lands. 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: Herbaceous Weed Control (315), Mulching (484), Tree & Shrub Site Preparation (490)

**Before Situation:**

Agricultural field, livestock paddock, feedlot or farmstead needing protection from wind, additional wildlife food and cover, odor mitigation, visual screen or management of snow deposition

**After Situation:**

Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening.

**Scenario Feature Measure:** length of windbreak row(s)

**Scenario Unit:** Feet

**Scenario Typical Size:** 500

**Scenario Cost:** \$494.45

**Scenario Cost/Unit:** \$0.99

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.72	2	\$75.44
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	\$6.60	2	\$13.20
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.79	2	\$47.58
<b>Labor</b>						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.43	4	\$89.72
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$42.74	2	\$85.48
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	\$22.22	4	\$88.88
<b>Materials</b>						
Wire flags	1586	Small vinyl flags attached to wire stakes, typically, 36" in length, for marking tree rows	Each	\$0.09	60	\$5.40
Tree, hardwood, seedling or transplant, bare root, 6-18"	1509	Bare root hardwood trees 6-18" tall. Includes materials and shipping only.	Each	\$0.71	125	\$88.75

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**Scenario: #4 - 2-row windbreak, conifers**

**Scenario Description:**

Two 500 foot rows of conifer tree seedlings for wind protection, energy conservation, wildlife habitat, air quality, snow management or to provide a visual screen. Trees planted with a tree planting machine 8 feet apart in the row with rows 16 feet apart. Herbivores (deer, rabbits, etc.) are NOT expected to browse tree seedlings, tree protection is not needed. This practice is typically applied to crop, pasture or range lands. 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: Herbaceous Weed Control (315), Mulching (484), Tree & Shrub Site Preparation (490)

**Before Situation:**

Agricultural field, livestock paddock, feedlot or farmstead needing protection from wind, additional wildlife food and cover, odor mitigation, visual screen or management of snow deposition

**After Situation:**

Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening.

**Scenario Feature Measure:** length of windbreak row(s)

**Scenario Unit:** Feet

**Scenario Typical Size:** 500

**Scenario Cost:** \$476.95

**Scenario Cost/Unit:** \$0.95

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
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	\$6.60	2	\$13.20
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.72	2	\$75.44
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.79	2	\$47.58
<b>Labor</b>						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$42.74	2	\$85.48
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	\$22.22	4	\$88.88
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.43	4	\$89.72
<b>Materials</b>						
Wire flags	1586	Small vinyl flags attached to wire stakes, typically, 36" in length, for marking tree rows	Each	\$0.09	60	\$5.40
Tree, conifer, seedling, containerized, 10 cu. in.	1519	Containerized conifer stock, 10 cubic inches (approx 6" plug), 1.7" x 6"). Includes materials and shipping only.	Each	\$0.57	125	\$71.25

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**Scenario: #5 - 3 or more row windbreak, hardwoods**

**Scenario Description:**

Three or more 500 foot rows of hardwood trees for wind protection, energy conservation, wildlife habitat, air quality, snow management. Trees planted with a tree planting machine, 8 feet apart in the row with rows 16 feet apart. This practice is typically applied to crop, pasture or range lands. 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: Herbaceous Weed Control (315), Mulching (484), Tree & Shrub Site Preparation (490)

**Before Situation:**

Agricultural field, livestock paddock, feedlot or farmstead needing protection from wind, additional wildlife food and cover, odor mitigation, visual screening or management of snow deposition

**After Situation:**

Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening.

**Scenario Feature Measure:** length of windbreak row(s)

**Scenario Unit:** Feet

**Scenario Typical Size:** 500

**Scenario Cost:** \$721.05

**Scenario Cost/Unit:** \$1.44

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.79	3	\$71.37
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.72	3	\$113.16
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	\$6.60	3	\$19.80
<b>Labor</b>						
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	\$22.22	8	\$177.76
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.43	3	\$67.29
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$42.74	3	\$128.22
<b>Materials</b>						
Wire flags	1586	Small vinyl flags attached to wire stakes, typically, 36" in length, for marking tree rows	Each	\$0.09	95	\$8.55
Tree, hardwood, seedling or transplant, bare root, 6-18"	1509	Bare root hardwood trees 6-18" tall. Includes materials and shipping only.	Each	\$0.71	190	\$134.90

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**Scenario: #6 - 3 or more tree rows hardwood/conifers**

**Scenario Description:**

Three or more 500 foot rows of trees for wind protection, energy conservation, wildlife habitat, air quality, snow management or to provide a visual screen. The outside rows are conifers the inside row(s) are hardwoods. Trees 8 feet apart with rows 16 feet apart, planted with a tree planting machine. Herbivores are not expected to browse planted seedlings, so tree shelters are not needed. This practice is typically applied to crop, pasture or range lands. 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: Herbaceous Weed Control (315), Mulching (484), Tree & Shrub Site Preparation (490)

**Before Situation:**

Agricultural field, livestock paddock, feedlot or farmstead needing protection from wind, additional wildlife food and cover, odor mitigation, visual screening or management of snow deposition

**After Situation:**

Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening.

**Scenario Feature Measure:** length of windbreak row(s)

**Scenario Unit:** Feet

**Scenario Typical Size:** 500

**Scenario Cost:** \$590.75

**Scenario Cost/Unit:** \$1.18

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$37.72	3	\$113.16
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	\$6.60	3	\$19.80
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.79	3	\$71.37
<b>Labor</b>						
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	\$22.22	8	\$177.76
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$42.74	2	\$85.48
<b>Materials</b>						
Tree, conifer, seedling, containerized, 10 cu. in.	1519	Containerized conifer stock, 10 cubic inches (approx 6" plug), 1.7" x 6"). Includes materials and shipping only.	Each	\$0.57	125	\$71.25
Tree, hardwood, seedling or transplant, bare root, 6-18"	1509	Bare root hardwood trees 6-18" tall. Includes materials and shipping only.	Each	\$0.71	63	\$44.73
Wire flags	1586	Small vinyl flags attached to wire stakes, typically, 36" in length, for marking tree rows	Each	\$0.09	80	\$7.20

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**Scenario: #7 - windbreak, poultry house**

**Scenario Description:**

Three or more 660 foot rows (125% of length of poultry house) of hardwood and conifer trees for wind protection, energy conservation, wildlife habitat, air quality, snow management 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).

**Before Situation:**

Agricultural field, livestock paddock, feedlot or farmstead needing protection from wind, additional wildlife food and cover, odor mitigation, visual screen or management of snow deposition

**After Situation:**

Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening.

**Scenario Feature Measure:** Number of trees

**Scenario Unit:** Each

**Scenario Typical Size:** 248

**Scenario Cost:** \$3,200.20

**Scenario Cost/Unit:** \$12.90

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
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	\$11.62	12	\$139.44
<b>Labor</b>						
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	\$22.22	24	\$533.28
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$42.74	8	\$341.92
<b>Materials</b>						
Stakes, wood, 3/4" x 3/4" x 60"	1583	3/4" x 3/4" x 60" wood stakes to fasten items in place. Includes materials only.	Each	\$1.56	248	\$386.88
Tree, hardwood, seedling or transplant, potted or B&B, 2-3 gal.	1532	Potted or balled and burlapped hardwood tree, 2-3 gal. Includes materials and shipping only.	Each	\$7.41	83	\$615.03
Tree, conifer, seedling or transplant, potted or B&B, 2-3 gal.	1537	Potted or balled and burlapped conifer tree, 2-3 gal. Includes materials and shipping only.	Each	\$7.13	165	\$1,176.45
Wire flags	1586	Small vinyl flags attached to wire stakes, typically, 36" in length, for marking tree rows	Each	\$0.09	80	\$7.20

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**Scenario: #9 - Multi-row Tree/shrub, containerized stock**

**Scenario Description:**

A multi-row linear planting of trees and/or shrubs to provide a buffer against wind-born sediments or chemicals. Two rows of containerized trees and shrubs are planted in an alternating pattern. One row is 4-5' trees planted on 16' centers. Second row is 30-36" shrubs planted on 5-7' centers. Windbreak is located in a difficult to establish area such as those prone to intense wildlife pressure or where fast establishment is necessary requiring the use of containerized plants to ensure establishment.

Associated Practices: Herbaceous Weed Control (315), Mulching (484), Tree & Shrub Site Preparation (490)

**Before Situation:**

An agricultural field, livestock paddock, feedlot or farmstead is vulnerable to wind causing air quality problems. Inadequate wildlife food and cover is a factor. It is located in a difficult to establish area such as those prone to intense wildlife pressure.

**After Situation:**

A multi-row linear planting of trees and/or shrubs provides a buffer against wind-born sediments or chemicals. Wind velocity is suitably reduced to manage soil erosion, energy loss, or snow deposition. Plantings provide improved plant diversity and quality and quantity of vegetation provides food and cover for wildlife.

**Scenario Feature Measure:** Length of windbreak

**Scenario Unit:** Foot

**Scenario Typical Size:** 1,980

**Scenario Cost:** \$7,165.63

**Scenario Cost/Unit:** \$3.62

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Labor</b>						
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	\$22.22	51.6	\$1,146.55
<b>Materials</b>						
Stakes, wood, 1" x 2" x 24"	1579	1" x 2" x 24" wood stakes to fasten items in place. Includes materials only.	Each	\$0.34	454	\$154.36
Tree shelter, solid tube type, 5" x 48"	1571	5" x 48" tree tube for protection from animal damage. Materials only.	Each	\$2.09	454	\$948.86
Wire flags	1586	Small vinyl flags attached to wire stakes, typically, 36" in length, for marking tree rows	Each	\$0.09	60	\$5.40
Shrub, seedling or transplant, potted or B&B, 2-3 gal.	1527	Potted or balled and burlapped shrub, 2-3 gal. Includes materials and shipping only.	Each	\$9.21	330	\$3,039.30
Tree, hardwood, seedling or transplant, potted or B&B, 5 gal.	1533	Potted or balled and burlapped hardwood tree, 5 gal. Includes materials and shipping only.	Each	\$15.09	124	\$1,871.16

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**Scenario: #10 - Single row of tree and shrub planting with tree tublings**

**Scenario Description:**

A new row of trees is planted @ 10; spacing using stock from an approved nursery. Species selected by the planner and the producer based on the intended purpose. Tree shelters are used on all trees or shrubs for animal control. Practice will provide wind protection, wildlife habitat, or snow management. This practice is typically applied to crop, pasture or range lands. Resource Concerns to be addressed may include: Soil Erosion (wind); Excess/Insufficient Water (drifted snow, inefficient moisture management); Water Quality Degradation (excess nutrients in 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); Inefficient Energy Use (facilities, farming/ranching practices and field operations).

Associated Practices: Herbaceous Weed Control (315), Mulching (484), Tree & Shrub Site Preparation (490)

**Before Situation:**

Agricultural field, livestock paddock, feedlot or farmstead needing protection from wind, additional wildlife food and cover, odor mitigation, visual screening or management of snow deposition

**After Situation:**

Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening.

**Scenario Feature Measure:** Feet of windbreak

**Scenario Unit:** Foot

**Scenario Typical Size:** 200

**Scenario Cost:** \$405.54

**Scenario Cost/Unit:** \$2.03

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
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	\$11.62	5	\$58.10
<b>Labor</b>						
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	\$22.22	5	\$111.10
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$42.74	1	\$42.74
<b>Materials</b>						
Tree, conifer, seedling or transplant, potted, 1 qt.	1534	Potted conifer tree, 1 quart. Includes materials and shipping only.	Each	\$3.05	20	\$61.00
Tree shelter, solid tube type, 4" x 60"	1567	4" x 60" tree tube for protection from animal damage. Materials only.	Each	\$5.07	20	\$101.40
Stakes, wood, 3/4" x 3/4" x 60"	1583	3/4" x 3/4" x 60" wood stakes to fasten items in place. Includes materials only.	Each	\$1.56	20	\$31.20