Practice: 650 - Windbreak/Shelterbelt Renovation

Scenario # 1 **Sod Release**

Scenario Description: **Actual Scenario # 1** **New York**

Reduce competition from sod around trees/shrubs within a windbreak/shelterbelt. Apply appropriate herbicide to stress or kill competing sod vegetation between and/or within tree/shrub row. A herbicide application is completed to significantly reduce competition from sod (grass) in the windbreak. Associated Practices: Conservation Cover (327), Fence (382), Windbreak/shelterbelt Establishment (380), Hedgerow Planting (422).

Before Practice Situation:

1000 feet of livestock shelterbelt, 4 row mix of deciduous and conifer trees/shrubs deteriorating due to being sod bound. Resouce concerns: Degrade plant condition- undesirable plant productivity and health; Livestock Production-Inadequate livestock shelter..

After Practice Situation:

Integrity of windbreak restored. Domestic animal protection restored.

Scenario Feature Measure:

Length of Renovation

Scenario Typical Size:	1000	Linear Feet	Tot Unit Cost	$0.37

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Herbicide, Sethoxydim	1	Acre	$19.39	$19.39
Equip./Install.	Chemical, ground application	1	Acre	$6.37	$6.37
Labor	General Labor	2	Hour	$23.16	$46.32
Labor	Specialist Labor	1	Hour	$105.46	$105.46
Mobilization	Mobilization, small equipment	1	Each	$190.19	$190.19
				Total Cost:	$367.73

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$0.28	EQIP-HU	$0.33
WHIP	$0.00	WHIP-HU	$0.00

Practice: 650 - Windbreak/Shelterbelt Renovation

Scenario # 2 Thinning

Scenario Description: **Actual Scenario # 2** **New York**

Windbreak is thinned by hand w/chainsaw and cut stumps have herbicide applied to prevent undesirable sprouting. Associated Practices: Conservation Cover (327), Fence (382), Windbreak/shelterbelt Establishment (380), Hedgerow Planting (422).

Before Practice Situation:

Windbreak functionality has decreased. Windbreak tree and/or shrub species are overly dense and do not provide the desired wind protection. Resouce concern is Degrade plant condition- undesirable plant productivity and health.

After Practice Situation:

Integrity of windbreak restored, function and health improved.

Scenario Feature Measure:

Length of Renovation

Scenario Typical Size:	1000	Linear Feet	Tot Unit Cost	$0.68

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Herbicide, Triclopyor	1	Acre	$42.84	$42.84
Equip./Install.	Chainsaw	10	Hour	$6.90	$69.00
Equip./Install.	Chemical, spot treatment, single	2	Hour	$62.08	$124.16
Labor	General Labor	10	Hour	$23.16	$231.60
Labor	Specialist Labor	2	Hour	$105.46	$210.92
				Total Cost:	$678.52

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$0.51	EQIP-HU	$0.61
WHIP	$0.00	WHIP-HU	$0.00

Practice: 650 - Windbreak/Shelterbelt Renovation

Scenario # 3 Pruning

Scenario Description: **Actual Scenario # 3** **New York**

Windbreak is pruned by hand (hand tools + chainsaw) to improve shape and form of trees and/or shrubs so that the overall effectiveness of the windbreak will improve. Slash is treated to prevent potential insect, disease, fire and operability problems. Associated Practices: Conservation Cover (327), Fence (382), Windbreak/shelterbelt Establishment (380), Hedgerow Planting (422).

Before Practice Situation:

The windbreak tree and or shrub species have become to 'leggy' (grown to tall) or are growing beyond the bounds of the designated windbreak area. Overall density of windbreak is lower than desired optimum. Resource concern is Degrade plant condition- undesirable plant productivity and health; Livestock Production-Inadequate livestock shelter.

After Practice Situation:

Integrity of windbreak restored; impacts of wind reduced. 1,000 feet of windbreaks or shelterbelts

Scenario Feature Measure:

Length of Renovation

Scenario Typical Size:	1000	Linear Feet	Tot Unit Cost	$0.56

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Chainsaw	10	Hour	$6.90	$69.00
Equip./Install.	Pruning tools, hand tools	2	Hour	$1.09	$2.18
Labor	General Labor	12	Hour	$23.16	$277.92
Labor	Specialist Labor	2	Hour	$105.46	$210.92
				Total Cost:	$560.02

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$0.42	EQIP-HU	$0.50
WHIP	$0.00	WHIP-HU	$0.00

Practice: 650 - Windbreak/Shelterbelt Renovation

Scenario # 4 Tree/Shrub Removal with Chain Saw

Scenario Description: **Actual Scenario # 4** **New York**

Windbreak renovation requires the removal of degraded or inappropriate trees or shrubs within a windbreak. This may include removal of entire rows, including stumps or roots, or selected trees/shrubs in order to prepare for the necessary planting of a replacement row within the windbreak, improve the health of the remaining rows, and/or allow for supplemental planting to expand the windbreak. Resource concerns: Degrade plant condition-undesirable plant productivity and health; Livestock Production-Inadequate livestock shelter, Soil erosion-wind.

Associated Practices: Conservation Cover (327), Fence (382), Windbreak/shelterbelt Establishment (380), Hedgerow Planting (422).

Before Practice Situation:

Plant (trees and/or shrubs) health has degraded decreasing the effectiveness of the original windbreak design. Plants lack leaf cover, have dead branches, gaps of no live green material and some are completley dead. Wind now moves freely thru areas that lack any leaves.

After Practice Situation:

Integrity and function of windbreak restored. 1,000 feet of windbreak/shelterbelt renovated.

Scenario Feature Measure:

Length of Renovation

Scenario Typical Size:	1000	Linear Feet	Tot Unit Cost	$0.97

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Chainsaw	8	Hour	$6.90	$55.20
Equip./Install.	Truck, Pickup	8	Hour	$40.77	$326.16
Equip./Install.	Pruning tools, hand tools	2	Hour	$1.09	$2.18
Equip./Install.	Trailer, flatbed, small	8	Hour	$6.11	$48.88
Labor	General Labor	14	Hour	$23.16	$324.24
Labor	Specialist Labor	2	Hour	$105.46	$210.92
				Total Cost:	$967.58

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$0.73	EQIP-HU	$0.87
WHIP	$0.00	WHIP-HU	$0.00

Practice: 650 - Windbreak/Shelterbelt Renovation

Scenario # 5 Removal <8 inches DBH with Skidsteer

Scenario Description: **Actual Scenario # 5** **New York**

Windbreak renovation requires the removal of degraded or inappropriate trees or shrubs within a windbreak. This may include removal of entire rows, including stumps or roots, or selected trees/shrubs in order to prepare for the necessary planting of a replacement row within the windbreak, improve the health of the remaining rows, and/or allow for supplemental planting to expand the windbreak. Resource concerns include Degraded plant condition-undesirable plant productivity and health; Livestock Production-Inadequate livestock shelter, Soil erosion-wind.

Associated Practices: Conservation Cover (327), Fence (382), Windbreak/shelterbelt Establishment (380), Hedgerow Planting (422).

Before Practice Situation:

Reduce wind impacts by renovating 1,000 foot windbreaks or shelterbelts using heavy equipment to remove selected trees with average DBH < 8 Inches. Typically trees and shrubs are cleared by a Skidsteer using a tree sheer or saw. All slash material from cutting and pruning is either scattered and crushed, piled and crushed, chipped or removed from the treatment area.

After Practice Situation:

Integrity and function of windbreak restored.

Scenario Feature Measure:

Length of Renovation

Scenario Typical Size:	1000	Linear Feet	Tot Unit Cost	$1.40

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Skidsteer, 80 HP	8	Hour	$47.33	$378.64
Labor	Equipment Operators, Light	10	Hour	$24.05	$240.50
Labor	Specialist Labor	2	Hour	$105.46	$210.92
Mobilization	Mobilization, medium equipment	2	Each	$282.78	$565.56
				Total Cost:	$1,395.62

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$1.05	EQIP-HU	$1.26
WHIP	$0.00	WHIP-HU	$0.00

Practice: 650 - Windbreak/Shelterbelt Renovation

Scenario # 6 **Removal > 8 inches DBH with Dozer**

Scenario Description: **Actual Scenario # 6** **New York**

Windbreak renovation requires the removal of degraded or inappropriate trees or shrubs within a windbreak. This may include removal of entire rows, including stumps or roots, or selected trees/shrubs in order to prepare for the necessary planting of a replacement row within the windbreak, improve the health of the remaining rows, and/or allow for supplemental planting to expand the windbreak. Resource concerns include Degraded plant condition-undesirable plant productivity and health; Livestock Production-Inadequate livestock shelter, Soil erosion-wind.

Associated Practices: Conservation Cover (327), Fence (382), Windbreak/shelterbelt Establishment (380), Hedgerow Planting (422).

Before Practice Situation:

Reduce wind impacts by renovating 1,000 foot windbreaks or shelterbelts using heavy equipment to remove selected trees with average DBH > 8 inches. Typically trees and shrubs are cleared by dozer (D-6 or equivalent) using a brush rake or blade. All slash material from cutting and pruning is either scattered and crushed, piled and crushed, chipped or removed from the treatment area.

After Practice Situation:

Integrity and function of windbreak restored.

Scenario Feature Measure:

Length of Renovation

Scenario Typical Size: 1000 | Linear Feet | Tot Unit Cost | $2.13

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Dozer, 140 HP	8	Hour	$136.36	$1,090.88
Labor	Equipment Operators, Heavy	8	Hour	$36.55	$292.40
Labor	Specialist Labor	2	Hour	$105.46	$210.92
Mobilization	Mobilization, large equipment	1	Each	$539.90	$539.90
				Total Cost:	$2,134.10

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$1.60	EQIP-HU	$1.92
WHIP	$0.00	WHIP-HU	$0.00

Practice: 650 - Windbreak/Shelterbelt Renovation

Scenario # 7 **Supplemental Planting, Container**

Scenario Description: **Actual Scenario # 7** **New York**

Parts of the windbreak being renovated have died. Supplemental plantings of containerized trees/shrubs will improve the effectiveness and longevity of the windbreak. Resource concerns include Soil erosion - Wind erosion, Degraded plant condition -Inadequate structure and composition, and Livestock production limitation - Inadequate livestock shelter. Associated Practices: Conservation Cover (327), Fence (382), Windbreak/shelterbelt Establishment (380), Hedgerow Planting (422).

Before Practice Situation:

Dead trees/shrubs are inhibiting windbreak effectiveness. A one (1.0) acre windbreak/shelterbelt is expanded through the planting of containerized tree and shrub seedlings at a average spacing of 8' (shrubs 4'-6', deciduous/conifer trees 8'-12') within row and 15'-20' between rows. Planting is achieved through hand planting.

After Practice Situation:

The integrity and function of the windbreak is restored.

Scenario Feature Measure:

Number of plants replaced

Scenario Typical Size:	350	Each	Tot Unit Cost	$8.34

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Tree, conifer, seedling,	350	Each	$0.53	$185.50
Materials	Tree shelter, solid tube type, 5" x	350	Each	$2.04	$714.00
Materials	Stakes, wood, 3/4" x 3/4" x 48"	350	Each	$1.13	$395.50
Equip./Install.	Hand tools, tree planting	2	Hour	$11.22	$22.44
Labor	General Labor	60	Hour	$23.16	$1,389.60
Labor	Specialist Labor	2	Hour	$105.46	$210.92
				Total Cost:	$2,917.96

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$6.25	EQIP-HU	$7.50
WHIP	$0.00	WHIP-HU	$0.00

Practice: 650 - Windbreak/Shelterbelt Renovation

Scenario # 8 Supplemental Plantings, Bare Root

Scenario Description: **Actual Scenario # 8** **New York**

Parts of the windbreak being renovated have died. Supplemental plantings of bare root trees/shrubs will improve the effectiveness and longevity of the windbreak. Resource concerns include Soil erosion - Wind erosion, Degraded plant condition - Inadequate structure and composition, and Livestock production limitation - Inadequate livestock shelter. Associated Practices: Conservation Cover (327), Fence (382), Windbreak/shelterbelt Establishment (380), Hedgerow Planting (422).

Before Practice Situation:

Dead trees/shrubs are inhibiting windbreak effectiveness. A one (1.0) acre windbreak/shelterbelt is expanded through the planting of bare root tree and shrub seedlings at a average spacing of 8' (shrubs 4'-6', deciduous/conifer trees 8'-12') within row and 15'-20' between rows. Planting is achieved through hand planting.

After Practice Situation:

The integrity and function of the windbreak is restored.

Scenario Feature Measure:

Number of plants replaced

Scenario Typical Size:	350	Each	Tot Unit Cost	$3.23

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Tree, hardwood, seedling or	200	Each	$0.66	$132.00
Materials	Tree, conifer, seedling, bare root, 1-1	150	Each	$0.39	$58.50
Equip./Install.	Hand tools, tree planting	3	Hour	$11.22	$33.66
Labor	General Labor	30	Hour	$23.16	$694.80
Labor	Specialist Labor	2	Hour	$105.46	$210.92
				Total Cost:	$1,129.88

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$2.42	EQIP-HU	$2.91
WHIP	$0.00	WHIP-HU	$0.00

Practice: 650 - Windbreak/Shelterbelt Renovation

Scenario # 9 Coppicing

Scenario Description: **Actual Scenario # 9** **New York**

Coppicing of selected trees and understory vegetation in a windbreak/shelterbelt is needed to ensure that species composition and stand structure continue to serve their intended purpose. Resouce concern is Degraded plant condition- undesirable plant productivity and health. Associated Practices: Conservation Cover (327), Fence (382), Windbreak/shelterbelt Establishment (380), Hedgerow Planting (422).

Before Practice Situation:

One acre of windbreak/shelterbelt renovation carried out through manipulating species composition, stand structure, and stocking by the cutting of selected trees and understory vegetation for coppicing and by removing or disposing of slash so as to not interfere with the intended purpose. This manipulation does not include pruning.

After Practice Situation:

The integrity and function of the windbreak is restored.

Scenario Feature Measure:

Area of Renovation

Scenario Typical Size:	1	Acre	Tot Unit Cost	$1,111.06

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Skidsteer, 80 HP	8	Hour	$47.33	$378.64
Labor	General Labor	2	Hour	$23.16	$46.32
Labor	Equipment Operators, Light	8	Hour	$24.05	$192.40
Labor	Specialist Labor	2	Hour	$105.46	$210.92
Mobilization	Mobilization, medium equipment	1	Each	$282.78	$282.78
				Total Cost:	$1,111.06

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$833.30	EQIP-HU	$999.95
WHIP	$0.00	WHIP-HU	$0.00