Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	309 - Agrichemical Handling Facility
Scenario ID	1
Scenario Name	Roofed Building with concrete pad for Chemical Handling and Storage
Scenario Description	This practice scenario is a roofed agrichemical handling facility for storage, loading, and mixing of agrichemicals. This practice addresses water quality degradation and due to mis-handling, storing, and mixing of fertilizer and other agrichemicalsor chemicals are running off into surface waters or leaching into ground water. Associated practices: Heavy Use Area Protection (561), Access Road (560), Pipeline (516), Pumping Plant (533), Nutrient Management (590), Integrated Pest Management (595), Roof Runoff Structure (558)
Before Practice Situation	Agrichemicals are improperly stored. Operator mixes the agrichemicals and fills the sprayer tank next to a commom hydrant. Spills or overflows of agrichemicals contaminate the soil, runoff to surface waters and leach to ground water.
After Practice Situation	A roofed pole building with sealed reinforced concrete pad (at least 5" t), is constructed to serve as an agricultural chemical handling facility for storage, loading, and mixing of agrichemicals. The concrete pad 20'w x 16'd to accomodate the width of the spray boom and tank is also considered the building dimensions. The roof area provides a 2' overhang all around (24'w x 20'd). This practice will contain agrichemicals and prevent contamination of surface and ground water resources.
Scenario Feature Measure	Concrete Floor surface area under roof
Scenario Unit	Square Foot
Scenario Typical Size	320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$3,420.80	$10.69
Equipment/Installation	$2,794.96	$8.73
Labor	$3,536.56	$11.05
Mobilization	$382.36	$1.19
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$10,134.68	$31.67

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1046	Post Frame Building	includes materials, labor and equipment costs.	Square Foot	$9.77	320	$3,126.40
Materials	1497	Painting, concrete surface, impermeable	Painting of concrete surfaces with an impermeable coating. Includes materials and application.	Square Foot	$0.92	320	$294.40
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$279.77	8	$2,238.16
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$34.80	16	$556.80
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	16	$398.56
Labor	231	General Labor	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	$26.15	120	$3,138.00
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	311 - Alley Cropping
Scenario ID	3
Scenario Name	Manual Planting, Individual Plant Cutting
Scenario Description	Cropland or grassland where few or no trees are growing is planted with rows of tree and shrub cuttings to increase crop diversity. Tree row width, and within-row tree spacing, is based on farm equipment size, growth form and potential competitive effects of trees, light needs of annual crop or grass, and intent of the landowner. Tree and shrub cuttings will be hand planted in rows. Typical resource concerns addressed include: Degraded plant condition - undesirable plant productivity and health, inadequate structure and composition; Soil erosion - sheet, rill & wind erosion, and; Inadequate habitat for fish & wildlife - habitat degradation.
Before Practice Situation	The landscape has been cropped or in perennial grass for many years and contains little if any trees or shrubs. Competing vegetation control is accomplished prior to planting tree and shrub cuttings. On cropland site preparation needs may include deep ripping to eliminate any hard pan. The existing condition of the land does not meet landowner's objectives
After Practice Situation	Tree and shrub rows have been established to diversify the crop production of the field.
Scenario Feature Measure	Area Planted
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$726.50	$0.48
Equipment/Installation	$487.12	$0.32
Labor	$1,301.90	$0.87
Mobilization	$256.63	$0.17
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,772.15	$1.85

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	50	$66.50
Materials	1308	Cuttings, woody, medium size	Woody cuttings, live stakes or whips typically 1/4" to 1" diameter and 24" to 48" long. Materials only.	Each	$0.44	1500	$660.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	6	$156.72
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	35	$330.40
Labor	231	General Labor	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	$26.15	40	$1,046.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	311 - Alley Cropping
Scenario ID	2
Scenario Name	Manual Planting, Individual Non-Native Plant
Scenario Description	Cropland or grassland where few or no trees are growing is planted with rows of trees and shrubs to increase crop diversity. Tree row width, and within-row tree spacing, is based on farm equipment size, growth form and potential competitive effects of trees, light needs of annual crop or grass, and intent of the landowner. Tree seedlings will be hand planted in rows. Typical resource concerns addressed include: Degraded plant condition - undesirable plant productivity and health, inadequate structure and composition; Soil erosion - sheet, rill & wind erosion, and; Inadequate habitat for fish & wildlife - habitat degradation.
Before Practice Situation	The landscape has been cropped or in perennial grass for many years and contains little if any trees or shrubs. Competing vegetation control is accomplished prior to tree and shrub planting. On cropland site preparation needs may include deep ripping to eliminate any hard pan. The existing condition of the land does not meet landowner's objectives
After Practice Situation	Tree and shrub rows have been established to diversify the crop production of the field.
Scenario Feature Measure	Area Planted
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$9,936.50	$6.62
Equipment/Installation	$922.00	$0.61
Labor	$2,518.50	$1.68
Mobilization	$341.15	$0.23
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$13,718.15	$9.15

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1548	Tree or shrub seedling, Tropical, non-native, containerized, 10 cu in	tree or shrub tropical seedling, non-native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$4.90	600	$2,940.00
Materials	1543	Tree or shrub seedling, Tropical, native or non-native, 1 gal	tree or shrub topical seedling, native or non-native, 1 gallon pot	Each	$11.10	300	$3,330.00
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	50	$66.50
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$6.00	600	$3,600.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	10	$261.20
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	70	$660.80
Labor	231	General Labor	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	$26.15	80	$2,092.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	5	$211.30

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	311 - Alley Cropping
Scenario ID	1
Scenario Name	Manual Planting, Individual Native Plant
Scenario Description	Cropland or grassland where few or no trees are growing is planted with rows of trees and shrubs to increase crop diversity. Tree row width, and within-row tree spacing, is based on farm equipment size, growth form and potential competitive effects of trees, light needs of annual crop or grass, and intent of the landowner. Tree seedlings will be hand planted in rows. Typical resource concerns addressed include: Degraded plant condition - undesirable plant productivity and health, inadequate structure and composition; Soil erosion - sheet, rill & wind erosion, and; Inadequate habitat for fish & wildlife - habitat degradation.
Before Practice Situation	The landscape has been cropped or in perennial grass for many years and contains little if any trees or shrubs. Competing vegetation control is accomplished prior to tree and shrub planting. On cropland site preparation needs may include deep ripping to eliminate any hard pan. The existing condition of the land does not meet landowner's objectives
After Practice Situation	Tree and shrub rows have been established to diversify the crop production of the field.
Scenario Feature Measure	Area Planted
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$13,679.00	$9.12
Equipment/Installation	$1,106.40	$0.74
Labor	$3,022.20	$2.01
Mobilization	$409.38	$0.27
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$18,216.98	$12.14

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1553	Tree or shrub seedling, Tropical, native, containerized, 10 cu in	tree or shrub tropical seedling, native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$5.67	375	$2,126.25
Materials	1544	Tree or shrub seedling, Tropical, native or non-native, 2-3 gal	tree or shrub topical seedling, native or non-native, 2-3gallon pot	Each	$23.25	75	$1,743.75
Materials	1543	Tree or shrub seedling, Tropical, native or non-native, 1 gal	tree or shrub topical seedling, native or non-native, 1 gallon pot	Each	$11.10	675	$7,492.50
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	50	$66.50
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$6.00	375	$2,250.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	84	$792.96
Labor	231	General Labor	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	$26.15	96	$2,510.40
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	12	$511.80
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	6	$155.82
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	6	$253.56

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	311 - Alley Cropping
Scenario ID	4
Scenario Name	Mechanized Planting, Medium Density
Scenario Description	Cropland or grassland where few or no trees are growing will be mechanically planted with rows of trees and shrubs to increase crop diversity. Tree row width, and within-row tree spacing, is based on farm equipment size, growth form and potential competitive effects of trees, light needs of annual crop or grass, and intent of the landowner. Tree seedlings will be machine planted in rows. Typical resource concerns addressed include: Degraded plant condition - undesirable plant productivity and health, inadequate structure and composition; Soil erosion - sheet, rill & wind erosion, and; Inadequate habitat for fish & wildlife - habitat degradation.
Before Practice Situation	The landscape has been cropped or in perennial grass for many years and contains little if any trees or shrubs. Competing vegetation control is accomplished prior to tree and shrub planting. On cropland site preparation needs may include deep ripping to eliminate any hard pan. The existing condition of the land does not meet landowner's objectives
After Practice Situation	Tree and shrub rows have been established to diversify the crop production of the field.
Scenario Feature Measure	area of treatment
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$10,570.00	$1,057.00
Equipment/Installation	$341.00	$34.10
Labor	$454.52	$45.45
Mobilization	$653.15	$65.32
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$12,018.67	$1,201.87

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1553	Tree or shrub seedling, Tropical, native, containerized, 10 cu in	tree or shrub tropical seedling, native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$5.67	1000	$5,670.00
Materials	1548	Tree or shrub seedling, Tropical, non-native, containerized, 10 cu in	tree or shrub tropical seedling, non-native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$4.90	1000	$4,900.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Equipment/Installation	1600	Mechanical tree planter	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	$4.38	4	$17.52
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	4	$219.00
Labor	231	General Labor	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	$26.15	4	$104.60
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	4	$179.32
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	1
Scenario Name	Concrete Pad
Scenario Description	This scenario consists of a dry stack facility with reinforced concrete floor without side walls. This scenario is intended for situations where consistency of manure or geographical conditions prohibit earthen floors. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	The typical is 1,000 SqFt (20' x 50'). The facility floor is 6" reinforced concrete without side walls. Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$389.61	$0.39
Equipment/Installation	$7,558.39	$7.56
Labor	$567.86	$0.57
Mobilization	$560.24	$0.56
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$9,076.10	$9.08

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	13	$389.61
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	6	$270.18
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	19	$7,209.74
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	$4.13	19	$78.47
Labor	231	General Labor	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	$26.15	16	$418.40
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	6	$149.46
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	2
Scenario Name	Concrete Pad with Concrete Block Walls
Scenario Description	This scenario consists of a 10 ft x 10ft x 6ft (600 cf) vessel with a reinforced concrete pad and concrete block walls. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	The typical is 600 cu ft (10' x 10'x6'). The facility floor is 6" reinforced concrete with concrete block walls. Walls allow for greater storage volume than a pad. Manure and other agricultural by-products are being controlled, by the collection at the source and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.
Scenario Feature Measure	Volume of container
Scenario Unit	Cubic Foot
Scenario Typical Size	600

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,115.58	$1.86
Equipment/Installation	$1,425.12	$2.38
Labor	$3,187.86	$5.31
Mobilization	$715.36	$1.19
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,443.92	$10.74

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	2	$59.94
Materials	253	Block, concrete	Concrete block, hollow, normal weight, 3500 psi. Includes both full and partial sizes. Material only	Each	$2.42	288	$696.96
Materials	1333	Grout, cement	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite gout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	$119.56	3	$358.68
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	6	$270.18
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	3	$1,138.38
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	$5.52	3	$16.56
Labor	231	General Labor	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	$26.15	64	$1,673.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	32	$1,364.80
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	6	$149.46
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	1
Scenario Name	Biological
Scenario Description	Management of woody non-herbaceous plant species through the use of livestock that are closely herded to concentrate grazing on targeted shrubs. Typical area is moderate rolling to gentle sloping, moderately deep to deep soils that have dense stands of woody non-herbaceous species that exceed the desirable ecological site condition. This scenario is an alternative for organic producers.
Before Practice Situation	Area consists of dense stands of woody non-herbaceous species that exceed the desirable ecological site condition degrading forage quality, promoting noxious and invasive species, increasing risk of soil erosion and degrading wildlife habitat.
After Practice Situation	Woody species are grazed to limit the regrowth of shrubs and achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$100.00	$10.00
Equipment/Installation	$147.81	$14.78
Labor	$0.00	$0.00
Mobilization	$38.71	$3.87
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$286.52	$28.65

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1130	Animals used for biological weed control	Goats, Llamas, Sheep - Includes all support: fence, water, dog, mob, etc.	Head per day	$1.00	100	$100.00
Equipment/Installation	961	Trucking, moving livestock to new paddock	Livestock transportation costs to implement a grazing rotation using a gooseneck trailer 6'8" x 24'. Includes equipment, power unit and labor costs.	Mile	$2.53	2	$5.06
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	5	$142.75
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	1	$38.71

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	7
Scenario Name	Chemical, Aerial Application
Scenario Description	This practice involves the application of herbicides by helicoptor in order to contol or kill undesired vegetation and improve site conditions.
Before Practice Situation	Undesirable vegetation, including woody and herbaceous plants, occupy up to 100 % of the on the site. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation may inhibit site productivity or degrade site conditions.
After Practice Situation	Undesirable vegetation has been treated using appropriate herbicides to address plant, animal, and wildlife resource concerns.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$321.18	$32.12
Equipment/Installation	$101.52	$10.15
Labor	$346.80	$34.68
Mobilization	$660.39	$66.04
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,429.89	$142.99

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	4	$244.04
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	10	$10.90
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	6	$66.24
Equipment/Installation	947	Chemical, aerial application, fixed wing	Chemical application performed by fixed wing aircraft. Includes equipment, power unit and labor costs.	Acre	$7.54	10	$75.40
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	231	General Labor	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	$26.15	10	$261.50
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	2	$85.30
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	1	$523.93
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	6
Scenario Name	Chemical, Ground Application
Scenario Description	This practice involves the application of herbicides using mechanized equipment (such as ATV or tractor mounted boom) in order to control or kil undesirable vegetation and improve site conditions.
Before Practice Situation	Undesirable vegetation, including woody and herbaceous plants, occupy up to 100 % of the on the site. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation may inhibit site productivity or degrade site conditions.
After Practice Situation	Undesirable vegetation has been treated using appropriate herbicides to address plant, animal, and wildlife resource concerns.
Scenario Feature Measure	area of treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$160.59	$32.12
Equipment/Installation	$58.62	$11.72
Labor	$94.95	$18.99
Mobilization	$68.23	$13.65
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$382.39	$76.48

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	2	$122.02
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	5	$5.45
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	3	$33.12
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.50	5	$32.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	231	General Labor	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	$26.15	2	$52.30
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	5
Scenario Name	Chemical, Manual Application
Scenario Description	This practice involves the application of herbicides using backpack sprayer or similar equipment, and may be used alone (e.g. basal bark, broadcast) or in conjunction with manual tree and shrbu cutting scenarios (e.g. hack-n-squirt), in order to control or kill undesirable vegetation and improve site conditions.
Before Practice Situation	Undesirable vegetation, including woody and herbaceous plants, occupy up to 100 % of the on the site. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation may inhibit site productivity or degrade site conditions.
After Practice Situation	Undesirable vegetation has been treated using appropriate herbicides to address plant, animal, and wildlife resource concerns.
Scenario Feature Measure	area of treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$160.59	$32.12
Equipment/Installation	$473.08	$94.62
Labor	$42.65	$8.53
Mobilization	$42.26	$8.45
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$718.58	$143.72

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	2	$122.02
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	5	$5.45
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	3	$33.12
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Equipment/Installation	964	Chemical, spot treatment, single stem application	Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included.	Hour	$55.87	8	$446.96
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	11
Scenario Name	Manual Cut, Heavy
Scenario Description	This practice involves the use of chainsaws or hand tools to remove above ground vegetation either by clearing or selective cutting in order to reduce fuel loading or improve ecological site conditions (Heavy Rating per PIA Size-Density-Slope Matrix).
Before Practice Situation	Undesirable vegetation is present on the site including woody competition and possibly herbaceous plants. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will degrade health and vigor of native herbaceous species, inhibit successful establishment of target species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Woody species are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,091.04	$218.21
Labor	$9,578.40	$1,915.68
Mobilization	$564.50	$112.90
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$11,233.94	$2,246.79

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	144	$777.60
Labor	231	General Labor	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	$26.15	288	$7,531.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	48	$2,047.20
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	6	$253.56
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	6	$155.82

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	9
Scenario Name	Manual Cut, Light
Scenario Description	This practice involves the use of chainsaws or hand tools to remove above ground vegetation either by clearing or selective cutting in order to reduce fuel loading or improve ecological site conditions (Light Rating per PIA Size-Density-Slope Matrix).
Before Practice Situation	Undesirable vegetation is present on the site including woody competition and possibly herbaceous plants. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will degrade health and vigor of native herbaceous species, inhibit successful establishment of target species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Woody species are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$181.84	$36.37
Labor	$1,596.40	$319.28
Mobilization	$223.35	$44.67
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,001.59	$400.32

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	2	$52.24
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	24	$129.60
Labor	231	General Labor	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	$26.15	48	$1,255.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	8	$341.20
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	10
Scenario Name	Manual Cut, Medium
Scenario Description	This practice involves the use of chainsaws or hand tools to remove above ground vegetation either by clearing or selective cutting in order to reduce fuel loading or improve ecological site conditions (Medium Rating per PIA Size-Density-Slope Matrix).
Before Practice Situation	Undesirable vegetation is present on the site including woody competition and possibly herbaceous plants. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will degrade health and vigor of native herbaceous species, inhibit successful establishment of target species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Woody species are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$545.52	$109.10
Labor	$4,789.20	$957.84
Mobilization	$359.81	$71.96
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$5,694.53	$1,138.91

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	6	$156.72
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	72	$388.80
Labor	231	General Labor	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	$26.15	144	$3,765.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	4
Scenario Name	Mechanical, Heavy
Scenario Description	This practice involves the use of light/moderate machinery to clear above ground vegetation and to also rip/cut/lift underground root systems in order to reduce fuel loading and improve ecological site condition (Heavy Rating per PIA Size-Density-Slope Matrix).
Before Practice Situation	Undesirable vegetation is present on the site including woody competition and possibly herbaceous plants. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will degrade health and vigor of native herbaceous species, inhibit successful establishment of target species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Woody species are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,581.80	$516.36
Labor	$2,529.45	$505.89
Mobilization	$1,123.44	$224.69
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,234.69	$1,246.94

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	15	$391.80
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	40	$2,190.00
Labor	231	General Labor	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	$26.15	20	$523.00
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	40	$1,793.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	5	$213.25
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	5	$211.30
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	5	$222.05
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	2
Scenario Name	Mechanical, Light
Scenario Description	This practice involves the use of light/moderate machinery to clear above ground vegetation and to also rip/cut/lift underground root systems in order to reduce fuel loading and improve ecological site condition (Light Rating per PIA Size-Density-Slope Matrix).
Before Practice Situation	Undesirable vegetation is present on the site including woody competition and possibly herbaceous plants. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will degrade health and vigor of native herbaceous species, inhibit successful establishment of target species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Woody species are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$625.86	$125.17
Labor	$595.55	$119.11
Mobilization	$672.88	$134.58
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,894.29	$378.86

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	3	$78.36
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	10	$547.50
Labor	231	General Labor	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	$26.15	4	$104.60
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	10	$448.30
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	1	$44.41
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	3
Scenario Name	Mechanical, Medium
Scenario Description	This practice involves the use of light/moderate machinery to clear above ground vegetation and to also rip/cut/lift underground root systems in order to reduce fuel loading and improve ecological site condition (Medium Rating per PIA Size-Density-Slope Matrix).
Before Practice Situation	Undesirable vegetation is present on the site including woody competition and possibly herbaceous plants. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will degrade health and vigor of native herbaceous species, inhibit successful establishment of target species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Woody species are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,303.96	$260.79
Labor	$1,286.05	$257.21
Mobilization	$898.16	$179.63
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,488.17	$697.63

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	8	$208.96
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	20	$1,095.00
Labor	231	General Labor	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	$26.15	10	$261.50
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	20	$896.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	3	$127.95
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	3	$133.23
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	8
Scenario Name	Mow and Herbicide
Scenario Description	Removal of woody weed infestations on gentle sloping and moderately deep to deep soils. The practice entails a combination of mechanical and chemical means by using a wet blade or other light equipment (either initial or retreatment) pulled behind a tractor to cut and treat woody weeds to improove forage conditions, reduce fuel loading or improve ecological site condition. Woody weeds have exceeded desired levels based on ecological site potential.
Before Practice Situation	Area consist of excessive stands of woody weeds that degrade the health and vigor of native or desired herbaceous species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Woody weeds are removed to achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor are returning to near normal levels, or wildlife habitat is improving.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$321.18	$32.12
Equipment/Installation	$508.22	$50.82
Labor	$291.75	$29.18
Mobilization	$449.30	$44.93
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,570.45	$157.05

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	4	$244.04
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	10	$10.90
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	6	$66.24
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	10	$425.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	2	$57.10
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	10	$249.10
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	315 - Herbaceous Weed Control
Scenario ID	1
Scenario Name	Biological Control
Scenario Description	Management of herbaceous plant species through the use of livestock that are closely herded to concentrate grazinging on undesired herbaceous species (either initial or retreatment). Typical area is moderate rolling to gentle sloping, moderately deep to deep soils that have stands of herbaceous weed species that exceed the desirable ecological site condition. This scenario is an alternative for organic producers.
Before Practice Situation	Area consist of stands of herbaceous weed species that exceed the desirable ecological site condition degrading forage quality, promoting noxious and invasive species, increasing risk of soil erosion and degrading wildlife habitat.
After Practice Situation	Herbacious species are grazed to limit their regrowth and achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels.
Scenario Feature Measure	Acres teated
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$50.00	$5.00
Equipment/Installation	$119.26	$11.93
Labor	$806.20	$80.62
Mobilization	$193.55	$19.36
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,169.01	$116.90

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1130	Animals used for biological weed control	Goats, Llamas, Sheep - Includes all support: fence, water, dog, mob, etc.	Head per day	$1.00	50	$50.00
Equipment/Installation	961	Trucking, moving livestock to new paddock	Livestock transportation costs to implement a grazing rotation using a gooseneck trailer 6'8" x 24'. Includes equipment, power unit and labor costs.	Mile	$2.53	2	$5.06
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	4	$114.20
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	20	$806.20
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	5	$193.55

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	315 - Herbaceous Weed Control
Scenario ID	7
Scenario Name	Chemical, Aerial Application
Scenario Description	Land unit on which weed control improves native plant community succession, ecological condition, or forage conditions for domestic livestock or wildlife. Undesired herbaceous vegetation is treated by aerial (helicopter or airplane) broadcast herbicide application (either initial or retreatment) in order to eliminate noxious weeds, promote forage productivity, or improve ecological condition.
Before Practice Situation	Area consist of excessive stands of herbaceous weeds that degrade the health and vigor of native herbaceous species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Herbaceous weeds are removed to achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor are returning to near normal levels, or wildlife habitat is improving.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	20

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$477.40	$23.87
Equipment/Installation	$643.84	$32.19
Labor	$565.65	$28.28
Mobilization	$789.89	$39.49
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,476.78	$123.84

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	344	Herbicide, Sulfometuron & metsulfuron	Product is typically used in this practice 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$22.78	20	$455.60
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	20	$21.80
Equipment/Installation	1991	Chemical, aerial application, helicopter	Chemical application performed by helicopter on forest only. Includes equipment, mobilization, and labor.	Acre	$29.58	20	$591.60
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	2	$52.24
Labor	231	General Labor	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	$26.15	20	$523.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	1	$77.56
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	4	$103.88
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	1	$523.93

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	315 - Herbaceous Weed Control
Scenario ID	6
Scenario Name	Chemical, Ground Application
Scenario Description	Land unit on which weed control improves native plant community succession, ecological condition, or forage conditions for domestic livestock or wildlife. Undesired herbaceous vegetation is treated by broadcast herbicide application (either initial or retreatment) using mechanized equipment (such as ATV or tractor mounted boom) to apply chemicals in order to eliminate noxious weeds, promote forage productivity, or improve ecological condition.
Before Practice Situation	Area consist of excessive stands of herbaceous weeds that degrade the health and vigor of native herbaceous species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Herbaceous weeds are removed to achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor are returning to near normal levels, or wildlife habitat is improving.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$238.70	$23.87
Equipment/Installation	$91.12	$9.11
Labor	$147.25	$14.73
Mobilization	$68.23	$6.82
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$545.30	$54.53

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	344	Herbicide, Sulfometuron & metsulfuron	Product is typically used in this practice 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$22.78	10	$227.80
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	10	$10.90
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.50	10	$65.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	231	General Labor	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	$26.15	4	$104.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	315 - Herbaceous Weed Control
Scenario ID	5
Scenario Name	Chemical, Manual Application
Scenario Description	Land unit on which weed control improves native plant community succession, ecological condition, or forage conditions for domestic livestock or wildlife. Undesired herbaceous vegetation is treated by spot or targeted herbicide application (either initial or retreatment) using hand-carried equipment (such as a backpack and hand-sprayer) to apply chemicals in order to eliminate noxious weeds, promote forage productivity, or improve ecological condition.
Before Practice Situation	Area consist of excessive stands of herbaceous weeds that degrade the health and vigor of native herbaceous species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Herbaceous weeds are removed to achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor are returning to near normal levels, or wildlife habitat is improving.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$451.75	$45.18
Equipment/Installation	$504.06	$50.41
Labor	$42.65	$4.27
Mobilization	$42.26	$4.23
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,040.72	$104.07

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	5	$55.20
Materials	336	Herbicide, Imazapyr	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Product is typically used in these practices 314, 595, 666 and 645. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$79.31	5	$396.55
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	2	$57.10
Equipment/Installation	964	Chemical, spot treatment, single stem application	Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included.	Hour	$55.87	8	$446.96
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	315 - Herbaceous Weed Control
Scenario ID	3
Scenario Name	Mechanical, Light Equipment
Scenario Description	Removal of herbaceous weed infestations on gentle sloping to moderately deep to deep soils. The practice entails the removal of herbaceous weeds by the use of mower, brush hog, disc or other light equipment (either initial or retreatment) in order to reduce fuel loading and improve ecological site condition. Herbacous weeds have exceeded desired levels based on ecological site potential.
Before Practice Situation	Area consist of excessive stands of herbaceous weeds that degrade the health and vigor of native herbaceous species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Herbaceous weeds are removed to achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor are returning to near normal levels, or wildlife habitat is improving.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$380.72	$38.07
Labor	$217.02	$21.70
Mobilization	$66.94	$6.69
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$664.68	$66.47

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	2	$57.10
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	7	$297.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	7	$174.37
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	315 - Herbaceous Weed Control
Scenario ID	2
Scenario Name	Manual, Hand Tools
Scenario Description	Using hand tools such as axes, shovels, hoes, nippers, to remove or cut off herbaceous plants at or below the root collar (either initial or retreatment). Typical area is moderate rolling to gentle sloping, moderately deep to deep soils that have herbaceous weed species in various phases of invasion.
Before Practice Situation	Area is in the early phases of herbaceous weed encroachment that degrades habitat for desired wildlife species. Future degradation of key forage species and ecological site condition promoting noxious and invasive species and increased soil erosion if woody species are allowed to expand.
After Practice Situation	Herbaceous weeds are removed to achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor are returning to near normal levels, or wildlife habitat is improving.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$232.87	$23.29
Labor	$879.45	$87.95
Mobilization	$68.23	$6.82
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,180.55	$118.06

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	5	$142.75
Equipment/Installation	1318	Pruning tools, hand tools	Pruning tools, hand tools, shears, loppers, pole saw, handsaw Equipment costs only. Labor not included.	Hour	$2.00	32	$64.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	231	General Labor	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	$26.15	32	$836.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	315 - Herbaceous Weed Control
Scenario ID	4
Scenario Name	Mow and Herbicide
Scenario Description	Removal of herbaceous weed infestations on gentle sloping to moderately deep to deep soils. The practice entails a combination of mechanical and chemical means by using a wet blade or other light equipment (either initial or retreatment) pulled behind a tractor to cut and treat herbaceous weeds to improove forage conditions, reduce fuel loading or improve ecological site condition. Herbaceous weeds have exceeded desired levels based on ecological site potential.
Before Practice Situation	Area consist of excessive stands of herbaceous weeds that degrade the health and vigor of native herbaceous species, promote noxious and invasive species or degrade wildlife habitat.
After Practice Situation	Herbaceous weeds are removed to achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor are returning to near normal levels, or wildlife habitat is improving.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$69.80	$6.98
Equipment/Installation	$465.72	$46.57
Labor	$266.84	$26.68
Mobilization	$449.30	$44.93
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,251.66	$125.17

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	331	Herbicide, 2,4-D + Dica	Product is typically used in this practice 595. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$5.89	10	$58.90
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	10	$10.90
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	2	$57.10
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	9	$382.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	9	$224.19
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	317 - Composting Facility
Scenario ID	1
Scenario Name	Concrete Slab - No Walls
Scenario Description	The composting facility, with complete concrete floor with no walls or roof is installed to address water quality concerns and disease vectors resulting from improper waste disposal by providing a dedicated facility for storage and treatment, and by creating a compost product that can be used in multiple ways including land application for enrichment of crop ground. This scenario is applicable when geological, soil or climate conditions prohibit the use of only partial concrete surfaces (bins only). All animal mortality composting shall be done using Practice Standard 316 - Animal Mortality Facility. Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560),
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	Manure and other agricultural by-products are being controlled, by the collection at the source, and stored properly, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. The typical composter is designed to handle organic material. The typical concrete slab is 20' x 50' with 4" of gravel and 6" of reinforced concrete. Strip top 6" of soil and roll compact same back into sub-floor. The 6" concrete slab is used to store and stabilize organic material from the farm.
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$269.63	$0.27
Equipment/Installation	$7,138.41	$7.14
Labor	$1,023.60	$1.02
Mobilization	$942.60	$0.94
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$9,374.24	$9.37

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	$21.57	12.5	$269.63
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	$4.13	18.5	$76.41
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	18.5	$7,020.01
Equipment/Installation	1220	Excavation, common earth, small equipment, 50 ft	Bulk excavation of common earth with dozer <100 HP with average push distance of 50 feet. Includes equipment and labor.	Cubic Yard	$2.27	18.5	$42.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	317 - Composting Facility
Scenario ID	2
Scenario Name	Concrete Slab with Block Bin
Scenario Description	The composting facility, with complete concrete floor with concrete block walls no roof is installed to address water quality concerns and disease vectors resulting from improper waste disposal by providing a dedicated facility for storage and treatment, and by creating a compost product that can be used in multiple ways including land application for enrichment of crop ground. This scenario is applicable when geological, soil or climate conditions prohibit the use of only partial concrete surfaces (bins only). All animal mortality composting shall be done using Practice Standard 316 - Animal Mortality Facility. Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560),
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	Manure and other agricultural by-products are being controlled, by the collection at the source, and stored properly, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. The typical composter is designed to handle organic material. The typical concrete slab is 4' x 4' with 4" of gravel and 5" of reinforced concrete. The 5" concrete slab and block walls are used to store and stabilize organic material from the farm.
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	16

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$167.63	$10.48
Equipment/Installation	$169.33	$10.58
Labor	$2,278.80	$142.43
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,615.76	$163.49

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	$21.57	0.2	$4.31
Materials	1609	Lumber, planks, posts and timbers, treated	Treated dimension lumber with nominal thickness greater than 2". Includes lumber and fasteners. Does not include labor.	Board Foot	$1.39	20	$27.80
Materials	253	Block, concrete	Concrete block, hollow, normal weight, 3500 psi. Includes both full and partial sizes. Material only	Each	$2.42	56	$135.52
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	0.25	$94.87
Equipment/Installation	36	Concrete, CIP, formless, non reinforced	Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$186.16	0.4	$74.46
Labor	231	General Labor	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	$26.15	48	$1,255.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	324 - Deep Tillage
Scenario ID	1
Scenario Name	Deep Tillage, Equipment Off-farm
Scenario Description	Fields (1 acre) with adverse soils conditions that restrict plant growth such as compacted layers caused by tillage operations or restrictive layers such as hardpans (duripans) in the root zone. This practice does not apply to normal tillage practices to prepare a seedbed but is meant to fracture the compacted zone below the restrictive soil layer. Producer will have to mobilize equipment from off the farm to complete the deep tillage.
Before Practice Situation	In the Pacific Islands Area, crop plants are observed as having reduced yield, water is not infiltrating into the soil. Soil layers have been compacted by shallow tillage operations, or soils have a hardpan (duripan) layer that is restricting root growth. Typical field size is 1 acres with crop rotations consisting of annual row crops or vegetable crops with conventional tillage or when the harvesting of row crops (historic sugarcane) use heavy trucks to assist with the harvest. Compaction has been caused when soil moisture is too wet for normal field operations or by excessive shallow tillage or field harvest haul traffic throughout the entire field. Soil structure has been reduced, aggregate strength is week and soil biological activity is low. Soil organic matter is not adequate and the water holding capacity of the soil is limited for the desired root zone.
After Practice Situation	Soil compaction is measured with a penetrometer and/or visual observation of limiting root growth. Deep tillage operations such as subsoiling, paratilling or ripping are performed not as a part of the normal tillage operation for seedbed preparation, but used to relieve compaction at depths less than 36 inches. Soil moisture is less than 30 percent when deep tillage is used. The fractured zone will be sufficient to permit root penetration below the restrictive soil layer. Deep tillage is generally preformed in fall after crop harvest when soil conditions are dry. When possible, harvest operations should be avoided when soil moisture is greater than 50% of field capacity. Field harvest haul traffic should be limited to end rows or haul roads.
Scenario Feature Measure	Acre
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$17.24	$3.45
Labor	$52.30	$10.46
Mobilization	$560.24	$112.05
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$629.78	$125.96

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1235	Ripper or subsoiler, 16 to 36 inch depth	Deep ripper or subsoiler, (16-36 inches depth) includes tillage implement, power unit and labor.	Acre	$17.24	1	$17.24
Labor	231	General Labor	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	$26.15	2	$52.30
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	324 - Deep Tillage
Scenario ID	2
Scenario Name	Deep Tillage, Equipment On-Farm
Scenario Description	Fields (1 acres) with adverse soils conditions that restrict plant growth such as compacted layers caused by tillage operations or restrictive layers such as hardpans (duripans) in the root zone. This practice does not apply to normal tillage practices to prepare a seedbed but is meant to fracture the compacted zone below the restrictive soil layer. Producer has the tillage equipment on the farm to compete the Deep Tillage practice and mobilzation is not needed.
Before Practice Situation	In the Pacific Islands Area, crop plants are observed as having reduced yield, water is not infiltrating into the soil. Soil layers have been compacted by shallow tillage operations, or soils have a hardpan (duripan) layer that is restricting root growth. Typical field size is 1 acres with crop rotations consisting of annual row crops or veg crops with conventional tillage or when the harvesting of row crops (historic sugarcane) use heavy trucks to assist with the harvest. Compaction has been caused when soil moisture is too wet for normal field operations or by excessive shallow tillage or field harvest haul traffic throughout the entire field. Soil structure has been reduced, aggregate strength is week and soil biological activity is low. Soil organic matter is not adequate and the water holding capacity of the soil is limited for the desired root zone.
After Practice Situation	Soil compaction is measured with a penetrometer and/or visual observation of limiting root growth. Deep tillage operations such as subsoiling, paratilling or ripping are performed not as a part of the normal tillage operation for seedbed preparation, but used to relieve compaction at depths less than 36 inches. Soil moisture is less than 30 percent when deep tillage is used. The fractured zone will be sufficient to permit root penetration below the restrictive soil layer. Deep tillage is generally preformed in fall after crop harvest when soil conditions are dry. When possible, harvest operations should be avoided when soil moisture is greater than 50% of field capacity. Field harvest haul traffic should be limited to end rows or haul roads.
Scenario Feature Measure	Acre
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$17.24	$17.24
Labor	$52.30	$52.30
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$69.54	$69.54

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1235	Ripper or subsoiler, 16 to 36 inch depth	Deep ripper or subsoiler, (16-36 inches depth) includes tillage implement, power unit and labor.	Acre	$17.24	1	$17.24
Labor	231	General Labor	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	$26.15	2	$52.30

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	326 - Clearing and Snagging
Scenario ID	3
Scenario Name	Clearing and Snagging, Heavy
Scenario Description	Removal of vegetation, logs, or other material that impedes the proper functioning on over 400 linear feet of a stream channel or water course to restore flow capacity; prevent bank erosion by eddies; reduce the formation of sediment bars; and/or minimize blockages by debris. Addresses resource concerns such as water quantity and soil erosion-streambanks.
Before Practice Situation	Vegetation, logs, or other material provide a flow restriction or divert flowing water against the streambank causing excess erosion. Approximately two-thirds of the channel flow capacity is obstructed. The flow blockage may encourage depostion in the main channel and may alter the established flow channel.
After Practice Situation	Vegetation, logs, or other material have been removed to allow unrestricted flow in the channel and appurtenant structures. Material that poses no blockage threat is left in place to enhance aquatic habitat. Channel bed and banks are in equillibrium with the flow.
Scenario Feature Measure	Linear Feet
Scenario Unit	Foot
Scenario Typical Size	400

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$3,970.00	$9.93
Labor	$2,662.58	$6.66
Mobilization	$1,120.48	$2.80
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$7,753.06	$19.38

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	931	Hydraulic Excavator, 1 CY	Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included.	Hour	$92.64	16	$1,482.24
Equipment/Installation	1401	Truck, dump, 8 CY	Dump truck for moving bulk material. Typically capacity is 12 ton or 8 cubic yards. Includes equipment only.	Hour	$44.20	16	$707.20
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	30	$162.00
Equipment/Installation	927	Dozer, 140 HP	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	$101.16	16	$1,618.56
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	16	$682.40
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	48	$1,195.68
Labor	231	General Labor	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	$26.15	30	$784.50
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	326 - Clearing and Snagging
Scenario ID	1
Scenario Name	Clearing and Snagging, Light
Scenario Description	Removal of vegetation, logs, or other material that impedes the proper functioning on up to 200 linear feet of a stream channel or water course to restore flow capacity; prevent bank erosion by eddies; reduce the formation of sediment bars; and/or minimize blockages by debris. Addresses resource concerns such as water quantity and soil erosion-streambanks.
Before Practice Situation	Vegetation, logs, or other material provide a flow restriction or divert flowing water against the streambank causing excess erosion. Approximately one-third of the channel flow capacity is obstructed. The flow blockage may encourage depostion in the main channel and may alter the established flow channel.
After Practice Situation	Vegetation, logs, or other material have been removed to allow unrestricted flow in the channel and appurtenant structures. Material that poses no blockage threat is left in place to enhance aquatic habitat. Channel bed and banks are in equillibrium with the flow.
Scenario Feature Measure	Linear Feet
Scenario Unit	Foot
Scenario Typical Size	200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,302.74	$6.51
Labor	$1,257.80	$6.29
Mobilization	$1,120.48	$5.60
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,681.02	$18.41

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	931	Hydraulic Excavator, 1 CY	Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included.	Hour	$92.64	6	$555.84
Equipment/Installation	1401	Truck, dump, 8 CY	Dump truck for moving bulk material. Typically capacity is 12 ton or 8 cubic yards. Includes equipment only.	Hour	$44.20	8	$353.60
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	12	$64.80
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	6	$328.50
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	8	$341.20
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	20	$498.20
Labor	231	General Labor	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	$26.15	16	$418.40
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	326 - Clearing and Snagging
Scenario ID	2
Scenario Name	Clearing and Snagging, Medium
Scenario Description	Removal of vegetation, logs, or other material that impedes the proper functioning on 200 to 400 linear feet of a stream channel or water course to restore flow capacity; prevent bank erosion by eddies; reduce the formation of sediment bars; and/or minimize blockages by debris. Addresses resource concerns such as water quantity and soil erosion-streambanks.
Before Practice Situation	Vegetation, logs, or other material provide a flow restriction or divert flowing water against the streambank causing excess erosion. Approximately one-half of the channel flow capacity is obstructed. The flow blockage may encourage depostion in the main channel and may alter the established flow channel.
After Practice Situation	Vegetation, logs, or other material have been removed to allow unrestricted flow in the channel and appurtenant structures. Material that poses no blockage threat is left in place to enhance aquatic habitat. Channel bed and banks are in equillibrium with the flow.
Scenario Feature Measure	Linear Feet
Scenario Unit	Foot
Scenario Typical Size	300

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,488.00	$8.29
Labor	$1,801.40	$6.00
Mobilization	$1,120.48	$3.73
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$5,409.88	$18.03

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	931	Hydraulic Excavator, 1 CY	Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included.	Hour	$92.64	10	$926.40
Equipment/Installation	1401	Truck, dump, 8 CY	Dump truck for moving bulk material. Typically capacity is 12 ton or 8 cubic yards. Includes equipment only.	Hour	$44.20	10	$442.00
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	20	$108.00
Equipment/Installation	927	Dozer, 140 HP	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	$101.16	10	$1,011.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	30	$747.30
Labor	231	General Labor	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	$26.15	24	$627.60
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	327 - Conservation Cover
Scenario ID	1
Scenario Name	Grass/Legumes
Scenario Description	This practice applies on land to be retired from agricultural production and on other lands needing permanent protective cover. This practice typically involves conversion from a clean-tilled (conventional tilled) intensive cropping system to permanent non-native vegetation (scenario includes non-native grass). The typical size of the practice is 1 acre. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality, develop wildlife habitit, and reduce air quality impacts.
Before Practice Situation	Crops such as corn, soybeans, or cotton are conventionally grown and harvested. Full width tillage is utilized, weeds controlled by cultivation and/or chemical application. Soil surface residue amounts average 10% or less. Soil erosion occurs with visible rills present, sediment may be moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The system provides little to no wildlife habitat.
After Practice Situation	Land covered with permanent non-native grass vegetation has reduced soil erosion, reduced water/sediment runoff, and significant dust emissions are eliminated therefore, air quality is improved. Plants grown for conservation cover may provide cover for beneficial insects and wildlife. This scenario does not apply to plantings for forage production or to critical area plantings.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$499.94	$499.94
Equipment/Installation	$79.88	$79.88
Labor	$209.20	$209.20
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$789.02	$789.02

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	79	Little Blue Stem (Schizachyrium scoparium)	Native Grasses and shipping.	Pound	$15.43	30	$462.90
Materials	112	Red Clover (Trifolium pratense)	Introduced Legumes and shipping.	Pound	$2.60	10	$26.00
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	1	$11.04
Equipment/Installation	957	Mechanical weed control, Vegetation termination	Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs.	Acre	$17.43	2	$34.86
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	$9.63	4	$38.52
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Equipment and labor costs included.	Acre	$6.50	1	$6.50
Labor	231	General Labor	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	$26.15	8	$209.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	327 - Conservation Cover
Scenario ID	2
Scenario Name	Native planting/Pollinator Habitat
Scenario Description	Permanent vegetation, including mix of native grasses, legume, forbs (mix may also include non-native species), established on any land needing permanent vegetative cover that provides habitat for pollinators. Typical practice size is variable depending on site, this scenario uses 1 ac as the typical size. In addition to providing pollinator habitat, this practice scenario may also reduce sheet and rill erosion, improve soil quality, improve water quality, and improve air quality. The practice may also provide wildlife habitat. Practice applicable on cropland, odd areas, corners, etc.
Before Practice Situation	Crops such as corn, soybeans, or cotton are conventionally grown and harvested. Full width tillage is utilized, weeds controlled by cultivation and/or chemical application. Soil surface residue amounts average 10% or less. Soil erosion occurs with visible rills present, sediment may be moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The system provides little to no wildlife or pollinator habitat.
After Practice Situation	Land covered with permanent pollinator habitat including a mix of native grasses, legume, forbs (mix may also include non-native species). This practice may also have reduced soil erosion, reduced water/sediment runoff, and significant dust emissions are eliminated therefore, air quality is improved. Plants sown for pollinator habitat may also provide cover for beneficial insects and wildlife. This scenario does not apply to critical area plantings.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$568.39	$568.39
Equipment/Installation	$79.88	$79.88
Labor	$209.20	$209.20
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$857.47	$857.47

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	119	Blue Wild Indigo (Baptisia australis)	Native Legumes and shipping.	Pound	$156.45	1	$156.45
Materials	125	Partidge Pea (Chamaecrista fasciculata)	Native Legumes and shipping.	Pound	$15.70	1	$15.70
Materials	77	Eastern Gamagrass (Tripsacum dactyloides)	Native Grasses and shipping.	Pound	$17.45	1	$17.45
Materials	79	Little Blue Stem (Schizachyrium scoparium)	Native Grasses and shipping.	Pound	$15.43	1	$15.43
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	1	$11.04
Materials	133	Smooth Aster (Aster laevis)	Native Forbs and shipping.	Pound	$217.74	1	$217.74
Materials	129	Wild Senna (Cassia hebecarpa)	Native Legumes and shipping.	Pound	$68.25	1	$68.25
Materials	148	Black-Eyed Susan (Rudbeckia hirta)	Native Forbs and shipping.	Pound	$33.55	1	$33.55
Materials	136	Purple Coneflower (Echinacea purpurea)	Native Forbs and shipping.	Pound	$32.78	1	$32.78
Equipment/Installation	957	Mechanical weed control, Vegetation termination	Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs.	Acre	$17.43	2	$34.86
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	$9.63	4	$38.52
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Equipment and labor costs included.	Acre	$6.50	1	$6.50
Labor	231	General Labor	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	$26.15	8	$209.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	328 - Conservation Crop Rotation
Scenario ID	2
Scenario Name	Specialty Crops with a Cover Crop, Conventional
Scenario Description	In this region a rotation of specialty crops (fruits and vegetable) are produced as part of a conservation management system to: 1) Reduce sheet and rill erosion 2) Reduce soil erosion from wind 3) Maintain or improve soil organic matter 4) Manage the balance of plant nutrients 5) Improve water use efficiency, and 6) Manage plant pests (weeds, insects, and diseases). This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 2 acre specialty crop farm. Has foregone income due to cover crop. Cost represents typical situations for conventional (non-organic) producers.
Before Practice Situation	This rotation consisted of growing specialty crops. Fields range from nearly flat to B and C slopes. Erosion, soil quality, and pest management are the primary concerns.
After Practice Situation	The rotation established adds higher residue crop(s) to the rotation that reduce erosion, improve soil quality, and break pest cycles.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$42.65	$21.33
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$127.87	$63.94
Foregone Income	$5,902.00	$2,951.00
Total	$6,072.52	$3,036.26

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	20	$11.20
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Foregone Income	2033	FI, Vegetables	Vegetables is Primary Crop	Acre	$11,804.00	0.5	$5,902.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	328 - Conservation Crop Rotation
Scenario ID	3
Scenario Name	Specialty Crops with a Cover Crop, Organic
Scenario Description	In this region a rotation of specialty crops (fruits and vegetable) are produced as part of a conservation management system to: 1) Reduce sheet and rill erosion 2) Reduce soil erosion from wind 3) Maintain or improve soil organic matter 4) Manage the balance of plant nutrient 5) Improve water use efficiency, and 6) Manage plant pests (weeds, insects, and diseases). This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 2 acre specialty crop farm. Foregone income due to cover crop. Cost represents typical situations for organic producers.
Before Practice Situation	This rotation consisted of growing specialty crops. Fields range from nearly flat to B and C slopes. Erosion, soil quality, and pest management are the primary concerns.
After Practice Situation	The rotation established adds higher residue crop(s) to the rotation that reduce erosion, improve soil quality, and break pest cycles.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$42.65	$21.33
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$127.87	$63.94
Foregone Income	$6,787.30	$3,393.65
Total	$6,957.82	$3,478.91

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	20	$11.20
Foregone Income	2252	FI, Organic, Vegetables	Vegetables is Primary Crop	Acre	$13,574.60	0.5	$6,787.30

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	328 - Conservation Crop Rotation
Scenario ID	1
Scenario Name	Specialty Crops without a Cover Crop
Scenario Description	In this region a rotation of specialty crops (fruits and vegetable) are produced as part of a conservation management system to: 1) Reduce sheet and rill erosion 2) Reduce soil erosion from wind 3) Maintain or improve soil organic matter 4) Manage the balance of plant nutrients 5) Improve water use efficiency, and 6) Manage plant pests (weeds, insects, and diseases). This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 2 acre specialty crop farm. No cover crop or foregone income. Cost represents typical situations for conventional (non-organic) and organic producers.
Before Practice Situation	The rotation consists primarily of low residue producing row crops. Fields range from nearly flat to C and D slopes. Erosion, soil quality, and pest management are the primary concerns.
After Practice Situation	A rotation is establish that provides additional high residue and/or perennial crops that reduce erosion, improve soil quality, and break pest cycles.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$42.65	$21.33
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$127.87	$63.94
Foregone Income	$0.00	$0.00
Total	$170.52	$85.26

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	20	$11.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	329 - Residue and Tillage Management - No-Till/ Strip Till/ Direct Seed
Scenario ID	1
Scenario Name	No-Till/Strip-Till, Conventional
Scenario Description	This practice typically involves conversion from a clean-tilled (conventional tilled) system to no-till or strip-till (conservation tilled) system on 2 acres of cropland. This involves managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting soil-disturbing activities used to grow and harvest crops in systems. The practice is used to reduce sheet and rill erosion, reduce wind erosion, improve soil quality, reduce CO2 losses from the soil, reduce energy use, increase plant available moisture and provide food and escape cover for wildlife. The no-till/strip-till system includes chemical weed control (rather than cultivation) and may also include a period of chemical fallow. System is applicable in both irrigated and non-irrigated fields.
Before Practice Situation	Row crops or veg crops are grown and harvested. Full width tillage is performed prior to planting and weed control during crop production is typically cultivation and chemical application. Fields are disked immediately following harvest, with additional operations in some fields to facilitate drainage or additional weed control. Residue amounts after tillage operations average 10% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Any crop residue that is present degrades and sediment/nutrient runoff from fields increases during rainfall events. Sheet and rill erosion occurs with visible rills by spring. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. This system will typically have a negative Soil Conditioning Index (SCI) and a high Soil Tillage Intensity Rating (STIR).
After Practice Situation	Managing crop residue on the surface of a field (typical 2 acres) year around according to the 329 practice plan while limiting soil disturbing activities to those which place nutrients, and plant crops that meet the minimum criteria in the 329 practice standard. All crops are seeded/planted with a no-till drill or no-till/strip-till planter, which minimizes soil disturbance while establishing good seed-soil contact. All residues are to be maintained on the soil surface in a uniform distribution over the entire field and not burned or removed. Crop residues provide soil surface cover throughout the year. Runoff and erosion are reduced and no rills are visible on the soil surface. Wind erosion is reduced by standing residues and surface cover. Over time, soil health is improved due to the additional biomass (crop residues), ground cover, and soil infiltration. Crop residues and/or cover crop residues left on the soil surface may maximize weed control by increasing allelopathic and mulching effect, and provides cover for wildlife. The practice would require reducing soil disturbance and erosion and increasing biomass returned to the soil in sufficient amounts to achieve increased SCI and decreased STIR.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$22.08	$11.04
Equipment/Installation	$51.16	$25.58
Labor	$0.00	$0.00
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$127.87	$63.94
Foregone Income	$0.00	$0.00
Total	$201.11	$100.56

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	2	$22.08
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Equipment and labor costs included.	Acre	$6.50	2	$13.00
Equipment/Installation	960	Seeding Operation, No Till/Grass Drill	No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor.	Acre	$19.08	2	$38.16
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	20	$11.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	329 - Residue and Tillage Management - No-Till/ Strip Till/ Direct Seed
Scenario ID	2
Scenario Name	No-Till/Strip-Till, Organic
Scenario Description	This practice typically involves conversion from a clean or mulch tilled (conventional tilled) system to no-till or strip-till (conservation tilled) system on 1 acres of organic cropland. This involves managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting soil-disturbing activities used to grow and harvest crops in systems. The practice is used to reduce sheet and rill erosion, reduce wind erosion, improve soil quality, reduce CO2 losses from the soil, reduce energy use, increase plant available moisture and provide food and escape cover for wildlife. The organic no-till/strip-till system relies on mulching/residue management, organic-approved chemical weed control, or alterative methods of weed control such as hand weeding, flaming, etc. (rather than traditional cultivation). System is applicable in both irrigated and non-irrigated fields.
Before Practice Situation	Organically grown crops such as various vegetable and fruit crops (along with organically produced row crops) are grown and harvested throughout the year. Full width tillage is performed prior to planting and weed control during crop production is typically cultivation and mulching. Fields are disked immediately following harvest, with additional operations in some fields to facilitate drainage or additional weed control. Residue amounts after tillage operations average 10% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Any crop residue that is present degrades and sediment/nutrient runoff from fields increases during rainfall events. Wind and/or water erosion occurs with visible rills by spring. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. This system will typically have a negative Soil Conditioning Index (SCI) and a high Soil Tillage Intensity Rating (STIR).
After Practice Situation	329 is applied per the practice plan and all the appropriate criteria are followed for the planned purpose(s). Crop residue is managed on the surface of an organic crop field (typical 1 acre) year around while limiting soil disturbing activities to those which condition residue, place nutrients, and plant crops. All crops are seeded/planted with a no-till drill, no-till/strip-till transplanter, or no-till/strip-till planter, which minimize soil disturbance while establishing good seed-soil contact. All residues are to be maintained on the soil surface in a uniform distribution over the entire field and not burned or removed. Crop residues provide soil surface cover throughout the year. Runoff and erosion are reduced and no rills are visible on the soil surface. Wind erosion is reduced by standing residues and surface cover. Over time, soil health is improved due to the additional biomass (crop residues), ground cover, and soil infiltration. Crop residues and/or cover crop residues left on the soil surface may maximize weed control by increasing allelopathic and mulching effect and provide wildlife food and cover. The practice would require reducing soil disturbance and erosion and increasing biomass returned to the soil in sufficient amounts to achieve increased SCI and decreased STIR.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$36.51	$36.51
Labor	$0.00	$0.00
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$127.87	$127.87
Foregone Income	$0.00	$0.00
Total	$164.38	$164.38

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	957	Mechanical weed control, Vegetation termination	Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs.	Acre	$17.43	1	$17.43
Equipment/Installation	960	Seeding Operation, No Till/Grass Drill	No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor.	Acre	$19.08	1	$19.08
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	20	$11.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	340 - Cover Crop
Scenario ID	1
Scenario Name	Cover Crop, Chemical Kill
Scenario Description	Typically legumes (sunn hemp) are hand seeded as a cover crop immediately after the harvest of a cash crop, and will be followed by a secondary cash crop which will utilize the cover crops residue as a nitrogen source. This scenario assumes that the cover crop is hand seeded on a prepaired seed bed and will be lightly dragged to improve the seed to soil contact. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using herbicides prior to planting the subsequent crop.
Before Practice Situation	Veg crops such as sweet corn, lettuce, onions, and pepper are grown and harvested througout the year. Fields are disked immediately following harvest, with rows in some fields being hipped for drainage. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Over time residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills by spring. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue crops, and long periods of bare soil.
After Practice Situation	Within 15 days after harvest of crop, fields are planted with a legume mix cover crop, typically sunn hemp. The average field size is 1 acres. The cover crop is seeded by hand. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover until the next crop is to be planted. Runoff and erosion are reduced and no rills are visible on the soil surface following the cover crop. The cover crop is terminated with using a hebicide kill method (mowing, rolling, undercutting, etc.), prior to planting as late as feasible to maximize plant biomass production. Over time, soil health is improved due to the additional biomass, ground cover, and plant diversity introduced to the cropping system. Wind erosion is reduced by standing resides. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$251.64	$251.64
Equipment/Installation	$33.42	$33.42
Labor	$163.75	$163.75
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$448.81	$448.81

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	1	$11.04
Materials	189	Sunn Hemp (Crotalaria juncea L.)	Legumes, Cover Crops and shipping.	Pound	$4.01	60	$240.60
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Equipment and labor costs included.	Acre	$6.50	1	$6.50
Equipment/Installation	1100	Cultipacking	Includes all costs for equipment and power unit. labor included.	Acre	$7.67	1	$7.67
Equipment/Installation	959	Seeding Operation, Broadcast, Ground	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Equipment and labor cost included.	Acre	$9.62	1	$9.62
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	$9.63	1	$9.63
Labor	231	General Labor	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	$26.15	3	$78.45
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	2	$85.30

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	340 - Cover Crop
Scenario ID	2
Scenario Name	Cover Crop, Mechanical Kill
Scenario Description	Typically legumes (sunn hemp) are hand seeded as a cover crop immediately after the harvest of a cash crop, and will be followed by a secondary cash crop which will utilize the cover crops residue as a nitrogen source. This scenario assumes that the cover crop is hand seeded on a prepaired seed bed and will be lightly dragged to improve the seed to soil contact. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using tillage/mowing equipment prior to planting the subsequent crop.
Before Practice Situation	Veg crops such as sweet corn, lettuce, onions, and pepper are grown and harvested througout the year. Fields are disked immediately following harvest, with rows in some fields being hipped for drainage. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Over time residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills by spring. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue crops, and long periods of bare soil.
After Practice Situation	Within 15 days after harvest of crop, fields are planted with a legume mix cover crop, typically sunn hemp. The average field size is 1 acres. The cover crop is seeded by hand. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover until the next crop is to be planted. Runoff and erosion are reduced and no rills are visible on the soil surface following the cover crop. The cover crop is terminated with using a mechnical kill method (mowing, rolling, undercutting, etc.), prior to planting as late as feasible to maximize plant biomass production. Over time, soil health is improved due to the additional biomass, ground cover, and plant diversity introduced to the cropping system. Wind erosion is reduced by standing resides. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$240.60	$240.60
Equipment/Installation	$44.35	$44.35
Labor	$121.10	$121.10
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$406.05	$406.05

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	189	Sunn Hemp (Crotalaria juncea L.)	Legumes, Cover Crops and shipping.	Pound	$4.01	60	$240.60
Equipment/Installation	1100	Cultipacking	Includes all costs for equipment and power unit. labor included.	Acre	$7.67	1	$7.67
Equipment/Installation	957	Mechanical weed control, Vegetation termination	Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs.	Acre	$17.43	1	$17.43
Equipment/Installation	959	Seeding Operation, Broadcast, Ground	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Equipment and labor cost included.	Acre	$9.62	1	$9.62
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	$9.63	1	$9.63
Labor	231	General Labor	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	$26.15	3	$78.45
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	340 - Cover Crop
Scenario ID	3
Scenario Name	Cover Crop, Organic
Scenario Description	Typically legumes (sunn hemp) are hand seeded as a cover crop immediately after the harvest of a cash crop, and will be followed by a secondary cash crop which will utilize the cover crops residue as a nitrogen source. This scenario assumes that the cover crop is hand seeded on a prepaired seed bed and will be lightly dragged to improve the seed to soil contact. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using tillage/mowing equipment prior to planting the subsequent crop. This scenario requires the use of certified organin seed.
Before Practice Situation	Organically grown crops such as sweet corn, lettuce, onions, and pepper are grown and harvested througout the year. Fields are disked immediately following harvest, with rows in some fields being hipped for drainage. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Over time residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills by spring. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue crops, and long periods of bare soil.
After Practice Situation	Within 15 days after harvest of crop, fields are planted with a legume mix cover crop, typically sunn hemp. The average field size is 1 acres. The cover crop is seeded by hand. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover until the next crop is to be planted. Runoff and erosion are reduced and no rills are visible on the soil surface following the cover crop. The cover crop is terminated with using a mechnical kill method (mowing, rolling, undercutting, etc.), prior to planting as late as feasible to maximize plant biomass production. Over time, soil health is improved due to the additional biomass, ground cover, and plant diversity introduced to the cropping system. Wind erosion is reduced by standing resides. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$296.10	$296.10
Equipment/Installation	$34.73	$34.73
Labor	$121.10	$121.10
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$451.93	$451.93

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	180	Certified Organic, Ryegrass, Annual (Lolium multiflorum)	Annual Grasses, Cover Crops and shipping.	Pound	$2.97	30	$89.10
Materials	195	Certified Organic, Sunn Hemp (Crotalaria juncea L.)	Legumes, Cover Crops and shipping.	Pound	$3.45	60	$207.00
Equipment/Installation	1100	Cultipacking	Includes all costs for equipment and power unit. labor included.	Acre	$7.67	1	$7.67
Equipment/Installation	957	Mechanical weed control, Vegetation termination	Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs.	Acre	$17.43	1	$17.43
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	$9.63	1	$9.63
Labor	231	General Labor	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	$26.15	3	$78.45
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	342 - Critical Area Planting
Scenario ID	1
Scenario Name	Grass/legume Planting
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 Practice 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 Practice Situation	This typical 1.0 acre critical area is stabilized by grading and shaping the small gullies with a dozer (4 hours) and then seed. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, The planting will be installed.
Scenario Feature Measure	area seeded
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$307.55	$307.55
Equipment/Installation	$26.93	$26.93
Labor	$627.60	$627.60
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$962.08	$962.08

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1092	Bermuda Grass, Sprigs (Cynodon dactylon)	Introduced Perennial Grasses and shipping.	Bushel	$3.56	80	$284.80
Materials	197	Oats (Avena sativa)	Small Grains, Cover Crops and shipping.	Pound	$0.91	25	$22.75
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	$9.63	2	$19.26
Equipment/Installation	1100	Cultipacking	Includes equipment, power unit and labor costs.	Acre	$7.67	1	$7.67
Labor	231	General Labor	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	$26.15	24	$627.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	342 - Critical Area Planting
Scenario ID	2
Scenario Name	Native Planting
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, native grass seed, companion crop, and fertilizer and lime with application.
Before Practice 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 Practice Situation	This typical 1.0 acre critical area is stabilized by grading and shaping the small gullies with a dozer (4 hours) and then seed. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, The planting will be installed.
Scenario Feature Measure	area seeded
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$798.19	$798.19
Equipment/Installation	$26.93	$26.93
Labor	$627.60	$627.60
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,452.72	$1,452.72

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1524	Shrub, seedling or transplant, potted, 1 qt.	Potted shrub, 1 quart. Materials only.	Each	$3.80	50	$190.00
Materials	76	Big Blue Stem (Andropogon gerardii)	Native Grasses and shipping.	Pound	$11.81	10	$118.10
Materials	82	Switchgrass, Blackwell (Panicum virgatum)	Native Grasses and shipping.	Pound	$9.62	10	$96.20
Materials	80	Prairie Dropseed (Sporobolus heterolepis)	Native Grasses and shipping.	Pound	$125.23	3	$375.69
Materials	197	Oats (Avena sativa)	Small Grains, Cover Crops and shipping.	Pound	$0.91	20	$18.20
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	$9.63	2	$19.26
Equipment/Installation	1100	Cultipacking	Includes equipment, power unit and labor costs.	Acre	$7.67	1	$7.67
Labor	231	General Labor	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	$26.15	24	$627.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	344 - Residue Management, Seasonal
Scenario ID	1
Scenario Name	Residue Management, Seasonal
Scenario Description	Historically, producers have focused tillage activities immediately before and after the cash crop. Tillage activities have been intensive, and have served to both suppress weeds, reduce insect populations, and prepare fields. These periods of intensive tillage have led to excessive soil loss, often above the Soil Loss Tolerance (T), due to the loss of critical crop or weed residue and have also resulted in a loss of seasonal wildlife cover. The RUSLE2 and/or WEPS models will be used to review the farming operation and determine if enough residue is being retained between planted crops to keep soil loss below T and the appropriate wildlife habitat tools will be used to assess wildlife habitat - where wildlife is an identified concern. The producer will then remove operations, or select alternate operations, to manage residue between planted crops.
Before Practice Situation	Veg crops are grown and harvested. Fields are tilled immediately following harvest, with rows in some fields being ripped for drainage. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall and a poor cover situation for wildlife. Over time residue degrades and sediment/nutrient runoff from fields increases. Wind and/or water erosion occurs. Tillage and seedbed preparation activities occur as early as possible. Weed control is accomplished primarily through tillage, requiring multiple operations. Sediment and nutrient runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue monocultures, and long periods of bare soil.
After Practice Situation	344 is applied per the practice plan following all the appropriate criteria for the planned purpose(s). No tillage occurs after crop harvest until just prior to planting the next crop. In warmer areas, winter weeds or cover crops grow between crops. The residue that remains on the soil surface provides soil cover between crops. Runoff and erosion are reduced and and wildlife cover is improved . Wind erosion is reduced by standing residues. Weeds or the cover crop is terminated with tillage, a roller-crimper, shredding, with an approved herbicide, or a combination of these methods prior to spring planting as late as feasible. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity in the cropping system.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$0.00	$0.00
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$127.87	$127.87
Foregone Income	$0.00	$0.00
Total	$127.87	$127.87

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	20	$11.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	345 - Res. & Tillage Mgt, Mulch-till
Scenario ID	1
Scenario Name	Mulch Till, Basic
Scenario Description	Mulch-till is managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting the soil-disturbing activities used to grow crops in systems where the entire field surface is tilled prior to planting. This practice includes tillage methods commonly referred to as mulch tillage or chiseling and disking. It applies to stubble mulching on summer-fallowed land, to tillage for annually planted crops and to tillage for planted crops and to tillage for planting perennial crops. All residue shall be uniformly surface throughout critical wind erosion period. All residue shall be uniformly distributed over the entire field and not burned or removed. These periods of intensive tillage have led to excessive soil loss, often above the Soil Loss Tolerance (T), due to the loss of critical crop or weed residue. The RUSLE2 model will be used to review the farming operation and determine if enough residue is being retained, throughout the rotation, to keep soil loss below T. The producer will then remove operations, or select alternate operations, to reduce erosion below T.
Before Practice Situation	Row crops are planted year around. Fields are disked immediately following harvest, with rows in some fields being ripped for drainage. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Between crops the residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills. Tillage and seedbed preparation activities occur as early as possible for planting the crops. Weed control is accomplished primarily through tillage, requiring multiple operations. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue monocultures, and long periods of bare soil.
After Practice Situation	Mulch tillage applies to all cropland and other lands where crops are planed. It applies to stubble mulching on summer fallowed land to tillage for annually planted crops and to tillage for plating perennial crops. It also includes some planting operation such as hoe drill, air seeder and no-till drill that disturb a large percentage of soil surface using the planting operation. tillage occurs after crop harvest. In warmer areas, winter weeds or cover crops grow throughout the winter months. The residue that remains on the soil surface provides soil cover between crops. Runoff and erosion are reduced and no rills are visible on the soil surface. Wind erosion is reduced by standing residues. Winter weeds or the cover crop is terminated with tillage, a roller-crimper, shredding, or a combination of these methods prior to spring planting as late as feasible. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity in the cropping system.
Scenario Feature Measure	Area planted
Scenario Unit	Acre
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$86.34	$43.17
Labor	$0.00	$0.00
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$116.67	$58.34
Foregone Income	$0.00	$0.00
Total	$203.01	$101.51

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	960	Seeding Operation, No Till/Grass Drill	No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor.	Acre	$19.08	2	$38.16
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	$9.63	2	$19.26
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow, Equipment and power unit costs. Labor is included.	Acre	$14.46	2	$28.92
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	350 - Sediment Basin
Scenario ID	1
Scenario Name	Excavated Basin
Scenario Description	An excavated sediment basin in an existing drainage way on a farm for purpose of trapping sediment and preserving the capacity of reservoirs, ditches, canals, diversions, waterways and streams and to prevent undesirable deposition on bottom lands and other developed lands. The sediment basin is created solely by excavation and impounds less than 3 feet against the embankment or spoil. Excavated material is spoiled, not placed in a designed embankment. Earthen spillway is constructed as needed. Resource concerns addressed include excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. Surface water causes the sediment (and potentially pesticides and nutrients) to be transported into the riparian areas and water bodies downstream.
Before Practice Situation	Disturbed areas on all land uses that have excessive erosion lead to deterioration of receiving waters due to excessive sedimentation.
After Practice Situation	'The typical sediment basin is constructed by excavating 1500 cubic yards and spreading the spoil outside the pool area using a dozer or similar excavation equipment. The sediment storage capacity should be a minimum of 900 cubic feet per acre of disturbed area. The detention storage should be a minimum of 3600 cubic feet per acre of drainage area. Associated practice(s): Other practices that may need to be implemented along with sediment basin to address all of the site specific resource concerns include: Critical Area Planting (342) and Mulching (484) where necessary to prevent erosion following construction activities, Structure for Water Control (587) if using a dewatering device, Pond Sealing or Lining (521A,521B,521C,521D).
Scenario Feature Measure	Excavated volume
Scenario Unit	Cubic Yard
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$20,454.00	$13.64
Labor	$6,724.50	$4.48
Mobilization	$2,700.37	$1.80
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$29,878.87	$19.92

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1330	Roller, vibratory, towed	Towed vibratory smooth or tamping foot (sheepsfoot) roller compactor typically 25 ton. Equipment cost only. Does not include pulling equipment. Add Tractor or Dozer.	Hour	$52.93	50	$2,646.50
Equipment/Installation	927	Dozer, 140 HP	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	$101.16	100	$10,116.00
Equipment/Installation	928	Dozer, 200 HP	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	$153.83	50	$7,691.50
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	150	$6,724.50
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	4	$2,095.72
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	1	$44.41

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	362 - Diversion
Scenario ID	1
Scenario Name	Diversion
Scenario Description	An earthen channel constructed across long slopes with supporting ridge on lower side, to divert runoff away from farmsteads, agricultural waste systems, gullies, critical erosion areas, construction areas or other sensitive areas. Outlet may be waterway, underground outlet. or other suitable outlet. Typical diversion is, 300 feet (5000 sq ft) long installed on a field slope of 5 percent and requires 1.5 CY excavation per LF. Channel my be level or gradient and ridge may be vegetated or farmed. The quantity of excavation and fill is balanced.
Before Practice Situation	Excessive sedimentation and soil erosion as a result of gully, rill or sheet erosion which exceeds "T" from farm fields and other locations. Also, roof runoff or surface runoff that becomes contaminated with agricultral wastes that significantly contributes to the amount of runoff that has to be stored or treated.
After Practice Situation	Diversion is installed using a dozer. Field system meets "T" or "clean" storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultral waste. Associated practices are Critical Area Planting (342), Grassed Waterway (412), Underground Outlet (620), Mulching (484), and Subsurface Drainage (606).
Scenario Feature Measure	Length of Diversion
Scenario Unit	Linear Feet
Scenario Typical Size	300

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,314.00	$4.38
Labor	$853.74	$2.85
Mobilization	$382.36	$1.27
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,550.10	$8.50

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	24	$1,314.00
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	24	$597.84
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	367 - Roofs and Covers
Scenario ID	1
Scenario Name	Flexible Membrane Cover
Scenario Description	A fabricated rigid, semi-rigid, or flexible membrane over a waste storage or treatment facility. The membrane will cover the entire surface of a waste storage or treatment facility (e.g. waste treatment lagoon or anaerobic digester). Cover will exclude precipitation and/or capture biogas for controlled release for flaring or anaerobic digestion. Associated practices include Waste Storage Facility (313), Waste Treatment Lagoon (359), Anaerobic Digester (366), Animal Mortality Facility (316), Composting Facility (317), Roof Runoff Structure (558), Pumping Plant (533), and Waste Treatment (629).
Before Practice Situation	Applicable where the exclusion of precipitation from an animal waste storage or treatment lagoon will improve the management of an existing or planned system, capture and controlled release or flaring of emissions from an existing or planned agricultural waste storage to improve air quality, and/or biogas production and capture for energy use are part of the existing or planned animal waste management system.
After Practice Situation	A fabricated rigid, semi-rigid, or flexible membrane over a waste storage or treatment facility. The membrane will cover the entire surface of a waste storage or treatment facility (e.g. waste treatment lagoon or anaerobic digester).
Scenario Feature Measure	Surface of Membrane
Scenario Unit	Square Foot
Scenario Typical Size	864

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$622.08	$0.72
Equipment/Installation	$0.00	$0.00
Labor	$104.60	$0.12
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$726.68	$0.84

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1387	Synthetic Liner, 40 mil	Synthetic 40 mil HDPE, LLDPE, EPDM, etc membrane liner material. Materials only.	Square Yard	$6.48	96	$622.08
Labor	231	General Labor	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.	Hours	$26.15	4	$104.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	367 - Roofs and Covers
Scenario ID	2
Scenario Name	Corrugated Metal Roof with Timber Frame
Scenario Description	A timber framed building with a timber or steel "sheet" roof and supporting foundation (from facilitiing practices). Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues. Associated practices include Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Agrichemical Handling Facility (309), Roof Runoff Structure (558), and Waste Treatment (629).
Before Practice Situation	Applicable where the exclusion of precipitation from an animal waste storage and/or treatment facility will improve of an existing or planned system. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues.
After Practice Situation	A timber framed building with a timber or steel "sheet" roof and supporting foundation. Engineered and installed in accordance with appropriate building codes and permits. Typical size is 480 square feet and is over an approved animal waste management facility as a component of a CNMP. It is designed to prevent precipitation to allow proper management of animal waste streams (manure or compost streams), thus mitigating the negative factors from the "before practice implementation".
Scenario Feature Measure	Footprint of building
Scenario Unit	Square Foot
Scenario Typical Size	480

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,524.16	$3.18
Equipment/Installation	$0.00	$0.00
Labor	$4,750.40	$9.90
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,274.56	$13.07

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	223	Corrugated Steel, 28 gage	Corrugated or ribbed, galvanized, 28 gauge, includes fasteners, materials only.	sq ft	$2.29	480	$1,099.20
Materials	1044	Dimension Lumber, Treated	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	$0.83	512	$424.96
Labor	231	General Labor	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.	Hours	$26.15	120	$3,138.00
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hours	$40.31	40	$1,612.40

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	378 - Pond
Scenario ID	2
Scenario Name	Embankment Pond without Pipe
Scenario Description	A water impoundment structure on agricultural land to improve water quality or to provide water for livestock, fish and wildlife, recreation, fire control, crop and orchard irrigation, and other related uses. An earthen embankment will be constructed with an earthen auxiliary spillway. The resource concerns addressed include inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition.
Before Practice Situation	Area exists where water could naturally pool or run off to create a pond for livestock, wildlife, fire control or irrigation. Failure of the embankment will not result in loss of life or damages of any kind.
After Practice Situation	The typical pond is constructed by excavating the pool area, constructing the auxiliary spillway, preparing the foundation as designed, and using 3100 cubic yards to create an embankment. The product of the storage times the effective height of the dam is less than 3,000. The effective height of the dam is 35 feet or less. The earthen auxiliary spillway will be constructed as designed. No principle spillway pipe will be used. Vegetation will be completed under critical area planting (342). Other associated practices include 382, 516, 521A, 533, 614, 587, 396.
Scenario Feature Measure	Embankment Volume
Scenario Unit	Cubic Yard
Scenario Typical Size	3100

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$38,098.67	$12.29
Labor	$13,852.47	$4.47
Mobilization	$2,700.37	$0.87
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$54,651.51	$17.63

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1328	Roller, static, towed, tamping foot	Towed static tamping foot (sheepsfoot) roller compactor typically 60" diameter drum. Equipment cost only. Does not include pulling equipment. Add Tractor or Dozer.	Hour	$13.74	103	$1,415.22
Equipment/Installation	927	Dozer, 140 HP	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	$101.16	206	$20,838.96
Equipment/Installation	928	Dozer, 200 HP	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	$153.83	103	$15,844.49
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	309	$13,852.47
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	4	$2,095.72
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	1	$44.41
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	378 - Pond
Scenario ID	1
Scenario Name	Excavated Pond
Scenario Description	A low-hazard water impoundment structure on agricultural lands to improve water quality and to provide water for livestock, fish and wildlife, recreation, fire control, crop and orchard irrigation, and other related uses. Pond is created solely by excavation and impounds less than 3 feet against the embankment or spoil. Excavated material is spoiled, not placed in a designed embankment. Earthen spillway is constructed as needed. The resource concerns addressed include inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition.
Before Practice Situation	Area exists where water could naturally pool or run off to create a pond for livestock, wildlife, fire control or irrigation. Failure of the pond will not result in loss of life; damage to homes, commercial or industrial buildings, main highways, or railroads; or in interruption of the use or service of public utilities.
After Practice Situation	The typical pond is constructed by excavating 3100 cubic yards and spreading the spoil outside the pool area using a dozer or similar excavation equipment. Vegetation will be completed under critical area planting (342). Other associated practices include 382, 516, 521A, 533, 614, 587, 396.
Scenario Feature Measure	Excavated Volume
Scenario Unit	Cubic Yard
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$20,454.00	$13.64
Labor	$6,724.50	$4.48
Mobilization	$2,700.37	$1.80
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$29,878.87	$19.92

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1330	Roller, vibratory, towed	Towed vibratory smooth or tamping foot (sheepsfoot) roller compactor typically 25 ton. Equipment cost only. Does not include pulling equipment. Add Tractor or Dozer.	Hour	$52.93	50	$2,646.50
Equipment/Installation	927	Dozer, 140 HP	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	$101.16	100	$10,116.00
Equipment/Installation	928	Dozer, 200 HP	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	$153.83	50	$7,691.50
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	150	$6,724.50
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	4	$2,095.72
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	1	$44.41

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	379 - Multi-Story Cropping
Scenario ID	3
Scenario Name	Manual Planting, Individual Plant Cutting
Scenario Description	Tree and shrub cuttings will be hand planted to establish a new canopy position and increase species diversity in an existing forest or agroforest containing a significant component of desirable species. Typical resource concerns are: Soil erosion - sheet and rill, and; Degraded plant condition - undesirable plant productivity and health, inadequate structure and composition, and excessive plant pest pressure.
Before Practice Situation	The forest or agroforest lacks a desired unique canopy layer, and that is negatively affecting existing plants growing on the site. Other desired native or non-native tree and shrub species exist and landowner desires to establish a new canopy layer and increase forest species diversity. Production, variety and quality of agroforest products does not meet landowner needs. Sunlight levels are not optimal for existing plant health or productivity. Ground cover is lacking and sheet and rill erosion occurs during hard rainfall events. Noxious or invasive plants may be an issue.
After Practice Situation	The prescribed number of tree and shrub cuttings are hand planted and the objectives of the landowner are met to address or accomplish forest or agroforest enhancement or enrichment, timber and other forest products or long term ground cover objectives.
Scenario Feature Measure	Area Planted
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$726.50	$0.48
Equipment/Installation	$330.40	$0.22
Labor	$1,301.90	$0.87
Mobilization	$256.63	$0.17
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,615.43	$1.74

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	50	$66.50
Materials	1308	Cuttings, woody, medium size	Woody cuttings, live stakes or whips typically 1/4" to 1" diameter and 24" to 48" long. Materials only.	Each	$0.44	1500	$660.00
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	35	$330.40
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Labor	231	General Labor	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	$26.15	40	$1,046.00
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	379 - Multi-Story Cropping
Scenario ID	1
Scenario Name	Manual Planting, Individual Native Plant
Scenario Description	Native tree and shrub seedlings will be hand planted to establish a new canopy position and increase species diversity in an existing forest or agroforest containing a significant component of desirable species. Typical resource concerns are: Soil erosion - sheet and rill, and; Degraded plant condition - undesirable plant productivity and health, inadequate structure and composition, and excessive plant pest pressure.
Before Practice Situation	The forest or agroforest lacks a desired unique canopy layer, and that is negatively affecting existing plants growing on the site. Other desired native or non-native tree and shrub species exist and landowner desires to establish a new canopy layer and increase forest species diversity. Production, variety and quality of agroforest products does not meet landowner needs. Sunlight levels are not optimal for existing plant health or productivity. Ground cover is lacking and sheet and rill erosion occurs during hard rainfall events. Noxious or invasive plants may be an issue.
After Practice Situation	The prescribed number of trees and shrubs are hand planted and the objectives of the landowner are met to address or accomplish forest or agroforest enhancement or enrichment, timber and other forest products or long term ground cover objectives.
Scenario Feature Measure	Area Planted
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$13,679.00	$9.12
Equipment/Installation	$792.96	$0.53
Labor	$3,022.20	$2.01
Mobilization	$409.38	$0.27
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$17,903.54	$11.94

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$6.00	375	$2,250.00
Materials	1544	Tree or shrub seedling, Tropical, native or non-native, 2-3 gal	tree or shrub topical seedling, native or non-native, 2-3gallon pot	Each	$23.25	75	$1,743.75
Materials	1543	Tree or shrub seedling, Tropical, native or non-native, 1 gal	tree or shrub topical seedling, native or non-native, 1 gallon pot	Each	$11.10	675	$7,492.50
Materials	1553	Tree or shrub seedling, Tropical, native, containerized, 10 cu in	tree or shrub tropical seedling, native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$5.67	375	$2,126.25
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	50	$66.50
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	84	$792.96
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	12	$511.80
Labor	231	General Labor	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	$26.15	96	$2,510.40
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	6	$253.56
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	6	$155.82

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	379 - Multi-Story Cropping
Scenario ID	2
Scenario Name	Manual Planting, Individual Non-Native Plant
Scenario Description	Non-native tree and shrub seedlings will be hand planted to establish a new canopy position and increase species diversity in an existing forest or agroforest containing a significant component of desirable species. Typical resource concerns are: Soil erosion - sheet and rill, and; Degraded plant condition - undesirable plant productivity and health, inadequate structure and composition, and excessive plant pest pressure.
Before Practice Situation	The forest or agroforest lacks a desired unique canopy layer, and that is negatively affecting existing plants growing on the site. Other desired native or non-native tree and shrub species exist and landowner desires to establish a new canopy layer and increase forest species diversity. Production, variety and quality of agroforest products does not meet landowner needs. Sunlight levels are not optimal for existing plant health or productivity. Ground cover is lacking and sheet and rill erosion occurs during hard rainfall events. Noxious or invasive plants may be an issue.
After Practice Situation	The prescribed number of trees and shrubs are hand planted and the objectives of the landowner are met to address or accomplish forest or agroforest enhancement or enrichment, timber and other forest products or long term ground cover objectives.
Scenario Feature Measure	Area Planted
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$9,936.50	$6.62
Equipment/Installation	$660.80	$0.44
Labor	$2,518.50	$1.68
Mobilization	$341.15	$0.23
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$13,456.95	$8.97

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$6.00	600	$3,600.00
Materials	1548	Tree or shrub seedling, Tropical, non-native, containerized, 10 cu in	tree or shrub tropical seedling, non-native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$4.90	600	$2,940.00
Materials	1543	Tree or shrub seedling, Tropical, native or non-native, 1 gal	tree or shrub topical seedling, native or non-native, 1 gallon pot	Each	$11.10	300	$3,330.00
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	50	$66.50
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	70	$660.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50
Labor	231	General Labor	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	$26.15	80	$2,092.00
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	5	$211.30
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	379 - Multi-Story Cropping
Scenario ID	4
Scenario Name	Individual Plant Protection
Scenario Description	Newly planted tree and shrub seedlings will be protected from wildlife browsing, excessive sunlight, wind or frost. Typical resource concerns are: Soil erosion - sheet and rill, and; Degraded plant condition - undesirable plant productivity and health, inadequate structure and composition, and excessive plant pest pressure.
Before Practice Situation	The forest or agroforest lacks a desired unique canopy layer, and that is negatively affecting existing plants growing on the site. Other desired native or non-native tree and shrub species exist and landowner desires to establish a new canopy layer and increase forest species diversity. Production, variety and quality of agroforest products does not meet landowner needs. Sunlight levels are not optimal for existing plant health or productivity. Ground cover is lacking and sheet and rill erosion occurs during hard rainfall events. Noxious or invasive plants may be an issue.
After Practice Situation	The prescribed number of trees and shrubs are protected from widlife browsing or adverse climatic conditions by installing some type of protective devise.
Scenario Feature Measure	Each Planted Seedling protected
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$7,350.00	$4.90
Equipment/Installation	$0.00	$0.00
Labor	$1,007.40	$0.67
Mobilization	$136.46	$0.09
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,493.86	$5.66

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1584	Stake, bamboo, 3/8" x 36"	3/8" x 36" bamboo stakes to anchor items in place. Materials only.	Each	$0.08	3000	$240.00
Materials	1575	Cable ties, plastic	Plastic cable ties (typ. 8-12") to assist in securing items. Materials only.	Each	$0.07	3000	$210.00
Materials	1570	Tree shelter, solid tube type, 5" x 30"	5" x 30" tree tube for protection from animal damage. Materials only.	Each	$4.60	1500	$6,900.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Labor	231	General Labor	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	$26.15	32	$836.80
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	380 - Windbreak/Shelterbelt Est.
Scenario ID	3
Scenario Name	Manual Planting, Individual Plant Cutting
Scenario Description	Tree and shrub cuttings are planted in one or multiple rows to provide wind protection for crops, orchards, animals or infrastructure. Tree row width, and within-row tree spacing, is based on growth form and crown charactaristics of individual species, number of rows and farm equipment size. Resource Concerns to be addressed may include: Soil erosion - sheet, rill and wind erosion; Water quality degradation - excess nutrients in surface and ground waters, excessive sediment in surface waters; Degraded plant condition - undesirable plant productivity and health); Inadequate habitat for fish and wildlife - inadequate habitat, and; Inefficient Energy Use - inefficient use of energy in the farm operation.
Before Practice Situation	Agricultural field, orchard, livestock paddock, feedlot or farmstead needs protection from wind.
After Practice Situation	Wind velocity suitably reduced to reduce: Soil erosion; Damage to plants in production fields, and; Impacts to livestock or farm operations.
Scenario Feature Measure	length of windbreak row(s)
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$992.50	$0.66
Equipment/Installation	$487.12	$0.32
Labor	$1,301.90	$0.87
Mobilization	$256.63	$0.17
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,038.15	$2.03

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1308	Cuttings, woody, medium size	Woody cuttings, live stakes or whips typically 1/4" to 1" diameter and 24" to 48" long. Materials only.	Each	$0.44	1500	$660.00
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	250	$332.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	6	$156.72
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	35	$330.40
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Labor	231	General Labor	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	$26.15	40	$1,046.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	380 - Windbreak/Shelterbelt Est.
Scenario ID	1
Scenario Name	Individual Native Plant, Manual Planting
Scenario Description	Trees and shrubs are planted in one or multiple rows to provide wind protection for crops, orchards, animals or infrastructure. Tree row width, and within-row tree spacing, is based on growth form and crown charactaristics of individual species, number of rows and farm equipment size. Resource Concerns to be addressed may include: Soil erosion - sheet, rill and wind erosion; Water quality degradation - excess nutrients in surface and ground waters, excessive sediment in surface waters; Degraded plant condition - undesirable plant productivity and health); Inadequate habitat for fish and wildlife - inadequate habitat, and; Inefficient Energy Use - inefficient use of energy in the farm operation.
Before Practice Situation	Agricultural field, orchard, livestock paddock, feedlot or farmstead needs protection from wind.
After Practice Situation	Wind velocity suitably reduced to reduce: Soil erosion; Damage to plants in production fields, and; Impacts to livestock or farm operations.
Scenario Feature Measure	length of windbreak row(s)
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$13,945.00	$9.30
Equipment/Installation	$1,106.40	$0.74
Labor	$3,022.20	$2.01
Mobilization	$409.38	$0.27
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$18,482.98	$12.32

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	250	$332.50
Materials	1544	Tree or shrub seedling, Tropical, native or non-native, 2-3 gal	tree or shrub topical seedling, native or non-native, 2-3gallon pot	Each	$23.25	75	$1,743.75
Materials	1543	Tree or shrub seedling, Tropical, native or non-native, 1 gal	tree or shrub topical seedling, native or non-native, 1 gallon pot	Each	$11.10	675	$7,492.50
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$6.00	375	$2,250.00
Materials	1553	Tree or shrub seedling, Tropical, native, containerized, 10 cu in	tree or shrub tropical seedling, native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$5.67	375	$2,126.25
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	84	$792.96
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	12	$511.80
Labor	231	General Labor	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	$26.15	96	$2,510.40
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	6	$155.82
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	6	$253.56

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	380 - Windbreak/Shelterbelt Est.
Scenario ID	2
Scenario Name	Manual Planting, Individual Non-Native Plant
Scenario Description	Trees and shrubs are planted in one or multiple rows to provide wind protection for crops, orchards, animals or infrastructure. Tree row width, and within-row tree spacing, is based on growth form and crown charactaristics of individual species, number of rows and farm equipment size. Resource Concerns to be addressed may include: Soil erosion - sheet, rill and wind erosion; Water quality degradation - excess nutrients in surface and ground waters, excessive sediment in surface waters; Degraded plant condition - undesirable plant productivity and health); Inadequate habitat for fish and wildlife - inadequate habitat, and; Inefficient Energy Use - inefficient use of energy in the farm operation.
Before Practice Situation	Agricultural field, orchard, livestock paddock, feedlot or farmstead needs protection from wind.
After Practice Situation	Wind velocity suitably reduced to reduce: Soil erosion; Damage to plants in production fields, and; Impacts to livestock or farm operations.
Scenario Feature Measure	length of windbreak row(s)
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$10,202.50	$6.80
Equipment/Installation	$922.00	$0.61
Labor	$2,518.50	$1.68
Mobilization	$341.15	$0.23
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$13,984.15	$9.32

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	250	$332.50
Materials	1543	Tree or shrub seedling, Tropical, native or non-native, 1 gal	tree or shrub topical seedling, native or non-native, 1 gallon pot	Each	$11.10	300	$3,330.00
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$6.00	600	$3,600.00
Materials	1548	Tree or shrub seedling, Tropical, non-native, containerized, 10 cu in	tree or shrub tropical seedling, non-native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$4.90	600	$2,940.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	10	$261.20
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	70	$660.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50
Labor	231	General Labor	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	$26.15	80	$2,092.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	5	$211.30

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	380 - Windbreak/Shelterbelt Est.
Scenario ID	4
Scenario Name	Individual Plant Protection
Scenario Description	Newly planted tree and shrub seedlings will be protected from wildlife browsing, excessive sunlight, wind or frost. Resource Concerns to be addressed may include: Soil erosion - sheet, rill and wind erosion; Water quality degradation - excess nutrients in surface and ground waters, excessive sediment in surface waters; Degraded plant condition - undesirable plant productivity and health); Inadequate habitat for fish and wildlife - inadequate habitat, and; Inefficient Energy Use - inefficient use of energy in the farm operation.
Before Practice Situation	Newly planted tree and shrub seedlings are in a location where they are highly susceptible to animal browse, or too much sun, wind or frost.
After Practice Situation	The prescribed number of trees and shrubs are protected from widlife browsing or adverse climatic conditions by installing some type of protective device.
Scenario Feature Measure	Each Planted Seedling protected
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$7,140.00	$4.76
Equipment/Installation	$368.80	$0.25
Labor	$1,007.40	$0.67
Mobilization	$136.46	$0.09
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,652.66	$5.77

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1584	Stake, bamboo, 3/8" x 36"	3/8" x 36" bamboo stakes to anchor items in place. Materials only.	Each	$0.08	3000	$240.00
Materials	1570	Tree shelter, solid tube type, 5" x 30"	5" x 30" tree tube for protection from animal damage. Materials only.	Each	$4.60	1500	$6,900.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	28	$264.32
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Labor	231	General Labor	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	$26.15	32	$836.80
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	380 - Windbreak/Shelterbelt Est.
Scenario ID	5
Scenario Name	Mechanized Planting, Medium Density
Scenario Description	One or more rows of trees and shrubs are planted by machine, providing wind protection for crops, orchards, animals or infrastructure. Tree row width, and within-row tree spacing, is based on growth form and crown charactaristics of individual species, number of rows and farm equipment size. Resource Concerns to be addressed may include: Soil erosion - sheet, rill and wind erosion; Water quality degradation - excess nutrients in surface and ground waters, excessive sediment in surface waters; Degraded plant condition - undesirable plant productivity and health); Inadequate habitat for fish and wildlife - inadequate habitat, and; Inefficient Energy Use - inefficient use of energy in the farm operation.
Before Practice Situation	Agricultural field, orchard, livestock paddock, feedlot or farmstead needs protection from wind.
After Practice Situation	Wind velocity suitably reduced to reduce: Soil erosion; Damage to plants in production fields, and; Impacts to livestock or farm operations.
Scenario Feature Measure	length of windbreak row(s)
Scenario Unit	Each
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$2,642.50	$5.29
Equipment/Installation	$85.25	$0.17
Labor	$113.63	$0.23
Mobilization	$68.23	$0.14
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,909.61	$5.82

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1553	Tree or shrub seedling, Tropical, native, containerized, 10 cu in	tree or shrub tropical seedling, native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$5.67	250	$1,417.50
Materials	1548	Tree or shrub seedling, Tropical, non-native, containerized, 10 cu in	tree or shrub tropical seedling, non-native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$4.90	250	$1,225.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	1	$54.75
Equipment/Installation	1600	Mechanical tree planter	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	$4.38	1	$4.38
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	1	$44.83
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Labor	231	General Labor	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	$26.15	1	$26.15
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	381 - Silvopasture
Scenario ID	6
Scenario Name	Direct Seeding
Scenario Description	Seed from tree and shrub species are broadcast or directly planted in the soil. The seeds are collected or purchased locally when possible so as to get trees known to be adapted to local conditions. Typical resource concerns addressed include: Degraded Plant Condition - undesirable plant productivity and health, excessive plant pest pressure, inadequate structure and composition, and Livestock Production Limitation - inadequate livestock shelter.
Before Practice Situation	An existing or planned pasture having very little protection from the elements (sun, wind, etc.) available to livestock. Additionally, there are no long-term wood products being produced. Direct seeding has high potential for success (e.g. following natural disturbance, or mechanized site preparation).
After Practice Situation	Seeds are collected or purchased and broadcast or planted at prescribed rates. Site preparation is done prior to direct seeding. Trees established by direct seeding (follow-up thinning may be requied) will provide shade and wind protection to livestock and in time, producing a viable forest products crop. Per the conservation practice standard, livestock grazing will be deferred until the trees reach adequate height to resist damage, or use exclusion measures are established.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$155.50	$31.10
Equipment/Installation	$26.12	$5.22
Labor	$173.40	$34.68
Mobilization	$68.23	$13.65
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$423.25	$84.65

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1871	Trees and shrubs, seed	Tree or shrub seed, e.g., acorns, to establish trees. Materials only.	Pound	$3.11	50	$155.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	231	General Labor	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	$26.15	5	$130.75
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	381 - Silvopasture
Scenario ID	3
Scenario Name	Manual Planting, Individual Plant Cutting
Scenario Description	Tree cuttings will be hand planted in an existing or planned pasture in double row sets at 10' x 10' spacing, with 40' between sets. Typical resource concerns addressed include: Degraded Plant Condition - undesirable plant productivity and health, excessive plant pest pressure, inadequate structure and composition, and Livestock Production Limitation - inadequate livestock shelter.
Before Practice Situation	An existing or planned pasture having very little protection from the elements (sun, wind, etc.) available to livestock. Additionally, there are no long-term wood products being produced.
After Practice Situation	The prescribed number of tree cuttings are hand planted and the objectives of the landowner are met to address or accomplish silvopasture establishment. Planted trees will provide shade and wind protection to livestock and in time, producing a viable forest products crop. Per the conservation practice standard, livestock grazing will be deferred until the trees reach adequate height to resist damage, or use exclusion measures are established.
Scenario Feature Measure	Area Planted
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$424.90	$84.98
Equipment/Installation	$302.72	$60.54
Labor	$798.20	$159.64
Mobilization	$162.43	$32.49
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,688.25	$337.65

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	30	$39.90
Materials	1308	Cuttings, woody, medium size	Woody cuttings, live stakes or whips typically 1/4" to 1" diameter and 24" to 48" long. Materials only.	Each	$0.44	875	$385.00
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	21	$198.24
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Labor	231	General Labor	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	$26.15	24	$627.60
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	381 - Silvopasture
Scenario ID	1
Scenario Name	Manual Planting, Individual Native Plant
Scenario Description	Tree seedlings will be hand planted in an existing or planned pasture in double row sets at 10' x 10' spacing, with 40' between sets. Typical resource concerns addressed include: Degraded Plant Condition - undesirable plant productivity and health, excessive plant pest pressure, inadequate structure and composition, and Livestock Production Limitation - inadequate livestock shelter.
Before Practice Situation	An existing or planned pasture having very little protection from the elements (sun, wind, etc.) available to livestock. Additionally, there are no long-term wood products being produced.
After Practice Situation	The prescribed number of trees are hand planted and the objectives of the landowner are met to address or accomplish silvopasture establishment. Planted trees will provide shade and wind protection to livestock and in time, producing a viable forest products crop. Per the conservation practice standard, livestock grazing will be deferred until the trees reach adequate height to resist damage, or use exclusion measures are established.
Scenario Feature Measure	Area Planted
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$8,010.05	$1,602.01
Equipment/Installation	$671.52	$134.30
Labor	$1,753.30	$350.66
Mobilization	$272.92	$54.58
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$10,707.79	$2,141.56

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1529	Tree, hardwood, seedling or transplant, potted, 1 qt.	Potted hardwood tree, 1 quart. Materials only.	Each	$5.02	215	$1,079.30
Materials	1533	Tree, hardwood, seedling or transplant, potted or B&B, 5 gal.	Potted or balled and burlapped hardwood tree, 5 gal. Materials only.	Each	$29.10	45	$1,309.50
Materials	1526	Shrub, seedling or transplant, potted, 1 gal.	Potted shrub, 1 gal. Materials only.	Each	$6.09	215	$1,309.35
Materials	1525	Shrub, seedling or transplant, potted, 1/2 gal.	Potted shrub, 1/2 gal. Materials only.	Each	$10.68	400	$4,272.00
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	30	$39.90
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	8	$208.96
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	49	$462.56
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	8	$341.20
Labor	231	General Labor	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	$26.15	54	$1,412.10
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	4	$103.88
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	4	$169.04

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	381 - Silvopasture
Scenario ID	2
Scenario Name	Manual Planting, Individual Non-Native Plant
Scenario Description	Tree seedlings will be hand planted in an existing or planned pasture in double row sets at 10' x 10' spacing, with 40' between sets. Typical resource concerns addressed include: Degraded Plant Condition - undesirable plant productivity and health, excessive plant pest pressure, inadequate structure and composition, and Livestock Production Limitation - inadequate livestock shelter.
Before Practice Situation	An existing or planned pasture having very little protection from the elements (sun, wind, etc.) available to livestock. Additionally, there are no long-term wood products being produced.
After Practice Situation	The prescribed number of trees are hand planted and the objectives of the landowner are met to address or accomplish silvopasture establishment. Planted trees will provide shade and wind protection to livestock and in time, producing a viable forest products crop. Per the conservation practice standard, livestock grazing will be deferred until the trees reach adequate height to resist damage, or use exclusion measures are established.
Scenario Feature Measure	Area Planted
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$5,797.40	$1,159.48
Equipment/Installation	$553.20	$110.64
Labor	$1,511.10	$302.22
Mobilization	$204.69	$40.94
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,066.39	$1,613.28

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	30	$39.90
Materials	1526	Shrub, seedling or transplant, potted, 1 gal.	Potted shrub, 1 gal. Materials only.	Each	$6.09	350	$2,131.50
Materials	1525	Shrub, seedling or transplant, potted, 1/2 gal.	Potted shrub, 1/2 gal. Materials only.	Each	$10.68	175	$1,869.00
Materials	1529	Tree, hardwood, seedling or transplant, potted, 1 qt.	Potted hardwood tree, 1 quart. Materials only.	Each	$5.02	350	$1,757.00
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	42	$396.48
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	6	$156.72
Labor	231	General Labor	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	$26.15	48	$1,255.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	381 - Silvopasture
Scenario ID	4
Scenario Name	Individual Plant Protection
Scenario Description	Newly planted tree and shrub seedlings will be protected from wildlife browsing, excessive sunlight, wind or frost. Typical resource concerns addressed include: Degraded Plant Condition - undesirable plant productivity and health, excessive plant pest pressure, inadequate structure and composition, and Livestock Production Limitation - inadequate livestock shelter.
Before Practice Situation	Newly planted tree seedlings are in a location where they are highly susceptible to animal browse, or too much sun, wind or frost. Wildlife are known to browse tree seedlings in the area causing great damage. To be a viable silvopasture, newly planted seedlings must be protected.
After Practice Situation	The prescribed number of trees are protected from widlife browsing or adverse climatic conditions by installing some type of protective devise.
Scenario Feature Measure	Each Planted Seedling protected
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$4,287.50	$857.50
Equipment/Installation	$104.48	$20.90
Labor	$693.60	$138.72
Mobilization	$162.43	$32.49
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$5,248.01	$1,049.60

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1584	Stake, bamboo, 3/8" x 36"	3/8" x 36" bamboo stakes to anchor items in place. Materials only.	Each	$0.08	1750	$140.00
Materials	1570	Tree shelter, solid tube type, 5" x 30"	5" x 30" tree tube for protection from animal damage. Materials only.	Each	$4.60	875	$4,025.00
Materials	1575	Cable ties, plastic	Plastic cable ties (typ. 8-12") to assist in securing items. Materials only.	Each	$0.07	1750	$122.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Labor	231	General Labor	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	$26.15	20	$523.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	381 - Silvopasture
Scenario ID	5
Scenario Name	Mechanical Planting, High Density
Scenario Description	Tree seedlings will be mechanically planted in an existing or planned pasture in double row sets at 10' x 10' spacing, with 40' between sets. Terrain conditions allow for mechanical tree planting of containerized seedlings. Typical resource concerns addressed include: Degraded Plant Condition - undesirable plant productivity and health, excessive plant pest pressure, inadequate structure and composition, and Livestock Production Limitation - inadequate livestock shelter.
Before Practice Situation	An existing or planned pasture having very little protection from the elements (sun, wind, etc.) available to livestock. Additionally, there are no long-term wood products being produced.
After Practice Situation	The prescribed number of trees are mechanically planted and the objectives of the landowner are met to address or accomplish silvopasture establishment. Planted trees will provide shade and wind protection to livestock and in time, producing a viable forest products crop. Per the conservation practice standard, livestock grazing will be deferred until the trees reach adequate height to resist damage, or use exclusion measures are established.
Scenario Feature Measure	Area Planted
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$8,785.00	$878.50
Equipment/Installation	$341.00	$34.10
Labor	$454.52	$45.45
Mobilization	$1,055.24	$105.52
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$10,635.76	$1,063.58

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1529	Tree, hardwood, seedling or transplant, potted, 1 qt.	Potted hardwood tree, 1 quart. Materials only.	Each	$5.02	1750	$8,785.00
Equipment/Installation	1600	Mechanical tree planter	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	$4.38	4	$17.52
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	4	$219.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Labor	231	General Labor	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	$26.15	4	$104.60
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	4	$179.32
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	1	$44.41
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	381 - Silvopasture
Scenario ID	7
Scenario Name	Shade for Livestock
Scenario Description	Native or non-native tree seedlings will be hand planted in an existing or planned pasture to provide shade for livestock. Trees shall be planted far from water or mineral sources to encourage livestock movement within paddocks. Each tree will be protected by installing a triangular enclosure, seven feet per side, using wooden posts and woven wire. Production of wood is not a primary objective. Typical resource concerns addressed is Livestock Production Limitation - inadequate livestock shelter.
Before Practice Situation	An existing or planned pasture having very little protection from the elements (sun, wind, etc.) available to livestock.
After Practice Situation	The prescribed number of trees are hand planted and the objectives of the landowner are met to address or accomplish silvopasture establishment. Planted trees will provide shade and wind protection to livestock. Because individual trees are well protected, livestock grazing will be permissible immediately after tree planting and tree enclosure construction are both complted.
Scenario Feature Measure	Area Planted
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$865.16	$173.03
Equipment/Installation	$493.44	$98.69
Labor	$589.00	$117.80
Mobilization	$136.46	$27.29
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,084.06	$416.81

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1533	Tree, hardwood, seedling or transplant, potted or B&B, 5 gal.	Potted or balled and burlapped hardwood tree, 5 gal. Materials only.	Each	$29.10	15	$436.50
Materials	1557	Tree shelter, wire mesh	5 feet tall, Woven Wire mesh, 6"x 6" opening or smaller, 10 gauge wire (minimum) , cage placed around seedling for animal protection. Materials only.	Each	$2.32	30	$69.60
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	2	$2.66
Materials	1578	Stakes, wood, 1" x 1" x 48"	1" x 1" x 48" wood stakes to fasten items in place. Materials only.	Each	$1.98	180	$356.40
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	16	$417.92
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	8	$75.52
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Labor	231	General Labor	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	$26.15	16	$418.40
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	382 - Fence
Scenario ID	2
Scenario Name	Barbed/Smooth Wire, Difficult Installation
Scenario Description	1320 ft Multi-strand, Barbed or Smooth Wire Installation of fence on soils with coarse-fragment restrictions as a barrier to exclude feral animals or will allow for implementation of grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Constructed using a pre-manufactured gate.
Before Practice Situation	On grazing lands health and vigor are negatively impacted by poor grazing distribution, timing of grazing and inadequate rest and recovery periods. Water quality is impacted by increased erosion and runoff, cattle access to water bodies is uncontrolled. Reduced vegetative cover increases the opportunity for encroachment of noxious and invasive weeds.
After Practice Situation	Installation of fence will allow for implementation of grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Fence includes posts, wire, fasteners, gates, etc. Four strand wire is commonly installed. Fence will be installed with a smooth top wire and white vinyl undersill trim strips are used to make "marking" strips that are hung on wire fences to increase visibility and reduce native Hawaiian Hoary Bat collisions and mortality.
Scenario Feature Measure	Length of Fence
Scenario Unit	Feet
Scenario Typical Size	1320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,636.76	$1.24
Equipment/Installation	$1,041.04	$0.79
Labor	$3,113.20	$2.36
Mobilization	$638.78	$0.48
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,429.78	$4.87

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	30	Fence, Wire Assembly, Barbed Wire, 3 Strand	Brace pins, battens, clips, staples	Foot	$0.16	1320	$211.20
Materials	241	Vinyl Undersill Strips	Marking material using the "undersill" strips of vinyl siding made by Georgia Pacific. Priced per foot of fence per each wire. Materials only.	Foot	$0.05	1320	$66.00
Materials	1050	Post, Wood, CCA Treated, 4-5" X 7'	Wood Post, Line 4-5" X 7', CCA Treated	Each	$11.30	9	$101.70
Materials	1057	Gate, Pipe, 12'	6 rail tube gate, 16 gauge	Each	$168.88	1	$168.88
Materials	15	Post, Steel T, 1.33 lbs, 6'	Steel Post, Studded 6' - 1.33 lb	Each	$7.59	110	$834.90
Materials	1	Wire, Barbed, Galvanized, 12.5 Gauge, 1,320' roll	Galvanized 12.5 gauge, 1,320' roll	Each	$63.52	4	$254.08
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	20	$385.60
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	36	$194.40
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	20	$147.60
Labor	231	General Labor	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	$26.15	100	$2,615.00
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	20	$498.20
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	2	$49.36
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	382 - Fence
Scenario ID	1
Scenario Name	Barbed/Smooth Wire, Regular Installation
Scenario Description	1320 ft Multi-strand, Barbed or Smooth Wire Installation of fence on soils without coarse-fragment restrictions as a barrier to exclude feral animals or will allow for implementation of grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Constructed using a pre-manufactured gate.
Before Practice Situation	On grazing lands health and vigor are negatively impacted by poor grazing distribution, timing of grazing and inadequate rest and recovery periods. Water quality is impacted by increased erosion and runoff, cattle access to water bodies is uncontrolled. Reduced vegetative cover increases the opportunity for encroachment of noxious and invasive weeds.
After Practice Situation	Installation of fence will allow for implementation of grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Fence includes posts, wire, fasteners, gates, etc. Four strand wire is commonly installed. Fence will be installed with a smooth top wire and white vinyl undersill trim strips are used to make "marking" strips that are hung on wire fences to increase visibility and reduce native Hawaiian Hoary Bat collisions and mortality.
Scenario Feature Measure	Length of Fence
Scenario Unit	Feet
Scenario Typical Size	1320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,636.76	$1.24
Equipment/Installation	$753.92	$0.57
Labor	$1,972.52	$1.49
Mobilization	$638.78	$0.48
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$5,001.98	$3.79

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	30	Fence, Wire Assembly, Barbed Wire, 3 Strand	Brace pins, battens, clips, staples	Foot	$0.16	1320	$211.20
Materials	241	Vinyl Undersill Strips	Marking material using the "undersill" strips of vinyl siding made by Georgia Pacific. Priced per foot of fence per each wire. Materials only.	Foot	$0.05	1320	$66.00
Materials	1050	Post, Wood, CCA Treated, 4-5" X 7'	Wood Post, Line 4-5" X 7', CCA Treated	Each	$11.30	9	$101.70
Materials	1057	Gate, Pipe, 12'	6 rail tube gate, 16 gauge	Each	$168.88	1	$168.88
Materials	15	Post, Steel T, 1.33 lbs, 6'	Steel Post, Studded 6' - 1.33 lb	Each	$7.59	110	$834.90
Materials	1	Wire, Barbed, Galvanized, 12.5 Gauge, 1,320' roll	Galvanized 12.5 gauge, 1,320' roll	Each	$63.52	4	$254.08
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	12	$231.36
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	10	$261.20
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	32	$172.80
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	12	$88.56
Labor	231	General Labor	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	$26.15	64	$1,673.60
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	12	$298.92
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	2	$49.36
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	382 - Fence
Scenario ID	6
Scenario Name	Permanent Electric (Min. 2 Strands)
Scenario Description	Installation of a 2-strand electric fence will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds.
Before Practice Situation	On grazinglands health and vigor are negatively impacted by poor grazing distribution, timing of grazing and inadequate rest and recovery periods. Water quality is impacted by increased erosion and runoff, cattle access to water bodies is uncontrolled. Reduced vegetative cover increases the opportunity for encroachment of noxious and invasive weeds.
After Practice Situation	Installation of fence will allow for implementation of grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Fence includes posts, wire, fasteners, gates, fence charger, etc... Two to three strand wire is commonly installed. Fence will be installed with wildlife friendly considerations.
Scenario Feature Measure	Length of Fence
Scenario Unit	Feet
Scenario Typical Size	1320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,099.50	$0.83
Equipment/Installation	$196.34	$0.15
Labor	$542.95	$0.41
Mobilization	$588.13	$0.45
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,426.92	$1.84

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	33	Fence, Wire Assembly, High Tensile, Electric, 2 Strand	Brace pins, springs, strainers, battens, clips, crimp sleeves, staples, insulators, wrap around sleeves	Foot	$0.07	1320	$92.40
Materials	1050	Post, Wood, CCA Treated, 4-5" X 7'	Wood Post, Line 4-5" X 7', CCA Treated	Each	$11.30	4	$45.20
Materials	18	Post, Fiberglass, ⅞" X 6'	Fiberglass line post, ⅞" diameter X 6' length	Each	$9.24	38	$351.12
Materials	12	Post, Wood, CCA treated, 6" x 8'	Wood Post, End 6" X 8', CCA Treated	Each	$20.58	3	$61.74
Materials	10	Post, Wood, CCA treated, 4" x 8'	Wood Post, Line 4" X 8', CCA Treated	Each	$10.69	2	$21.38
Materials	2	Wire, High Tensile, 12.5 Gauge, 4,000' roll	High Tensile 12.5 gauge, 4,000' roll	Each	$116.48	0.66	$76.88
Materials	21	Electric, Ground Rod Clamps	Electric, Ground Rod Clamps for electric fence	Each	$2.39	3	$7.17
Materials	22	Electric, Lightening Diverter	Electric, Lightening diverter for electric fence	Each	$12.01	1	$12.01
Materials	23	Electric, Insulated cable	Electric, Insulated cable for electric fence. Typically in spools of 100 to 200 feet.	Each	$31.64	1	$31.64
Materials	25	Electric, Cutoff Switch	Electric, Cutoff Switch for electric fence	Each	$10.99	1	$10.99
Materials	26	Electric, Tester	Electric, Tester for electric fence	Each	$34.60	1	$34.60
Materials	27	Electric, Energizer, Solar	Electric, Energizer, Solar for electric fence	Each	$315.85	1	$315.85
Materials	20	Electric, Ground Rods	Electric, Ground Rod for electric fence	Each	$12.84	3	$38.52
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	5	$96.40
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	2	$52.24
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	2	$10.80
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	5	$36.90
Labor	231	General Labor	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	$26.15	16	$418.40
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	5	$124.55
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36

Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	382 - Fence
Scenario ID	3
Scenario Name	Woven Wire (<6 ft Tall), Regular Installation
Scenario Description	Installation of a 1320 ft woven wire fence less than 6 ft tall on soils without coarse-fragment restrictions as a barrier to exclude feral animals or will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc. Constructed using a pre-manufactured gate and 1 smooth top wire strand and 1 barbed wire bottom strand.
Before Practice Situation	On grazing lands health and vigor are negatively impacted by poor grazing distribution, timing of grazing and inadequate rest and recovery periods. Water quality is impacted by increased erosion and runoff, livestock access to water bodies is uncontrolled. Reduced vegetative cover increases opportunity for encroachment of noxious and invasive weeds.
After Practice Situation	Installation of fence will allow for implementation of a rotational grazing plan that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire fence includes posts, wire, fasteners, gates, etc... Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc.
Scenario Feature Measure	Length of Fence
Scenario Unit	Feet
Scenario Typical Size	1320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$2,195.79	$1.66
Equipment/Installation	$903.76	$0.68
Labor	$3,013.56	$2.28
Mobilization	$638.78	$0.48
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,751.89	$5.12

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	35	Fence, Wire Assembly, Woven Wire	Brace pins, twist sticks, staples	Foot	$0.12	1320	$158.40
Materials	1050	Post, Wood, CCA Treated, 4-5" X 7'	Wood Post, Line 4-5" X 7', CCA Treated	Each	$11.30	9	$101.70
Materials	1058	Gate, Pipe, 14'	6 rail tube gate, 16 gauge	Each	$167.67	1	$167.67
Materials	4	Wire, Woven, Galvanized, 12.5 Gauge, 48"	Galvanized 12.5 gauge, 48" - 330' roll	Each	$201.52	4	$806.08
Materials	15	Post, Steel T, 1.33 lbs, 6'	Steel Post, Studded 6' - 1.33 lb	Each	$7.59	110	$834.90
Materials	1	Wire, Barbed, Galvanized, 12.5 Gauge, 1,320' roll	Galvanized 12.5 gauge, 1,320' roll	Each	$63.52	2	$127.04
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	16	$308.48
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	10	$261.20
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	40	$216.00
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	16	$118.08
Labor	231	General Labor	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	$26.15	100	$2,615.00
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	16	$398.56
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	2	$49.36
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	382 - Fence
Scenario ID	7
Scenario Name	Woven Wire (<6 ft Tall), Regular Installation (Isolated Islands)
Scenario Description	Installation of a 1320 ft woven wire fence less than 6 ft tall on soils without coarse-fragment restrictions as a barrier to exclude feral animals or will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc. Constructed using a pre-manufactured gate and 1 smooth top wire strand and 1 barbed wire bottom strand. This payment scenario should only be used in areas with high material mobilization cost such as isolated islands.
Before Practice Situation	On grazing lands health and vigor are negatively impacted by poor grazing distribution, timing of grazing and inadequate rest and recovery periods. Water quality is impacted by increased erosion and runoff, livestock access to water bodies is uncontrolled. Reduced vegetative cover increases opportunity for encroachment of noxious and invasive weeds.
After Practice Situation	Installation of fence will allow for implementation of a rotational grazing plan that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire fence includes posts, wire, fasteners, gates, etc... Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc.
Scenario Feature Measure	Length of Fence
Scenario Unit	Feet
Scenario Typical Size	1320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$2,958.44	$2.24
Equipment/Installation	$1,050.00	$0.80
Labor	$3,113.20	$2.36
Mobilization	$2,245.52	$1.70
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$9,367.16	$7.10

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	35	Fence, Wire Assembly, Woven Wire	Brace pins, twist sticks, staples	Foot	$0.12	1320	$158.40
Materials	1050	Post, Wood, CCA Treated, 4-5" X 7'	Wood Post, Line 4-5" X 7', CCA Treated	Each	$11.30	100	$1,130.00
Materials	1058	Gate, Pipe, 14'	6 rail tube gate, 16 gauge	Each	$167.67	1	$167.67
Materials	4	Wire, Woven, Galvanized, 12.5 Gauge, 48"	Galvanized 12.5 gauge, 48" - 330' roll	Each	$201.52	4	$806.08
Materials	15	Post, Steel T, 1.33 lbs, 6'	Steel Post, Studded 6' - 1.33 lb	Each	$7.59	75	$569.25
Materials	1	Wire, Barbed, Galvanized, 12.5 Gauge, 1,320' roll	Galvanized 12.5 gauge, 1,320' roll	Each	$63.52	2	$127.04
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	20	$385.60
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	10	$261.20
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	20	$108.00
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	40	$295.20
Labor	231	General Labor	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	$26.15	100	$2,615.00
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	20	$498.20
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	5	$123.40
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1043	Mobilization, Material, distance > 50 miles	Mobilization cost of materials for special cases where the distance from the supplier delivery point to the job site exceeds 50 miles. The costs for shipping by UPS or bulk freight shipping to a location within 50 miles of the job site have already been included in the component price.	Dollar	$1.00	1273	$1,273.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	12	$311.64

Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	382 - Fence
Scenario ID	5
Scenario Name	Woven Wire (6-8 ft Tall)
Scenario Description	Installation of a 1320 ft woven wire fence as a barrier to exclude feral goats, deer, or other feral animals able to jump shorter fences or will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds.. Reduces resource concerns associated with livestock feeding operations, invasive plant control, and/or wildlife access to prevent conflicts between humans and livestock or wildlife species.
Before Practice Situation	Wildlife negatively impacting sensitive areas such as riparian areas, windbreaks and shelterbelts or feed storage. Disease transmission from wildlife posses a significant health risk to domestic animals.
After Practice Situation	Installation of fence reduces resource concerns associated with livestock and/or wildlife access and prevents conflicts between humans and threatened, endangered or sensitive species. Fence includes posts, wire, fasteners, gates, etc.
Scenario Feature Measure	Length of Fence
Scenario Unit	Feet
Scenario Typical Size	1320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$3,121.90	$2.37
Equipment/Installation	$1,955.84	$1.48
Labor	$4,762.00	$3.61
Mobilization	$638.78	$0.48
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$10,478.52	$7.94

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1085	Gate, Game, 8' High X 14'	14' Wide Game Gate (8' Tall)	Each	$387.15	1	$387.15
Materials	16	Post, Steel T, 1.33 lbs, 8'	Steel Post, Studded 8' - 1.33 lb	Each	$9.17	55	$504.35
Materials	17	Post, Steel T, 1.33 lbs, 10'	Steel Post, Studded 10' - 1.33 lb	Each	$12.44	55	$684.20
Materials	11	Post, Wood, CCA treated, 5" x 8'	Wood Post, End 5" X 8', CCA Treated	Each	$15.72	9	$141.48
Materials	1	Wire, Barbed, Galvanized, 12.5 Gauge, 1,320' roll	Galvanized 12.5 gauge, 1,320' roll	Each	$63.52	2	$127.04
Materials	5	Wire, Woven, Wildlife, 72"	High Tensile 12.5 gauge, 72" - 330' roll	Each	$319.42	4	$1,277.68
Equipment/Installation	1088	Fence, Wire Assembly, Woven Wire, Game Fence	Brace pins, twist sticks, staples	Foot	$0.24	1320	$316.80
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	40	$771.20
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	48	$259.20
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	40	$295.20
Labor	231	General Labor	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	$26.15	144	$3,765.60
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	40	$996.40
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	2	$49.36
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	382 - Fence
Scenario ID	4
Scenario Name	Woven Wire (<6 ft Tall), Difficult Installation
Scenario Description	Installation of a 1320 ft woven wire fence less than 6 ft tall on soils with coarse-fragment restrictions as a barrier to exclude feral animals or will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc. Constructed using a pre-manufactured gate and 1 smooth top wire strand and 1 barbed wire bottom strand.
Before Practice Situation	On grazing lands health and vigor are negatively impacted by poor grazing distribution, timing of grazing and inadequate rest and recovery periods. Water quality is impacted by increased erosion and runoff, livestock access to water bodies is uncontrolled. Reduced vegetative cover increases opportunity for encroachment of noxious and invasive weeds.
After Practice Situation	Installation of fence will allow for implementation of a rotational grazing plan that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire fence includes posts, wire, fasteners, gates, etc... Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc.
Scenario Feature Measure	Length of Fence
Scenario Unit	Feet
Scenario Typical Size	1320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$2,195.79	$1.66
Equipment/Installation	$1,425.76	$1.08
Labor	$4,144.32	$3.14
Mobilization	$689.43	$0.52
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,455.30	$6.41

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	35	Fence, Wire Assembly, Woven Wire	Brace pins, twist sticks, staples	Foot	$0.12	1320	$158.40
Materials	1050	Post, Wood, CCA Treated, 4-5" X 7'	Wood Post, Line 4-5" X 7', CCA Treated	Each	$11.30	9	$101.70
Materials	1058	Gate, Pipe, 14'	6 rail tube gate, 16 gauge	Each	$167.67	1	$167.67
Materials	4	Wire, Woven, Galvanized, 12.5 Gauge, 48"	Galvanized 12.5 gauge, 48" - 330' roll	Each	$201.52	4	$806.08
Materials	15	Post, Steel T, 1.33 lbs, 6'	Steel Post, Studded 6' - 1.33 lb	Each	$7.59	110	$834.90
Materials	1	Wire, Barbed, Galvanized, 12.5 Gauge, 1,320' roll	Galvanized 12.5 gauge, 1,320' roll	Each	$63.52	2	$127.04
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	32	$616.96
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	48	$259.20
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	32	$236.16
Labor	231	General Labor	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	$26.15	128	$3,347.20
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	32	$797.12
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	3	$74.04
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	382 - Fence
Scenario ID	8
Scenario Name	Woven Wire (<6 ft Tall), Difficult Installation (Isolated Islands)
Scenario Description	Installation of a 1320 ft woven wire fence less than 6 ft tall on soils with coarse-fragment restrictions as a barrier to exclude feral animals or will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc. Constructed using a pre-manufactured gate and 1 smooth top wire strand and 1 barbed wire bottom strand. This payment scenario should only be used in areas with high material mobilization cost such as isolated islands.
Before Practice Situation	On grazing lands health and vigor are negatively impacted by poor grazing distribution, timing of grazing and inadequate rest and recovery periods. Water quality is impacted by increased erosion and runoff, livestock access to water bodies is uncontrolled. Reduced vegetative cover increases opportunity for encroachment of noxious and invasive weeds.
After Practice Situation	Installation of fence will allow for implementation of a rotational grazing plan that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire fence includes posts, wire, fasteners, gates, etc... Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc.
Scenario Feature Measure	Length of Fence
Scenario Unit	Feet
Scenario Typical Size	1320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$2,958.44	$2.24
Equipment/Installation	$1,639.04	$1.24
Labor	$4,343.60	$3.29
Mobilization	$2,423.44	$1.84
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$11,364.52	$8.61

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	35	Fence, Wire Assembly, Woven Wire	Brace pins, twist sticks, staples	Foot	$0.12	1320	$158.40
Materials	1050	Post, Wood, CCA Treated, 4-5" X 7'	Wood Post, Line 4-5" X 7', CCA Treated	Each	$11.30	100	$1,130.00
Materials	1058	Gate, Pipe, 14'	6 rail tube gate, 16 gauge	Each	$167.67	1	$167.67
Materials	4	Wire, Woven, Galvanized, 12.5 Gauge, 48"	Galvanized 12.5 gauge, 48" - 330' roll	Each	$201.52	4	$806.08
Materials	15	Post, Steel T, 1.33 lbs, 6'	Steel Post, Studded 6' - 1.33 lb	Each	$7.59	75	$569.25
Materials	1	Wire, Barbed, Galvanized, 12.5 Gauge, 1,320' roll	Galvanized 12.5 gauge, 1,320' roll	Each	$63.52	2	$127.04
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	40	$771.20
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	48	$259.20
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	40	$295.20
Labor	231	General Labor	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	$26.15	128	$3,347.20
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	40	$996.40
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	8	$197.44
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1043	Mobilization, Material, distance > 50 miles	Mobilization cost of materials for special cases where the distance from the supplier delivery point to the job site exceeds 50 miles. The costs for shipping by UPS or bulk freight shipping to a location within 50 miles of the job site have already been included in the component price.	Dollar	$1.00	1273	$1,273.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	16	$415.52

Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	382 - Fence
Scenario ID	10
Scenario Name	Woven Wire with electric offset (<6 ft Tall), Difficult Installation (Isolated Islands)
Scenario Description	Installation of a 1320 ft woven wire fence less than 6 ft tall on soils without coarse-fragment restrictions as a barrier to exclude feral animals or will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc. Constructed using a pre-manufactured gate and 1 smooth top wire strand and 1 barbed wire bottom strand. In addition there will be a single off set strand of electric wire on this fence to prevent animals from rubbing on the fence. This payment scenario should only be used in areas with high material mobilization cost such as isolated islands.
Before Practice Situation	On grazing lands health and vigor are negatively impacted by poor grazing distribution, timing of grazing and inadequate rest and recovery periods. Water quality is impacted by increased erosion and runoff, livestock access to water bodies is uncontrolled. Reduced vegetative cover increases opportunity for encroachment of noxious and invasive weeds.
After Practice Situation	Installation of fence will allow for implementation of a rotational grazing plan that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire fence includes posts, wire, fasteners, gates, etc... Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc.
Scenario Feature Measure	Length of Fence
Scenario Unit	Feet
Scenario Typical Size	1320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$3,494.06	$2.65
Equipment/Installation	$2,076.80	$1.57
Labor	$4,841.80	$3.67
Mobilization	$2,245.52	$1.70
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$12,658.18	$9.59

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	35	Fence, Wire Assembly, Woven Wire	Brace pins, twist sticks, staples	Foot	$0.12	1320	$158.40
Materials	1050	Post, Wood, CCA Treated, 4-5" X 7'	Wood Post, Line 4-5" X 7', CCA Treated	Each	$11.30	100	$1,130.00
Materials	1058	Gate, Pipe, 14'	6 rail tube gate, 16 gauge	Each	$167.67	1	$167.67
Materials	4	Wire, Woven, Galvanized, 12.5 Gauge, 48"	Galvanized 12.5 gauge, 48" - 330' roll	Each	$201.52	4	$806.08
Materials	15	Post, Steel T, 1.33 lbs, 6'	Steel Post, Studded 6' - 1.33 lb	Each	$7.59	75	$569.25
Materials	1	Wire, Barbed, Galvanized, 12.5 Gauge, 1,320' roll	Galvanized 12.5 gauge, 1,320' roll	Each	$63.52	2	$127.04
Materials	2	Wire, High Tensile, 12.5 Gauge, 4,000' roll	High Tensile 12.5 gauge, 4,000' roll	Each	$116.48	1	$116.48
Materials	21	Electric, Ground Rod Clamps	Electric, Ground Rod Clamps for electric fence	Each	$2.39	3	$7.17
Materials	22	Electric, Lightening Diverter	Electric, Lightening diverter for electric fence	Each	$12.01	1	$12.01
Materials	25	Electric, Cutoff Switch	Electric, Cutoff Switch for electric fence	Each	$10.99	1	$10.99
Materials	26	Electric, Tester	Electric, Tester for electric fence	Each	$34.60	1	$34.60
Materials	27	Electric, Energizer, Solar	Electric, Energizer, Solar for electric fence	Each	$315.85	1	$315.85
Materials	20	Electric, Ground Rods	Electric, Ground Rod for electric fence	Each	$12.84	3	$38.52
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	60	$1,156.80
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	10	$261.20
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	40	$216.00
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	60	$442.80
Labor	231	General Labor	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	$26.15	128	$3,347.20
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	60	$1,494.60
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	5	$123.40

Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1043	Mobilization, Material, distance > 50 miles	Mobilization cost of materials for special cases where the distance from the supplier delivery point to the job site exceeds 50 miles. The costs for shipping by UPS or bulk freight shipping to a location within 50 miles of the job site have already been included in the component price.	Dollar	$1.00	1273	$1,273.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	12	$311.64
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	382 - Fence
Scenario ID	9
Scenario Name	Woven Wire with electric offset(<6 ft Tall), Regular Installation (Isolated Islands)
Scenario Description	Installation of a 1320 ft woven wire fence less than 6 ft tall on soils without coarse-fragment restrictions as a barrier to exclude feral animals or will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc. Constructed using a pre-manufactured gate and 1 smooth top wire strand and 1 barbed wire bottom strand. In addition there will be a single off set strand of electric wire on this fence to prevent animals from rubbing on the fence. This payment scenario should only be used in areas with high material mobilization cost such as isolated islands.
Before Practice Situation	On grazing lands health and vigor are negatively impacted by poor grazing distribution, timing of grazing and inadequate rest and recovery periods. Water quality is impacted by increased erosion and runoff, livestock access to water bodies is uncontrolled. Reduced vegetative cover increases opportunity for encroachment of noxious and invasive weeds.
After Practice Situation	Installation of fence will allow for implementation of a rotational grazing plan that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Woven wire fence includes posts, wire, fasteners, gates, etc... Woven wire is typically used in applications with sheep, goats, hogs, wildlife exclusion, shelterbelt/tree protection, etc.
Scenario Feature Measure	Length of Fence
Scenario Unit	Feet
Scenario Typical Size	1320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$3,494.06	$2.65
Equipment/Installation	$1,543.60	$1.17
Labor	$3,611.40	$2.74
Mobilization	$2,245.52	$1.70
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$10,894.58	$8.25

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	35	Fence, Wire Assembly, Woven Wire	Brace pins, twist sticks, staples	Foot	$0.12	1320	$158.40
Materials	1050	Post, Wood, CCA Treated, 4-5" X 7'	Wood Post, Line 4-5" X 7', CCA Treated	Each	$11.30	100	$1,130.00
Materials	1058	Gate, Pipe, 14'	6 rail tube gate, 16 gauge	Each	$167.67	1	$167.67
Materials	4	Wire, Woven, Galvanized, 12.5 Gauge, 48"	Galvanized 12.5 gauge, 48" - 330' roll	Each	$201.52	4	$806.08
Materials	15	Post, Steel T, 1.33 lbs, 6'	Steel Post, Studded 6' - 1.33 lb	Each	$7.59	75	$569.25
Materials	1	Wire, Barbed, Galvanized, 12.5 Gauge, 1,320' roll	Galvanized 12.5 gauge, 1,320' roll	Each	$63.52	2	$127.04
Materials	2	Wire, High Tensile, 12.5 Gauge, 4,000' roll	High Tensile 12.5 gauge, 4,000' roll	Each	$116.48	1	$116.48
Materials	21	Electric, Ground Rod Clamps	Electric, Ground Rod Clamps for electric fence	Each	$2.39	3	$7.17
Materials	22	Electric, Lightening Diverter	Electric, Lightening diverter for electric fence	Each	$12.01	1	$12.01
Materials	25	Electric, Cutoff Switch	Electric, Cutoff Switch for electric fence	Each	$10.99	1	$10.99
Materials	26	Electric, Tester	Electric, Tester for electric fence	Each	$34.60	1	$34.60
Materials	27	Electric, Energizer, Solar	Electric, Energizer, Solar for electric fence	Each	$315.85	1	$315.85
Materials	20	Electric, Ground Rods	Electric, Ground Rod for electric fence	Each	$12.84	3	$38.52
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	40	$771.20
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	10	$261.20
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	40	$216.00
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	40	$295.20
Labor	231	General Labor	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	$26.15	100	$2,615.00
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	40	$996.40
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	5	$123.40

Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1043	Mobilization, Material, distance > 50 miles	Mobilization cost of materials for special cases where the distance from the supplier delivery point to the job site exceeds 50 miles. The costs for shipping by UPS or bulk freight shipping to a location within 50 miles of the job site have already been included in the component price.	Dollar	$1.00	1273	$1,273.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	12	$311.64
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	383 - Fuel Break
Scenario ID	7
Scenario Name	Chemical, Ground Application
Scenario Description	This practice involves the application of herbicides using mechanized equipment (such as ATV or tractor mounted boom) in order to control or kill undesirable vegetation within a designated fuel break alignment. Resource concerns are degraded plant condition - wildfire hazard, excess biomass accumulation & undesirable productivity and health.
Before Practice Situation	The forest stand is overstocked with trees (desirable and undesirable) and is at risk of loss if a wildfire should occur. Tree crowns are touching, trees retain limbs down to understory vegetation creating a "ladder" for fire movement into the overstory, and understory vegetation (brush and grasses) create a significant fuel load.
After Practice Situation	A fuel Break is installed at the property line or key locations to reduce the risk of crown fire spread - width varies due to site conditions. Trees and shrubs are removed or thinned so open gaps are created in crown overstory; branches on remaining trees are pruned to a minimum of 8 to 10 feet in height; all woody residue (e.g. thinned trees, pruned branches and cut brush) are treated.
Scenario Feature Measure	area of treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$160.59	$32.12
Equipment/Installation	$135.46	$27.09
Labor	$180.25	$36.05
Mobilization	$499.95	$99.99
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$976.25	$195.25

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	2	$122.02
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	5	$5.45
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	3	$33.12
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	2	$57.10
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	3	$78.36
Labor	231	General Labor	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	$26.15	2	$52.30
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	3	$127.95
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	2	$49.36
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	383 - Fuel Break
Scenario ID	6
Scenario Name	Chemical, Manual Application
Scenario Description	This practice involves the application of herbicides using backpack sprayer or similar equipment, and may be used in conjunction with manual tree and shrub cutting scenarios (e.g. hack-n-squirt), in order to control or kill undesirable vegetation within a designated fuel break alignment. Resource concerns are degraded plant condition - wildfire hazard, excess biomass accumulation & undesirable productivity and health.
Before Practice Situation	The forest stand is overstocked with trees (desirable and undesirable) and is at risk of loss if a wildfire should occur. Tree crowns are touching, trees retain limbs down to understory vegetation creating a "ladder" for fire movement into the overstory, and understory vegetation (brush and grasses) create a significant fuel load.
After Practice Situation	A fuel Break is installed at the property line or key locations to reduce the risk of crown fire spread - width varies due to site conditions. Trees and shrubs are removed or thinned so open gaps are created in crown overstory; branches on remaining trees are pruned to a minimum of 8 to 10 feet in height; all woody residue (e.g. thinned trees, pruned branches and cut brush) are treated.
Scenario Feature Measure	area of treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$160.59	$32.12
Equipment/Installation	$473.08	$94.62
Labor	$68.80	$13.76
Mobilization	$68.23	$13.65
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$770.70	$154.14

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	2	$122.02
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	5	$5.45
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	3	$33.12
Equipment/Installation	964	Chemical, spot treatment, single stem application	Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included.	Hour	$55.87	8	$446.96
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	231	General Labor	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	$26.15	1	$26.15
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	383 - Fuel Break
Scenario ID	10
Scenario Name	Manual Cut, Heavy
Scenario Description	Using chainsaws or hand tools to either completely remove trees and shrubs within a designated fuel break alignmement or reduce the stocking level of trees to less than 50 stems per acre (Heavy Rating per PIA Size-Density-Slope Matrix). This treatment may be applied alone or in combination with pruning residual trees if any. Typically conducted in conjunction with treatment of woody residues (piling/burning, chipping, crushing, or off-site removal). Resource concerns are degraded plant condition - wildfire hazard, excess biomass accumulation & undesirable productivity and health.
Before Practice Situation	The forest stand is overstocked with trees (desirable and undesirable) and is at risk of loss if a wildfire should occur. Tree crowns are touching, trees retain limbs down to understory vegetation creating a "ladder" for fire movement into the overstory, and understory vegetation (brush and grasses) create a significant fuel load.
After Practice Situation	A fuel Break is installed at the property line or key locations to reduce the risk of crown fire spread - width varies due to site conditions. Trees and shrubs are removed or thinned so open gaps are created in crown overstory; branches on remaining trees are pruned to a minimum of 8 to 10 feet in height; all woody residue (e.g. thinned trees, pruned branches and cut brush) are treated.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,031.36	$406.27
Labor	$9,578.40	$1,915.68
Mobilization	$564.50	$112.90
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$12,174.26	$2,434.85

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	48	$1,253.76
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	144	$777.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	48	$2,047.20
Labor	231	General Labor	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	$26.15	288	$7,531.20
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	6	$155.82
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	6	$253.56
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	383 - Fuel Break
Scenario ID	8
Scenario Name	Manual Cut, Light
Scenario Description	Using chainsaws or hand tools to either completely remove trees and shrubs within a designated fuel break alignmement or reduce the stocking level of trees to less than 50 stems per acre (Light Rating per PIA Size-Density-Slope Matrix). This treatment may be applied alone or in combination with pruning residual trees if any. Typically conducted in conjunction with treatment of woody residues (piling/burning, chipping, crushing, or off-site removal). Resource concerns are degraded plant condition - wildfire hazard, excess biomass accumulation & undesirable productivity and health.
Before Practice Situation	The forest stand is overstocked with trees (desirable and undesirable) and is at risk of loss if a wildfire should occur. Tree crowns are touching, trees retain limbs down to understory vegetation creating a "ladder" for fire movement into the overstory, and understory vegetation (brush and grasses) create a significant fuel load.
After Practice Situation	A fuel Break is installed at the property line or key locations to reduce the risk of crown fire spread - width varies due to site conditions. Trees and shrubs are removed or thinned so open gaps are created in crown overstory; branches on remaining trees are pruned to a minimum of 8 to 10 feet in height; all woody residue (e.g. thinned trees, pruned branches and cut brush) are treated.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$338.56	$67.71
Labor	$1,596.40	$319.28
Mobilization	$223.35	$44.67
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,158.31	$431.66

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	8	$208.96
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	24	$129.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	8	$341.20
Labor	231	General Labor	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	$26.15	48	$1,255.20
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	383 - Fuel Break
Scenario ID	9
Scenario Name	Manual Cut, Medium
Scenario Description	Using chainsaws or hand tools to either completely remove trees and shrubs within a designated fuel break alignmement or reduce the stocking level of trees to less than 50 stems per acre (Medium Rating per PIA Size-Density-Slope Matrix). This treatment may be applied alone or in combination with pruning residual trees if any. Typically conducted in conjunction with treatment of woody residues (piling/burning, chipping, crushing, or off-site removal). Resource concerns are degraded plant condition - wildfire hazard, excess biomass accumulation & undesirable productivity and health.
Before Practice Situation	The forest stand is overstocked with trees (desirable and undesirable) and is at risk of loss if a wildfire should occur. Tree crowns are touching, trees retain limbs down to understory vegetation creating a "ladder" for fire movement into the overstory, and understory vegetation (brush and grasses) create a significant fuel load.
After Practice Situation	A fuel Break is installed at the property line or key locations to reduce the risk of crown fire spread - width varies due to site conditions. Trees and shrubs are removed or thinned so open gaps are created in crown overstory; branches on remaining trees are pruned to a minimum of 8 to 10 feet in height; all woody residue (e.g. thinned trees, pruned branches and cut brush) are treated.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,015.68	$203.14
Labor	$4,789.20	$957.84
Mobilization	$359.81	$71.96
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,164.69	$1,232.94

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	24	$626.88
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	72	$388.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60
Labor	231	General Labor	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	$26.15	144	$3,765.60
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	383 - Fuel Break
Scenario ID	5
Scenario Name	Mechanical, Heavy
Scenario Description	Using heavy equipment such as a dozer to either completely remove trees and shrubs within a designated fuel break alignmement or reduce the stocking level of trees to less than 50 stems per acre (Heavy Rating per PIA Size-Density-Slope Matrix). This treatment may be applied alone or in combination with pruning residual trees if any. Typically conducted in conjunction with treatment of woody residues (piling/burning, chipping, crushing, or off-site removal). Resource concerns are degraded plant condition - wildfire hazard, excess biomass accumulation & undesirable productivity and health.
Before Practice Situation	The forest stand is overstocked with trees (desirable and undesirable) and is at risk of loss if a wildfire should occur. Tree crowns are touching, trees retain limbs down to understory vegetation creating a "ladder" for fire movement into the overstory, and understory vegetation (brush and grasses) create a significant fuel load.
After Practice Situation	A fuel Break is installed at the property line or key locations to reduce the risk of crown fire spread - width varies due to site conditions. Trees and shrubs are removed or thinned so open gaps are created in crown overstory; branches on remaining trees are pruned to a minimum of 8 to 10 feet in height; all woody residue (e.g. thinned trees, pruned branches and cut brush) are treated.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,712.40	$542.48
Labor	$2,847.30	$569.46
Mobilization	$1,071.50	$214.30
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,631.20	$1,326.24

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	40	$2,190.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	20	$522.40
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	40	$1,793.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50
Labor	231	General Labor	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	$26.15	24	$627.60
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	5	$222.05
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	5	$211.30
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	383 - Fuel Break
Scenario ID	3
Scenario Name	Mechanical, Light
Scenario Description	Using heavy equipment such as a dozer to either completely remove trees and shrubs within a designated fuel break alignmement or reduce the stocking level of trees to less than 50 stems per acre (Light Rating per PIA Size-Density-Slope Matrix). This treatment may be applied alone or in combination with pruning residual trees if any. Typically conducted in conjunction with treatment of woody residues (piling/burning, chipping, crushing, or off-site removal). Resource concerns are degraded plant condition - wildfire hazard, excess biomass accumulation & undesirable productivity and health.
Before Practice Situation	The forest stand is overstocked with trees (desirable and undesirable) and is at risk of loss if a wildfire should occur. Tree crowns are touching, trees retain limbs down to understory vegetation creating a "ladder" for fire movement into the overstory, and understory vegetation (brush and grasses) create a significant fuel load.
After Practice Situation	A fuel Break is installed at the property line or key locations to reduce the risk of crown fire spread - width varies due to site conditions. Trees and shrubs are removed or thinned so open gaps are created in crown overstory; branches on remaining trees are pruned to a minimum of 8 to 10 feet in height; all woody residue (e.g. thinned trees, pruned branches and cut brush) are treated.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$704.22	$140.84
Labor	$742.80	$148.56
Mobilization	$759.55	$151.91
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,206.57	$441.31

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	10	$547.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	6	$156.72
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	10	$448.30
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	2	$85.30
Labor	231	General Labor	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	$26.15	8	$209.20
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	2	$88.82
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	383 - Fuel Break
Scenario ID	4
Scenario Name	Mechanical, Medium
Scenario Description	Using heavy equipment such as a dozer to either completely remove trees and shrubs within a designated fuel break alignmement or reduce the stocking level of trees to less than 50 stems per acre (Medium Rating per PIA Size-Density-Slope Matrix). This treatment may be applied alone or in combination with pruning residual trees if any. Typically conducted in conjunction with treatment of woody residues (piling/burning, chipping, crushing, or off-site removal). Resource concerns are degraded plant condition - wildfire hazard, excess biomass accumulation & undesirable productivity and health.
Before Practice Situation	The forest stand is overstocked with trees (desirable and undesirable) and is at risk of loss if a wildfire should occur. Tree crowns are touching, trees retain limbs down to understory vegetation creating a "ladder" for fire movement into the overstory, and understory vegetation (brush and grasses) create a significant fuel load.
After Practice Situation	A fuel Break is installed at the property line or key locations to reduce the risk of crown fire spread - width varies due to site conditions. Trees and shrubs are removed or thinned so open gaps are created in crown overstory; branches on remaining trees are pruned to a minimum of 8 to 10 feet in height; all woody residue (e.g. thinned trees, pruned branches and cut brush) are treated.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,408.44	$281.69
Labor	$1,570.90	$314.18
Mobilization	$872.19	$174.44
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,851.53	$770.31

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	20	$1,095.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	20	$896.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Labor	231	General Labor	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	$26.15	16	$418.40
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	3	$133.23
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	383 - Fuel Break
Scenario ID	1
Scenario Name	Fuel Break, Mowed
Scenario Description	A fuel break with few or no trees where brush, grass and forbs dominate. The fuel break area is mowed/bushhog so standing vegetation is reduced to a low height. Resource concerns are degraded plant condition - wildfire hazard.
Before Practice Situation	Vegetation is tall, dense and continuous creating conditions conducive for fire movement across the landscape. Wildfire movement may be a concern within the designated area.
After Practice Situation	A fuel break is installed by shredding/mowing/bush-hogging a defined width, typically at property lines, around structures, at roadways, or other key locations to reduce continuity of vegetation cover. Width of fuel break varies based on site conditions.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$238.62	$47.72
Labor	$167.20	$33.44
Mobilization	$407.04	$81.41
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$812.86	$162.57

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	5	$212.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	5	$124.55
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	383 - Fuel Break
Scenario ID	2
Scenario Name	Pruning, Fire Hazard
Scenario Description	Pruning branches from trees (canopy lifting and separation) within a fuel break. Hand tools and power tools are used to cut branches from trees. Resource concerns include Degraded plant condition-wildfire hazard and Undesirable plant productivity and health.
Before Practice Situation	The fuel break contains scattered trees, typically less than 50 trees per acre. Branches are touching adjacnet trees or understory vegetation or are in close proximity to forest floor where a ground fire can ignite the lower branches and move into the upper canopy. Wildfire hazard is very high.
After Practice Situation	Trees are pruned to the desirable height (generally 8-10') based on desired separation space between ground vegetation and tree crown. Crowns of adjacent trees are at least 20-30 feet apart. Pruned branches are treated if they are a hazard, see Woody Residue Treatment standard.
Scenario Feature Measure	Individual tree/shrub pruned
Scenario Unit	Each
Scenario Typical Size	250

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$259.80	$1.04
Labor	$1,007.40	$4.03
Mobilization	$428.04	$1.71
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,695.24	$6.78

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1318	Pruning tools, hand tools	Pruning tools, hand tools, shears, loppers, pole saw, handsaw Equipment costs only. Labor not included.	Hour	$2.00	8	$16.00
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	4	$114.20
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	24	$129.60
Labor	231	General Labor	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	$26.15	32	$836.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	4	$103.88
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	4	$169.04

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	384 - Woody Residue Treatment
Scenario ID	6
Scenario Name	Chipping, Heavy
Scenario Description	Chippng woody residue from an area (Medium rating per PIA Size-Density-Slope Matrix) generated via natural means or by tree and shrub pruning, thinning, harvesting or clearing operations. Woody slash and debris is chipped and stockpiled or spread by skidsteet to: Reduce hazardous fuels, insect & disease risks; reduce soil erosion and water sedimentation, and; manage unproductive or undesired plants. Resource concerns include: Wildfire Hazard from excessive biomass accumulation, Emissions of Particulate Matter, Wildlife Habitat Degradation, Excessive Sediment in Surface Waters, Undesirable Plant Productivity and Health, and Excessive plant pest pressure.
Before Practice Situation	Woody residues generated via natural means or management operations potentially cause or create fire hazards, impediments to access, harm to humans and animals, pest and disease issues, or are burned creating air quality issues.
After Practice Situation	Treatment of woody residues results in reductions of fire risk, soil movement and sedimentation, air pollutants, energy consumption and sites that can harbor pests while improving access.
Scenario Feature Measure	Acres Treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$3,191.52	$638.30
Labor	$5,379.90	$1,075.98
Mobilization	$483.66	$96.73
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$9,055.08	$1,811.02

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	48	$1,253.76
Equipment/Installation	938	"Brush Chipper, 6"" capacity"	"Brush Chipper, 6"" capacity, typically 35 HP. Includes chipper and power unit. Labor not included."	Hour	$17.57	48	$843.36
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$34.80	24	$835.20
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	48	$259.20
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	90	$2,241.90
Labor	231	General Labor	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	$26.15	120	$3,138.00
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	2	$49.36

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	384 - Woody Residue Treatment
Scenario ID	4
Scenario Name	Chipping, Light
Scenario Description	Chippng woody residue from an area (Light rating per PIA Size-Density-Slope Matrix) generated via natural means or by tree and shrub pruning, thinning, harvesting or clearing operations. Woody slash and debris is chipped and stockpiled or spread by skidsteet to: Reduce hazardous fuels, insect & disease risks; reduce soil erosion and water sedimentation, and; manage unproductive or undesired plants. Resource concerns include: Wildfire Hazard from excessive biomass accumulation, Emissions of Particulate Matter, Wildlife Habitat Degradation, Excessive Sediment in Surface Waters, Undesirable Plant Productivity and Health, and Excessive plant pest pressure.
Before Practice Situation	Woody residues generated via natural means or management operations potentially cause or create fire hazards, impediments to access, harm to humans and animals, pest and disease issues, or are burned creating air quality issues.
After Practice Situation	Treatment of woody residues results in reductions of fire risk, soil movement and sedimentation, air pollutants, energy consumption and sites that can harbor pests while improving access.
Scenario Feature Measure	Acres Treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,063.84	$212.77
Labor	$1,793.30	$358.66
Mobilization	$433.01	$86.60
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,290.15	$658.03

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	16	$417.92
Equipment/Installation	938	"Brush Chipper, 6"" capacity"	"Brush Chipper, 6"" capacity, typically 35 HP. Includes chipper and power unit. Labor not included."	Hour	$17.57	16	$281.12
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$34.80	8	$278.40
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	16	$86.40
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	30	$747.30
Labor	231	General Labor	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	$26.15	40	$1,046.00
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	384 - Woody Residue Treatment
Scenario ID	5
Scenario Name	Chipping, Medium
Scenario Description	Chippng woody residue from an area (Medium rating per PIA Size-Density-Slope Matrix) generated via natural means or by tree and shrub pruning, thinning, harvesting or clearing operations. Woody slash and debris is chipped and stockpiled or spread by skidsteet to: Reduce hazardous fuels, insect & disease risks; reduce soil erosion and water sedimentation, and; manage unproductive or undesired plants. Resource concerns include: Wildfire Hazard from excessive biomass accumulation, Emissions of Particulate Matter, Wildlife Habitat Degradation, Excessive Sediment in Surface Waters, Undesirable Plant Productivity and Health, and Excessive plant pest pressure.
Before Practice Situation	Woody residues generated via natural means or management operations potentially cause or create fire hazards, impediments to access, harm to humans and animals, pest and disease issues, or are burned creating air quality issues.
After Practice Situation	Treatment of woody residues results in reductions of fire risk, soil movement and sedimentation, air pollutants, energy consumption and sites that can harbor pests while improving access.
Scenario Feature Measure	Acres Treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,127.68	$425.54
Labor	$3,586.60	$717.32
Mobilization	$433.01	$86.60
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,147.29	$1,229.46

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	32	$835.84
Equipment/Installation	938	"Brush Chipper, 6"" capacity"	"Brush Chipper, 6"" capacity, typically 35 HP. Includes chipper and power unit. Labor not included."	Hour	$17.57	32	$562.24
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$34.80	16	$556.80
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	32	$172.80
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	60	$1,494.60
Labor	231	General Labor	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	$26.15	80	$2,092.00
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	384 - Woody Residue Treatment
Scenario ID	3
Scenario Name	Manual Treatment (Lop & Scatter), Heavy
Scenario Description	Treating an area containing woody residue (Heavy Rating per PIA Size-Density-Slope Matrix) generated via natural means or by tree and shrub pruning, thinning, harvesting or clearing operations. Woody slash and debris is cut or lopped and piled or scattered by hand to: Reduce hazardous fuels, insect & disease risks; reduce soil erosion and water sedimentation, and; manage unproductive or undesired plants. Resource concerns include: Wildfire Hazard from excessive biomass accumulation, Emissions of Particulate Matter, Wildlife Habitat Degradation, Excessive Sediment in Surface Waters, Undesirable Plant Productivity and Health, and Excessive plant pest pressure.
Before Practice Situation	Woody residues generated via natural means or management operations potentially cause or create fire hazards, impediments to access, harm to humans and animals, pest and disease issues, or are burned creating air quality issues.
After Practice Situation	Treatment of woody residues results in reductions of fire risk, soil movement and sedimentation, air pollutants, energy consumption and sites that can harbor pests while improving access.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,476.80	$295.36
Labor	$2,092.00	$418.40
Mobilization	$51.94	$10.39
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,620.74	$724.15

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	40	$1,044.80
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	80	$432.00
Labor	231	General Labor	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	$26.15	80	$2,092.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	384 - Woody Residue Treatment
Scenario ID	1
Scenario Name	Manual Treatment (Lop & Scatter), Light
Scenario Description	Treating an area containing woody residue (Light Rating per PIA Size-Density-Slope Matrix) generated via natural means or by tree and shrub pruning, thinning, harvesting or clearing operations. Woody slash and debris is cut or lopped and piled or scattered by hand to: Reduce hazardous fuels, insect & disease risks; reduce soil erosion and water sedimentation, and; manage unproductive or undesired plants. Resource concerns include: Wildfire Hazard from excessive biomass accumulation, Emissions of Particulate Matter, Wildlife Habitat Degradation, Excessive Sediment in Surface Waters, Undesirable Plant Productivity and Health, and Excessive plant pest pressure.
Before Practice Situation	Woody residues generated via natural means or management operations potentially cause or create fire hazards, impediments to access, harm to humans and animals, pest and disease issues, or are burned creating air quality issues.
After Practice Situation	Treatment of woody residues results in reductions of fire risk, soil movement and sedimentation, air pollutants, energy consumption and sites that can harbor pests while improving access.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$461.50	$92.30
Labor	$653.75	$130.75
Mobilization	$25.97	$5.19
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,141.22	$228.24

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12.5	$326.50
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	25	$135.00
Labor	231	General Labor	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	$26.15	25	$653.75
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	384 - Woody Residue Treatment
Scenario ID	2
Scenario Name	Manual Treatment (Lop & Scatter), Medium
Scenario Description	Treating an area containing woody residue (Medium Rating per PIA Size-Density-Slope Matrix) generated via natural means or by tree and shrub pruning, thinning, harvesting or clearing operations. Woody slash and debris is cut or lopped and piled or scattered by hand to: Reduce hazardous fuels, insect & disease risks; reduce soil erosion and water sedimentation, and; manage unproductive or undesired plants. Resource concerns include: Wildfire Hazard from excessive biomass accumulation, Emissions of Particulate Matter, Wildlife Habitat Degradation, Excessive Sediment in Surface Waters, Undesirable Plant Productivity and Health, and Excessive plant pest pressure.
Before Practice Situation	Woody residues generated via natural means or management operations potentially cause or create fire hazards, impediments to access, harm to humans and animals, pest and disease issues, or are burned creating air quality issues.
After Practice Situation	Treatment of woody residues results in reductions of fire risk, soil movement and sedimentation, air pollutants, energy consumption and sites that can harbor pests while improving access.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$923.00	$184.60
Labor	$1,307.50	$261.50
Mobilization	$25.97	$5.19
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,256.47	$451.29

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	25	$653.00
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	50	$270.00
Labor	231	General Labor	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	$26.15	50	$1,307.50
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	386 - Field Border
Scenario ID	4
Scenario Name	Introduced Plants, Cropland taken out of production
Scenario Description	A strip of permanent vegetation established at the edge or around the perimeter of a field. This practice may also apply to recreation land or other land uses where agronomic crops including forages are grown. Practice includes seedbed prep and planting of introduced species. The area of the field border is taken out of production.
Before Practice Situation	Before practice conditions may vary widely. Fields may have erosion issues from wind or water, a field border may be needed to manage pest populations, protect soil and water quality, provide wildlife food and cover, provide pollinator habitat, or a field border may be used to increase carbon storage and improve air quality. Water quality, soil erosion and/or wildlife food and cover may all be primary resource concerns.
After Practice Situation	This practice when applied around a field will support and connect other buffer practices within and between fields. Introduced grasses and legumes will be established around the field edges to the extent needed to meet the resource needs and producer objectives. Minimum field border widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Introduced species of grasses, legumes, forbs or shrubs shall be selected that are adapted to site, will not function as a host for diseases of a field crop and have physical charactaristics necessary to control wind and water erosion to tolerable levels on the field border area.
Scenario Feature Measure	Number of acres
Scenario Unit	Acre
Scenario Typical Size	0.1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$13.48	$134.84
Equipment/Installation	$0.65	$6.50
Labor	$78.45	$784.50
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$1,180.40	$11,804.00
Total	$1,272.98	$12,729.84

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	0.1	$1.10
Materials	104	Alfalfa (Medicago sativa)	Introduced Legumes and shipping.	Pound	$4.15	2	$8.30
Materials	92	Orchard Grass (Dactylis glomerata)	Introduced Perennial Grasses and shipping.	Pound	$2.04	2	$4.08
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.50	0.1	$0.65
Labor	231	General Labor	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	$26.15	3	$78.45
Foregone Income	2033	FI, Vegetables	Vegetables is Primary Crop	Acre	$11,804.00	0.1	$1,180.40

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	386 - Field Border
Scenario ID	3
Scenario Name	Introduced Plants
Scenario Description	A strip of permanent vegetation established at the edge or around the perimeter of a field. This practice may also apply to recreation land or other land uses where agronomic crops including forages are grown. Practice includes seedbed prep and planting of introduced species. The area of the field border is NOT taken out of production.
Before Practice Situation	Before practice conditions may vary widely. Fields may have erosion issues from wind or water, a field border may be needed to manage pest populations, protect soil and water quality, provide wildlife food and cover, provide pollinator habitat, or a field border may be used to increase carbon storage and improve air quality. Water quality, soil erosion and/or wildlife food and cover may all be primary resource concerns.
After Practice Situation	This practice when applied around a field will support and connect other buffer practices within and between fields. Introduced grasses and legumes will be established around the field edges to the extent needed to meet the resource needs and producer objectives. Minimum field border widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Introduced species of grasses, legumes, forbs or shrubs shall be selected that are adapted to site, will not function as a host for diseases of a field crop and have physical charactaristics necessary to control wind and water erosion to tolerable levels on the field border area.
Scenario Feature Measure	Number of acres
Scenario Unit	Acre
Scenario Typical Size	0.1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$13.48	$134.84
Equipment/Installation	$0.65	$6.50
Labor	$78.45	$784.50
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$92.58	$925.84

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	104	Alfalfa (Medicago sativa)	Introduced Legumes and shipping.	Pound	$4.15	2	$8.30
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	0.1	$1.10
Materials	92	Orchard Grass (Dactylis glomerata)	Introduced Perennial Grasses and shipping.	Pound	$2.04	2	$4.08
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.50	0.1	$0.65
Labor	231	General Labor	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	$26.15	3	$78.45

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	386 - Field Border
Scenario ID	2
Scenario Name	Native Plants, Cropland taken out of production
Scenario Description	A strip of permanent vegetation established at the edge or around the perimeter of a field. This practice may also apply to recreation land or other land uses where agronomic crops including forages are grown. Practice includes seedbed prep and planting of native species. The area of the field border is taken out of production.
Before Practice Situation	Before practice conditions may vary widely. Fields may have erosion issues from wind or water, a field border may be needed to manage pest populations, protect soil and water quality, provide wildlife food and cover, provide pollinator habitat, or a field border may be used to increase carbon storage and improve air quality. Water quality, soil erosion and/or wildlife food and cover may all be primary resource concerns.
After Practice Situation	This practice when applied around a field will support and connect other buffer practices within and between fields. Native grasses, legumes and forbs will be established around the field edges to the extent needed to meet the resource needs and producer objectives. Minimum field border widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Native species shall be selected that do not function as a host for diseases of a field crop and have physical charactaristics necessary to control wind and water erosion to tolerable levels on the field border area.
Scenario Feature Measure	number of acres
Scenario Unit	Acre
Scenario Typical Size	0.1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$52.78	$527.79
Equipment/Installation	$0.65	$6.50
Labor	$78.45	$784.50
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$1,180.40	$11,804.00
Total	$1,312.28	$13,122.79

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	77	Eastern Gamagrass (Tripsacum dactyloides)	Native Grasses and shipping.	Pound	$17.45	2	$34.90
Materials	148	Black-Eyed Susan (Rudbeckia hirta)	Native Forbs and shipping.	Pound	$33.55	0.5	$16.78
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	0.1	$1.10
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.50	0.1	$0.65
Labor	231	General Labor	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	$26.15	3	$78.45
Foregone Income	2033	FI, Vegetables	Vegetables is Primary Crop	Acre	$11,804.00	0.1	$1,180.40

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	386 - Field Border
Scenario ID	1
Scenario Name	Native Plants
Scenario Description	A strip of permanent vegetation established at the edge or around the perimeter of a field. This practice may also apply to recreation land or other land uses where agronomic crops including forages are grown. Practice includes seedbed prep and planting of native species. The area of the field border is NOT taken out of production.
Before Practice Situation	Before practice conditions may vary widely. Fields may have erosion issues from wind or water, a field border may be needed to manage pest populations, protect soil and water quality, provide wildlife food and cover, provide pollinator habitat, or a field border may be used to increase carbon storage and improve air quality. Water quality, soil erosion and/or wildlife food and cover may all be primary resource concerns.
After Practice Situation	This practice when applied around a field will support and connect other buffer practices within and between fields. Native grasses, legumes and forbs will be established around the field edges to the extent needed to meet the resource needs and producer objectives. Minimum field border widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Native species shall be selected that do not function as a host for diseases of a field crop and have physical charactaristics necessary to control wind and water erosion to tolerable levels on the field border area.
Scenario Feature Measure	number of acres
Scenario Unit	Acre
Scenario Typical Size	0.1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$52.78	$527.79
Equipment/Installation	$0.65	$6.50
Labor	$78.45	$784.50
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$131.88	$1,318.79

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	77	Eastern Gamagrass (Tripsacum dactyloides)	Native Grasses and shipping.	Pound	$17.45	2	$34.90
Materials	148	Black-Eyed Susan (Rudbeckia hirta)	Native Forbs and shipping.	Pound	$33.55	0.5	$16.78
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	0.1	$1.10
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.50	0.1	$0.65
Labor	231	General Labor	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	$26.15	3	$78.45

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	390 - Riparian Herbaceous Cover
Scenario ID	1
Scenario Name	Plugging and Seeding
Scenario Description	Plugging. This scenario addresses inadequate herbaceous plant community function or diversity within the specific transitional zone between terrestrial and aquatic habitats in rangeland, pasture, cropland, and forest where natural seeding methods and/or management is unlikely to improve the plant community within a reasonable time period. This scenario applies to work not covered under NRCS Conservation Practice Range Planting (528), Forage and Biomass Planting (512), Critical Area Planting (342), Filter Strip (393), Restoration and Management of Rare and Declining Habitats (643), Streambank and Shoreline Protection (580), Vegetated Treatment Area (635), Wetland Enhancement (659), or Wetland Restoration (657). The typical setting for this scenario is usually a narrow strip between the aquatic and terrestrial habitats subject to intermittant flooding and saturated soils where the exising plant community has been disturbed, destroyed, or the species diversity is unable to provide adequate habitat. Where the establishment of a diverse riparian herbaceous plant community is desired, an adapted mix of grasses, sedges, rushes, ferns, legumes, and/or forbs tolerant to the site conditions will be planted. Grasses such as prairie cordgrass (Spartina pectinata), sedges, rushes, and/or ferns will be
Before Practice Situation	The riparian zone, the specific area between terrestrial and aquatic habitats, is currently an undesirable or inadequate stand of perennial or annual vegetation and natural reseeding or vegetation management is unlikely to improve the plant community within a reasonable amount of time to adequately address streambank and/or shoreline stability, dissipate stream energy and trap sediment, improve and/or maintain water quality, and/or provide adequate habitat corridors, food and/or cover for fish, wildlife, pollinators, and/or livestock resource conern(s). Existing conditions often require suppression or eradication of current vegetation by conventional mechanical or chemical (Herbaceous Weed Control (315)) methods to ensure establishment success of the new planting.
After Practice Situation	The riparian zone, the transitional zone between the terrestrial and aquatic habitats, is established to an adapted, diverse vegetative plant community and is under close management to insure long term survival and ecological succession. The quality and quantity of the riparian zone components are managed to support the species that depend on it for habitat as well as the functions it performs for stabilizing the streambank and/or shoreline, dissipating stream energy and trapping sediment, and improving and/or maintaining water quality. These functions include: stream temperature moderation through shading, recruitment of non-woody organic matter, habitat for terrestrial insects and other riparian dependent species, streambank integrity, and filtration of contaminants from surface run-off into the stream.
Scenario Feature Measure	Acres of Riparian Herbaceous Cover
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$10,740.00	$10,740.00
Equipment/Installation	$0.00	$0.00
Labor	$1,046.00	$1,046.00
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$11,786.00	$11,786.00

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1873	Softstem Bulrush (Scirpus validus)	Native Rush and shipping	Each	$1.01	2000	$2,020.00
Materials	1878	Bull Sedge (Carex lanuginosa)	Native Sedge and shipping, plug or rhizome	Each	$4.36	2000	$8,720.00
Labor	231	General Labor	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	$26.15	40	$1,046.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	391 - Riparian Forest Buffer
Scenario ID	6
Scenario Name	Direct Seeding, Native Species
Scenario Description	Seed from natvie tree species are directly planted in the soil. The native seeds are collected/purchased locally so as to get trees known to be adapted to local conditions. Typical resource concerns addressed include undesirable plant productivity and health, degraded plant condition (excessive plant pest pressure; inadequate structure and composition) sheet, rill & wind erosion, and fish & wildlife habitat degradation.
Before Practice Situation	The native forest is degraded, particularly due to invasive species infestations or natural disturbance or past harvesting. Unwanted shade tolerant tree species may be colonizing the site, are in the overstory and competing with desirable species as well as in the mid and understory where they will eventually out-compete with desirable species.
After Practice Situation	Seed from native species are collected or purchased and planted at prescribed rates. Site preparation is done prior to direct seeding. Ecosystem degradation is reversed and native plant growth and ecosystem quality are improving. Habitat for wildlife may be improving.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$155.50	$31.10
Equipment/Installation	$26.12	$5.22
Labor	$173.40	$34.68
Mobilization	$68.23	$13.65
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$423.25	$84.65

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1871	Trees and shrubs, seed	Tree or shrub seed, e.g., acorns, to establish trees. Materials only.	Pound	$3.11	50	$155.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Labor	231	General Labor	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	$26.15	5	$130.75
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	391 - Riparian Forest Buffer
Scenario ID	3
Scenario Name	Manual Planting, Individual Plant Cutting
Scenario Description	Tree and shrub cuttings will be hand planted to establish a buffer of trees and shrubs to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body extending a minimum of 15 feet on each side. Typical resource concerns addressed include: Soil Erosion - excessive bank erosion, sheet, rill & wind erosion; Water Quality - excess sediment and organics in surface waters and elevated temperature; Degraded Plant Condition - inadequate structure and composition, excessive plant pest pressure, undesirable plant productivity, health and vigor, and; Inadequate Habitat for Fish and Wildlife - habitat degradation.
Before Practice Situation	Typical sites include former riparian forests and habitat used for forage, cropland, speculation property, or other nonforest condition which contains undesirable amounts or types of vegetation. Active bank erosion is depositing sediment, nutrients and organics in the riparian area. Water temperature is high due to lack of shade. Habitat is not desirable for wildlife.
After Practice Situation	A buffer of trees and shrubs is established along the riparian corridor or water body which provides stability, filtration, shade, and desirable fish and wildlife habitat.
Scenario Feature Measure	Area Planted
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$992.50	$198.50
Equipment/Installation	$487.12	$97.42
Labor	$1,301.90	$260.38
Mobilization	$256.63	$51.33
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,038.15	$607.63

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	250	$332.50
Materials	1308	Cuttings, woody, medium size	Woody cuttings, live stakes or whips typically 1/4" to 1" diameter and 24" to 48" long. Materials only.	Each	$0.44	1500	$660.00
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	35	$330.40
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	6	$156.72
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Labor	231	General Labor	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	$26.15	40	$1,046.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	391 - Riparian Forest Buffer
Scenario ID	1
Scenario Name	Manual Planting, Individual Native Plant
Scenario Description	Tree and shrub seedlings will be hand planted to establish a buffer of trees and shrubs to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body extending a minimum of 15 feet on each side. Typical resource concerns addressed include: Soil Erosion - excessive bank erosion, sheet, rill & wind erosion; Water Quality - excess sediment and organics in surface waters and elevated temperature; Degraded Plant Condition - inadequate structure and composition, excessive plant pest pressure, undesirable plant productivity, health and vigor, and; Inadequate Habitat for Fish and Wildlife - habitat degradation.
Before Practice Situation	Typical sites include former riparian forests and habitat used for forage, cropland, speculation property, or other nonforest condition which contains undesirable amounts or types of vegetation. Active bank erosion is depositing sediment, nutrients and organics in the riparian area. Water temperature is high due to lack of shade. Habitat is not desirable for wildlife.
After Practice Situation	A buffer of trees and shrubs is established along the riparian corridor or water body which provides stability, filtration, shade, and desirable fish and wildlife habitat.
Scenario Feature Measure	Area Planted
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$13,945.00	$2,789.00
Equipment/Installation	$1,106.40	$221.28
Labor	$3,022.20	$604.44
Mobilization	$409.38	$81.88
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$18,482.98	$3,696.60

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1543	Tree or shrub seedling, Tropical, native or non-native, 1 gal	tree or shrub topical seedling, native or non-native, 1 gallon pot	Each	$11.10	675	$7,492.50
Materials	1544	Tree or shrub seedling, Tropical, native or non-native, 2-3 gal	tree or shrub topical seedling, native or non-native, 2-3gallon pot	Each	$23.25	75	$1,743.75
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$6.00	375	$2,250.00
Materials	1553	Tree or shrub seedling, Tropical, native, containerized, 10 cu in	tree or shrub tropical seedling, native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$5.67	375	$2,126.25
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	250	$332.50
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	84	$792.96
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	12	$511.80
Labor	231	General Labor	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	$26.15	96	$2,510.40
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	6	$155.82
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	6	$253.56

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	391 - Riparian Forest Buffer
Scenario ID	2
Scenario Name	Manual Planting, Individual Non-Native Plant
Scenario Description	Tree and shrub seedlings will be hand planted to establish a buffer of trees and shrubs to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body extending a minimum of 15 feet on each side. Typical resource concerns addressed include: Soil Erosion - excessive bank erosion, sheet, rill & wind erosion; Water Quality - excess sediment and organics in surface waters and elevated temperature; Degraded Plant Condition - inadequate structure and composition, excessive plant pest pressure, undesirable plant productivity, health and vigor, and; Inadequate Habitat for Fish and Wildlife - habitat degradation.
Before Practice Situation	Typical sites include former riparian forests and habitat used for forage, cropland, speculation property, or other nonforest condition which contains undesirable amounts or types of vegetation. Active bank erosion is depositing sediment, nutrients and organics in the riparian area. Water temperature is high due to lack of shade. Habitat is not desirable for wildlife.
After Practice Situation	A buffer of trees and shrubs is established along the riparian corridor or water body which provides stability, filtration, shade, and desirable fish and wildlife habitat.
Scenario Feature Measure	Area Planted
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$10,202.50	$2,040.50
Equipment/Installation	$922.00	$184.40
Labor	$2,518.50	$503.70
Mobilization	$341.15	$68.23
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$13,984.15	$2,796.83

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1548	Tree or shrub seedling, Tropical, non-native, containerized, 10 cu in	tree or shrub tropical seedling, non-native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$4.90	600	$2,940.00
Materials	1543	Tree or shrub seedling, Tropical, native or non-native, 1 gal	tree or shrub topical seedling, native or non-native, 1 gallon pot	Each	$11.10	300	$3,330.00
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$6.00	600	$3,600.00
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	250	$332.50
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	70	$660.80
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	10	$261.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50
Labor	231	General Labor	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	$26.15	80	$2,092.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	5	$211.30

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	391 - Riparian Forest Buffer
Scenario ID	4
Scenario Name	Individual Plant Protection
Scenario Description	Newly planted tree and shrub seedlings will be protected from wildlife browsing, excessive sunlight, wind or frost. Typical resource concerns addressed include: Soil Erosion - excessive bank erosion, sheet, rill & wind erosion; Water Quality - excess sediment and organics in surface waters and elevated temperature; Degraded Plant Condition - inadequate structure and composition, excessive plant pest pressure, undesirable plant productivity, health and vigor, and; Inadequate Habitat for Fish and Wildlife - habitat degradation.
Before Practice Situation	Newly planted tree and shrub seedlings are in a location where they are highly susceptible to animal browse, or too much sun, wind or frost. Wildlife are known to browse tree seedlings in the area causing great damage.
After Practice Situation	The prescribed number of trees and shrubs are protected from widlife browsing or adverse climatic conditions by installing some type of protective devise.
Scenario Feature Measure	Each Planted Seedling
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$7,140.00	$1,428.00
Equipment/Installation	$368.80	$73.76
Labor	$1,007.40	$201.48
Mobilization	$136.46	$27.29
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,652.66	$1,730.53

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1584	Stake, bamboo, 3/8" x 36"	3/8" x 36" bamboo stakes to anchor items in place. Materials only.	Each	$0.08	3000	$240.00
Materials	1570	Tree shelter, solid tube type, 5" x 30"	5" x 30" tree tube for protection from animal damage. Materials only.	Each	$4.60	1500	$6,900.00
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	28	$264.32
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Labor	231	General Labor	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	$26.15	32	$836.80
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	391 - Riparian Forest Buffer
Scenario ID	5
Scenario Name	Mechanical Planting, High Density
Scenario Description	Tree and shrub seedlings will be mechanically planted to establish a buffer of trees and shrubs to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body extending a minimum of 15 feet on each side. Typical resource concerns addressed include: Soil Erosion - excessive bank erosion, sheet, rill & wind erosion; Water Quality - excess sediment and organics in surface waters and elevated temperature; Degraded Plant Condition - inadequate structure and composition, excessive plant pest pressure, undesirable plant productivity, health and vigor, and; Inadequate Habitat for Fish and Wildlife - habitat degradation.
Before Practice Situation	Typical sites include former riparian forests and habitat used for forage, cropland, speculation property, or other nonforest condition which contains undesirable amounts or types of vegetation. Active bank erosion is depositing sediment, nutrients and organics in the riparian area. Water temperature is high due to lack of shade. Habitat is not desirable for wildlife.
After Practice Situation	A buffer of trees and shrubs is established along the riparian corridor or water body which provides stability, filtration, shade, and desirable fish and wildlife habitat.
Scenario Feature Measure	Area Planted
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$15,855.00	$1,585.50
Equipment/Installation	$518.39	$51.84
Labor	$667.46	$66.75
Mobilization	$1,055.24	$105.52
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$18,096.09	$1,809.61

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1553	Tree or shrub seedling, Tropical, native, containerized, 10 cu in	tree or shrub tropical seedling, native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$5.67	1500	$8,505.00
Materials	1548	Tree or shrub seedling, Tropical, non-native, containerized, 10 cu in	tree or shrub tropical seedling, non-native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$4.90	1500	$7,350.00
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	7	$383.25
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Equipment/Installation	1600	Mechanical tree planter	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	$4.38	7	$30.66
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	7	$313.81
Labor	231	General Labor	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	$26.15	7	$183.05
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	1	$44.41
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	393 - Filter Strip
Scenario ID	1
Scenario Name	Filter Strip, Introduced species
Scenario Description	A strip or area of Introduced herbaceous vegetation situated between cropland, grazing land or disturbed land and sensitive areas. Practice includes seedbed prep and planting of introduced species.
Before Practice Situation	Annual cropland, grazing land, or disturbed land (including forestland) allows for runoff of suspended solids, dissolved and/or associated contaminants into environmentally-sensitive areas such as wetlands, riparian zones, critical habitat and neighboring non-ag properties. Water Quality resource concerns are associated with this practice.
After Practice Situation	The planned filter strip will be established and mainatined per the practice plan that will meet the criteria for the planned purpose(s). The vegetation will consist of introduced species. The filter strip will have adequate width to filter the planned pollutants. The practice includes seedbed preparation, seeding, and operation and maintenance to maintain the vegetation and the function of the filter strip. Species selected shall be able to withstand partial burial by sediment and tolerant of herbicides used on contribution area while protecting environmentally-sensitive areas.
Scenario Feature Measure	Number of acres
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$284.80	$284.80
Equipment/Installation	$38.55	$38.55
Labor	$627.60	$627.60
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$950.95	$950.95

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1092	Bermuda Grass, Sprigs (Cynodon dactylon)	Introduced Perennial Grasses and shipping.	Bushel	$3.56	80	$284.80
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$14.46	2	$28.92
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	$9.63	1	$9.63
Labor	231	General Labor	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	$26.15	24	$627.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	393 - Filter Strip
Scenario ID	2
Scenario Name	Filter Strip, Introduced species with cropland taken out of production
Scenario Description	A strip or area of Introduced herbaceous vegetation situated between cropland, grazing land or disturbed land and sensitive areas. Practice includes seedbed prep and planting of introduced species. The area of the filter strip is taken out of production.
Before Practice Situation	Annual cropland, grazing land, or disturbed land (including forestland) allows for runoff of suspended solids, dissolved and/or associated contaminants into environmentally-sensitive areas such as wetlands, riparian zones, critical habitat and neighboring non-ag properties. Water Quality resource concerns are associated with this practice.
After Practice Situation	The planned filter strip will be established and mainatined per the practice plan that will meet the criteria for the planned purpose(s). The vegetation will consist of introduced species. The filter strip will have adequate width to filter the planned pollutants. The practice includes seedbed preparation, seeding, and operation and maintenance to maintain the vegetation and the function of the filter strip. Species selected shall be able to withstand partial burial by sediment and tolerant of herbicides used on contribution area while protecting environmentally-sensitive areas. The area of the filter strip is taken out of production.
Scenario Feature Measure	Number of acres
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$284.80	$284.80
Equipment/Installation	$38.55	$38.55
Labor	$627.60	$627.60
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$11,804.00	$11,804.00
Total	$12,754.95	$12,754.95

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1092	Bermuda Grass, Sprigs (Cynodon dactylon)	Introduced Perennial Grasses and shipping.	Bushel	$3.56	80	$284.80
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$14.46	2	$28.92
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	$9.63	1	$9.63
Labor	231	General Labor	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	$26.15	24	$627.60
Foregone Income	2033	FI, Vegetables	Vegetables is Primary Crop	Acre	$11,804.00	1	$11,804.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	395 - Stream Habitat Improvement
Scenario ID	5
Scenario Name	Fish Barrier
Scenario Description	This scenario describes the implementation of a stream habitat improvement and management project where practices are focused on the stream channel. The planned activity will meet the current 395 standard, and facilitating practice standards utilized. Implementation will result in protecting native aquatic fauna in the reach from competition or harrassament from non-native fish. This action may also increase food availability for fish and other stream species located above the constructed barrier. Payment for implementation is to defray the costs of stream habitat assessment above the barrier, and project implementation. Records demonstrating implementation of this scenario will address resource concerns for aquatic and riparian species of concern will be required.
Before Practice Situation	In this stream corridor, native aquatic species are at risk as determined by the state fish and wildlife agency. NRCS Stream Visual Assessment Protocol for the reach being protected by a barrier meets quality criteria and provides habitat for native species of concern, as determined by a Stream Visual Assessment Protocol score of greater than 5 .
After Practice Situation	Native fish inhabiting areas upstream of the newly constructed concrete barrier will not be adversely affected by interactions with non-native species/competitors.
Scenario Feature Measure	Each
Scenario Unit	Cubic Yard
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$39,538.10	$7,907.62
Labor	$1,112.90	$222.58
Mobilization	$1,047.86	$209.57
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$41,698.86	$8,339.77

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	932	Hydraulic Excavator, 2 CY	Track mounted hydraulic excavator with bucket capacity range of 1.5 to 2.5 CY. Equipment and power unit costs. Labor not included.	Hour	$155.01	10	$1,550.10
Equipment/Installation	1211	Truck, Concrete Pump	Concrete pump, normally truck mounted. Use this item in association with other concrete components when job requires placement by other than normal chutes. Include drive and setup time in quantity; therefore, do not include mobilization. Includes equipment and operator.	Hour	$183.32	10	$1,833.20
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$602.58	60	$36,154.80
Labor	231	General Labor	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	$26.15	10	$261.50
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	10	$448.30
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	10	$403.10
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	2	$1,047.86

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	395 - Stream Habitat Improvement
Scenario ID	1
Scenario Name	Riparian Zone Improvement-Forested
Scenario Description	This scenario describes fish and wildlife habitat improvement and/or management actions focused on the community structure and function of forested riparian zone plant communities. The planned activity meets the 395 standard, and facilitating practice standards, especially Codes 390 and 391, utilized in combination to satisfy all requirements specific to habitats needed for the stream and riparian species for which the practice is being implemented. Implementation will improve instream and riparian habitat complexity, water quality, hiding and resting cover, and/or increased food availability for desired riparian and stream species.
Before Practice Situation	Riparian quality and quantity are at risk as determined by the NRCS Stream Visual Assessment Protocol score of less than 5 for those elements. The site does not have adequate food, cover, and/or connectivity for riparian wildlife, and contributes insufficient amounts of organic matter andor large woody material for stream species food and cover. The site's riparian vegetation is compromised by human activities and/or access of vehicles, people, and/or livestock is not controlled adequately to protect riparian functions and stream habitat quality. Nutrients are transported to surface waters through runoff or soil erosion or to ground water from leaching in quantities that degrade water quality and limit use of intended purposes. Soil quality may be reduced due to compaction. Riparian vegetation quality and/or quantity is compromised to the extent that the riparian area and floodplain are not functioning to provide necessary stream and riparian habitat components.
After Practice Situation	Revegetation/reforestation of the riparian zone is completed and the vegetation community is under close management to insure long-term survival and ecological succession of the plant community. The quality and quantity of the riparian zone components of the site are managed to support a diverse vegetation community suitable for the site, the species that depend on it for habitat, and the functions it performs or will eventually perform as the vegetation matures. These functions include: stream temperature moderation thru shading, recruitment of instream large wood and/or non-woody organic matter, riparian habitat for terrestrial insects and other riparian-dependent species, streambank integrity, and filtration of contaminants from surface run-off into the stream.
Scenario Feature Measure	acres
Scenario Unit	Acre
Scenario Typical Size	0.5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$629.10	$1,258.20
Equipment/Installation	$1,158.48	$2,316.96
Labor	$10,277.52	$20,555.04
Mobilization	$1,120.48	$2,240.96
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$13,185.58	$26,371.16

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1550	Tree or shrub seedling, Tropical, native, containerized, 4 cu in	tree or shrub tropical seedling, native, containerized, 4 cubic in size, 1.1 x 5.2 "	Each	$3.84	150	$576.00
Materials	265	Compost	A mixture of decaying organic matter, as from leaves and manure, used to improve soil structure and provide nutrients.	Ton	$53.10	1	$53.10
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	8	$438.00
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	16	$720.48
Labor	231	General Labor	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	$26.15	40	$1,046.00
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	24	$1,075.92
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	40	$1,706.00
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	160	$6,449.60
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	395 - Stream Habitat Improvement
Scenario ID	3
Scenario Name	Instream rock placement
Scenario Description	This scenario describes the implementation of a stream habitat improvement and management project that places individual boulders or boulder clusters, or rock structures in or adjacent to the stream channel as habitat components. A project design for boulder placement will be based on assessment of the target stream reach characteristics and those of a suitable reference reach. These characteristics include channel geometry, channel slope, stream bottom substrate size and composition, and the geomorphic setting influencing the channel form, pattern and profile. Large rocks/boulders placed in the stream channel will mimic geologic material sizes typically present in the watershed or observed in intact, reference stream reaches in the MLRA where the project is located. Boulders should be placed in streams to create pool habitat and hydraulic complexity according to NRCS engineering specifications and with close review & approval of a fish habitat biologis onsite during implementation of the project design. Spawning gravel placement should be placed to restore spawning area substrates potentially disturbed by rock placement. The planned activity will meet the current 395 standard, and facilitating practice standards utilized. Implementation will result in the improvement of instream habitat complexity, hiding and resting cover, spawning habitat, and/or increased food availability for fish and other stream species. Payment for implementation is to defray
Before Practice Situation	In this stream reach, habitat for fish, aquatic insects and other stream species is sub-optimal as determined by the NRCS Stream Visual Assessment Protocol score of less than 5 overall. The site does not have adequate food, cover, and perhaps habitat connectivity for desired species. Riparian vegetation quality and/or quantity may be also compromised to the extent that the riparian area and floodplain are not functioning to provide necessary stream and riparian habitat components, such as large wood, leaf matter, and shade.
After Practice Situation	Stream habitat within the project reach is improving as a result of placing boulders or constructing rock structures in the channel and/or along the stream bank. Hydraulic complexity of the habitat in the reach is increased, and hiding cover, food availability and refuge habitat for stream species is improving. Streambank vegetation is increasing and contributing to stability of the streambanks.
Scenario Feature Measure	Bankfull width x reach length
Scenario Unit	Acre
Scenario Typical Size	0.5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$4,414.00	$8,828.00
Equipment/Installation	$3,058.96	$6,117.92
Labor	$1,494.32	$2,988.64
Mobilization	$1,047.86	$2,095.72
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$10,015.14	$20,030.28

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1761	Boulder	Rock boulders. Includes materials and local delivery (less than 50 miles) only.	Ton	$32.61	30	$978.30
Materials	1834	Aggregate, river rock	Well graded, rounded mineral substrates derived from local riverine settings. Includes materials and local delivery	Ton	$36.89	10	$368.90
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	60	$1,798.20
Materials	45	Aggregate, Sand, Graded, Washed	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic yard	$28.84	15	$432.60
Materials	1309	Cuttings, woody, large size	Woody pole cuttings or posts 2" to 6" in diameter and 6' long. Materials only.	Each	$16.72	50	$836.00
Equipment/Installation	932	Hydraulic Excavator, 2 CY	Track mounted hydraulic excavator with bucket capacity range of 1.5 to 2.5 CY. Equipment and power unit costs. Labor not included.	Hour	$155.01	16	$2,480.16
Equipment/Installation	1215	Truck, dump, 12 CY	Dump truck for moving bulk material. Typically capacity is 16 ton or 12 cubic yards. Includes equipment only.	Hour	$72.35	8	$578.80
Labor	231	General Labor	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	$26.15	16	$418.40
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	24	$1,075.92
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	2	$1,047.86

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	395 - Stream Habitat Improvement
Scenario ID	4
Scenario Name	Rock and wood structures
Scenario Description	This scenario describes the implementation of a stream habitat improvement and management project where practices are focused on instream habitat improvement with a combination of rock AND wood structures. This senario involves placement of large wood and rock structures into a stream channel in order to improve aquatic habitat that currently does not meet quality criteria for stream species habitat. A stream assessment (i.e. Stream Visual Assessment Protocol) should be conducted in order to document habitat components (such as large wood, pools) are not currently present in the stream or are limited for aquatic species. A project design for placement of habitat structures (boulders, boulder clusters, wood, wood structures) will be based on assessment of (a) the target stream reach characteristics and (b) those of a suitable reference reach. These characteristics include channel geometry, channel slope, stream bottom substrate size and composition, and the geomorphic setting influencing the channel form, pattern and profile. Large rocks/boulders placed in the stream channel will mimic geologic material sizes typically present in the watershed or observed in intact, reference stream reaches in the MLRA where the project is located. Rock boulder sizes should also reflect the geomorphic setting of the stream reach. Large wood placed into the stream under this scenario should be similar in species, age, and size (diameter) as trees found in
Before Practice Situation	In this stream reach, habitat for fish, aquatic insects and/or other stream species is sub-optimal as determined by the NRCS Stream Visual Assessment Protocol score of less than 5. The site does not have adequate food, cover, and perhaps habitat connectivity for desired species. Riparian vegetation quality and/or quantity may also be compromised to the extent that the riparian area and floodplain are not functioning to provide necessary stream habitat components, such as large wood and off-channel refuge habitat.
After Practice Situation	Stream habitat within the project reach is improving as a result of placing logs, rocks, or constructing wood and rock structures in the channel and/or along the stream bank. Pool habitat in the reach is improved, and hiding cover, food availability and refuge habitat for all stream species is improving.
Scenario Feature Measure	stream length X bankfull width
Scenario Unit	Acre
Scenario Typical Size	0.5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$5,122.91	$10,245.82
Equipment/Installation	$3,058.96	$6,117.92
Labor	$11,799.12	$23,598.24
Mobilization	$1,047.86	$2,095.72
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$21,028.85	$42,057.70

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1761	Boulder	Rock boulders. Includes materials and local delivery (less than 50 miles) only.	Ton	$32.61	20	$652.20
Materials	265	Compost	A mixture of decaying organic matter, as from leaves and manure, used to improve soil structure and provide nutrients.	Ton	$53.10	1	$53.10
Materials	1834	Aggregate, river rock	Well graded, rounded mineral substrates derived from local riverine settings. Includes materials and local delivery	Ton	$36.89	3	$110.67
Materials	2035	Log, un-anchored	Price of log picked up at the Mill. Includes material only.	Ton	$37.12	15	$556.80
Materials	2045	Root Wad	Tree stump buried into the streambank with the roots left exposed. Includes material only.	Ton	$22.00	5	$110.00
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	30	$899.10
Materials	45	Aggregate, Sand, Graded, Washed	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic yard	$28.84	8	$230.72
Materials	1832	Steel, rebar	Steel rebar, grade 60. Materials only.	Pound	$0.58	4	$2.32
Materials	1309	Cuttings, woody, large size	Woody pole cuttings or posts 2" to 6" in diameter and 6' long. Materials only.	Each	$16.72	150	$2,508.00
Equipment/Installation	932	Hydraulic Excavator, 2 CY	Track mounted hydraulic excavator with bucket capacity range of 1.5 to 2.5 CY. Equipment and power unit costs. Labor not included.	Hour	$155.01	16	$2,480.16
Equipment/Installation	1215	Truck, dump, 12 CY	Dump truck for moving bulk material. Typically capacity is 16 ton or 12 cubic yards. Includes equipment only.	Hour	$72.35	8	$578.80
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	60	$2,418.60
Labor	231	General Labor	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	$26.15	24	$627.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	180	$7,677.00

Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	24	$1,075.92
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	2	$1,047.86

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	395 - Stream Habitat Improvement
Scenario ID	2
Scenario Name	Instream wood placement
Scenario Description	This scenario involves placement of large wood (logs, root wads, log structures) into a stream channel in order to improve aquatic habitat that currently does not meet quality criteria for stream species habitat. A stream assessment (i.e. Stream Visual Assessment Protocol) should be conducted in order to document habitat components lacking for aquatic species (i.e. large wood, pools). A project design for wood placement will be based on assessment of the target stream reach characteristics and those of a suitable reference reach. These characteristics include channel geometry, channel slope, stream bottom substrate size and composition, and the geomorphic setting influencing the channel form, pattern and profile. Large wood and root wads placed into the stream will mimic genus, age, and size of mature trees found in intact, reference riparian areas in the MLRA where the project is located. Large wood/trees with rootwads intact should be placed in streams to create pool habitat according to NRCS engineering specifications and with close review & approval of a fish habitat biologist. Boulders placed to provide ballast shall only be used if the geomorphic setting and project design demand this component. The planned activity will meet the current 395 standard, and facilitating practice
Before Practice Situation	In this stream reach, habitat for fish, aquatic insects and/or other stream species is sub-optimal as determined by the NRCS Stream Visual Assessment Protocol score of less than 5 overall. The site does not have adequate food, cover, and perhaps habitat connectivity for desired species. Riparian vegetation quality and/or quantity may also be compromised to the extent that the riparian area and floodplain are not functioning to provide necessary stream and riparian habitat components, such as large wood.
After Practice Situation	Stream habitat within the project reach is improving as a result of placing logs, root wads, and/or wood structures in the channel and/or along the stream bank. Pool habitat in the reach is improved, and hiding cover, food availability and refuge habitat for all stream species is improving.
Scenario Feature Measure	Bankfull width x reach length
Scenario Unit	Acre
Scenario Typical Size	0.5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$5,019.23	$10,038.45
Equipment/Installation	$3,058.96	$6,117.92
Labor	$1,494.32	$2,988.64
Mobilization	$1,047.86	$2,095.72
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$10,620.37	$21,240.73

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1761	Boulder	Rock boulders. Includes materials and local delivery (less than 50 miles) only.	Ton	$32.61	20	$652.20
Materials	265	Compost	A mixture of decaying organic matter, as from leaves and manure, used to improve soil structure and provide nutrients.	Ton	$53.10	1	$53.10
Materials	1834	Aggregate, river rock	Well graded, rounded mineral substrates derived from local riverine settings. Includes materials and local delivery	Ton	$36.89	7.5	$276.68
Materials	2035	Log, un-anchored	Price of log picked up at the Mill. Includes material only.	Ton	$37.12	15	$556.80
Materials	2045	Root Wad	Tree stump buried into the streambank with the roots left exposed. Includes material only.	Ton	$22.00	10	$220.00
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	15	$449.55
Materials	45	Aggregate, Sand, Graded, Washed	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic yard	$28.84	10	$288.40
Materials	1832	Steel, rebar	Steel rebar, grade 60. Materials only.	Pound	$0.58	25	$14.50
Materials	1309	Cuttings, woody, large size	Woody pole cuttings or posts 2" to 6" in diameter and 6' long. Materials only.	Each	$16.72	150	$2,508.00
Equipment/Installation	932	Hydraulic Excavator, 2 CY	Track mounted hydraulic excavator with bucket capacity range of 1.5 to 2.5 CY. Equipment and power unit costs. Labor not included.	Hour	$155.01	16	$2,480.16
Equipment/Installation	1215	Truck, dump, 12 CY	Dump truck for moving bulk material. Typically capacity is 16 ton or 12 cubic yards. Includes equipment only.	Hour	$72.35	8	$578.80
Labor	231	General Labor	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	$26.15	16	$418.40
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	24	$1,075.92
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	2	$1,047.86

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	410 - Grade Stabilization Structure
Scenario ID	1
Scenario Name	Grouted Rock Drop
Scenario Description	A Straight Drop structure constructed of grouted rock. These structures are used to stabilized the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a grouted rock structure with a drop of 3 ft and weir length of 8ft (24square feet). The unit of payment measurement is defined as weir length times drop in "feet". The drop (feet) is defined as the structure inlet crest elevation minus the control outlet elevation (ie: outlet apron elevation).Disturbed areas are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion-concentrated flow erosion and water quality degradation.
Before Practice Situation	The operator presently has gullies forming and/or worsening on the farmland and impacting the useable area and the downstream water quality. Erosion from the gullies is allowing soil and possibly nutrients to be transported to downstream receiving waters degrading water quality and causing soil loss.
After Practice Situation	Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). Other associated practices such as; Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620) will use the corresponding Standard(s) as appropriate.
Scenario Feature Measure	Headwall area
Scenario Unit	Square Foot
Scenario Typical Size	24

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$3,005.33	$125.22
Labor	$3,947.46	$164.48
Mobilization	$715.36	$29.81
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$7,668.15	$319.51

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1757	Rock Riprap, grouted	Grouted Rock Riprap, placed, includes materials, equipment and labor to transport and place.	Cubic Yard	$156.67	17	$2,663.39
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	6	$270.18
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	$5.52	13	$71.76
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	40	$1,706.00
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	6	$149.46
Labor	231	General Labor	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	$26.15	80	$2,092.00
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	410 - Grade Stabilization Structure
Scenario ID	2
Scenario Name	Reinforced Concrete Drop
Scenario Description	A Straight Drop structure constructed of reinforced concrete. These structures are used to stabilized the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a reinforced concrete structure with a drop of 6 ft and weir length of 7ft (42 square feet). The unit of payment measurement is defined as weir length times drop in "feet". The drop (feet) is defined as the structure inlet crest elevation minus the control outlet elevation (ie: outlet apron elevation).Disturbed areas are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion-concentrated flow erosion and water quality degradation.
Before Practice Situation	The operator presently has gullies forming and/or worsening on the farmland and impacting the useable area and the downstream water quality. Erosion from the gullies is allowing soil and possibly nutrients to be transported to downstream receiving waters degrading water quality and causing soil loss.
After Practice Situation	Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). Other associated practices such as; Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620) will use the corresponding Standard(s) as appropriate.
Scenario Feature Measure	Headwall area
Scenario Unit	Square Foot
Scenario Typical Size	42

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$119.88	$2.85
Equipment/Installation	$4,003.32	$95.32
Labor	$2,478.08	$59.00
Mobilization	$715.36	$17.03
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$7,316.64	$174.21

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	4	$119.88
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$602.58	6	$3,615.48
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	8	$360.24
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	$5.52	5	$27.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	8	$199.28
Labor	231	General Labor	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	$26.15	48	$1,255.20
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	412 - Grassed Waterway
Scenario ID	1
Scenario Name	Waterway Base
Scenario Description	Typical waterway is 300 ' Long, 16' Wide, 1.0' Deep, parabolic shape, installed in a swale. Overlying topsoil is moved to the side and the waterway is shaped and the topsoil is replaced. It is then lightly tilled, seeded, and rolled with the dozer. Runoff water is excluded until vegetation is established. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. Critical area planting must be planned in conjuction with this practice.
Before Practice Situation	The field has a small gulley which is cutting deeper into the field as time goes on, so it needs to be stopped or controlled. Excessive sedimentation and soil erosion as a result from ephemeral or classic gully erosion. Gully has formed in field as a result of excessive runoff and poor cropping techniques. Grassed waterway is also commonly installed to covey runoff from concentrated flows, terrarces, diversions, or water control structures or similar practices to a suitable, stable outlet.
After Practice Situation	A 300 ft long by 16' wide by 1' deep parabolic grassed waterway is constructed to address resource concnerns. Use Critical Area Planting (342) for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Runoff water is typically introduced to the grassed waterway via gradient Terraces (CPS 600). Outlets, if needed, will be installed using Structure for Water Control (587).
Scenario Feature Measure	Waterway Area
Scenario Unit	Square Foot
Scenario Typical Size	5,000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,393.00	$0.28
Labor	$1,967.52	$0.39
Mobilization	$560.24	$0.11
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,920.76	$0.78

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1199	Stripping and stockpiling, topsoil	Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor.	Cubic Yard	$0.79	100	$79.00
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	24	$1,314.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	16	$682.40
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	24	$1,075.92
Labor	231	General Labor	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	$26.15	8	$209.20
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	422 - Hedgerow Planting
Scenario ID	2
Scenario Name	Contour
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.
Before Practice 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 Practice 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	Feet
Scenario Typical Size	800

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,377.92	$1.72
Equipment/Installation	$6.02	$0.01
Labor	$2,615.00	$3.27
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,998.94	$5.00

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1555	Tree shelter, mesh tree tube, 24"	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.28	100	$28.00
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$13.48	100	$1,348.00
Materials	82	Switchgrass, Blackwell (Panicum virgatum)	Native Grasses and shipping.	Pound	$9.62	0.2	$1.92
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow, Equipment and power unit costs. Labor is included.	Acre	$14.46	0.25	$3.62
Equipment/Installation	959	Seeding Operation, Broadcast, Ground	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Equipment and labor cost included.	Acre	$9.62	0.25	$2.41
Labor	231	General Labor	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	$26.15	100	$2,615.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	422 - Hedgerow Planting
Scenario ID	1
Scenario Name	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
Before Practice 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 Practice 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	Feet
Scenario Typical Size	400

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,707.11	$4.27
Equipment/Installation	$6.02	$0.02
Labor	$2,615.00	$6.54
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$4,328.13	$10.82

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	132	Butterfly Milkweed (Asclepias tuberosa)	Native Forbs and shipping.	Pound	$437.08	1	$437.08
Materials	139	Western Sunflower (Helianthus occidentalis)	Native Forbs and shipping.	Pound	$467.12	1	$467.12
Materials	76	Big Blue Stem (Andropogon gerardii)	Native Grasses and shipping.	Pound	$11.81	1	$11.81
Materials	1542	Tree or shrub seedling, Tropical, native or non-native, 1/2 gal	tree or shrub topical seedling, native or non-native, 1/2 gallon pot	Each	$17.20	15	$258.00
Materials	1551	Tree or shrub seedling, Tropical, native, containerized, 6 cu in	tree or shrub tropical seedling, native, containerized, 6 cubic in size, 1.4 x 4.6 "	Each	$4.04	70	$282.80
Materials	1543	Tree or shrub seedling, Tropical, native or non-native, 1 gal	tree or shrub topical seedling, native or non-native, 1 gallon pot	Each	$14.82	15	$222.30
Materials	1555	Tree shelter, mesh tree tube, 24"	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.28	100	$28.00
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow, Equipment and power unit costs. Labor is included.	Acre	$14.46	0.25	$3.62
Equipment/Installation	959	Seeding Operation, Broadcast, Ground	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Equipment and labor cost included.	Acre	$9.62	0.25	$2.41
Labor	231	General Labor	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	$26.15	100	$2,615.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	422 - Hedgerow Planting
Scenario ID	3
Scenario Name	Wildlife machine plant
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
Before Practice Situation	Habitat patches lack connectivity. Cover is inadequate to allow wildlife to exploit cropland food resources. Berries and mast are limited.
After Practice Situation	Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. 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
Scenario Unit	Feet
Scenario Typical Size	400

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,394.94	$3.49
Equipment/Installation	$17.15	$0.04
Labor	$49.82	$0.12
Mobilization	$382.36	$0.96
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,844.26	$4.61

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	82	Switchgrass, Blackwell (Panicum virgatum)	Native Grasses and shipping.	Pound	$9.62	0.5	$4.81
Materials	79	Little Blue Stem (Schizachyrium scoparium)	Native Grasses and shipping.	Pound	$15.43	0.33	$5.09
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$13.48	100	$1,348.00
Materials	1907	Animal repellent, chemical	Chemical animal repellent to protect trees from animal damage. Materials only.	Gallon	$36.14	0.25	$9.04
Materials	1555	Tree shelter, mesh tree tube, 24"	24" tall vexar or other open weave tubular tree shelter to protect from animal damage. Materials only.	Each	$0.28	100	$28.00
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow, Equipment and power unit costs. Labor is included.	Acre	$14.46	0.25	$3.62
Equipment/Installation	960	Seeding Operation, No Till/Grass Drill	No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor.	Acre	$19.08	0.25	$4.77
Equipment/Installation	1600	Mechanical tree planter	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	$4.38	2	$8.76
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	2	$49.82
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	430 - Irrigation Pipeline
Scenario ID	1
Scenario Name	PVC (Iron Pipe Size) ≤ 8"
Scenario Description	Description: Below ground installation of PVC (Iron Pipe Size) pipeline. PVC (IPS) is manufactured in sizes (nominal diameter) from ½-inch to 36-inch; typical practice sizes range from 1-inch to 8-inch; and typical scenario size is 3 in or less. Construct 1/4 mile (1,320 feet) of 3-inch, Class 160 (SDR-32.5), PVC pipeline with appurtenances, installed below ground with a minimum of 2 feet of ground cover. The unit is weight of pipe material in pounds. 1,320 feet of 3-inch, Class 160 PVC pipe weighs 0.897 lb/ft, or a total of 1184 pounds. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included in the cost of pipe material (additional 15% of pipe material quantity). Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements. Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use. Associated Practices: 436 - Irrigation Reservoir; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 443 - Irrigation System, Surface & Subsurface; 447 - Irrigation System, Tailwater Recovery; 533 - Pumping Plant; 634 - Waste Transfer.
Before Practice Situation	Pipeline needed to replace or supplement inefficient irrigation conveyance systems.
After Practice Situation	Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use.
Scenario Feature Measure	Weight of Pipe
Scenario Unit	Pound
Scenario Typical Size	1,184

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$2,233.68	$1.89
Equipment/Installation	$1,742.40	$1.47
Labor	$836.80	$0.71
Mobilization	$560.24	$0.47
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$5,373.12	$4.54

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1323	Pipe, PVC, dia. < 18", weight priced	Polyvinyl Chloride (PVC) pressure rated pipe priced by the weight of the pipe materials for pipes with diameters less than 18". Materials only.	Pound	$1.64	1362	$2,233.68
Equipment/Installation	53	Trenching, Earth, 12" x 48"	Trenching, earth, 12" wide x 48" depth, includes equipment and labor for trenching and backfilling	Foot	$1.32	1320	$1,742.40
Labor	231	General Labor	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	$26.15	32	$836.80
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	430 - Irrigation Pipeline
Scenario ID	2
Scenario Name	Surface HDPE
Scenario Description	Description: On-ground surface installation of HDPE (Iron Pipe Size & Tubing) pipeline. HDPE (IPS & Tubing) is manufactured in sizes (nominal diameter) from ½-inch to 24-inch; typical practice sizes range from 0.5-inch to 3-inch; and typical scenario size is 1 1/4-inch. Construct 1/4 mile (1,320 feet) of 1 1/4-inch, Class 200 (SDR-9.0), HDPE pipeline with appurtenances, installed on the ground surface. The unit is weight of pipe material in pounds. 1,320 feet of 1 1/4-inch, Class 200 (SDR-9.0), HDPE weighs 0.362 lb/ft, or a total of 478 pounds. Appurtenances include: fittings, air vents, pressure relief valves, anchors, thrust blocks, risers, and inline valves, and are included in the cost of pipe material (additional 15% of pipe material quantity). Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements. Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use. Associated Practices: 436 - Irrigation Reservoir; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 443 - Irrigation System, Surface & Subsurface; 447 - Irrigation System, Tailwater Recovery; 533 - Pumping Plant; 634 - Waste Transfer.
Before Practice Situation	Pipeline needed to replace or supplement inefficient irrigation conveyance systems.
After Practice Situation	Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use.
Scenario Feature Measure	Weight of Pipe
Scenario Unit	Pound
Scenario Typical Size	478

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,578.50	$3.30
Equipment/Installation	$178.72	$0.37
Labor	$418.40	$0.88
Mobilization	$155.12	$0.32
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,330.74	$4.88

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1379	Pipe, HDPE, smooth wall, weight priced	High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only.	Pound	$2.87	550	$1,578.50
Equipment/Installation	1383	Fuser for HDPE Pipe	Fusing machine for 1" to 12" diameter HDPE pipe joints	Hour	$22.34	8	$178.72
Labor	231	General Labor	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	$26.15	16	$418.40
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	436 - Irrigation Reservoir
Scenario ID	3
Scenario Name	Fiberglass Tank
Scenario Description	A 10,000 Gallon above ground, enclosed, fiberglass tank, is installed on 6" of well compacted drain rock support pad. The tank is used to store water from a reliable source for irrigation of areas less than 3 acres. The scenario assumes the typical dimensions of the tank are 15 feet in diameter and 8 feet tall. The scenario also assumes a 19 feet diameter gravel base pad to extend a minimum of 2 feet past the base of tank for adequate foundation support. This cost estimate scenario is for cost of the tank and pad only and does not include estimate for pumps, pipe, fittings for the pipeline, or catchment area. Resource Concern: Insufficient Water - Inefficient use of irrigation water. Associated Practices: 430 - Irrigation Pipeline; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 533 - Pumping Plant; 447 - Irrigation System, Tailwater Recovery.
Before Practice Situation	Insufficient volume of water to complete an irrigation cycle at the required flow rate.
After Practice Situation	A large fiberglass enclosed tank, capable of withstanding the elements, is used to accumulate and store water between irrigation cycles for a very small irrigation system. This allows for an improved flow rate and timing of water application and better efficiency. Sources of water could be a well, a domestic water system, a very large roof area, a water ram , or a pump drawing water from a stream.
Scenario Feature Measure	Volume of Tank Storage
Scenario Unit	Gallon
Scenario Typical Size	10,000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$7,304.47	$0.73
Equipment/Installation	$295.92	$0.03
Labor	$2,428.24	$0.24
Mobilization	$715.36	$0.07
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$10,743.99	$1.07

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	$21.57	6	$129.42
Materials	1919	Tank, Fiberglass Enclosed Storage, 10,000 gallon	10,000 gallon capacity enclosed fiberglass water storage tank. Includes tank anchoring materials and delivery.	Each	$7,175.05	1	$7,175.05
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$34.80	8	$278.40
Equipment/Installation	1915	Plate compactor	Manually guided vibratroy plate compactor. Equipment only.	Hour	$4.38	4	$17.52
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	8	$358.64
Labor	231	General Labor	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	$26.15	40	$1,046.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	436 - Irrigation Reservoir
Scenario ID	1
Scenario Name	Plastic Tank
Scenario Description	A 3,000 Gallon, above-ground, High Density Polyethylene plastic enclosed tank, is installed on 6" of well-compacted drain rock or a 4" thick reinforced concrete support pad, to store water from a reliable source for irrigation of an area less than one acre. The scenario assumes the typical dimensions of the tank are 102" in diameter and 93" tall. The scenario also assumes a 126" diameter gravel base or concrete pad to extend a minimum of 12" past the base of tank for adequate foundation support. This cost estimate scenario is for cost of the tank and pad only and does not include estimate for pumps, pipe, or connecting fittings. Resource Concern: Insufficient Water - Inefficient use of irrigation water. Associated Practices: 430 - Irrigation Pipeline; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 533 - Pumping Plant; 447 - Irrigation System, Tailwater Recovery.
Before Practice Situation	Insufficient volume of water to complete an irrigation cycle at the required flow rate.
After Practice Situation	An above-ground plastic tank, constructed to withstand the elements, is used to accumulate and store water between irrigation cycles for a very small irrigation system. This allows for an improved flow rate and timing of water application. Sources of water could be a well, a domestic water system, a large roof area, a water ram , or a pump drawing water from a stream.
Scenario Feature Measure	Volume of Tank Storage
Scenario Unit	Gallon
Scenario Typical Size	3,000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$2,323.14	$0.77
Equipment/Installation	$78.36	$0.03
Labor	$763.96	$0.25
Mobilization	$715.36	$0.24
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,880.82	$1.29

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	$21.57	2	$43.14
Materials	1075	Tank, Poly Enclosed Storage, >1,000	Includes materials	Gallon	$0.76	3000	$2,280.00
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$34.80	2	$69.60
Equipment/Installation	1915	Plate compactor	Manually guided vibratroy plate compactor. Equipment only.	Hour	$4.38	2	$8.76
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	2	$89.66
Labor	231	General Labor	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	$26.15	16	$418.40
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	436 - Irrigation Reservoir
Scenario ID	4
Scenario Name	Embankment or Excavated Reservoir
Scenario Description	This is a rectangular embankment reservoir with a 10" diameter principal spillway through the embankment controlled by a canal-type gate. It is designed to accumulate, store, and deliver water by gravity to an open ditch or non-pressurized pipeline, in excess of 5 cfs. The embankment top will be 10 feet wide and the side slopes will no steeper than 2.5 H to 1 V inside and out. It will have a maximum water depth of 10 feet with 2 feet of freeboard and no auxiliary spillway. Volume is approximately 500,000 gallons. Resource Concern: Insufficient Water - Inefficient use of irrigation water. Associated Practices: 521 - Pond Sealing or Lining (various); 320 - Irrigation Canal or Lateral; 430 - Irrigation Pipeline; 428 - Irrigation Ditch Lining; 533 - Pumping Plant; 440 series - Irrigation Systems; 447 - Irrigation System, Tailwater Recovery; 378 - Pond; 484 - Mulching; and 342 - Critical Area Planting.
Before Practice Situation	Current system relies on an intermittent or low-flow rate water source. This results in untimely and/or inefficient water application.
After Practice Situation	The square reservoir will be built on a relatively flat site and be used to accumulate and store water for timely application through an irrigation system. The water source could be a stream, an irrigation well, or an irrigation district canal.
Scenario Feature Measure	Volume of Compacted Earthfill
Scenario Unit	Cubic Yard
Scenario Typical Size	4,000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$884.60	$0.22
Equipment/Installation	$31,524.87	$7.88
Labor	$5,693.39	$1.42
Mobilization	$2,655.96	$0.66
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$40,758.82	$10.19

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1243	Pipe, HDPE, CPT, Double Wall, Soil Tight, 10"	Pipe, Corrugated HDPE Double Wall, 10" diameter with soil tight joints - AASHTO M252. Material cost only.	Foot	$5.64	40	$225.60
Materials	1916	Screw gate, cast iron, 10" diameter, 10/0 head	10" diameter cast iron screw (canal) gate rated at 10 seating head 0 feet unseating head. Materials only.	Each	$659.00	1	$659.00
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	24	$1,314.00
Equipment/Installation	928	Dozer, 200 HP	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	$153.83	89	$13,690.87
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	$4.13	4000	$16,520.00
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	113	$5,065.79
Labor	231	General Labor	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	$26.15	24	$627.60
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	4	$2,095.72

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	436 - Irrigation Reservoir
Scenario ID	2
Scenario Name	Steel Tank
Scenario Description	A 20,000 Gallon, above ground, enclosed fabricated steel or bottomless corrugated metal (with plastic liner and cover) tank with fittings, is installed on 6" of well compacted drain rock support pad with sand padding (CM tank), to store water from a reliable source for irrigation of an area less than 5 acres. The scenario assumes the typical dimensions of the tank are 24 feet in diameter and 6 feet tall. The scenario also assumes a 28 feet diameter gravel base pad to extend a minimum of 2 feet past the base of tank for adequate foundation support. This cost estimate scenario is for cost of the tank and pad only and does not include the cost for pumps, pipe, or fittings for the pipeline. Resource Concern: Insufficient Water - Inefficient use of irrigation water. Associated Practices: 430 - Irrigation Pipeline; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 533 - Pumping Plant; 447 - Irrigation System, Tailwater Recovery.
Before Practice Situation	Insufficient volume of water to complete an irrigation cycle at the required flow rate.
After Practice Situation	An above ground, enclosed fabricated steel or bottomless corrugated metal tank (with plastic liner and cover), capable of withstanding the elements, is used to accumulate and store water between irrigation cycles for a small irrigation system. This allows for an improved flow rate and timing of water application. Sources of water could be a well, a domestic water system, a very large roof area, a water ram , or a pump drawing water from a stream.
Scenario Feature Measure	Volume of Tank Storage
Scenario Unit	Gallon
Scenario Typical Size	20,000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$28,679.04	$1.43
Equipment/Installation	$226.32	$0.01
Labor	$1,788.18	$0.09
Mobilization	$715.36	$0.04
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$31,408.90	$1.57

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	$21.57	12	$258.84
Materials	1920	Tank, Corrugated Metal Storage, 20,000 gallon	20,000 gallon capacity enclosed corrugated Metal Storage tank. Includes delivery to the site and anchoring material.	Each	$28,276.00	1	$28,276.00
Materials	45	Aggregate, Sand, Graded, Washed	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic yard	$28.84	5	$144.20
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$34.80	6	$208.80
Equipment/Installation	1915	Plate compactor	Manually guided vibratroy plate compactor. Equipment only.	Hour	$4.38	4	$17.52
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	6	$268.98
Labor	231	General Labor	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	$26.15	32	$836.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	16	$682.40
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	441 - Irrigation System, Microirrigation
Scenario ID	1
Scenario Name	Surface PE with emitters, Orchard
Scenario Description	A micro irrigation system, utilizing surface PE tubing (can be placed on trells or above ground), with emitters to provide irrigation for an orchard, vinyard, or other specialty crop grown in a grid pattern. The typical system is a permanent system, installed on a 3 acre orchard on the ground surface or trellis. The orchard has a row spacing of 9 feet. This system utilizes emitters on a 12-24" spacing . This system typically includes a filter system, PE tubing laterals, PE submains, valves, fittings, emitters, etc. Does not include Pump, Power source, Water source (well or reservoir). Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities. Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measrement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328-Conservation Crop Rotation, and 590 Nutrient Management.
Before Practice Situation	An orchard has an inefficient irrigation system causing irrigation water loss that impacts water quality and water quantity.
After Practice Situation	A surface placed microirrigation system is utilized to provide highly efficient irrigation to an orchard. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.
Scenario Feature Measure	Acres in System
Scenario Unit	Acre
Scenario Typical Size	3

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$6,150.73	$2,050.24
Equipment/Installation	$0.00	$0.00
Labor	$627.60	$209.20
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,778.33	$2,259.44

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1617	Micro Irrigation, screen filter, < 100 gpm	Screen filter for Micro Irrigation used in small systems. Includes filter. No controls are included or needed.	Each	$39.85	1	$39.85
Materials	1488	Micro Irrigation, surface drip tubing or tape	Tubing or Tape is installed above ground for surface drip irrigation, includes installation, and connections to the supply and flushing laterals. Tubing has emitters built in.	Foot	$0.34	15972	$5,430.48
Materials	976	Pipe, PVC, 2", SCH 40	Materials: - 2" - PVC - SCH 40 - ASTM D1785	Foot	$1.08	630	$680.40
Labor	231	General Labor	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	$26.15	24	$627.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	441 - Irrigation System, Microirrigation
Scenario ID	2
Scenario Name	Surface PE with emitters, Row Crops
Scenario Description	A micro-irrigation system, utilizing surface PE tubing (can be placed on trelis or above ground) with emitters to provide irrigation for row crops. The typical system is a permanent system, installed on a 3 acre field on the ground surface. The rows have a spacing of 3 feet. This system utilizes emitters on a 6-18" spacing . This system typically includes a filter system, PE tubing laterals, PE submains, valves, fittings, emitters, etc. Does not include Pump, Power source, Water source (well or reservoir). Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities. Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measrement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328-Conservation Crop Rotation, and 590 Nutrient Management.
Before Practice Situation	A field of row crops has an inefficient irrigation system causing irrigation water loss that impacts water quality and water quantity.
After Practice Situation	A surface placed microirrigation system is utilized to provide highly efficient irrigation to a row crop. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.
Scenario Feature Measure	Acres in System
Scenario Unit	Acre
Scenario Typical Size	3

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$9,824.29	$3,274.76
Equipment/Installation	$0.00	$0.00
Labor	$1,255.20	$418.40
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$11,079.49	$3,693.16

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1489	Micro Irrigation, emitters or sprays and tubing	Emitters or sprays that are installed above ground for micro or drip irrigation, includes installation, and connections to the supply and flushing laterals. Tubing for the has emitters is included in this item.	Foot	$0.19	47916	$9,104.04
Materials	1617	Micro Irrigation, screen filter, < 100 gpm	Screen filter for Micro Irrigation used in small systems. Includes filter. No controls are included or needed.	Each	$39.85	1	$39.85
Materials	976	Pipe, PVC, 2", SCH 40	Materials: - 2" - PVC - SCH 40 - ASTM D1785	Foot	$1.08	630	$680.40
Labor	231	General Labor	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	$26.15	48	$1,255.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	442 - Irrigation System, Sprinkler
Scenario ID	1
Scenario Name	Solid Set System
Scenario Description	A solid set irrigation system. Resource concerns include: Soil Erosion (Concentrated flow erosion e.g. irrigation induced), Insufficient Water (Inefficient use of irrigation water), Water Quality Degradation (Excess nutrients in surface and ground waters, Excessive salts in surface and ground waters, Excess pathogens and chemicals from manure, bio-solids or compost applications) Associated Practices: Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449)
Before Practice Situation	The typical installation will be on cropland with some existing inefficient irrigation. The farm is typically producing specialty crops, such as fresh vegetables.
After Practice Situation	The system is installed on 2 acres or less. The installed solid set system has 3-4 inch pipe sizes and sprinklers set 30 – 50 ft apart. Improved distribution uniformity and irrigation efficiency will result.
Scenario Feature Measure	Area of Irrigation System
Scenario Unit	Acre
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$4,280.20	$2,140.10
Equipment/Installation	$0.00	$0.00
Labor	$0.00	$0.00
Mobilization	$155.12	$77.56
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$4,435.32	$2,217.66

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	324	Irrigation, Solid Set, w/Appurtenances	System: Solid Set - w/Appurtenances	Acre	$2,140.10	2	$4,280.20
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	449 - Irrigation Water Management
Scenario ID	3
Scenario Name	IWM, Advanced
Scenario Description	A high intensity irrigation water management system for producers using a checkbook method with advanced methods of determining irrigation water applied, and estimating crop evapotranspiration, monitoring field soil moisture, or monitoring crop temperature stress. Typical methods include flow measurement, daily record keeping, and use of real-time evapotranspiration estimates (such as those provided dedicated weather stations) and/or soil moisture sensors with automated data logging to monitor field soil moisture content and/or crop temperature. For this scenario, soil moisture is determined by automated soil moisture monitoring stations equiped with telemetry data. Irrigation amounts are recorded from a flow meter near the pump. Telemetry data is automatically sent to a computer with irrigation software. Irrigator also receives real time data via mobile phone applications. Some data such as total water applied may be entered into computer software manually. Resource Concerns: Insufficient Water Supply-Inefficient use of irrigation water; Degraded Plant Condition-Undesirable plant productivity and health, and Inefficient Energy Use-Equipment and facilities. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler.
Before Practice Situation	The irrigator decides when to irrigate based on general crop or soil appearance or limited soil moisture monitoring. System run times are based on past apparent success. The typical irrigated field is a 10 acre specialty crop field with a microirrigation or sprinkler system.
After Practice Situation	Irrigations are scheduled based on measured crop water requirements. Records are used to evaluate results of past irrigation events and influence future irrigations. The irrigator keeps records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.
Scenario Feature Measure	Irrigated Area Managed
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,407.44	$140.74
Equipment/Installation	$0.00	$0.00
Labor	$853.00	$85.30
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,260.44	$226.04

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	314	Weather Station	Portable device which collects site specific atmospheric and weather related measurements.	Each	$153.29	1	$153.29
Materials	1456	Soil Moisture Sensor	Soil moisture resistance sensor W/10' cables. Equipment only.	Each	$44.80	3	$134.40
Materials	1454	Data Logger with Telemetry System	Data Logger W/Graphic Output for water management and telemetry - data communication device with power supply in a weather proof enclosure. Equipment only.	Each	$1,119.75	1	$1,119.75
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	20	$853.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	449 - Irrigation Water Management
Scenario ID	1
Scenario Name	IWM, Basic
Scenario Description	A low Intensity irrigation water management system for producers using a checkbook method (crop grown, soil moisture conditions prior to irrigation, dates of irrigation start and stop, depths of irrigation applied, duration of irrigations, and amount of rainfall). For a typical scenario, soil moisture is determined by the feel method, volumes of irrigation water are based on energy or water district bills, records are kept on paper copies, and calculations are made by hand. Resource Concerns: Insufficient Water Supply-Inefficient use of irrigation water; Degraded Plant Condition-Undesirable plant productivity and health, and Inefficient Energy Use-Equipment and facilities. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler.
Before Practice Situation	The irrigator decides when to irrigate based on general crop or soil appearance or limited soil moisture monitoring. System run times are based on past apparent success. The typical irrigated field is a 7 acre specialty crop field with a microirrigation or sprinkler system.
After Practice Situation	Irrigations are scheduled based on measured crop water requirements. Records are used to evaluate results of past irrigation events and influence future irrigations. The irrigator keeps records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.
Scenario Feature Measure	Irrigated Area Managed
Scenario Unit	Acre
Scenario Typical Size	7

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$426.50	$60.93
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$426.50	$60.93

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	449 - Irrigation Water Management
Scenario ID	2
Scenario Name	IWM, Intermediate
Scenario Description	A medium intensity irrigation water management system for producers using a checkbook method (crop grown, soil moisture conditions prior to irrigation, dates of irrigation start and stop, depths of irrigation applied, duration of irrigations, and amount of rainfall). For a typical scenario, soil moisture is determined by in-field moisture sensors with manual downloads. Irrigation amounts are recorded from a flow meter near the pump. Records are input manually into an irrigation scheduling computer program. Resource Concerns: Insufficient Water Supply-Inefficient use of irrigation water; Degraded Plant Condition-Undesirable plant productivity and health, and Inefficient Energy Use-Equipment and facilities. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler.
Before Practice Situation	The irrigator decides when to irrigate based on general crop or soil appearance or limited soil moisture monitoring. System run times are based on past apparent success. The typical irrigated field is a 10 acre specialty crop field with a microirrigation or sprinkler system.
After Practice Situation	Irrigations are scheduled based on measured crop water requirements. Records are used to evaluate results of past irrigation events and influence future irrigations. The irrigator keeps records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.
Scenario Feature Measure	Irrigated Area Managed
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$467.90	$46.79
Equipment/Installation	$0.00	$0.00
Labor	$639.75	$63.98
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,107.65	$110.77

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1456	Soil Moisture Sensor	Soil moisture resistance sensor W/10' cables. Equipment only.	Each	$44.80	3	$134.40
Materials	1455	Soil Moisture Meter	Soil Moisture Sensor Reader. Equipment only.	Each	$333.50	1	$333.50
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	15	$639.75

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	462 - Precision Land Forming
Scenario ID	1
Scenario Name	Minor Shaping
Scenario Description	The land surface is shaped or leveled to a specific elevation and grade for various land uses. Cuts and fills are small. The resource concerns are EXCESS / INSUFFICIENT WATER -(Ponding, Flooding) and SOIL EROSION -(Sheet, Rill)
Before Practice Situation	The field has minor topographic issues or problems with surface drainage or erosion which can be corrected without land leveling or land smoothing. Site conditions require attention to elevation and grade. Typical situation is a 3 acre field. Material to be moved and or placed typically around 100 cubic yards per acre.
After Practice Situation	Land has been shaped to the required elevations and grades. Resource concerns have been treated. Associated practices, like plantings or drainage water management practices, would be contracted seperately as needed.
Scenario Feature Measure	Acres of land treated
Scenario Unit	Acre
Scenario Typical Size	3

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$695.34	$231.78
Labor	$268.98	$89.66
Mobilization	$560.24	$186.75
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,524.56	$508.19

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	927	Dozer, 140 HP	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	$101.16	6	$606.96
Equipment/Installation	1206	Scraper, pull, 7 CY	Pull type earthmoving scraper with 7 CY capacity. Does not include pulling equipment or labor. Add Tractor or Dozer, 160 HP typically required for single scraper.	Hour	$14.73	6	$88.38
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	6	$268.98
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	466 - Land Smoothing
Scenario ID	1
Scenario Name	Minor Shaping
Scenario Description	Removing irregularities on the land surface of cropland by use of heavy equipment.
Before Practice Situation	Field damaged by flooding, past agricultural practices, or other topographich issues causing drainage or field workablity issues. Typically less than 100 cy/acre material moved.
After Practice Situation	Land level, backhoe, bulldozer or other heavy equipment used to correct irregulaties and address drainage or workablity issues.
Scenario Feature Measure	Acres of land treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$463.56	$92.71
Labor	$179.32	$35.86
Mobilization	$560.24	$112.05
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,203.12	$240.62

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	927	Dozer, 140 HP	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	$101.16	4	$404.64
Equipment/Installation	1206	Scraper, pull, 7 CY	Pull type earthmoving scraper with 7 CY capacity. Does not include pulling equipment or labor. Add Tractor or Dozer, 160 HP typically required for single scraper.	Hour	$14.73	4	$58.92
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	4	$179.32
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	468 - Lined Waterway or Outlet
Scenario ID	4
Scenario Name	Concrete Block
Scenario Description	Install 36' long (including inlet and outlet aprons) by 15' wide by 1.5' deep trapezoidal shaped waterway or chute lined with concrete blocks. 1/2 the channel is excavated. Excess excavation is spoiled in the immediate area. 8"x8"x16" standard concrete blocks are installed over 100% of the width of the waterway/chute to prevent scour. Cost include excavation, spoiling of excess material, 3" stone subgrade, geotextile and furnishing and installing standard concrete blocks. Lined waterway width is measured from top of bank to top of bank.
Before Practice Situation	Excessive sedimentation and soil erosion as a result of ephemeral or classic gully erosion. Velocities are generally too high or saturated soil conditions make it difficult to establish a grassed waterway. Usually installed in locations where rock or other lining materials are not readily available.
After Practice Situation	Conccrete block lined waterway or chute is 36 ' long by 15' wide by 1.5' deep. Chute is installed on a 3 to 1 slope. The practice is installed using a hydraulic excavator. Geotextile and concrete blocks are installed by laborers. Associated practices are Subsurface Drain (606), Underground Outlet (620), Structure for Water Control (587), and Critical Area Seeding (342).
Scenario Feature Measure	Square Foot of Waterway
Scenario Unit	Square Feet
Scenario Typical Size	540

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,728.62	$3.20
Equipment/Installation	$531.84	$0.98
Labor	$2,059.68	$3.81
Mobilization	$560.24	$1.04
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$4,880.38	$9.04

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	253	Block, concrete	Concrete block, hollow, normal weight, 3500 psi. Includes both full and partial sizes. Material only	Each	$2.42	640	$1,548.80
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	6	$179.82
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	$2.64	65	$171.60
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	8	$360.24
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	8	$199.28
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60
Labor	231	General Labor	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	$26.15	32	$836.80
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	468 - Lined Waterway or Outlet
Scenario ID	3
Scenario Name	Reinforced Concrete
Scenario Description	Install 200 ' long by 4.5' wide by 1' deep trapezoidal or parabolic shaped waterway lined with concrete. 1/2 the channel is excavated, before excavation for concrete and subgrade material. Excess excavation is spoiled in the immediate area. Concrete is installed over 100% of the width of the waterway to prevent scour. Cost include excavation, spoiling of excess material, 4" of gravel subgrade, and 5" reinforced concrete slab. Lined waterway width is measured from top of bank to top of bank.
Before Practice Situation	Excessive sedimentation and soil erosion as a result of ephemeral or classic gully erosion. Velocities are generally too high or saturated soil conditions make it difficult to establish a grassed waterway. Usually installed in locations where rock or other lining materials are not readily available.
After Practice Situation	Concrete lined waterway is 200 ' long by 4.5' wide by 1' deep. Waterway is excavated using a hydraulic excavator. Concrete slab is placed on 4" of stone. Concrete is placed, graded and screeded by laborers. Associated practices are Subsurface Drain (606), Underground Outlet (620), Structure for Water Control (587), and Critical Area Seeding (342).
Scenario Feature Measure	Square Foot of Waterway
Scenario Unit	Square Foot
Scenario Typical Size	900

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$332.67	$0.37
Equipment/Installation	$7,326.82	$8.14
Labor	$1,972.56	$2.19
Mobilization	$560.24	$0.62
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$10,192.29	$11.32

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	11.1	$332.67
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	17	$6,450.82
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	16	$876.00
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	16	$398.56
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	32	$1,364.80
Labor	231	General Labor	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	$26.15	8	$209.20
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	468 - Lined Waterway or Outlet
Scenario ID	2
Scenario Name	Grouted Rock Lined 12"
Scenario Description	Install 200 ' long by 9.1' wide by 1.5' deep trapezoidal or parabolic shaped waterway lined with riprap. 1/2 the channel is excavated, before excavation for riprap. Excess excavation is spoiled in the immediate area. Grouted riprap is installed over 100% of the width of the waterway to prevent scour. Cost include excavation, spoiling of excess material, geotextile underlayment and installing 9" Grouted Rock Riprap. Lined waterway width is measured from top of bank to top of bank.
Before Practice Situation	Excessive sedimentation and soil erosion as a result of ephemeral or classic gully erosion. Velocities are generally too high or saturated soil conditions make it difficult to establish a grassed waterway.
After Practice Situation	Grouted rock lined waterway is 200 ' long by 9.1' wide by 1.5' deep. Waterway is excavated and rock is placed using a hydraulic excavator. Geotextile underlayment is installed by laborers. Associated practices are Subsurface Drain (606), Underground Outlet (620), Structure for Water Control (587), and Critical Area Seeding (342).
Scenario Feature Measure	Square Foot of Waterway
Scenario Unit	Square Foot
Scenario Typical Size	1820

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,849.12	$1.02
Equipment/Installation	$6,847.05	$3.76
Labor	$4,520.39	$2.48
Mobilization	$1,120.48	$0.62
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$14,337.04	$7.88

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	$71.12	26	$1,849.12
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	$2.64	202	$533.28
Equipment/Installation	36	Concrete, CIP, formless, non reinforced	Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$186.16	26	$4,840.16
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	16	$876.00
Equipment/Installation	930	Hydraulic Excavator, .5 CY	Track mounted hydraulic excavator with bucket capacity range of 0.3 to 0.8 CY. Equipment and power unit costs. Labor not included.	Hour	$45.97	13	$597.61
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	29	$722.39
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	40	$1,706.00
Labor	231	General Labor	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	$26.15	80	$2,092.00
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	468 - Lined Waterway or Outlet
Scenario ID	1
Scenario Name	Turf Reinforced Matting
Scenario Description	Install 300 ' long by 15' wide by 1.5' deep trapezoidal or parabolic shaped waterway lined with Turf Reinforced Matting (TRM). 1/2 the channel is excavated. Excess excavation is spoiled in the immediate area. TRM is installed over 100% of the width of the waterway to prevent scour and aid in waterway establishment. Cost include excavation, spoiling of excess material, and furnishing and installing TRM. Lined waterway width is measured from top of bank to top of bank.
Before Practice Situation	Excessive sedimentation and soil erosion as a result of ephemeral or classic gully erosion. Velocities are generally too high or saturated soil conditions make it difficult to establish a grassed waterway.
After Practice Situation	TRM lined waterway is 300 ' long by 15' wide by 1.5' deep. The practice is installed using a hydraulic excavator. TRM is installed by laborers. Associated practices are Subsurface Drain (606), Underground Outlet (620), Structure for Water Control (587), and Critical Area Seeding (342).
Scenario Feature Measure	Square Foot of Waterway
Scenario Unit	Square Foot
Scenario Typical Size	4500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$6,805.20	$1.51
Equipment/Installation	$417.60	$0.09
Labor	$981.32	$0.22
Mobilization	$560.24	$0.12
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,764.36	$1.95

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1212	Turf reinforcement mat	Synthetic turf reinforcement mat with staple anchoring. Includes materials, equipment and labor.	Square Yard	$12.72	535	$6,805.20
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$34.80	12	$417.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	16	$682.40
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	12	$298.92
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	472 - Access Control
Scenario ID	2
Scenario Name	Animal Exclusion from Sensitive Areas, Non-Nene
Scenario Description	Excluding animals from an area in order to address identified resource concerns. This is for facilitating exclusion of animals to protect or enhance natural resource values. Control will be by temporary electric fencing. Any need for permanent fencing will be planned and installed using the Fence practice (382). Clearing of brush and trees is not necessary. Resource concerns include Wildlife Habitat degradation, Excessive plant pest pressure, Undesirable plant productivity and health, and/or Excessive sediment in surface waters.
Before Practice Situation	Sensitive areas are threatened by the adverse actions of domestic and/or wild animals. The importance of the sensitive areas can include (but are not limited to): wildlife habitat, plant species composition, newly established trees and/or plants, stream bank stability, and/or water quality.
After Practice Situation	Sensitive areas are protected from the adverse actions of domestic and/or wild animals by excluding them from the area.
Scenario Feature Measure	Length of fence
Scenario Unit	Foot
Scenario Typical Size	1900

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,649.73	$0.87
Equipment/Installation	$52.24	$0.03
Labor	$52.30	$0.03
Mobilization	$217.15	$0.11
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,971.42	$1.04

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	21	Electric, Ground Rod Clamps	Electric, Ground Rod Clamps for electric fence	Each	$2.39	2	$4.78
Materials	33	Fence, Wire Assembly, High Tensile, Electric, 2 Strand	Brace pins, springs, strainers, battens, clips, crimp sleeves, staples, insulators, wrap around sleeves	Foot	$0.07	1900	$133.00
Materials	28	Electric, Energizer, 3-4 joule	Electric, Energizer, 3-4 joule for electric fence	Each	$195.16	1	$195.16
Materials	293	Property/Safety Signs	"Plastic Fence safety or property sign - Printed on both sides 6 pre-drilled holes for hanging or nailing. 7.5"" x 4.75"""	Each	$1.39	19	$26.41
Materials	7	Wire, Polytape	Wire, Polytape for electric fence. Rolls of 655' to 825'.	Each	$114.64	2	$229.28
Materials	10	"Post, Wood, CCA treated, 4"" x 8'"	"Wood Post, Line 4"" X 8', CCA Treated"	Each	$10.69	2	$21.38
Materials	26	Electric, Tester	Electric, Tester for electric fence	Each	$34.60	1	$34.60
Materials	20	Electric, Ground Rods	Electric, Ground Rod for electric fence	Each	$12.84	2	$25.68
Materials	18	"Post, Fiberglass, ⅞"" X 6'"	"Fiberglass line post, ⅞"" diameter X 6' length"	Each	$9.24	106	$979.44
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	2	$52.24
Labor	231	General Labor	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	$26.15	2	$52.30
Mobilization	1138	Mobilization, small equipment	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	$191.18	1	$191.18
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	472 - Access Control
Scenario ID	3
Scenario Name	Exclusion, Nene
Scenario Description	Excluding nene from row crop fields in order to minimize the interaction between humans and nene. Nene exclusion will be accomplished by erecting barriers or other protective structures. Clearing of brush and trees is not necessary. Addresses the Special Environmental Concern, Threatened and Endangered Fish and Wildlife Species.
Before Practice Situation	The nene are walking and flying into the fields destroying crops and creating a conflict between the nene and the farmers. This situation is resulting in too much interaction between the nene and the producer.
After Practice Situation	A tall physical barrier will be placed around the field which will not allow the nene to walk into the field and to prevent fly ins. This will result in reduced conflict and interaction between the nene and producers. The strucure will consist of a tall woven wire fence with a secon layer of woven wire to to make the opening smallenough that a nene can not walk through. The fence will be tall enough to allow for normal farming activities and there will be poly tape stretched across the top to prevent fly ins. The poly tape will be placed on 1 foot spacings and will not need to be electicfied.
Scenario Feature Measure	Area of row crop field
Scenario Unit	Acre
Scenario Typical Size	0.1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$2,149.67	$21,496.70
Equipment/Installation	$137.82	$1,378.20
Labor	$410.96	$4,109.60
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,698.45	$26,984.50

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	3	"Wire, Woven, Galvanized, 12.5 Gauge, 32"""	"Galvanized 12.5 gauge, 32"" - 330' roll"	Each	$166.41	1	$166.41
Materials	6	"Wire, Woven, Wildlife, 96"""	"High Tensile 12.5 gauge, 96"" - 330' roll"	Each	$437.50	1	$437.50
Materials	7	Wire, Polytape	Wire, Polytape for electric fence. Rolls of 655' to 825'.	Each	$114.64	6	$687.84
Materials	13	"Post, Wood, CCA treated, 6"" x 12-14'"	"Wood Post, Line/End 6"" X 12-14', CCA Treated"	Each	$41.18	16	$658.88
Materials	17	Post, Steel T, 1.33 lbs, 10'	Steel Post, Studded 10' - 1.33 lb	Each	$12.44	16	$199.04
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	3	$22.14
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	6	$115.68
Labor	231	General Labor	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	$26.15	10	$261.50
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	6	$149.46

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	472 - Access Control
Scenario ID	5
Scenario Name	Patroling, monitoring, maintenance, additional labor
Scenario Description	Labor and increased time needed to control or re-route animal or traffic movement into or within managed areas via patrolling, monitoring and barrier maintenance efforts. Resource concerns include Excessive sediment in surface waters, Habitat degradation for fish and wildlife, Excessive plant pest pressure and Undesirable plant productivity and health.
Before Practice Situation	The application of Access Control has resulted in increased labor and time to patrol, re-route or remove undesired traffic and/or animals from a managed area, as well as inspecting and repairing the barrier.
After Practice Situation	Water quality is maintained, habitat is improved, plant health is maintained and access by undesired traffic and animals is controlled in the managed area.
Scenario Feature Measure	Area of management unit
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$104.48	$20.90
Labor	$104.60	$20.92
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$209.08	$41.82

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Labor	231	General Labor	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	$26.15	4	$104.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	472 - Access Control
Scenario ID	4
Scenario Name	Access Control, Forest/Farm
Scenario Description	Restricting human access to a field/farm/property through use of signage and other markings. Resource concerns include Undesirable plant productivity and health, Excessive sediment in surface waters, Concentrated flow erosion, and Wildlife habitat degradation.
Before Practice Situation	A 20 acre tract (field, farm. forests, etc.) is being damaged or misused by illegal activities that put the resources/property at risk or needs controlled access due to an active management operation such as pest management or timber harvesting. The perimeter needs marking with paint (at 100 foot intervals) and signs at points of ingress. Surveying is not necessary.
After Practice Situation	The property is adequately marked and protected, illegal activities are stopped and/or forest resources are secure.
Scenario Feature Measure	Length of boundary
Scenario Unit	Foot
Scenario Typical Size	3750

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$52.98	$0.01
Equipment/Installation	$208.96	$0.06
Labor	$209.20	$0.06
Mobilization	$25.97	$0.01
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$497.11	$0.13

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	293	Property/Safety Signs	"Plastic Fence safety or property sign - Printed on both sides 6 pre-drilled holes for hanging or nailing. 7.5"" x 4.75"""	Each	$1.39	2	$2.78
Materials	313	Tree Marking Paint	Trees to be cut through tree marking are physically identified through the application of paint on the tree. Typically one quart of paint is used to mark one acre of trees.	Acre	$5.02	10	$50.20
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	8	$208.96
Labor	231	General Labor	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	$26.15	8	$209.20
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	472 - Access Control
Scenario ID	1
Scenario Name	Access Control, Trails/Roads
Scenario Description	Restricting access to the use of forest/farm roads and trails by the use of a gate and limited fencing. Resource concerns include Undesirable plant productivity and health, Concentrated flow erosion, Soil compaction, Excessive sediment in surface waters, and Wildlife habitat degradation.
Before Practice Situation	Roads are damaged or misused, illegal activities occur and/or forest resources are at risk. Extensive amount of fencing (other than that needed to restrict access at the site of ingress) is not included in this scenario, but instead will be planned and installed with the Fence practice (382).
After Practice Situation	Roads are protected, illegal activities are stopped and/or forest resources are secure.
Scenario Feature Measure	number
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$414.78	$414.78
Equipment/Installation	$196.36	$196.36
Labor	$104.60	$104.60
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$715.74	$715.74

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	30	Fence, Wire Assembly, Barbed Wire, 3 Strand	Brace pins, battens, clips, staples	Foot	$0.16	100	$16.00
Materials	1226	Concrete mix, bag	Pre-mixed dry concrete mix in 60 pound bag. Materials only.	Each	$4.79	10	$47.90
Materials	1057	Gate, Pipe, 12'	6 rail tube gate, 16 gauge	Each	$168.88	1	$168.88
Materials	12	"Post, Wood, CCA treated, 6"" x 8'"	"Wood Post, End 6"" X 8', CCA Treated"	Each	$20.58	4	$82.32
Materials	1	Wire, Barbed, Galvanized, 12.5 Gauge, 1,320' roll	Galvanized 12.5 gauge, 1,320' roll	Each	$63.52	1	$63.52
Materials	9	"Post, Wood, CCA treated, 3-4"" x 7'"	"Wood Post, Line 3-4"" X 7', CCA Treated"	Each	$9.04	4	$36.16
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	$7.38	2	$14.76
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	4	$77.12
Labor	231	General Labor	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	$26.15	4	$104.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	484 - Mulching
Scenario ID	1
Scenario Name	Natural Material (green waste, wood chips, compost etc), 1-3 inches
Scenario Description	Manually-spreading loose natural material (green waste, wood chips, compost) from an off-site source (delivered) to reduce soil erosion, moderate soil moisture, improve water quality, reduce sedimentation, improve soil quality, and supress weeds. Practices associated are other erosion control measures, plant establishment, crop management, wildlife habitat improvement, and water management.
Before Practice Situation	Site conditions require mulching for short periods of time, typically less than 60 days. Typically scenarios include new tree and shrub plantings, irrigated orchards or vineyards, or annual and perennial specialty crops. Water quantity, soil moisture, and soil orgainc matter is a concern.
After Practice Situation	Natural mulch is applied in rows by hand or by mechanized means. Soil moisture is conserved, energy use associated with irrigation is decreased, and weed growth is suppressed. Mulching protection will last approximatly 60 days.
Scenario Feature Measure	Area Covered by Mulch
Scenario Unit	Square Foot
Scenario Typical Size	4356

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$586.44	$0.13
Labor	$0.00	$0.00
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$586.44	$0.13

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1098	Aggregate, Wood Chips	Includes materials, equipment and labor	Cubic yard	$21.72	27	$586.44

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	484 - Mulching
Scenario ID	2
Scenario Name	Natural Material (green waste, wood chips, compost etc), 4-6 inches
Scenario Description	Manually-spreading loose natural material (green waste, wood chips, compost) from an off-site source (delivered) to reduce soil erosion, moderate soil moisture, improve water quality, reduce sedimentation, improve soil quality, and supress weeds. Practices associated are other erosion control measures, plant establishment, crop management, wildlife habitat improvement, and water management.
Before Practice Situation	Site conditions require mulching covrerage of 60-120 days to address the resource concern. Typically scenarios include new tree and shrub plantings, irrigated orchards or vineyards, or annual and perennial specialty crops. Water quantity and soil moisture is a concern.
After Practice Situation	Natural mulch is applied in rows by hand or by mechanized means. Soil moisture is conserved, energy use associated with irrigation is decreased, and weed growth is suppressed. Mulching protection should last approximatly 60 - 120 days.
Scenario Feature Measure	Area Covered by Mulch
Scenario Unit	Square Foot
Scenario Typical Size	4356

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,172.88	$0.27
Labor	$0.00	$0.00
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,172.88	$0.27

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1098	Aggregate, Wood Chips	Includes materials, equipment and labor	Cubic yard	$21.72	54	$1,172.88

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	484 - Mulching
Scenario ID	3
Scenario Name	Natural Material (green waste, wood chips, compost etc), 7-9 inches
Scenario Description	Manually-spreading loose natural material (green waste, wood chips, compost) from an off-site source (delivered) to reduce soil erosion, moderate soil moisture, improve water quality, reduce sedimentation, improve soil quality, and supress weeds. Practices associated are other erosion control measures, plant establishment, crop management, wildlife habitat improvement, and water management.
Before Practice Situation	Site conditions require mulching to last for more than 120 days to address the resource concerns. Typically scenarios include new tree and shrub plantings, irrigated orchards or vineyards, or annual and perennial specialty crops. Water quantity and soil moisture is a concern.
After Practice Situation	Natural mulch is applied in rows by hand or by mechanized means. Soil moisture is conserved, energy use associated with irrigation is decreased, and weed growth is suppressed. Mulching protection should last for more than 120 days.
Scenario Feature Measure	Area covered by mulch
Scenario Unit	Square Foot
Scenario Typical Size	4356

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,041.68	$0.47
Labor	$0.00	$0.00
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,041.68	$0.47

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1098	Aggregate, Wood Chips	Includes materials, equipment and labor	Cubic yard	$21.72	94	$2,041.68

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	484 - Mulching
Scenario ID	4
Scenario Name	Synthetic Material (Plastic Mulch, Geotextile, Papers etc)
Scenario Description	Installation of geotextile, biodegradable plastic, polyethylene plastic to conserve soil moisture, moderate soil temperature, suppress weed growth and provide erosion control. Payment based on actual area covered by mulching material.
Before Practice Situation	Site conditions very. Typically scenarios include new tree and shrub plantings, irrigated orchards or vineyards, or annual and perennial specialty crops. Water quantity and soil moisture is a concern.
After Practice Situation	Synthetic mulch is applied in rows with a mulch layer or by other mechanized means. Soil moisture is conserved, energy use associated with irrigation is decreased, and weed growth is suppressed.
Scenario Feature Measure	Area Covered by Mulch
Scenario Unit	Square Foot
Scenario Typical Size	4000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$284.16	$0.07
Equipment/Installation	$0.00	$0.00
Labor	$261.50	$0.07
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$545.66	$0.14

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1304	Mulch, biodegradable plastic, 0.8 mil	0.8 mil starch-based biodegradable plastic mulch, with anchoring. Materials only.	Square Yard	$0.64	444	$284.16
Labor	231	General Labor	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	$26.15	10	$261.50

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	490 - Tree & Shrub Site Preparation
Scenario ID	6
Scenario Name	Chemical, Aerial Application
Scenario Description	This practice involves the applicatin of herbicides by helicoptor in order to contol or kill undesired vegetation and improve site conditions for establishing trees and/or shrubs. This typical scenraio includes open land such as abandoned fields, pastures or forestlands that were recently harvested. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition.
Before Practice Situation	Undesirable vegetation is present on the site including herbaceous plants and woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs.
After Practice Situation	Undesirable vegetation has been treated using appropriate herbicides, reducing competition for target trees and/or shrubs. Site conditions are favorable for successful establishment of trees and/or shrubs.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$321.18	$32.12
Equipment/Installation	$321.92	$32.19
Labor	$304.15	$30.42
Mobilization	$136.46	$13.65
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,083.71	$108.37

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	4	$244.04
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	10	$10.90
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	6	$66.24
Equipment/Installation	1991	Chemical, aerial application, helicopter	Chemical application performed by helicopter on forest only. Includes equipment, mobilization, and labor.	Acre	$29.58	10	$295.80
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Labor	231	General Labor	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	$26.15	10	$261.50
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	490 - Tree & Shrub Site Preparation
Scenario ID	5
Scenario Name	Chemical, Ground Application
Scenario Description	This practice involves the application of herbicides using mechanized equipment (such as ATV or tractor mounted boom) in order to control or kill undesired vegetation or treat stumps or sprouts of undesired vegetation to improve site conditions for establishing trees and/or shrubs. Typical sites include abandoned fields, pastures, rangelands, agricultural fields or forestlands. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition.
Before Practice Situation	Undesirable vegetation is present on the site including herbaceous plants and woody vegetation. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs.
After Practice Situation	Undesirable vegetation has been treated using appropriate herbicides, reducing competition for target trees and/or shrubs. Site conditions are favorable for successful establishment of trees and/or shrubs.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$160.59	$32.12
Equipment/Installation	$591.71	$118.34
Labor	$180.25	$36.05
Mobilization	$653.15	$130.63
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,585.70	$317.14

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	2	$122.02
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	5	$5.45
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	3	$33.12
Equipment/Installation	1313	Chemical, ground application, wildland	Chemical application performed by ground equipment. Includes forestry application methods that include heavy equipment such as skidders. Equipment and labor.	Acre	$102.67	5	$513.35
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	3	$78.36
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	3	$127.95
Labor	231	General Labor	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	$26.15	2	$52.30
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68

Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	490 - Tree & Shrub Site Preparation
Scenario ID	4
Scenario Name	Chemical, Manual Application
Scenario Description	This practice involves the application of herbicides using backpack sprayer or similar equipment, and may be used in conjunction with manual vegetation cutting scenarios via hack-n-squirt for tree control, in order to control or kill undesirable vegetation and improve site conditions for establishing trees and/or shrubs. Typical sites include lands such as old fields, pastures, rangelands, agricultural fields, previous forestlands that have been abandoned and are now covered with a mixture of grasses, forbs, shrubs and some remnant trees. Resource concerns are: degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition.
Before Practice Situation	Undesirable vegetation, including woody and herbaceous plants, occupy up to 100 % of the on the site. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs.
After Practice Situation	Undesirable vegetation has been treated using appropriate herbicides, reducing competition for target trees and/or shrubs. Site conditions are favorable for successful establishment of trees and/or shrubs.
Scenario Feature Measure	area of treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$160.59	$32.12
Equipment/Installation	$473.08	$94.62
Labor	$68.80	$13.76
Mobilization	$68.23	$13.65
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$770.70	$154.14

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	2	$122.02
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	5	$5.45
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	3	$33.12
Equipment/Installation	964	Chemical, spot treatment, single stem application	Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included.	Hour	$55.87	8	$446.96
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Labor	231	General Labor	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	$26.15	1	$26.15
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	490 - Tree & Shrub Site Preparation
Scenario ID	10
Scenario Name	Manual, Hand Tools
Scenario Description	This practice typically involves grubbing all vegetation from the area of ground prior to the establishment of trees and/or shrubs. nt plantings, and/or to enhance wildlife habitat. Typically, an area 3 to 4 feet in diameter will be cleared of all vegetation using hand tools. This scenario applies to sites where: 1) A significant component of desirable vegetation exists; 2) Producers are employing organic methods, and/or; 3) Trees/shrubs will be planted at low densities. Typical sites include land such as fallow fields, pastures, rangelands, agricultural fields, or abandoned forests that are mostly grass or weed covered. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure.
Before Practice Situation	The site contains undesirable vegetation including herbaceous and woody plants. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs. Soils may be compacted as a result of recent timber harvesting activities or other land uses. If left untreated poor survival or reduced growth of trees/shrubs will occur and wildlife habitat conditions will not improve.
After Practice Situation	All undesirable vegetation has been grubbed out of a circular area with a diameter of 4 feet, leaving bare soil, at each planting spot. Tree seedlings and/or shrubs are planted at each spot. Adequate moisture, space and light is available allowing plants to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$1,519.20	$303.84
Mobilization	$136.46	$27.29
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,655.66	$331.13

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	16	$682.40
Labor	231	General Labor	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	$26.15	32	$836.80
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	490 - Tree & Shrub Site Preparation
Scenario ID	9
Scenario Name	Manual Cut, Heavy
Scenario Description	This practice involves the use of chainsaws or hand tools to remove above ground vegetation either by clearing or selective cutting in order to improve site conditions for establishing trees and/or shrubs (Heavy Rating per PIA Size-Density-Slope Matrix). Typical sites include abandoned fields, pastures, rangelands, agricultural fields or forestlands that have been harvested. This practice typically addresses the following resource concerns: soil quality degredation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition.
Before Practice Situation	Undesirable vegetation is present on the site including herbaceous plants and sparse woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs. Soils may be compacted as a result of harvesting heavy equipment activities or other land uses.
After Practice Situation	Undesirable vegetation has been removed using chainsaws or hand tools. Site conditions are favorable for successful establishment of trees and/or shrubs.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,031.36	$406.27
Labor	$9,578.40	$1,915.68
Mobilization	$564.50	$112.90
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$12,174.26	$2,434.85

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	144	$777.60
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	48	$1,253.76
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	48	$2,047.20
Labor	231	General Labor	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	$26.15	288	$7,531.20
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	6	$155.82
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	6	$253.56

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	490 - Tree & Shrub Site Preparation
Scenario ID	7
Scenario Name	Manual Cut, Light
Scenario Description	This practice involves the use of chainsaws or hand tools to remove above ground vegetation either by clearing or selective cutting in order to improve site conditions for establishing trees and/or shrubs (Light Rating per PIA Size-Density-Slope Matrix). Typical sites include abandoned fields, pastures, rangelands, agricultural fields or forestlands that have been harvested. This practice typically addresses the following resource concerns: soil quality degredation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition.
Before Practice Situation	Undesirable vegetation is present on the site including herbaceous plants and sparse woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs. Soils may be compacted as a result of harvesting heavy equipment activities or other land uses.
After Practice Situation	Undesirable vegetation has been removed using chainsaws or hand tools. Site conditions are favorable for successful establishment of trees and/or shrubs.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$338.56	$67.71
Labor	$1,596.40	$319.28
Mobilization	$223.35	$44.67
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,158.31	$431.66

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	24	$129.60
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	8	$208.96
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	8	$341.20
Labor	231	General Labor	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	$26.15	48	$1,255.20
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	490 - Tree & Shrub Site Preparation
Scenario ID	8
Scenario Name	Manual Cut, Medium
Scenario Description	This practice involves the use of chainsaws or hand tools to remove above ground vegetation either by clearing or selective cutting in order to improve site conditions for establishing trees and/or shrubs (Medium Rating per PIA Size-Density-Slope Matrix). Typical sites include abandoned fields, pastures, rangelands, agricultural fields or forestlands that have been harvested. This practice typically addresses the following resource concerns: soil quality degredation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition.
Before Practice Situation	Undesirable vegetation is present on the site including herbaceous plants and sparse woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs. Soils may be compacted as a result of harvesting heavy equipment activities or other land uses.
After Practice Situation	Undesirable vegetation has been removed using chainsaws or hand tools. Site conditions are favorable for successful establishment of trees and/or shrubs.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,015.68	$203.14
Labor	$4,789.20	$957.84
Mobilization	$359.81	$71.96
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,164.69	$1,232.94

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	72	$388.80
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	24	$626.88
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60
Labor	231	General Labor	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	$26.15	144	$3,765.60
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	490 - Tree & Shrub Site Preparation
Scenario ID	3
Scenario Name	Mechanical, Heavy
Scenario Description	This practice involves the use of heavy machinery to clear above ground vegetation and to also rip/cut/lift underground root systems in order to improve site conditions for establishing trees and/or shrubs (Heavy Rating per PIA Size-Density-Slope Matrix). Typical sites include tree and brush cover that is not appropriate to the site or is not providing the desired condition for the landowner, including abandoned fields, pastures, rangelands, agricultural fields or forestlands. This practice typically addresses the following resource concerns: soil quality degredation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition.
Before Practice Situation	Undesirable vegetation is present on the site including herbaceous plants and sparse woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs. Soils may be compacted as a result of harvesting heavy equipment activities or other land uses.
After Practice Situation	Undesirable vegetation has been removed using a dozer to knock down stand vegetation and heavy tillage equipment is used to breakup and lift root systems, breakup plow pans (<18" deep), thus enhancing the conditions for planting and survival of trees and/or shrubs. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,784.70	$556.94
Labor	$2,847.30	$569.46
Mobilization	$1,071.50	$214.30
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,703.50	$1,340.70

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow, Equipment and power unit costs. Labor is included.	Acre	$14.46	5	$72.30
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	40	$2,190.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	20	$522.40
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	40	$1,793.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50
Labor	231	General Labor	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	$26.15	24	$627.60
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	5	$222.05
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	5	$211.30

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	490 - Tree & Shrub Site Preparation
Scenario ID	1
Scenario Name	Mechanical, Light
Scenario Description	This practice involves the use of light/moderate machinery to clear above ground vegetation and to also rip/cut/lift underground root systems in order to improve site conditions for establishing trees and/or shrubs (Light Rating per PIA Size-Density-Slope Matrix). Mechanical - Light may also be used for scarifying sites to stimulate natural regeneration of Acacia koa in Hawaii. Typical sites include abandoned fields, pastures, rangelands, agricultural fields or forestlands that have been harvested. This practice typically addresses the following resource concerns: soil quality degredation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition.
Before Practice Situation	Undesirable vegetation is present on the site including herbaceous plants and sparse woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs. Soils may be compacted as a result of harvesting heavy equipment activities or other land uses.
After Practice Situation	Undesirable vegetation has been removed using a dozer to knock down stand vegetation and heavy tillage equipment is used to breakup and lift root systems, breakup plow pans (<18" deep), thus enhancing the conditions for planting and survival of trees and/or shrubs. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$776.52	$155.30
Labor	$742.80	$148.56
Mobilization	$759.55	$151.91
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,278.87	$455.77

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow, Equipment and power unit costs. Labor is included.	Acre	$14.46	5	$72.30
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	10	$547.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	6	$156.72
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	10	$448.30
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	2	$85.30
Labor	231	General Labor	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	$26.15	8	$209.20
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	2	$88.82
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	490 - Tree & Shrub Site Preparation
Scenario ID	2
Scenario Name	Mechanical, Medium
Scenario Description	This practice involves the use of heavy machinery to clear above ground vegetation and to also rip/cut/lift underground root systems in order to improve site conditions for establishing trees and/or shrubs (Medium Rating per PIA Size-Density-Slope Matrix). Typical sites include tree and brush cover that is not appropriate to the site or is not providing the desired condition for the landowner, including abandoned fields, pastures, rangelands, agricultural fields or forestlands. This practice typically addresses the following resource concerns: soil quality degredation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition.
Before Practice Situation	Undesirable vegetation is present on the site including herbaceous plants and sparse woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs. Soils may be compacted as a result of harvesting heavy equipment activities or other land uses.
After Practice Situation	Undesirable vegetation has been removed using a dozer to knock down stand vegetation and heavy tillage equipment is used to breakup and lift root systems, breakup plow pans (<18" deep), thus enhancing the conditions for planting and survival of trees and/or shrubs. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,480.74	$296.15
Labor	$1,570.90	$314.18
Mobilization	$872.19	$174.44
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,923.83	$784.77

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow, Equipment and power unit costs. Labor is included.	Acre	$14.46	5	$72.30
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	20	$1,095.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	20	$896.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Labor	231	General Labor	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	$26.15	16	$418.40
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	3	$133.23
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	512 - Forage and Biomass Planting
Scenario ID	2
Scenario Name	Grass/Legume Establishment, Manual Planting
Scenario Description	Sprigging or seeding by hand new grasses with sprigging/seeding application for the purpose of providing forage, increasing plant diversity, soil quality and fertility, and plant health. This practice may be utilized for organic or regular production. This scenario assumes sprigs/seed, equipment and labor for seed bed prep, tillage, sprigging/seeding ,and spreading.
Before Practice Situation	Poor or nonexistent stand of grass species. Resource concerns may include undesireable plant productivity and health, inadequate feed and forage for livestock, soil erosion and soil quality.
After Practice Situation	Suitable species are established to improve forage quality and quantity and reduce soil erosion on cropland ,hayland, pasture, and/or biomass production.
Scenario Feature Measure	Acres of Forgage and Biomass Planting
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$914.40	$182.88
Equipment/Installation	$728.16	$145.63
Labor	$2,559.90	$511.98
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$4,202.46	$840.49

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	10	$110.40
Materials	197	Oats (Avena sativa)	Small Grains, Cover Crops. Shipping not included.	Pound	$0.46	200	$92.00
Materials	1092	Bermuda Grass, Sprigs (Cynodon dactylon)	Introduced Perennial Grasses and shipping.	Bushel	$3.56	200	$712.00
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	$9.63	5	$48.15
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$14.46	10	$144.60
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.50	10	$65.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	8	$208.96
Equipment/Installation	957	Mechanical weed control, Vegetation termination	Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs.	Acre	$17.43	15	$261.45
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	3	$127.95
Labor	231	General Labor	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	$26.15	93	$2,431.95

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	512 - Forage and Biomass Planting
Scenario ID	1
Scenario Name	Grass/Legume Establishment, Mechanical Seeding
Scenario Description	Establish or reseed adapted perennial native grasses to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Used for either conventional or no-till seeding of native grasses for pasture, hayland, and wildlife openings. This practice may be utilized for organic or regular production. This scenario assumes seed, equipment and labor for seed bed prep, tillage, seeding ,and spreading.
Before Practice Situation	Poorly managed/degraded pasture land or cropland being converted to pasture and/or hay.
After Practice Situation	Suitable species are established to improve forage quality and quantity and reduce soil erosion on cropland ,hayland, pasture, and/or biomass production.
Scenario Feature Measure	Acres of Forgage and Biomass Planting
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,331.90	$266.38
Equipment/Installation	$518.50	$103.70
Labor	$127.95	$25.59
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,978.35	$395.67

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	10	$110.40
Materials	77	Eastern Gamagrass (Tripsacum dactyloides)	Native Grasses and shipping.	Pound	$17.45	70	$1,221.50
Equipment/Installation	1100	Cultipacking	Includes equipment, power unit and labor costs.	Acre	$7.67	5	$38.35
Equipment/Installation	959	Seeding Operation, Broadcast, Ground	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	$9.62	5	$48.10
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	$9.63	5	$48.15
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	$14.46	10	$144.60
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.50	10	$65.00
Equipment/Installation	957	Mechanical weed control, Vegetation termination	Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs.	Acre	$17.43	10	$174.30
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	3	$127.95

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	516 - Pipeline
Scenario ID	1
Scenario Name	PVC (Iron Pipe Size)
Scenario Description	Description: Below ground installation of PVC (Iron Pipe Size) pipeline. PVC (IPS) is manufactured in sizes (nominal diameter) from ½-inch to 36-inch; typical practice sizes range from 1-inch to 4-inch; and typical scenario size is 1½-inch. Construct 1,280 feet of 1½-inch, Schedule 40, PVC Pipeline with appurtenances, installed below ground with a minimum 1.5 feet of ground cover. The scenario unit is weight of pipe material in pounds. 1000 feet of 1½-inch, Schedule 40, PVC pipe weighs 0.501 lb/ft, or a total of 551 pounds. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and are included in the cost of pipe material (additional 10% of pipe material quantity). Revegetation is not included. Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use. Associated Practices: Critical Area Planting (342), Pumping Plant (533), Watering Facility (614), and Water Harvesting Catchment (636).
Before Practice Situation	Water supplies need to be conveyed through pipelines for use by livestock or wildlife.
After Practice Situation	Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.
Scenario Feature Measure	Weight of Pipe
Scenario Unit	Pound
Scenario Typical Size	501

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$903.64	$1.80
Equipment/Installation	$1,010.00	$2.02
Labor	$209.20	$0.42
Mobilization	$560.24	$1.12
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,683.08	$5.36

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1323	Pipe, PVC, dia. < 18", weight priced	Polyvinyl Chloride (PVC) pressure rated pipe priced by the weight of the pipe materials for pipes with diameters less than 18". Materials only.	Pound	$1.64	551	$903.64
Equipment/Installation	1096	Trenching, Pipeline Plowing	Includes equipment and labor for plowing small diameter lines in common earth (< 3")	Foot	$1.01	1000	$1,010.00
Labor	231	General Labor	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	$26.15	8	$209.20
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	516 - Pipeline
Scenario ID	2
Scenario Name	Surface HDPE (Iron Pipe Size & Tubing)
Scenario Description	Description: On-ground surface installation of HDPE (Iron Pipe Size & Tubing) pipeline. HDPE (IPS & Tubing) is manufactured in sizes (nominal diameter) from ½-inch to 24-inch; typical practice sizes range from 1-inch to 4-inch; and typical scenario size is 1½-inch. Construct 1000 feet of 1½-inch, Class 200 (SDR-9.0, PE4708), HDPE Pipeline with appurtenances, installed on the ground surface. Typical size range of pipe installed: 1-inch to 4-inch. The scenario unit is weight of pipe material in pounds. 1000 feet of 1½-inch, Class 200 (SDR-9.0, PE4708), HDPE pipe weighs 0.475 lb/ft, or a total of 246 pounds. Appurtenances include: couplings, fittings, anchors, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and are included in the cost of pipe material (additional 15% of pipe material quantity). Revegetation is not included. Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use. Associated Practices: Critical Area Planting (342), Pumping Plant (533), Watering Facility (614), and Water Harvesting Catchment (636).
Before Practice Situation	Water supplies need to be conveyed through pipelines for use by livestock or wildlife.
After Practice Situation	Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.
Scenario Feature Measure	Weight of Pipe
Scenario Unit	Pound
Scenario Typical Size	475

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,567.02	$3.30
Equipment/Installation	$22.34	$0.05
Labor	$156.90	$0.33
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,746.26	$3.68

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1379	Pipe, HDPE, smooth wall, weight priced	High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only.	Pound	$2.87	546	$1,567.02
Equipment/Installation	1383	Fuser for HDPE Pipe	Fusing machine for 1" to 12" diameter HDPE pipe joints	Hour	$22.34	1	$22.34
Labor	231	General Labor	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	$26.15	6	$156.90

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	516 - Pipeline
Scenario ID	3
Scenario Name	Surface Steel (Iron Pipe Size)
Scenario Description	Description: On-ground surface installation of Steel (Iron Pipe Size) pipeline. Steel (IPS) is manufactured in sizes (nominal diameter) from ½-inch to 36-inch; typical practice sizes range from 1-inch to 4-inch; and typical scenario size is 1½-inch. Construct one mile (5,280 feet) of 1½-inch, Schedule 40, Galvanized Steel Pipeline with appurtenances, installed on the ground surface. Typical size range of pipe installed: 1-inch to 4-inch. The scenario unit is weight of pipe material in pounds. 5,280 feet of 1½-inch, Schedule 40, Galvanized Steel Pipe weighs 2.718 lb/ft, or a total of 14,351 pounds. Appurtenances include: couplings, fittings, expansion joints, anchors, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and are included in the cost of pipe material (additional 15% of pipe material quantity). Revegetation is not included. Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use. Associated Practices: Critical Area Planting (342), Pumping Plant (533), Watering Facility (614), and Water Harvesting Catchment (636).
Before Practice Situation	Water supplies need to be conveyed through pipelines for use by livestock or wildlife.
After Practice Situation	Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.
Scenario Feature Measure	Weight of Pipe
Scenario Unit	Pound
Scenario Typical Size	14,351

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$32,017.76	$2.23
Equipment/Installation	$0.00	$0.00
Labor	$3,765.60	$0.26
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$35,783.36	$2.49

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1381	Pipe, steel, smooth wall, galvanized, weight priced	Steel manufactured into galvanized smooth wall pipe	Pound	$1.94	16504	$32,017.76
Labor	231	General Labor	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	$26.15	144	$3,765.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	521A - Pond Sealing or Lining, Flexible Membrane
Scenario ID	1
Scenario Name	Flexible Membrane
Scenario Description	Installation of a flexible geosynthetic membrane liner, uncovered, to reduce seepage from ponds or waste storage facility. Practice implementation includes a geotextile or soil cushion to protect the liner from subgrade damage. Associated practices include PS378 Pond, PS313 Waste Storage Facility.
Before Practice Situation	In-place soils at site exhibit seepage rates in excess of acceptable limits.
After Practice Situation	Water conservation and enviromental protection provided by limiting seepage losses from ponds or waste storage impoundments.
Scenario Feature Measure	Surface area of Liner Material (including anchorage)
Scenario Unit	Square Yard
Scenario Typical Size	2200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$14,256.00	$6.48
Equipment/Installation	$7,434.66	$3.38
Labor	$6,040.32	$2.75
Mobilization	$1,120.48	$0.51
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$28,851.46	$13.11

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1387	Synthetic Liner, 40 mil	Synthetic 40 mil HDPE, LLDPE, EPDM, etc membrane liner material. Materials only.	Square Yard	$6.48	2200	$14,256.00
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	$2.64	2200	$5,808.00
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	6	$270.18
Equipment/Installation	1618	Front End Loader, 130 HP	Wheeled front end loader with horsepower range of 110 to 140. Equipment and power unit costs. Labor not included.	Hour	$56.52	24	$1,356.48
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	72	$2,902.32
Labor	231	General Labor	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	$26.15	120	$3,138.00
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	528 - Prescribed Grazing
Scenario ID	1
Scenario Name	Range/Pasture, Standard
Scenario Description	Design and implementation of a grazing system that will enhance pasture condition and ecosystem function as well as optimize efficiency and economic return through monitoring (ex:photo points, stubble height after grazing, composition, production, etc) & record keeping.
Before Practice Situation	Current grazing system exhibits undesirable and inefficient use of forage plants and such use may have a negative impact on pasture condition, as well as soil and water resources. Stocking rates are likely higher than the current level of production and efficiency of use can support without management changes. There is currently no monitoring plan in place to evaluate change on the landscape.
After Practice Situation	Prescribed grazing system is designed to protect the health and vigor of the plant communities that are in place. Livestock are managed in a way that enhances pasture condition and function through proper rest and recovery periods, protection of sensitive areas, proper utilization, and efficient harvest of forage resources. Grazing system success will be evaluated through monitoring.
Scenario Feature Measure	
Scenario Unit	Acre
Scenario Typical Size	20

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$44.24	$2.21
Equipment/Installation	$0.00	$0.00
Labor	$1,481.76	$74.09
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$144.67	$7.23
Foregone Income	$0.00	$0.00
Total	$1,670.67	$83.53

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	967	Rangeland/grassland field monitoring kit	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes equipment costs only.	Each	$44.24	1	$44.24
Labor	231	General Labor	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	$26.15	32	$836.80
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	16	$644.96
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	50	$28.00
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	1
Scenario Name	Electric-Powered Pump ≤ 3 Hp
Scenario Description	A 1 Hp submersible electric-powered pump is installed in a well or structure, or a close-coupled 1 Hp electric-powered centrifugal pump is mounted on a platform. It is used for watering livestock as part of a prescribed grazing system; or for pressurizing a small irrigation system; or for transferring liquid waste in a waste transfer system. Resource Concerns: Livestock Production Limitation - Inadequate livestock water; Water Quality degradation - Excess nutrients in surface and ground waters; Insufficient water - Inefficient use of irrigation water. Associated Practices include: 374 - Farmstead Energy Improvement; 430 - Irrigation Pipeline; 441 - Irrigation System, Microirrigation; 449 - Irrigation Water Management; 516 - Livestock Pipeline; 313 - Waste Storage Facility; 634 - Waste Transfer; and 614 - Watering Facility.
Before Practice Situation	Livestock: The present gravity flow system is inadequate to provide the proper flow rate for a prescribed grazing system. Irrigation: Available water is at an insufficient pressure to allow for even distribution of water. Waste Transfer: Contaminated water needs to be moved to a containment facility.
After Practice Situation	Livestock: Water is transferred at a sufficient rate and pressure to meet the requirements of a prescribed grazing system. Irrigation: A properly designed pump is installed to improve irrigation efficiency and reduce energy usage. Waste Transfer: Liquid wastes that have been collected through a waste transfer system are now efficiently transferred to an appropriate treatment or storage facility.
Scenario Feature Measure	Pump Power Requirement
Scenario Unit	Horse Power
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$405.33	$405.33
Equipment/Installation	$147.11	$147.11
Labor	$412.80	$412.80
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$965.24	$965.24

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1010	Pump, < 5 HP - Pump and motor, variable cost portion	Variable cost portion of the Pump: < 5 HP - Pump and motor. This portion IS dependent on the total horsepower for the Pump: < 5 HP. The total cost of any Pump: < 5 HP will include this variable cost plus the fixed cost portion. The completed Pump: < 5 HP - Pump and motor will include the motor and controls. This cost will include material, labor and equipment.	Horsepower	$229.73	1	$229.73
Materials	1009	Pump, < 5 HP - Pump and motor, fixed cost portion	Fixed cost portion of the Pump: < 5 HP - Pump and motor. This portion is a base cost for all Pump: < 5 HP and is not dependant on horsepower. The total cost of any Pump: < 5 HP will include this fixed cost plus a variable cost portion. The completed Pump: < 5 HP - Pump and motor will include the motor and controls. This cost will include material, labor and equipment	Each	$175.60	1	$175.60
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	2	$52.24
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	0.25	$94.87
Labor	231	General Labor	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	$26.15	6	$156.90
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	2
Scenario Name	Electric-Powered Pump >3 to 10 HP
Scenario Description	This is a close-coupled 7.5 hp electric-powered centrifugal pump, mounted on a platform. It is for a large, high-pressure (200 psi) livestock pipeline, used for watering livestock as part of a prescribed grazing system; or for pressurizing a medium-sized (200 gpm and 40 psi) irrigation system; or a medium-sized (400 gpm and 20 psi) waste transfer system. Resource Concerns: Livestock Production Limitation - Inadequate livestock water; Water Quality degradation - Excess nutrients in surface and ground waters; Insufficient water - Inefficient use of irrigation water. Associated Practices include: 374 - Farmstead Energy Improvement; 430 - Irrigation Pipeline; 441 - Irrigation System, Microirrigation; 449 - Irrigation Water Management; 516 - Livestock Pipeline; 313 - Waste Storage Facility; 634 - Waste Transfer; and 614 - Watering Facility.
Before Practice Situation	Livestock: Current system consists of a series of medium pressure and inefficient pump stations to transport water to a distant and higher-elevation watering facility. Irrigation: An existing irrigation system employs an inefficient, improperly sized pump, that prevents efficient water application resulting in water loss and high energy use. Waste Transfer: Various types of semi-solid or liquid waste are uncollected causing surface and ground water issues. Due to topography, gravity transfer is not possible and a properly sized pump is needed to transfer waste as part of a waste transfer system.
After Practice Situation	Livestock: A single, efficient, high-pressure pumping plant is installed, eliminating intermediate pump stations, reducing energy use and enabling better system management. Irrigation: A properly designed and efficient pumping plant is installed, reducing energy use and improving irrigation efficiency. Waste Transfer: Collected wastes are now efficiently transferred to an appropriate treatment or storage facility.
Scenario Feature Measure	Pump Power Requirement
Scenario Unit	Horse Power
Scenario Typical Size	7.5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$3,038.28	$405.10
Equipment/Installation	$294.21	$39.23
Labor	$825.60	$110.08
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$4,158.09	$554.41

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1011	Pump, > 5 HP - Pump and motor, fixed cost portion	Fixed cost portion of the Pump: > 5 HP - Pump and motor, 2.5" through 10" discharge size, flows to 7000 gpm and heads to 325 ft. This portion is a base cost for all Pump: > 5 HP and is not dependant on horsepower. The total cost of any Pump: > 5 HP will include this fixed cost plus a variable cost portion. The completed Pump: > 5 HP - Pump and motor will include the motor and controls. This cost will include materials only.	Each	$2,247.40	1	$2,247.40
Materials	1012	Pump, > 5 HP - Pump and motor, variable cost portion	Variable cost portion of the Pump: > 5 HP - Pump and motor, 2.5" through 10" discharge size, flows to 7000 gpm and heads to 325 ft. This portion IS dependent on the total horsepower for the Pump: > 5 HP. The total cost of any Pump: > 5 HP will include this variable cost plus the fixed cost portion. The completed Pump: > 5 HP - Pump and motor will include the motor and controls. This cost will include materials only.	Horsepower	$105.45	7.5	$790.88
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	0.5	$189.73
Labor	231	General Labor	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	$26.15	12	$313.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	12	$511.80

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	3
Scenario Name	Internal Combustion-Powered Pump ≤ 7½ HP
Scenario Description	The typical scenario supports replacement of a pump in an existing irrigation system on cropland with a 5 HP pump. Size of pump is determined by required GPM and pressure derived from a design for specific irrigation system on cropland. Scenario could also be used for a 5 HP pump for silage leachate, barnyard runoff, and milk house waste (as part of a waste transfer system) at farm headquarters. The combination of higher solids content and volume require a larger horse power pump. This liquid manure pump is used to transfer semi-solid manure from a small reception pit located either below a barnyard or at the end of a free-stall barn or scrape alley. Resource Concerns: Livestock Production Limitation - Inadequate livestock water; Water Quality degradation - Excess nutrients in surface and ground waters; Insufficient water - Inefficient use of irrigation water. Associated Practices include: 374 - Farmstead Energy Improvement; 430 - Irrigation Pipeline; 441 - Irrigation System, Microirrigation; 442 - Irrigation System, Sprinkler; 449 - Irrigation Water Management; 516 - Livestock Pipeline; 313 - Waste Storage Facility; 634 - Waste Transfer; and 614 - Watering Facility.
Before Practice Situation	Irrigation: Either an existing irrigation system employs an inefficient, improperly-sized pump that leads to inefficient water delivery resulting in high energy costs, or Waste Transfer: various types of semi-solid or liquid waste at the headquarters is uncollected causing surface and ground water issues.
After Practice Situation	Irrigation Setting: For irrigation system, a properly designed pump is installed, reducing water and energy usage. Waste Transfer Setting: For semi-solid or liquid waste, wastes that have been collected through a waste transfer system are now efficiently transferred to appropriate treatment or storage facilities or crop application. Due to topography, gravity transfer is not possible and a properly sized pump is needed to transfer waste as part of a waste transfer system.
Scenario Feature Measure	Pump Power Requirement
Scenario Unit	Horse Power
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,025.00	$205.00
Equipment/Installation	$147.11	$29.42
Labor	$412.80	$82.56
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,584.91	$316.98

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1027	Pump, < 50 HP, Pump & ICE power unit	Materials, labor, controls: < 50 HP Pump & ICE power unit	Horsepower	$205.00	5	$1,025.00
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	0.25	$94.87
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	2	$52.24
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Labor	231	General Labor	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	$26.15	6	$156.90

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	7
Scenario Name	Livestock Nose Pump
Scenario Description	A Nose Pump is a diaphragm pump located in a pasture for the purpose of providing water to cattle. For a permanent installation, it is typical to also install Heavy Use Area Protection (561) (separate contract item) where the cattle congregate around the pump. It is powered and operated by cattle to transfer water from a stream to a drinking bowl. The objective is to provide water to the cattle outside of a live stream or other natural water source thereby eliminating a significant erosion situation and while also improving water quality. The cattle thus have access to drinking water without having to enter the stream. Generally one nose pump is adequate for 20 cattle. Resource Concerns: Insufficient stockwater; Inefficient energy use - Equipment and facilities. Associated Practices include: 374 - Farmstead Energy Improvement; 382 - Fence; 516 - Livestock Pipeline; 561 - Heavy Use Area Protection; and, 614 - Watering Facility.
Before Practice Situation	Livestock have open access to a live stream or other existing natural water supply. Water supply is contaminated due to animal activity and stream banks are eroded on a daily basis. Improper cattle distribution results in poor water quality, poor grazing distribution, over grazing, and soil erosion.
After Practice Situation	One nose pump is installed with all appurtenances anchored to concrete pad with 6"x6"x10 Gauge reinforcement wire (9 ft x 4 ft x 5 in) or other appropriate secure base to supply water to cattle for improved livestock herd management. Additional Heavy Use Area Protection (561) in the form of crushed rock and at least 5 feet wide, may be installed (separate contract item) surrounding the concrete pad. Improved: water quality, soil quality, grazing management, plant diversity, and animal health.
Scenario Feature Measure	Number of Pumps
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$392.62	$392.62
Equipment/Installation	$398.69	$398.69
Labor	$550.40	$550.40
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,341.71	$1,341.71

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1052	Nose Pump	Materials and delivery	Each	$392.62	1	$392.62
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	8	$208.96
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	0.5	$189.73
Labor	231	General Labor	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	$26.15	8	$209.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	8	$341.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	4
Scenario Name	Photovoltaic-Powered Pump
Scenario Description	The typical scenario assumes installation of a submersible solar-powered pump in a well or a live stream. The installation includes the pump, wiring, drop pipe, solar panels, mounts, inverter, and all appurtenances. Note: It is generally not advisable to use a storage battery for a number of reasons. A storage tank is generally the most efficient method to store energy. Grazing - Livestock exclusion from surface water will result in improved surface water quality and reduced erosion. Irrigation - energy consumption will be reduced and the increased pressure and flow rates will improve irrigation efficiency. Resource Concerns: Insufficient stockwater. Associated Practices include: 374 - Farmstead Energy Improvement; 382 - Fence; 430 - Irrigation Pipeline; 436 - Irrigation Reservoir; 516 - Livestock Pipeline; 561 - Heavy Use Area Protection; and, 614 - Watering Facility.
Before Practice Situation	Livestock: Inadequate supply or location of water for a prescribed grazing system. Eroded stream banks and degraded water quality due to livestock access to stream. Cattle are not well-distributed because of remote water location. Irrigation: Pressure and flow rate is insufficient for uniform irrigation.
After Practice Situation	The typical scenario assumes installation of a 4 each 230-watt photovoltaic (PV) panels, capable of operating a 1 Hp (1.00 Hp) solar-powered submersible pump in a well or other water source (Notes: 1) A PV panel is rated under standard and ideal conditions which will most likely not be replicated in the field; 2) 1 Hp is defined as 746 watts; 3) It is reasonable to expect a 1 Hp solar-powered submersible pump to deliver about 6 gpm and develop a pressure at the pump outlet of about 60 psi.). The installation includes the pump, wiring, pipeline in the well, solar panels, frame mounts, inverter, and all appurtenances. Water will be pumped to an existing storage tank at a higher elevation from which it will be used to pressurize the Livestock Pipeline (516) or Irrigation Pipeline (430). Grazing - Livestock exclusion from surface water will result in improved surface water quality and reduced erosion. Grazing has potential to be well distributed. Irrigation: Improved pressure and flow rate will improve irrigation efficiency.
Scenario Feature Measure	Pump Power Requirement
Scenario Unit	Horse Power
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$5,898.73	$5,898.73
Equipment/Installation	$199.35	$199.35
Labor	$1,100.80	$1,100.80
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$7,198.88	$7,198.88

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1135	Solar Panels, variable cost portion	Variable cost portion of the Solar Panels. This portion IS dependent on the total Kilowatt for the Solar Panels. The total cost of any Solar Panels will include this variable cost plus the fixed cost portion. The completed Solar Panels will include all materials (electrical, controllers, and service drop, etc). This cost will include material, labor and equipment.	Kilowatt	$3,337.70	1	$3,337.70
Materials	1031	Solar Panels, fixed cost portion	Fixed cost portion of the Solar Panels. This portion is a base cost for all Solar Panels and is not dependant on KiloWatt. The total cost of any Solar Panels will include this fixed cost plus a variable cost portion. The completed Solar Panels will include all materials (electrical, controllers, service drops and etc). This cost will include material, labor and equipment.	Each	$2,155.70	1.00	$2,155.70
Materials	1009	Pump, < 5 HP - Pump and motor, fixed cost portion	Fixed cost portion of the Pump: < 5 HP - Pump and motor. This portion is a base cost for all Pump: < 5 HP and is not dependant on horsepower. The total cost of any Pump: < 5 HP will include this fixed cost plus a variable cost portion. The completed Pump: < 5 HP - Pump and motor will include the motor and controls. This cost will include material, labor and equipment	Each	$175.60	1	$175.60
Materials	1010	Pump, < 5 HP - Pump and motor, variable cost portion	Variable cost portion of the Pump: < 5 HP - Pump and motor. This portion IS dependent on the total horsepower for the Pump: < 5 HP. The total cost of any Pump: < 5 HP will include this variable cost plus the fixed cost portion. The completed Pump: < 5 HP - Pump and motor will include the motor and controls. This cost will include material, labor and equipment.	Horsepower	$229.73	1	$229.73

Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	0.25	$94.87
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	16	$682.40
Labor	231	General Labor	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	$26.15	16	$418.40

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	6
Scenario Name	Water Ram Pump
Scenario Description	A water ram is used to transfer water from a live stream to a watering facility (614) or small irrigation reservoir (436) utilizing the energy of moving water to transfer a portion of that water to a higher elevation. It is anchored to a small concrete pad. Bypass water (which could easily be 90% of the water diverted from the stream) is returned to the stream or transferred in a pipe, to a lower elevation tank (614 or 436), without erosion or impairment to water quality. In the livestock scenario, the objective is to provide water to the cattle outside of a live stream or other natural water source thereby eliminating a significant erosion situation while also improving water quality. The cattle thus have access to drinking water without having to enter the stream. The water ram may need to be fenced for protection from curious bovines. While it is generally not considered practical for irrigation, in the irrigation scenario, water can be retrieved from a stream and stored in a small 436 to provide water for a very small (0.1 acre) irrigation system. Resource Concerns: Insufficient stockwater. Associated Practices: 374 - Farmstead Energy Improvement; 382 - Fence; 430 - Irrigation Pipeline; 436 - Irrigation Reservoir; 516 - Livestock Pipeline; 561 - Heavy Use Area Protection; and, 614 - Watering Facility.
Before Practice Situation	Water in a nearby stream is not available at the desired location, pressure and/or flow rate.
After Practice Situation	A 2" diameter inlet pipe is installed and connected to a water ram pump with all appurtenances and anchored to a concrete pad (9 ft x 4 ft x 5 in) or other appropriate secure base. Depending upon the application, either a 1-inch diameter Livestock Pipeline (516) or an Irrigation Pipeline (430) is installed from the water ram to a 5,000 gallon storage facility. Improved water quantity or quality, grazing management, plant diversity, animal health, and/or irrigation purposes as outlined in the appropriate NRCS irrigation system standard. A 2" water ram, with 10 gpm of inlet flow and 10 feet of drop, can supply about 1.0 gpm to a location about 50 feet higher than the water ram.
Scenario Feature Measure	Nominal Diameter of Inlet Pipe
Scenario Unit	Inch
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$515.00	$257.50
Equipment/Installation	$607.65	$303.83
Labor	$1,100.80	$550.40
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,223.45	$1,111.73

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1114	Pump, Ram	Materials only for 2" Ram Pump Kit	Each	$515.00	1	$515.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	16	$417.92
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	0.5	$189.73
Labor	231	General Labor	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	$26.15	16	$418.40
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	16	$682.40

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	5
Scenario Name	Windmill-Powered Pump
Scenario Description	A windmill is installed in order to supply a reliable water source for livestock and/or wildlife. The windmill includes the tower, concrete footings, wheel blade unit, sucker rod, down pipe, gear box, pump, plumbing, and well head protection concrete pad. The typical scenario will be a windmill system with a 10 ft diameter mill and 27-foot tower which is pumping from a 150-foot well. As a result of installing this windmill, resource concerns of inadequate stock water, plant establishment, growth, productivity, health, and vigor, and water quantity can be addressed. Resource Concerns: Insufficient stockwater.
Before Practice Situation	In a rangeland or pasture setting, a reliable source of water for livestock is not available, or the spacing between water sources is such that grazing distribution and plant health are adversely impacted.
After Practice Situation	A windmill, with a wheel ranging from 6' to 16' in diameter, will be installed over a well that is located to provide a reliable source of livestock water at the rate of at least 2 gpm, to facilitate proper grazing distribution and improved plant health. To increase reliability, water is pumped into a storage tank to provide a given number of days of supply. Installation includes the footings, wellhead protection concrete pad, tower, gear box, sail, sucker rod, down hole accessories, and a short outlet pipe to a storage tank.
Scenario Feature Measure	Diameter of Mill Wheel
Scenario Unit	Feet
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$6,159.20	$615.92
Equipment/Installation	$1,216.44	$121.64
Labor	$1,519.20	$151.92
Mobilization	$560.24	$56.02
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$9,455.08	$945.51

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1036	Windmill, 10', fan diameter	Includes materials costs for windmill head and 27' tower	Each	$6,159.20	1	$6,159.20
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Equipment/Installation	1893	Aerial lift, telescoping bucket	Aerial lift, bucket truck or cherry picker, typical 40' boom. Equipment only.	Hour	$44.13	8	$353.04
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	2	$758.92
Labor	231	General Labor	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	$26.15	32	$836.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	16	$682.40
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	548 - Grazing Land Mechanical Treatment
Scenario ID	1
Scenario Name	Mechanical Treatment
Scenario Description	On the contour, using mechanical equipment or combinations of equipment that modifies physical soil layer or plant conditions on rangeland or pastureland.
Before Practice Situation	Desired Ecological plant community is limited by a plant or soil layer that physically restricts change over a threshold.
After Practice Situation	Desired Ecological plant community has changed by overcoming the threshold or the seeded vegetaion establishes and sustains its function and ecological processes for the life of the practice and geomorphology of the site.
Scenario Feature Measure	area of treatment
Scenario Unit	Acre
Scenario Typical Size	25

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$8.00	$0.32
Equipment/Installation	$686.50	$27.46
Labor	$261.50	$10.46
Mobilization	$804.05	$32.16
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,760.05	$70.40

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1586	Wire flags	Small vinyl flags attached to wire stakes, typically, 36" in length, for marking tree rows	Each	$0.08	100	$8.00
Equipment/Installation	2024	Grazingland Renovation, Furrowing	Contour furrowing on existing grazingland including tillage implement, power unit and labor.	Acre	$27.46	25	$686.50
Labor	231	General Labor	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	$26.15	10	$261.50
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	1	$280.12
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	1	$523.93

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Range/Pasture Grazing
Practice Code/Name	550 - Range Planting
Scenario ID	1
Scenario Name	Native plants, Standard prep
Scenario Description	Establishment of a mixture of PREDOMINANTLY NATIVE adapted perennial species on a rangeland unit to improve forage condition, improve wildlife habitat and/or reduce erosion. Seed mix of Predominantly Native species is chosen based on range conditions and availability of seed. Planting by preparing a seedbed with a LIGHT TO MODERATE TILLAGE and seeding with a no-till drill, range drill, or broadcasting.
Before Practice Situation	Rangeland with existing stand of perennial or annual grasses OR monoculture OR no grasses present where natural reseeding or vegetation enhancement by grazing management alone is unlikely. Resource concerns may include: undesireable plant productivity and health, inadequate feed and forage for livestock, soil erosion and soil quality.
After Practice Situation	Establishment of PREDOMINANTLY NATIVE adapted perennial vegetation such as grasses, forbs, legumes, shrubs, and trees to improve forage quality and quantity and reduce soil erosion on rangeland, native or naturalized pasture, grazed forest or other suitable location.
Scenario Feature Measure	Acres of Range Planting
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$849.92	$84.99
Equipment/Installation	$385.50	$38.55
Labor	$784.50	$78.45
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$305.80	$30.58
Total	$2,325.72	$232.57

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	77	Eastern Gamagrass (Tripsacum dactyloides)	Native Grasses and shipping.	Pound	$17.45	20	$349.00
Materials	80	Prairie Dropseed (Sporobolus heterolepis)	Native Grasses and shipping.	Pound	$125.23	4	$500.92
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	$9.63	10	$96.30
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow, Equipment and power unit costs. Labor is included.	Acre	$14.46	20	$289.20
Labor	231	General Labor	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	$26.15	30	$784.50
Foregone Income	2079	FI, Grazing AUMs	Grazing is the Primary Land Use	AUM	$15.29	20	$305.80

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	557 - Row Arrangement
Scenario ID	1
Scenario Name	Establishing Row Direction, Grade, & Length
Scenario Description	Includes establishing crop rows in direction, grade and length by setting a baseline by ground survey, GPS, GIS, or other appropriate methods that will provide the planned results to provide drainage, erosion control. Used as part of drainage system, control runoff, reduces soil erosion. Crop rows on planned grades and lengths. Direction and length of rows will vary according to local situation. Planner will consider crop, exposure, aspect, flow of water, and use of additional practices. May be used on dryland areas to fully and effectively utilize rainfall. This scenario addresses the resource concern of Soil Erosion / irrigation induced soil erosion / sheet & rill.
Before Practice Situation	This practice applies to all crop land areas where there is a need for reducing soil erosion ,improving irrigation efficiency, improving drainage and improving production practices which improve energy efficiency and minimize the application of chemicals and nutrients overlapping (Parallel System) while improving the water quality to receiving water bodies. Row arrangement is applied as part of a surface drainage system for a field where the rows are planned to carry runoff to main or lateral drains; to facilitate optimum use of water in graded furrow irrigation systems; in dryland areas where it is necessary to control the grade of rows to more fully utilize available rainfall; on sloping land where control of the length, grade and direction of the rows can help reduce soil erosion, as a stand-alone practice or in conjunction with other conservation practices
After Practice Situation	Crop rows are established in direction, grade and length by setting a baseline by ground survey, GPS, GIS, or other appropriate methods that will provide the planned results. To remove irregularities on land surface with special equipment, that may require a needed change of length, direction, or slope of crop rows and slope, the field will need to be smoothed or leveled to correct irregularities and address drainage or Irrigation Issues, then other Conservation Practices should be used to address these concerns by using Land Smoothing (466), Precision Land Leveling (462), Irrigation Land Leveling (464), Other associated practices that maybe used are Grassed Waterway (412), Sediment Basin (350), Terrace (600), Filter Strip (393), Irrigation Water Management (449), Grade Stabilization (410), Conservation Cover (327), and Cover Crop (340)
Scenario Feature Measure	Area to Set Row Direction, Grade, & Length
Scenario Unit	Acre
Scenario Typical Size	3

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$40.31	$13.44
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$40.31	$13.44

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	1	$40.31

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	558 - Roof Runoff Structure
Scenario ID	1
Scenario Name	Roof Gutter with Downspouts
Scenario Description	A roof runoff structure, consisting of 50 ft of vinyl gutter, 2 each downspouts, and appropriate outlet facilities. Used to keep roof water runoff relatively clean and outlet to a storage facility or to the ground surface. Facilitates waste management and protects environment by minimizing clean water additions to waste systems and addresses water quality concerns. Associated practices include Watering Facility (614), Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Underground Outlet (620), Diversion (362), and any relevant irrigation practices.
Before Practice Situation	Applicable where: (1) a roof runoff management facility is included in an overall plan for an overall plan for a waste management system; (2) roof runoff needs to be diverted away from structures or contaminated areas; (3) there is a need to collect, control, and transport runoff from roofs to a storage tank or a stable outlet.
After Practice Situation	A gutter, downspouts, and outlet system servicing the portion of an existing building roof that would otherwise fall on the ground, drain into a waste management system, or create erosion. Roof line of 50 ft serviced with gutter, downspouts, and appurtances.
Scenario Feature Measure	Linear Length of Roof to be Guttered
Scenario Unit	Foot
Scenario Typical Size	50

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$228.20	$4.56
Equipment/Installation	$0.00	$0.00
Labor	$209.20	$4.18
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$437.40	$8.75

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1389	Gutter, Plastic, Small	"5"" PVC guttering emptying into a 4"" PVC Sch-40 pipe"	Foot	$3.30	50	$165.00
Materials	978	"Pipe, PVC, 4"", SCH 40"	"Materials: - 4"" - PVC - SCH 40 - ASTM D1785"	Foot	$3.16	20	$63.20
Labor	231	General Labor	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	$26.15	8	$209.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	560 - Access Road
Scenario ID	2
Scenario Name	Rehabilitation of existing gravel road
Scenario Description	Repair and rehabilitation of gravel road with min. 6 inch thick consolidated gravel surface on existing alignment in wet, steep sloped terrain. The extent of construction work over an existing alignment is assumed to average 20% of the work for a new installation. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, and all equipment, labor and all materials necessary to install the practice.
Before Practice Situation	An agricultural enterprise with an existing access road which is beyond its useful lifespan, can no longer be used as intended without rehabilitation. If left in its current condition , it will result in continued compaction, excessive sediment in surface water and emissions of fugitive dust. This scenario is applicable where the resource activity areas with an existing but unserviceable access road consist of relatively wet and swampy land with steep sloped terrain.
After Practice Situation	The entire road will be upgraded to meet conservation practice standard 560, Access Road.A properly installed access road will greatly reduce or eliminate compaction in land use areas where it is harmful, reduce emissions of fugitive dust and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport and improving drainage of irrigated lands. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). When seeding or revegetation is required, use Critical Area Planting (342). Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373).
Scenario Feature Measure	Length of Roadway
Scenario Unit	Linear Foot
Scenario Typical Size	300

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,682.46	$5.61
Equipment/Installation	$1,277.40	$4.26
Labor	$1,289.92	$4.30
Mobilization	$560.24	$1.87
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$4,810.02	$16.03

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	$21.57	78	$1,682.46
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	$4.13	20	$82.60
Equipment/Installation	48	Excavation, Common Earth, side cast, small equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	$2.24	20	$44.80
Equipment/Installation	47	Excavation, Rock, Ripping	Excavation, rock, mechanical ripping, includes equipment and labor	Cubic yard	$4.70	20	$94.00
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	$2.64	400	$1,056.00
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	32	$1,289.92
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	560 - Access Road
Scenario ID	1
Scenario Name	Rehabilitation of existing earth road, level terrain
Scenario Description	Repair and rehabilitation of compacted earth road in existing alignment in dry, level terrain. The extent of construction work over an existing alignment is assumed to average 20% of the work for a new installation. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, and all equipment, labor and incidental materials necessary to install the practice.
Before Practice Situation	An agricultural enterprise with an existing access road which is beyond its useful lifespan, can no longer be used as intended without rehabilitation. If left in its current condition , it will result in continued compaction, excessive sediment in surface water and emissions of fugitive dusts. This scenario is applicable where the resource activity areas with an existing but dilapidated access road consist of relatively dry and level terrain lands.
After Practice Situation	The damaged portions of the road will be repaired to a full 14 feet width at the top, mostly in embankment less than 3 feet in height, (average 2 ft), typical side slopes 2:1. A properly repaired access road will greatly reduce or eliminate compaction in land use areas where it is harmful, reduce emissions of fugitive dust and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport and improving drainage of irrigated lands. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). When seeding or revegetation is required, use Critical Area Planting (342). Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373).
Scenario Feature Measure	Length of Roadway
Scenario Unit	Linear Foot
Scenario Typical Size	300

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$600.80	$2.00
Labor	$120.93	$0.40
Mobilization	$560.24	$1.87
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,281.97	$4.27

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	$3.38	80	$270.40
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	$4.13	80	$330.40
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	3	$120.93
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	561 - Heavy Use Area Protection
Scenario ID	1
Scenario Name	Reinforced Concrete with gravel foundation
Scenario Description	The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with reinforced concrete on a sand or gravel foundation to provide a stable, non-eroding surface. Installation includes all materials, equipment, and labor to install this practice, The stabilized area will address the resource concerns soil erosion and water quality degradation.
Before Practice Situation	This practice applies to agricultural, urban, recreational and other frequently and/or intensively used areas requiring treatment to address soil erosion and water quality degradation.
After Practice Situation	The stabilized area is surfaced with approximately 200 square feet of approximately 8 cubic yards of reinforced concrete with welded wire mesh and 8 cubic yards of gravel foundation material for surfacing areas around facilities that are frequently and intensively used by people, animals or vehicles and will address soil erosion and water quality degradation. All needed roads must use Access Road (560). Any needed treatment of stream crossings must use Stream Crossing (578). Any needed vegetation of disturbed areas must use Critical Area Planting (342). Provisions to collect, store, utilize, and or treat contaminated runoff must use Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).
Scenario Feature Measure	Area
Scenario Unit	Square Foot
Scenario Typical Size	200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$72.10	$0.36
Equipment/Installation	$951.56	$4.76
Labor	$0.00	$0.00
Mobilization	$560.24	$2.80
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,583.90	$7.92

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	45	Aggregate, Sand, Graded, Washed	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic yard	$28.84	2.5	$72.10
Equipment/Installation	48	Excavation, Common Earth, side cast, small equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	$2.24	1.3	$2.91
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	2.5	$948.65
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	561 - Heavy Use Area Protection
Scenario ID	2
Scenario Name	Rock/Gravel on Geotextile
Scenario Description	The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with rock and or gravel on a geotextile fabric foundation to provide a stable, non-eroding surface. Installation includes all materials, equipment, and labor to install this practice, The stabilized area will address the resource concerns of soil erosion and water quality degradation.
Before Practice Situation	This practice applies to agricultural, urban, recreational and other frequently and/or intensively used areas requiring treatment to address soil erosion and water quality degradation.
After Practice Situation	The stabilized area is surfaced with approximately 200 square feet of rock and or gravel on approximately 22 square yards of geotextile fabric foundation material for surfacing areas around facilities that are frequently and intensively used by people, animals or vehicles and will address soil erosion and water quality degradation. All needed roads must use Access Road (560). Any needed treatment of stream crossings must use Stream Crossing (578). Any needed vegetation of disturbed areas must use Critical Area Planting (342). Provisions to collect, store, utilize, and or treat contaminated runoff must use Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).
Scenario Feature Measure	Area of Rock and or Gravel
Scenario Unit	Square Foot
Scenario Typical Size	200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$74.93	$0.37
Equipment/Installation	$112.17	$0.56
Labor	$0.00	$0.00
Mobilization	$560.24	$2.80
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$747.34	$3.74

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	2.5	$74.93
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	$2.64	22	$58.08
Equipment/Installation	48	Excavation, Common Earth, side cast, small equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	$2.24	1.3	$2.91
Equipment/Installation	1392	Roller, static, smooth, self propelled	Self propelled smooth drum static roller compactor, typically 1.5 ton with 34" roller. Equipment cost only. Does not include labor.	Hour	$25.59	2	$51.18
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	575 - Animal Trail or Walkway
Scenario ID	1
Scenario Name	Construct Trail or Walkway Base
Scenario Description	Layout and construct a lane or travel way to facilitate animal movement, to provide or improve access to forage, water, working/handling facilities, and/or shelter, Improve grazing efficiency and distribution, and/or protect ecologically sensitive, erosive and/or potentially erosive sites and address soil erosion and water quality resource concerns. Costs include excavation, shaping, grading, and all equipment, labor and incidental materials necessary to install the practices.
Before Practice Situation	On farmstead area and pastureland and rangeland areas where control of animal movement is needed and needing to address soil erosion and water quality resource concerns.
After Practice Situation	The typical trail or walkway will be a 12 foot wide 300 foot long, 3600 square foot lane. All excavation, grading and shaping necessary to provide a smooth permanent travel surface for livestock. No surface materials are included with this practice..Consider the adequacy of natural surfacing. If the lane is vegetated and requires planting, the vegetation shall be planted according to Critical Area Planting, Code 342. Where vegetation is not practical, Heavy Use Area Protection, Code 561,shall be used to provide adequate surface protection. Stream Crossing, Code 578, will be used when the trail or lane crosses streams or shallow water areas. Consider the use of water bars or culverts to control and direct water flow, use Access Road, Code 560. Diversion, Code 362, may also be beneficial. Fencing, Code 382, will be used when needed to control animal movement.
Scenario Feature Measure	Area of lane or trail
Scenario Unit	Square Foot
Scenario Typical Size	3600

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$164.25	$0.05
Labor	$174.80	$0.05
Mobilization	$560.24	$0.16
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$899.29	$0.25

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	3	$164.25
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	3	$134.49
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	1	$40.31
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	3
Scenario Name	Low Water Crossing, Concrete
Scenario Description	Stabilize the bottom and slope of a stream channel using cast in place concrete. This scenario includes site preparation, dewatering, acquiring and installing gravel or geotextile with cast in place concrete on channel bottom and approaches. Final travel surface shall be the concrete. If a different travel surface is needed, refer to another appropriate standard for the surfacing. Typical stream has 70 foot bottom width and approaches. Width is 14 feet for a total area as 980sf. Use (396) Aquatic Organism Passage instead, when the primary intent is biological concerns, not hydrologic.
Before Practice Situation	Water flow could not cross access road or trail without erosion; or access road or trail could not cross channel.
After Practice Situation	Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross. Associated practices could be (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization.
Scenario Feature Measure	Crossing dimensions
Scenario Unit	Square Foot
Scenario Typical Size	980

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$359.64	$0.37
Equipment/Installation	$5,351.76	$5.46
Labor	$1,422.16	$1.45
Mobilization	$1,120.48	$1.14
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,254.04	$8.42

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	12	$359.64
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	8	$438.00
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	8	$360.24
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	12	$4,553.52
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	16	$398.56
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	1
Scenario Name	Culvert
Scenario Description	Install a new culvert. Work includes dewatering, site preparation and removing any old crossing, acquiring and installing culvert pipe with gravel bedding and fill (compacted), and building headwalls. If a different travel surface is needed, refer to another appropriate standard for the surfacing. 24 inch Culvert installation with <75 cy of fill needed and < 2 yds rock riprap for headwalls. Pipe is 30 feet long.Use (396) Aquatic Organism Passage instead, when the primary intent is biological concerns, not hydrologic. Use (587) Structure for Water Control instead, for ditch cross culverts and other intermittent flows.
Before Practice Situation	Water flow could not cross access road or trail without erosion; or access road or trail could not cross channel.
After Practice Situation	Access road and waterflow are able to cross each other in a stable manner.Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross. Associated practices could be (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization.
Scenario Feature Measure	Culvert
Scenario Unit	Inch-Foot
Scenario Typical Size	720

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$2,294.74	$3.19
Equipment/Installation	$942.96	$1.31
Labor	$657.50	$0.91
Mobilization	$942.60	$1.31
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$4,837.80	$6.72

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	50	$1,498.50
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	$71.12	2	$142.24
Materials	1246	Pipe, HDPE, 24", CPT, Double Wall	Pipe, Corrugated HDPE Double Wall, 24" diameter with soil tight joints - AASHTO M294. Material cost only.	Foot	$21.80	30	$654.00
Equipment/Installation	931	Hydraulic Excavator, 1 CY	Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included.	Hour	$92.64	10	$926.40
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	$5.52	3	$16.56
Labor	231	General Labor	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	$26.15	8	$209.20
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	10	$448.30
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	2
Scenario Name	Low Water Crossing, Rock Riprap
Scenario Description	Stabilize the bottom and slope of a stream channel using rock riprap. This scenario includes site preparation, dewatering, acquiring and installing gravel or geotextile with rock riprap on channel bottom and approaches. Final travel surface shall be the rocks. If a different travel surface is needed, refer to another appropriate standard for the surfacing. Typical stream has 70 foot bottom width and approaches. Width is 14 feet for a total area as 980sf. Use (396) Aquatic Organism Passage instead, when the primary intent is biological concerns, not hydrologic.
Before Practice Situation	Water flow could not cross access road or trail without erosion; or access road or trail could not cross channel.
After Practice Situation	Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross. Associated practices could be (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization.
Scenario Feature Measure	Crossing dimensions
Scenario Unit	Square Foot
Scenario Typical Size	980

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$2,560.32	$2.61
Equipment/Installation	$1,338.60	$1.37
Labor	$1,891.68	$1.93
Mobilization	$1,120.48	$1.14
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,911.08	$7.05

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	$71.12	36	$2,560.32
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	8	$438.00
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	20	$900.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	28	$1,194.20
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	28	$697.48
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	585 - Stripcropping
Scenario ID	1
Scenario Name	Stripcropping
Scenario Description	This scenario describes the implementation of a stripcropping system that is designed specifically for the control of water/wind erosion or minimizing the transport of sediments. The planned stripcropping system will meet the current 585 standard. Implementation will result in alternating strips of erosion susceptible crops with erosion resistant crops that are oriented as close to perpendicular to water flows or wind direction as possible. The designed system will reduce erosion/sediment/contaminants to desired objectives. Payment for implementation is to defray the costs of designing the system, installing the strips on the landscape appropriately, and integrating a crop rotation that includes water/wind erosion resistant species.
Before Practice Situation	In the Pacific Islands area, excessive water/wind erosion is caused by either raising crops in a manner that allows water flows to travel unimpeded down the slope or in a manner that allows wind velocities to travel unimpeded down the length of a field due to lack of growing green vegetation due to lack of residue or other conservation measures causing erosion. There is also degradation of soil health through loss of topsoil and organic matter, along with offsite negative impacts to water quality and aquatic wildlife habitat.
After Practice Situation	A stripcropping system that includes at least two or more strips within the planning slope will be designed to include parallel strips of approximately equal widths of water/wind erosion resistant crop species with non-water/wind erosion resistant crop species. Widths will be determined using current erosion prediction technology to meet objectives. The design and implementation of a stripcropping system will minimize erosion, protect soil quality, reduce offsite sedimentation, and benefit offsite aquatic wildlife habitat. Erosion prediction before and after practice application will be recorded showing the design and benefits of the practice. Erosion - resistant strips in rotation must be managed to maintain the planned vegetative cover and surface roughness.
Scenario Feature Measure	area of strips
Scenario Unit	Acre
Scenario Typical Size	3

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$26.12	$8.71
Labor	$110.27	$36.76
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$136.39	$45.46

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	1	$84.12
Labor	231	General Labor	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	$26.15	1	$26.15

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	587 - Structure for Water Control
Scenario ID	2
Scenario Name	Culvert <30 inches CMP
Scenario Description	Install a new Corrugated Metal Pipe (CMP) culvert under 30 inches in diameter to convey water under roads or other barriers. A typical scenario would be an 24 inch diameter pipe, 40 feet in length. Work includes site preparation, acquiring and installing culvert pipe with gravel bedding and fill (compacted), and riprap protection of side slopes. Use (396) Aquatic Organism Passage when the primary intent is biological concerns, not hydrologic. Use (578) Stream Crossing instead for culverts ≥ 30 inches or perennial flow.
Before Practice Situation	Water flow needs to be conveyed under an access road, ditch or other barrier. Water must be conveyed in a controlled fashion.
After Practice Situation	Water is conveyed in a controlled manner. Associated practices could be Access Road (560), Animal Trails and Walkways (575), Critical Area Planting (342), Drainage Water Management (554), Irrigation Canal or Lateral (320), Irrigation Pipeline (430), Irrigation Reservoir (436), Irrigation System, Surface and Subsurface (443), Irrigation System, Tailwater Recovery (447), Irrigation Water Management (449), Lined Waterway or Outlet (468), Obstruction Removal (500), Pond (378), Stormwater Runoff Control (570), Surface Drain, Field Ditch (607), Surface Drain, Main or Lateral (608), and Trails and Walkways (568).
Scenario Feature Measure	Pipe Diameter (In) x Pipe Length (Ft)
Scenario Unit	Inch-Foot
Scenario Typical Size	960

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,550.89	$1.62
Equipment/Installation	$270.18	$0.28
Labor	$410.96	$0.43
Mobilization	$560.24	$0.58
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,792.27	$2.91

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1417	Pipe, CMP, 24", 12 Gauge	24" Corrugated Metal Pipe, Galvanized, Uncoated, 12 gage. Material cost only.	Foot	$31.47	40	$1,258.80
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	5	$149.85
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	$71.12	2	$142.24
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	6	$270.18
Labor	231	General Labor	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	$26.15	10	$261.50
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	6	$149.46
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Engineering General
Practice Code/Name	587 - Structure for Water Control
Scenario ID	1
Scenario Name	Culvert <30 inches HDPE
Scenario Description	Install a new HDPE culvert under 30 inches in diameter to convey water under roads or other barriers. A typical scenario would be an 24 inch diameter pipe, 40 feet in length. Work includes site preparation, acquiring and installing culvert pipe with gravel bedding and fill (compacted), and riprap protection of side slopes. Use (396) Aquatic Organism Passage when the primary intent is biological concerns, not hydrologic. Use (578) Stream Crossing for culverts ≥ 30 inches or perennial flow.
Before Practice Situation	Water flow needs to be conveyed under an access road, ditch or other barrier. Water must be conveyed in a controlled fashion.
After Practice Situation	Water is conveyed in a controlled manner. Associated practices could be Access Road (560), Animal Trails and Walkways (575), Critical Area Planting (342), Drainage Water Management (554), Irrigation Canal or Lateral (320), Irrigation Pipeline (430), Irrigation Reservoir (436), Irrigation System, Surface and Subsurface (443), Irrigation System, Tailwater Recovery (447), Irrigation Water Management (449), Lined Waterway or Outlet (468), Obstruction Removal (500), Pond (378), Stormwater Runoff Control (570), Surface Drain, Field Ditch (607), Surface Drain, Main or Lateral (608), and Trails and Walkways (568).
Scenario Feature Measure	Pipe Diameter (In) x Pipe Length (Ft)
Scenario Unit	Inch-Foot
Scenario Typical Size	960

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,164.09	$1.21
Equipment/Installation	$270.18	$0.28
Labor	$410.96	$0.43
Mobilization	$560.24	$0.58
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,405.47	$2.51

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	5	$149.85
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	$71.12	2	$142.24
Materials	1246	Pipe, HDPE, 24", CPT, Double Wall	Pipe, Corrugated HDPE Double Wall, 24" diameter with soil tight joints - AASHTO M294. Material cost only.	Foot	$21.80	40	$872.00
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	6	$270.18
Labor	231	General Labor	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	$26.15	10	$261.50
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	6	$149.46
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	590 - Nutrient Management
Scenario ID	1
Scenario Name	Basic NM System, 1 or 2 Crops in Annual Rotation
Scenario Description	This scenario describes the implementation of a basic nutrient management system on > = 2 acres of cropland where there is no manure application. This scenario attempts to capture the higher cost/acre of nutrient management planning and implementation on smaller production areas (usually between .25-10 acres) with only 1 or 2 crops, often times with multiple harvests per year, that require intense and diversified nutrient management. The planned NM system for this organic or conventional production system will meet current 590 Nutrient Management criteria. Implementation will result in the proper rate, source, method of placement, and timing of nutrients. Payment for implementation is to defray the costs of soil testing, analysis, consultant services that provide nutrient recommendations based on LGU recommendations or crop removal rates and an associated nutrient budget, and recordkeeping. Records demonstrating implementation of the 4 R's of the NM criteria will be required.
Before Practice Situation	In this geographic area, a fertility program is either non existent or does not meet the 590 nutrient management standard. Soil testing is not completed on a regular basis and applications of fertilizers are not based on land grant university recommendations or a nutrient budget. An environmental evaluation or risk assessment is not completed. Nutrients are transported to surface waters through runoff or soil erosion or to ground water from leaching in quantities that degrade water quality and limit use of intended purposes. Soil quality may be degraded by excess or inadequate nutrients.
After Practice Situation	A nutrient management system will be developed to meet the NRCS 590 standard. The development and implementation of a nutrient management plan (NMP) will benefit plant productivity and reduce off-site degradation. A nutrient management budget will be developed for each field(s) based on soil test analysis and land grant university recommendations or crop removal rates. On planning units typically ~2 acres or larger, soil testing is completed according to LGU recommendations. The use of pre-plant soil tests will assist with the proper development of the annual nutrient budget. The use post-harvest of soil and/or tissue tests (results interpreted by crop consultant) will help establish the adequacy of the plan in meeting crop needs while minimizing P application rate and residual N, thus reducing the potential for off-site impacts. Records will be provided annually of the current soil test, analysis, amount of application, forms and rates of nutrients for each field, including post harvest analysis. Applications will be completed in a manner that minimizes nutrient runoff and leaching or build up of excess nutrient concentrations.
Scenario Feature Measure	Acre
Scenario Unit	Acre
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$9.53	$4.77
Equipment/Installation	$26.12	$13.06
Labor	$144.91	$72.46
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$180.56	$90.28

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	299	Test, Soil Test, Standard	Includes materials, labor, and equipment costs.	Each	$9.53	1	$9.53
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	231	General Labor	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	$26.15	4	$104.60
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	1	$40.31

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	590 - Nutrient Management
Scenario ID	3
Scenario Name	Basic NM system with Manure or Compost
Scenario Description	This scenario describes the implementation of a basic nutrient management system on planning units 2 ac or larger of cropland where there is manure or compost application in addition to commercial fertilizer applications. The planned NM system will meet the current 590 standard. Implementation will result in the proper rate, source, method of placement, and timing of nutrients while minimizing off-site degradation or the excessive built up of N and P. Payment for implementation is to defray the costs of soil testing, manure testing, analysis, proper implementation, consultant services that provide nutrient recommendations based on LGU recommendations or crop removal rates and an associated nutrient budget, and recordkeeping. Risk assessments including PI (phosphorus index) and NI (nitrogen index) will be completed with applications of manure completed based on risk results. Records demonstrating implementation of the 4 R's of the NM plan will be required along with copies of risk assessments.
Before Practice Situation	In this geographic area, a fertility program is either non existent or does not meet the 590 nutrient management standard. Soil testing and manure testing is not completed on a regular basis and applications of nutrients are not based on land grant university recommendations or a nutrient budget. Nutrients and manure solids are transported to surface waters through runoff or erosion or to groundwater through leaching in quantities that degrade water quality and limit use of intended purposes. Soil quality may be degraded by excess or inadequate nutrients. Fields have little or no erosion protection often times resulting in wind, sheet, rill, and ephemeral erosion.
After Practice Situation	A nutrient management system that includes manure as a source will be developed to meet the NRCS 590 standard. The development and implementation of a nutrient management plan (NMP) will benefit plant productivity and reduce off-site degradation. A nutrient management budget will be developed for each field(s) based on soil tests and manure test analysis along with land grant university recommendations or crop removal rates. On a planning unit soil testing is completed according to LGU recommendations. The use of pre-plant soil tests will assist with the proper development of the annual nutrient budget. Applications of manure are based on risk assessments (PI - phosphorus index). The use of post-harvest soil and/or tissue tests (results interpreted by crop consultant) will help establish the adequacy of the plan in meeting crop needs while minimizing P application rate and residual N, The use of Pre side-dress soil nitrogen test (PSNT) or a Pre Top Dress Tissue test (PTDTT) prior to the rapid biomass growth of the plant will assist the producer in evaluating the mineralization of Nitrogen from manures / cover crops in providing adequate nitrogen to meet the crop requirements, thus reducing the potential for off-site impacts. Records will be provided annually documenting current
Scenario Feature Measure	Acre
Scenario Unit	Acre
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$52.59	$26.30
Equipment/Installation	$26.12	$13.06
Labor	$634.11	$317.06
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$712.82	$356.41

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	306	Test, Manure Analysis	Moisture, Total N, P, K	Each	$43.06	1	$43.06
Materials	299	Test, Soil Test, Standard	Includes materials, labor, and equipment costs.	Each	$9.53	1	$9.53
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	231	General Labor	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	$26.15	15	$392.25
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	6	$241.86

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	590 - Nutrient Management
Scenario ID	2
Scenario Name	Diversified, 3 or More Crops in Annual Rotation
Scenario Description	Small farm/diversified systems include CSA's (community supported agriculture), truck farms, market gardens, etc., where numerous variable crops are grown on small acreages. This scenario attempts to capture the higher cost/acre of nutrient management planning and implementation on smaller production areas (usually between .25-10 acres) with a large number of crops, often times with multiple harvests per year, that require intense and diversified nutrient management. The planned NM system for this organic or conventional production system will meet current 590 Nutrient Management criteria. Payment for implementation of this scenario is to defray the costs of soil testing, associated nutrient budgets, and recordkeeping. Records demonstrating implementation of the 4 R's of NM will be required.
Before Practice Situation	In this geographic area, a fertility program does not meet the 590 nutrient management standard. Soil testing is not completed on a regular basis and applications of fertilizers, amendments, manure, and/or compost are not based on land grant university recommendations or a nutrient budget. Nutrients are transported to surface waters through runoff or erosion or to groundwater by leaching in quantities that degrade water quality and limit use of intended purposes. Soil quality may be degraded by excess or inadequate nutrients. Fields have little or no erosion protection during critical periods.
After Practice Situation	A nutrient management system will be developed to meet the 590 nutrient management standard and NOP regulations where applicable. A nutrient management budget will be developed annually for each "crop block" or each crop rotation pertaining to a block of ground based on soil test analysis and land grant university recommendations or crop removal rates. Application of nutrients will be completed at the proper rate, timing, and methods, and sources. Applications will be completed in a manner that minimizes nutrient runoff and leaching or build up of excess nutrient concentrations. Application rates of all nutrients are based upon soil test analyses either LGU recommendations, crop removal rates, or industry standard. Specialized training is required by attending annual workshops and/or conferences. Records will be provided annually of the current soil test, analyses, amount of application, forms and rates of nutrients for each crop block.
Scenario Feature Measure	Acre
Scenario Unit	Acre
Scenario Typical Size	2 Typical size ranges from .25 to 10 acres

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$9.53	$4.77
Equipment/Installation	$26.12	$13.06
Labor	$477.21	$238.61
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$512.86	$256.43

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	299	Test, Soil Test, Standard	Includes materials, labor, and equipment costs.	Each	$9.53	1	$9.53
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	231	General Labor	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	$26.15	9	$235.35
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	6	$241.86

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	3
Scenario Name	Advanced IPM Orchard All RCs
Scenario Description	A comprehensive IPM plan with LGU-approved pest prevention, avoidance and monitoring techniques and pest thresholds (where available) is applied in Large Scale Orchard/Specialty Crops to address all identified resource concerns with either risk prevention (e.g. planned pesticides have no risk to identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for “Intermediate”, “High” or “Extra High” WIN-PST Final Hazard Ratings).
Before Practice Situation	Before practice conditions vary widely. Conditions range from the client is not using many pest suppression techniques (pesticides, tillage for weed control, burning, etc.) to the client is using many different pest suppression techniques for many different pests, but in all cases at least one planned pest suppression technique has risk to an identified resource concern (e.g. Water Quality – Impacts to Human Drinking Water).
After Practice Situation	After implementing the 595 practice, a comprehensive IPM plan with Land Grant University approved pest prevention, avoidance and monitoring techniques and pest thresholds (where available) is applied to help meet the minimum criteria for all identified resource concerns with either risk prevention (e.g. planned pesticides have no risk to the identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for “Intermediate”, “High” or “Extra High” WIN-PST Final Hazard Ratings).
Scenario Feature Measure	Acres of management applied
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$2,690.15	$538.03
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,690.15	$538.03

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	25	$1,007.75
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	20	$1,682.40

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	6
Scenario Name	Advanced IPM S-Farm All RCs
Scenario Description	A comprehensive IPM plan with LGU-approved pest prevention, avoidance and monitoring techniques and pest thresholds (where available) is applied in Small Farm/Diversified Systems (e.g. CSA, Organic, etc.) to address all identified resource concerns with either risk prevention (e.g. planned pesticides have no risk to the identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings. This scenario attempts to capture the higher cost/acre of planning and implementing IPM techniques on smaller acreages with very diverse cropping systems.
Before Practice Situation	Before practice conditions vary widely. Conditions range from the client is not using many pest suppression techniques (pesticides, tillage for weed control, burning, etc.) to the client is using many different pest suppression techniques for many different pests, but in all cases at least one planned pest suppression technique has risk to an identified resource concern (e.g. Water Quality – Impacts to Human Drinking Water).
After Practice Situation	After implementing the 595 practice, a comprehensive IPM plan with Land Grant University approved pest prevention, avoidance and monitoring techniques and pest thresholds (where available) is applied to help meet the minimum criteria for all identified resource concerns with either risk prevention (e.g. planned pesticides have no risk to the identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).
Scenario Feature Measure	Acres of management applied
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$998.94	$998.94
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$998.94	$998.94

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	6	$241.86
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	9	$757.08

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	2
Scenario Name	Basic IPM Orchard >1RC
Scenario Description	A basic IPM plan with LGU-approved pest monitoring techniques and pest thresholds (where available) is applied in Large Scale Orchard/Specialty Crops to address multiple identified resource concerns (e.g. Water Quality - Impacts to Human Drinking Water and Pollinator Impacts) with either risk prevention (e.g. planned pesticides have no risks to identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for “Intermediate”, “High” or “Extra High” WIN-PST Final Hazard Ratings).
Before Practice Situation	Before practice conditions vary widely. Conditions range from the client is not using many pest suppression techniques (pesticides, tillage for weed control, burning, etc.) to the client is using many different pest suppression techniques for many different pests, but in all cases at least one planned pest suppression technique has risk to two or more identified resource concerns (e.g. Water Quality – Impacts to Human Drinking Water and Impacts on Pollinators).
After Practice Situation	After implementing the 595 practice, a basic IPM system has been implemented with Land Grant University approved pest monitoring techniques and pest thresholds (where available) to help meet the minimum criteria for two or more identified resource concerns (e.g. Water Quality - Impacts to Human Drinking Water and Impacts on Pollinators) with either risk prevention (e.g. planned pesticides have no risk to the identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for “Intermediate”, “High” or “Extra High” WIN-PST Final Hazard Ratings).
Scenario Feature Measure	Acres of management applied
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$1,664.90	$332.98
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,664.90	$332.98

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	10	$403.10
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	15	$1,261.80

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	1
Scenario Name	Basic IPM Orchard 1RC
Scenario Description	A basic IPM plan with LGU-approved pest monitoring techniques and pest thresholds (where available) is applied in Large Scale Orchard/Specialty Crops to address one identified resource concern (e.g. Water Quality - Impacts to Human Drinking Water) with either risk prevention (e.g. planned pesticides have no risk to the identified resource concern) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for “Intermediate”, “High” or “Extra High” WIN-PST Final Hazard Ratings).
Before Practice Situation	Before practice conditions vary widely. Conditions range from the client is not using many pest suppression techniques (pesticides, tillage for weed control, burning, etc.) to the client is using many different pest suppression techniques for many different pests, but in all cases at least one planned pest suppression technique has risk to an identified resource concern (e.g. Water Quality – Impacts to Human Drinking Water).
After Practice Situation	After implementing the 595 practice, a basic IPM system has been implemented with Land Grant University approved pest monitoring techniques and pest thresholds (where available) to help meet the minimum criteria for at least one identified resource concern (e.g. Water Quality - Impacts to Human Drinking Water) with either risk prevention (e.g. planned pesticides have no risk to the identified resource concern) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for “Intermediate”, “High” or “Extra High” WIN-PST Final Hazard Ratings).
Scenario Feature Measure	Acres of management applied
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$1,083.06	$216.61
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,083.06	$216.61

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	6	$241.86
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	10	$841.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	5
Scenario Name	IPM Small Farm >1RC
Scenario Description	A basic IPM plan with LGU-approved pest monitoring techniques and pest thresholds (where available) is applied in Small Farm/ Diversified Systems (e.g. CSA, organic, etc.) to address multiple identified resource concerns (e.g. Water Quality - Impacts to Human Drinking Water and Pollinator Impacts) with either risk prevention (e.g. planned pesticides have no risk to the identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings). This scenario attempts to capture the higher cost/acre of planning and implementing IPM techniques on smaller acreages with very diverse cropping systems.
Before Practice Situation	Before practice conditions vary widely. Conditions range from the client is not using many pest suppression techniques (pesticides, tillage for weed control, burning, etc.) to the client is using many different pest suppression techniques for many different pests, but in all cases at least one planned pest suppression technique has risk to two or more identified resource concerns (e.g. Water Quality – Impacts to Human Drinking Water and Impacts on Pollinators).
After Practice Situation	After implementing the 595 practice, a basic IPM system has been implemented with Land Grant University approved pest monitoring techniques and pest thresholds (where available) to help meet the minimum criteria for two or more identified resource concerns (e.g. Water Quality - Impacts to Human Drinking Water and Impacts on Pollinators) with either risk prevention (e.g. planned pesticides have no risk to the identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).
Scenario Feature Measure	Acres of management applied
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$665.96	$665.96
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$665.96	$665.96

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	4	$161.24
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	6	$504.72

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	4
Scenario Name	IPM Small Farm 1RC
Scenario Description	A basic IPM plan with LGU-approved pest monitoring techniques and pest thresholds (where available) is applied in Small Farm/Diversified Systems (e.g. CSA, organic, etc.) to address one identified resource concern (e.g. Water Quality - Impacts to Human Drinking Water) with either risk prevention (e.g. planned pesticides have no risk to the identified resource concern) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings). This scenario attempts to capture the higher cost/acre of planning and implementing IPM techniques on smaller acreages with very diverse cropping systems.
Before Practice Situation	Before practice conditions vary widely. Conditions range from the client is not using many pest suppression techniques (pesticides, tillage for weed control, burning, etc.) to the client is using many different pest suppression techniques for many different pests, but in all cases at least one planned pest suppression technique has risk to an identified resource concern (e.g. Water Quality – Impacts to Human Drinking Water).
After Practice Situation	After implementing the 595 practice, a basic IPM system has been implemented with Land Grant University approved pest monitoring techniques and pest thresholds (where available) to help meet the minimum criteria for at least one identified resource concern resource concern (e.g. Water Quality - Impacts to Human Drinking Water) with either risk prevention (e.g. planned pesticides have no risk to the identified resource concern) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).
Scenario Feature Measure	Acres of management applied
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$501.22	$501.22
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$501.22	$501.22

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	2	$80.62
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	5	$420.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	7
Scenario Name	Risk Prevention IPM All RCs
Scenario Description	A comprehensive IPM plan based primarily on LGU-approved pest prevention and avoidance techniques is applied to prevent negative impacts on all identified resource concerns. LGU-approved pest monitoring techniques and pest thresholds may also be included, but suppression techniques cannot pose any hazards to identified resource concerns. This type of system is very difficult to achieve, but may be most commonly achieved in Organic Systems that already rely heavily on prevention and avoidance techniques.
Before Practice Situation	Before practice conditions vary widely. Conditions range from the client is not using many pest suppression techniques (pesticides, tillage for weed control, burning, etc.) to the client is using many different pest suppression techniques for many different pests, but in all cases at least one planned pest suppression technique has risk to an identified resource concern (e.g. Water Quality – Impacts to Human Drinking Water).
After Practice Situation	After implementing the 595 practice, a comprehensive IPM plan based primarily on Land Grant University approved pest prevention and avoidance techniques is applied to prevent negative impacts on all identified resource concerns. Land Grant University approved pest monitoring techniques and pest thresholds may also be included, but suppression techniques cannot pose any hazards to identified resource concerns.
Scenario Feature Measure	Acres of management applied
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$1,445.85	$1,445.85
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,445.85	$1,445.85

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	15	$604.65
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	10	$841.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	600 - Terrace
Scenario ID	1
Scenario Name	Gradient Terrace
Scenario Description	An earthen embankment with channel constructed on a slope or 0.5 to 3% across the field slope as part of a system to shorten slope lengths and reduce sheet, rill, and gully erosion in a cropped field and control runoff to a grassed waterway. The typical installation is 10'w x 1'd and 500 feet long having an embankment back slope of 5:1 in fields with slopes from 3% to 10% constructed in farmable soils. Channel and berm are not farmed. A stable outlet is provided in the form of a Grassed Waterway or Underground Outlet. Costs include all equipment and forces necessary to excavate, shape, and compact terrace. This practice addresses Concentrated Flow Erosion and Excessive Sediment in surface waters.
Before Practice Situation	Long slope lengths contribute to erosion in cropped fields as a result of gully, rill, and sheet erosion. The erosion leads to contaminatioin of receiving waters due to sedimentation and nutrient transport.
After Practice Situation	A system of parabolic gradient terraces measuring 500'l x 1'h, and 5:1 back slopes is installed with spacing designed to intercept flow of water and shorten slope length to reduce erosion to acceptable levels. Work is done with dozer, scraper, or road grader. The installed terrace is typically not farmed. Associated practices are Critical Area Planting (342), Grassed Waterway (412), and Underground Outlet (620).
Scenario Feature Measure	Length of terrace
Scenario Unit	Linear Foot
Scenario Typical Size	300

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,190.00	$7.30
Labor	$2,219.70	$7.40
Mobilization	$771.54	$2.57
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$5,181.24	$17.27

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	40	$2,190.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	40	$1,793.20
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	5	$211.30
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	601 - Vegetative Barriers
Scenario ID	1
Scenario Name	Vegetative Barrier, 3-5 ft wide
Scenario Description	Permanent strips of stiff, dense vegetation established along the general contour of slopes or across concentrated flow areas.
Before Practice Situation	Significant erosion is occurring resulting in substantial transport of sediment across the slope or concentrated flow areas. A large amount of sediment is subsequently delivered to the edge of the field and/or waterways.
After Practice Situation	A 1000 ft strip of vetiver is installed by hand planting three to five feet wide, 3-6in between plants is/are established along the general contour of the slope or across concentrated flow areas that effectively settles a significant amount or sediment above the leading edge of the vegetative barrier.Barrier may also help to connect green areas to provide shelter for wildlife.
Scenario Feature Measure	Linear feet of practice installed
Scenario Unit	Linear Feet
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$6,760.00	$6.76
Equipment/Installation	$0.00	$0.00
Labor	$251.85	$0.25
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$7,011.85	$7.01

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1233	Vetiver Grass, plug	Introduced Perennial Grasses established as plugs. Materials only.	Each	$3.38	2000	$6,760.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Labor	231	General Labor	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	$26.15	8	$209.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	603 - Herbaceous Wind Barriers
Scenario ID	1
Scenario Name	Perennial species
Scenario Description	This scenario describes the implementation of herbaceous barriers to reduce wind velocities and wind-borne particulate matter. In this scenario barriers are composed of perennial living vegetation. Plant materials shall be selected for local adaptation and climatic conditions and are resistant to lodging and are non-spreading in their habit. Barriers will be designed as close to perpendicular to prevailing winds as practical. Barrier direction, spacing, and composition needed to achieve the desired purpose shall be designed using the currently approved wind erosion technology.
Before Practice Situation	Typically cropland has excessive soil disturbance and unsheltered distance that results in excessive wind erosion that affect soil resources. Seedling development and wildlife habitat are negatively affected by wind-borne sediment and sediment-borne contaminants travelling offsite.
After Practice Situation	Implementation of perennial herbaceous wind barriers will modify the flow and velocity of air dependant upon barrier height, porosity, spacing and wind speed. Orientation is generally placed across an entire field perpendicular to applicable prevailing wind direction. Implementation will reduce soil loss; protect growing plants from damage by wind blown soil particles, provide food and cover for wildlife. Payment is for the design and implementation of perennial barriers and required reestablishment.
Scenario Feature Measure	linear feet of barrier planted
Scenario Unit	Linear Foot
Scenario Typical Size	1320

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$23.62	$0.02
Equipment/Installation	$2.89	$0.00
Labor	$52.30	$0.04
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$1,180.40	$0.89
Total	$1,259.21	$0.95

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	76	Big Blue Stem (Andropogon gerardii)	Native Grasses and shipping.	Pound	$11.81	2	$23.62
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	$9.63	0.3	$2.89
Labor	231	General Labor	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	$26.15	2	$52.30
Foregone Income	2033	FI, Vegetables	Vegetables is Primary Crop	Acre	$11,804.00	0.1	$1,180.40

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	612 - Tree & Shrub Establishment
Scenario ID	6
Scenario Name	Direct Seeding
Scenario Description	Seed from tree and shrub species are broadcast or directly planted in the soil. The seeds are collected or purchased locally when possible so as to get trees known to be adapted to local conditions. Typical resource concerns addressed include undesirable plant productivity and health, degraded plant condition (excessive plant pest pressure; inadequate structure and composition) sheet, rill & wind erosion, and fish & wildlife habitat degradation.
Before Practice Situation	A site planned for reforestation where direct seeding has high potential for success (e.g. following natural disturbance, past harvesting or mechanized site preparation), or a degraded native forest where desirable species will eventually be out-competed by undesired species (e.g. forests colonized by invasive species infestations or unwanted shade tolerant tree species).
After Practice Situation	Seeds are collected or purchased and broadcast or planted at prescribed rates. Site preparation is done prior to direct seeding. Forest establishment is accomplished, or native ecosystem degradation is reversed and native plant growth and ecosystem quality are improving. Habitat for wildlife may be improving.
Scenario Feature Measure	Area of Treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$155.50	$31.10
Equipment/Installation	$26.12	$5.22
Labor	$173.40	$34.68
Mobilization	$68.23	$13.65
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$423.25	$84.65

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1871	Trees and shrubs, seed	Tree or shrub seed, e.g., acorns, to establish trees. Materials only.	Pound	$3.11	50	$155.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	231	General Labor	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	$26.15	5	$130.75
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	612 - Tree & Shrub Establishment
Scenario ID	3
Scenario Name	Manual Planting, Individual Plant Cutting
Scenario Description	Tree and shrub cuttings will be hand planted where: Few or no forest trees are growing; an existing forest requires underplanting/enrichment, or; an existing forest has a tree stocking level is below desirable conditions. Typical resource concerns addressed include: Degraded plant condition - undesirable plant productivity and health, excessive plant pest pressure, inadequate structure and composition; Soil erosion - sheet, rill & wind erosion, and; Inadequate habitat for fish & wildlife - habitat degradation.
Before Practice Situation	The stocking level of the forest does not meet the minimum recommended number of deisred trees, shrubs and vines per acre. The existing condition of the forest stand does not meet the landowners objectives. To be a viable forest additional cuttings need planting. Native forest ecosystem quality may be rated poor.
After Practice Situation	The prescribed number of tree and shrub cuttings are hand planted and the objectives of the landowner are met to address or accomplish native forest restoration, agroforest establishment or enrichment, timber or long term ground cover objectives.
Scenario Feature Measure	Area Planted
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$726.50	$0.48
Equipment/Installation	$487.12	$0.32
Labor	$1,301.90	$0.87
Mobilization	$256.63	$0.17
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,772.15	$1.85

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	50	$66.50
Materials	1308	Cuttings, woody, medium size	Woody cuttings, live stakes or whips typically 1/4" to 1" diameter and 24" to 48" long. Materials only.	Each	$0.44	1500	$660.00
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	35	$330.40
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	6	$156.72
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Labor	231	General Labor	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	$26.15	40	$1,046.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	612 - Tree & Shrub Establishment
Scenario ID	1
Scenario Name	Manual Planting, Individual Native Plant
Scenario Description	Tree and shrub seedlings will be hand planted where: Few or no forest trees are growing; an existing forest requires underplanting/enrichment, or; an existing forest has a tree stocking level is below desirable conditions. Typical resource concerns addressed include: Degraded plant condition - undesirable plant productivity and health, excessive plant pest pressure, inadequate structure and composition; Soil erosion - sheet, rill & wind erosion, and; Inadequate habitat for fish & wildlife - habitat degradation.
Before Practice Situation	The stocking level of the forest does not meet the minimum recommended number of deisred trees, shrubs and vines per acre. Wildlife habitat may be degraded by loss of forest conditions. The existing condition of the forest stand does not meet the landowners objectives. To be a viable forest additional seedlings need planting. Native forest ecosystem quality and/or wildlife habitat may be rated poor.
After Practice Situation	The prescribed number of trees and shrubs are hand planted and the objectives of the landowner are met to address or accomplish native forest restoration, provide wildlife habitat, agroforest establishment or enrichment, timber or long term ground cover objectives.
Scenario Feature Measure	Area Planted
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$13,679.00	$9.12
Equipment/Installation	$1,106.40	$0.74
Labor	$3,022.20	$2.01
Mobilization	$409.38	$0.27
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$18,216.98	$12.14

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	50	$66.50
Materials	1553	Tree or shrub seedling, Tropical, native, containerized, 10 cu in	tree or shrub tropical seedling, native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$5.67	375	$2,126.25
Materials	1544	Tree or shrub seedling, Tropical, native or non-native, 2-3 gal	tree or shrub topical seedling, native or non-native, 2-3gallon pot	Each	$23.25	75	$1,743.75
Materials	1543	Tree or shrub seedling, Tropical, native or non-native, 1 gal	tree or shrub topical seedling, native or non-native, 1 gallon pot	Each	$11.10	675	$7,492.50
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$6.00	375	$2,250.00
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	84	$792.96
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Labor	231	General Labor	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	$26.15	96	$2,510.40
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	12	$511.80
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	6	$155.82
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	6	$253.56

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	612 - Tree & Shrub Establishment
Scenario ID	2
Scenario Name	Manual Planting, Individual Non-Native Plant
Scenario Description	Tree and shrub seedlings will be hand planted where: Few or no forest trees are growing; an existing forest requires underplanting/enrichment, or; an existing forest has a tree stocking level is below desirable conditions. Typical resource concerns addressed include: Degraded plant condition - undesirable plant productivity and health, excessive plant pest pressure, inadequate structure and composition; Soil erosion - sheet, rill & wind erosion, and; Inadequate habitat for fish & wildlife - habitat degradation.
Before Practice Situation	The stocking level of the forest does not meet the minimum recommended number of deisred trees, shrubs and vines per acre. Wildlife habitat may be degraded by loss of forest conditions. The existing condition of the forest stand does not meet the landowners objectives. To be a viable forest additional seedlings need planting. Native forest ecosystem quality and/or wildlife habitat may be rated poor.
After Practice Situation	The prescribed number of trees and shrubs are hand planted and the objectives of the landowner are met to address or accomplish native forest restoration, provide wildlife habitat, agroforest establishment or enrichment, timber or long term ground cover objectives.
Scenario Feature Measure	Area Planted
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$9,936.50	$6.62
Equipment/Installation	$922.00	$0.61
Labor	$2,518.50	$1.68
Mobilization	$341.15	$0.23
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$13,718.15	$9.15

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1593	Fertilizer, tree, slow release, warm climate, 18-6-12	Slow release fertilizer to gradually apply nutrients over time for tree establishment. 50 pound bag, 18-6-12 blend.	Pound	$1.33	50	$66.50
Materials	1548	Tree or shrub seedling, Tropical, non-native, containerized, 10 cu in	tree or shrub tropical seedling, non-native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$4.90	600	$2,940.00
Materials	1543	Tree or shrub seedling, Tropical, native or non-native, 1 gal	tree or shrub topical seedling, native or non-native, 1 gallon pot	Each	$11.10	300	$3,330.00
Materials	1541	Tree or shrub seedling, Tropical, native or non-native, 1 qt.	tree or shrub tropical seedling, native or non-native, 1 quart pot size	Each	$6.00	600	$3,600.00
Equipment/Installation	1590	Hand tools, tree planting	Various hand tools for digging holes and planting trees such as augers, dibble bars, planting shovel, hoe-dad. Equipment only. Labor not included.	Hour	$9.44	70	$660.80
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	10	$261.20
Labor	231	General Labor	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	$26.15	80	$2,092.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	5	$211.30

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	612 - Tree & Shrub Establishment
Scenario ID	4
Scenario Name	Individual Plant Protection
Scenario Description	Newly planted tree and shrub seedlings will be protected from wildlife browsing, excessive sunlight, wind or frost. Typical resource concerns addressed include: Degraded plant condition - undesirable plant productivity and health, excessive plant pest pressure, inadequate structure and composition; Soil erosion - sheet, rill & wind erosion, and; Inadequate habitat for fish & wildlife - habitat degradation.
Before Practice Situation	Newly planted tree and shrub seedlings are in a location where they are highly susceptible to animal browse, or too much sun, wind or frost. The stocking level of the forest does not meet the minimum recommended number of deisred trees, shrubs and vines per acre. Wildlife habitat may be degraded by loss of forest conditions. The existing condition of the forest stand does not meet the landowners objectives. To be a viable forest, newly planted seedlings must be protected. Wildlife are known to browse tree seedlings in the area causing great damage.
After Practice Situation	The prescribed number of trees and shrubs are protected from widlife browsing or adverse climatic conditions by installing some type of protective devise.
Scenario Feature Measure	Each Planted Seedling protected
Scenario Unit	Each
Scenario Typical Size	1500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$7,350.00	$4.90
Equipment/Installation	$104.48	$0.07
Labor	$1,007.40	$0.67
Mobilization	$136.46	$0.09
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,598.34	$5.73

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1584	Stake, bamboo, 3/8" x 36"	3/8" x 36" bamboo stakes to anchor items in place. Materials only.	Each	$0.08	3000	$240.00
Materials	1575	Cable ties, plastic	Plastic cable ties (typ. 8-12") to assist in securing items. Materials only.	Each	$0.07	3000	$210.00
Materials	1570	Tree shelter, solid tube type, 5" x 30"	5" x 30" tree tube for protection from animal damage. Materials only.	Each	$4.60	1500	$6,900.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Labor	231	General Labor	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	$26.15	32	$836.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	612 - Tree & Shrub Establishment
Scenario ID	5
Scenario Name	Mechanical Planting, High Density
Scenario Description	Tree and shrub seedlings are mechanically planted after the site has been prepared for seedling establishment and growth. Forest productivity potential at the site is high or very high and dense planting is planned. Terrain conditions allow for mechanical tree planting of containerized seedlings. Typical resource concerns addressed include: Degraded plant condition - undesirable plant productivity and health, excessive plant pest pressure, and; Soil erosion - sheet, rill & wind erosion.
Before Practice Situation	The land lacks forest cover and needs replanting, is stocked with the undesired woody vegetation potentially including noxious and invasive species, or is a nonstocked field. Seedlings selected are appropriate for the site and site conidtions. The main resource concerns are degraded plant condition and inadequate structure and composition.
After Practice Situation	Field is established with permanent tree cover that will improve degraded plant condition, establish a timber plantation, establish native forest and/or wildlife habitat.
Scenario Feature Measure	area of treatment
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$15,855.00	$1,585.50
Equipment/Installation	$518.39	$51.84
Labor	$667.46	$66.75
Mobilization	$1,055.24	$105.52
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$18,096.09	$1,809.61

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1553	Tree or shrub seedling, Tropical, native, containerized, 10 cu in	tree or shrub tropical seedling, native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$5.67	1500	$8,505.00
Materials	1548	Tree or shrub seedling, Tropical, non-native, containerized, 10 cu in	tree or shrub tropical seedling, non-native, containerized, 10 cubic in size, 1.7 x 6.0"	Each	$4.90	1500	$7,350.00
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	7	$383.25
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Equipment/Installation	1600	Mechanical tree planter	Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor.	Hour	$4.38	7	$30.66
Labor	231	General Labor	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	$26.15	7	$183.05
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	7	$313.81
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	1	$44.41
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	614 - Watering Facility
Scenario ID	6
Scenario Name	Concrete Block Tank >1000 gal
Scenario Description	A permanent concrete block tank for livestock and or wildlife constructed of approved materials with more than 1,000 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. This watering facility will address the resource concerns of inadequate supply of water for livestock, habitat degradation, water quality, and undesirable plant productivity and health.
Before Practice Situation	This practice applies to all land uses where there is a need for new or improved watering facilities for livestock and or wildlife, where water is not available in sufficient quantities at specific locations, and habitat, water quality, plant productivity and health needs to be improved.
After Practice Situation	A permanent concrete tank with a capacity of 1,616 gallons (8ft x 8ft x 8ft) is installed with all tank materials, tank plumbing and float valve, to provide adequate water storage capacity to ensure an adequate supply and quality of water for livestock or wildlife for storage and or direct drinking access and provides improved plant productivity and health, water quality, and habitat. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing. All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns must be protected by using Heavy Use Area Protection (561) as appropriate.
Scenario Feature Measure	Capacity in Gallons
Scenario Unit	Gallon
Scenario Typical Size	1616

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$465.57	$0.29
Equipment/Installation	$708.27	$0.44
Labor	$2,378.44	$1.47
Mobilization	$155.12	$0.10
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,707.40	$2.29

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	1	$29.97
Materials	253	Block, concrete	Concrete block, hollow, normal weight, 3500 psi. Includes both full and partial sizes. Material only	Each	$2.42	180	$435.60
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	$5.84	1.2	$7.01
Equipment/Installation	36	Concrete, CIP, formless, non reinforced	Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$177.50	1	$177.50
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$279.77	1.2	$335.72
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	$2.64	3	$7.92
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	4	$180.12
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60
Labor	231	General Labor	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	$26.15	48	$1,255.20
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	4	$99.64
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	614 - Watering Facility
Scenario ID	5
Scenario Name	Concrete Block Trough <400 gal
Scenario Description	A permanent concrete block trough for livestock and or wildlife constructed of approved materials with less than 400 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. This watering facility will address the resource concerns of inadequate supply of water for livestock and or wildlife, habitat degradation, water quality, and undesirable plant productivity and health.
Before Practice Situation	This practice applies to all land uses where there is a need for new or improved watering facilities for livestock and or wildlife, where water is not available in sufficient quantities at specific locations, and habitat, water quality, plant productivity and health needs to be improved.
After Practice Situation	A permanent concrete block trough with a capacity of 330 gallons is installed with all trough materials, plumbing and float valve, to provide adequate water storage capacity to ensure an adequate supply and quality of water for livestock or wildlife for storage and or direct drinking access and provides improved plant productivity and health, water quality, and habitat. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing. All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.
Scenario Feature Measure	Gallons of Capacity
Scenario Unit	Gallon
Scenario Typical Size	330

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$259.44	$0.79
Equipment/Installation	$473.67	$1.44
Labor	$1,139.40	$3.45
Mobilization	$155.12	$0.47
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,027.63	$6.14

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	1	$29.97
Materials	253	Block, concrete	Concrete block, hollow, normal weight, 3500 psi. Includes both full and partial sizes. Material only	Each	$2.42	60	$145.20
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	$5.84	1	$5.84
Materials	1077	Tank, Float Valve Assembly	Float Valve, Stem, Swivel, Float Ball	Each	$84.27	1	$84.27
Equipment/Installation	36	Concrete, CIP, formless, non reinforced	Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$177.50	1	$177.50
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$279.77	1	$279.77
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	$2.64	4	$10.56
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	12	$511.80
Labor	231	General Labor	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	$26.15	24	$627.60
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	614 - Watering Facility
Scenario ID	2
Scenario Name	Metal or Concrete Trough <500 Gallons
Scenario Description	A permanent metal or concrete trough for livestock and or wildlife constructed of approved materials with less than 500 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. This watering facility will address the resource concerns of inadequate supply of water for livestock and or wildlife, habitat degradation, water quality, and undesirable plant productivity and health.
Before Practice Situation	This practice applies to all land uses where there is a need for new or improved watering facilities for livestock and or wildlife, where water is not available in sufficient quantities at specific locations, and habitat, water quality, plant productivity and health needs to be improved.
After Practice Situation	A permanent metal or concrete trough with a capacity of 495 gallons is installed with all trough materials, plumbing and float valve, to provide adequate water storage capacity to ensure an adequate supply and quality of water for livestock or wildlife for storage and or direct drinking access and provides improved plant productivity and health, water quality, and habitat. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing. All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.
Scenario Feature Measure	Capacity in Gallons
Scenario Unit	Gallon
Scenario Typical Size	495

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$767.50	$1.55
Equipment/Installation	$304.78	$0.62
Labor	$514.92	$1.04
Mobilization	$382.36	$0.77
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,969.56	$3.98

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	0.5	$14.99
Materials	1050	"Post, Wood, CCA Treated, 4-5"" X 7'"	"Wood Post, Line 4-5"" X 7', CCA Treated"	Each	$11.30	5	$56.50
Materials	1077	Tank, Float Valve Assembly	Float Valve, Stem, Swivel, Float Ball	Each	$84.27	1	$84.27
Materials	283	Tank, Spring or Trough, concrete, ≥ 200 gallons	Concrete tank with sloping sides	Each	$575.00	1	$575.00
Materials	242	Wildlife Escape Ramp	Pool size 15' x 30', for small mammals less than one pound	Each	$36.74	1	$36.74
Equipment/Installation	935	Track Loader, 95HP	Equipment and power unit costs. Labor not included.	Hour	$74.03	2	$148.06
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	6	$156.72
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	2	$49.82
Labor	231	General Labor	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	$26.15	8	$209.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	614 - Watering Facility
Scenario ID	4
Scenario Name	Metal Storage Tank >5000 Gallons
Scenario Description	A permanent corrugated metal tank for livestock and or wildlife constructed of approved materials with more than 5,000 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. This watering facility will address the resource concerns of inadequate supply of water for livestock, habitat degradation, water quality, and undesirable plant productivity and health.
Before Practice Situation	This practice applies to all land uses where there is a need for new or improved watering facilities for livestock and or wildlife, where water is not available in sufficient quantities at specific locations, and habitat, water quality, plant productivity and health needs to be improved.
After Practice Situation	A permanent currogated metal tank with a capacity of 14,250 gallons is installed with all tank materials, tank plumbing and float valve, to provide adequate water storage capacity to ensure an adequate supply and quality of water for livestock or wildlife for storage and or direct drinking access and provides improved plant productivity and health, water quality, and habitat. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing. All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns must be protected by using Heavy Use Area Protection (561) as appropriate.
Scenario Feature Measure	Capacity in Gallons
Scenario Unit	Gallon
Scenario Typical Size	14,250

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$7,252.23	$0.51
Equipment/Installation	$749.32	$0.05
Labor	$2,671.02	$0.19
Mobilization	$560.24	$0.04
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$11,232.81	$0.79

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	9	$269.73
Materials	1072	Tank, Galvanized Steel Bottomless w/liner Livestock, > 6,000 gallon	Includes tank materials with liner and float valve	Gallon	$0.49	14,250	$6,982.50
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	12	$540.36
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	8	$208.96
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	12	$298.92
Labor	231	General Labor	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	$26.15	24	$627.60
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	20	$806.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	22	$938.30
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	614 - Watering Facility
Scenario ID	3
Scenario Name	Plastic Storage Tank 1000-5000 Gallons
Scenario Description	A permanent plastic tank for livestock and or wildlife constructed of approved materials with greater than 1,000 to 5,000 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. This watering facility will address the resource concerns of inadequate supply of water for livestock, habitat degradation, water quality, and undesirable plant productivity and health.
Before Practice Situation	This practice applies to all land uses where there is a need for new or improved watering facilities for livestock and or wildlife, where water is not available in sufficient quantities at specific locations, and habitat, water quality, plant productivity and health needs to be improved.
After Practice Situation	A permanent plastic tank with a capacity of 4,000 gallons is installed with all tank materials, tank plumbing and float valve, to provide adequate water storage capacity to ensure an adequate supply and quality of water for livestock or wildlife for storage and or direct drinking access and provides improved plant productivity and health, water quality, and habitat. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing. All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.
Scenario Feature Measure	Capacity in Gallons
Scenario Unit	Gallon
Scenario Typical Size	4,000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$3,156.44	$0.79
Equipment/Installation	$284.60	$0.07
Labor	$1,389.66	$0.35
Mobilization	$560.24	$0.14
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$5,390.94	$1.35

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	2	$59.94
Materials	1050	"Post, Wood, CCA Treated, 4-5"" X 7'"	"Wood Post, Line 4-5"" X 7', CCA Treated"	Each	$11.30	5	$56.50
Materials	1075	Tank, Poly Enclosed Storage, >1,000	Includes materials	Gallon	$0.76	4,000	$3,040.00
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	4	$180.12
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	4	$104.48
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	4	$99.64
Labor	231	General Labor	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	$26.15	8	$209.20
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	12	$483.72
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	14	$597.10
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	614 - Watering Facility
Scenario ID	1
Scenario Name	Plastic Trough <500 Gallons
Scenario Description	A permanent plastic trough for livestock and or wildlife constructed of approved materials with less than 500 gallons of capacity that stores adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. This watering facility will address the resource concerns of inadequate supply of water for livestock and or wildlife, habitat degradation, water quality, and undesirable plant productivity and health.
Before Practice Situation	This practice applies to all land uses where there is a need for new or improved watering facilities for livestock and or wildlife, where water is not available in sufficient quantities at specific locations, and habitat, water quality, plant productivity and health needs to be improved.
After Practice Situation	A permanent plastic trough with a capacity of 500 gallons is installed with all trough materials, plumbing and float valve, to provide adequate water storage capacity to ensure an adequate supply and quality of water for livestock or wildlife for storage and or direct drinking access and provides improved plant productivity and health, water quality, and habitat. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing. All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.
Scenario Feature Measure	Capacity in Gallons
Scenario Unit	Gallon
Scenario Typical Size	300

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$486.50	$1.62
Equipment/Installation	$156.72	$0.52
Labor	$465.10	$1.55
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,108.32	$3.69

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	0.5	$14.99
Materials	1050	"Post, Wood, CCA Treated, 4-5"" X 7'"	"Wood Post, Line 4-5"" X 7', CCA Treated"	Each	$11.30	5	$56.50
Materials	1077	Tank, Float Valve Assembly	Float Valve, Stem, Swivel, Float Ball	Each	$84.27	1	$84.27
Materials	1064	Tank, Poly Livestock, >75 - 300 gallon	Includes tank materials and float valve	Gallon	$0.98	300	$294.00
Materials	242	Wildlife Escape Ramp	Pool size 15' x 30', for small mammals less than one pound	Each	$36.74	1	$36.74
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	6	$156.72
Labor	231	General Labor	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	$26.15	8	$209.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90

Scenario Worksheet

Practice and Scenario Description:	
Information Type	**Data**
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	620 - Underground Outlet
Scenario ID	1
Scenario Name	6" to 12" UO without Riser
Scenario Description	Install 200 feet of 10" approved plastic pipe to convey stormwater from one location to a new suitable and stable outlet. Trench Excavation is 58" deep and 28" wide. Costs include 10" HDPE pipe, Precast concrete drop inlet with steel grate, trench excavation, trench backfill, rodent guard and laid up stone headwall at outlet. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or simlar practices.
Before Practice Situation	Excessive sedimentation and soil erosion as a result of gully, rill or sheet erosion which exceeds "T" from farm fields and other locations. Also, roof runoff or surface runoff that becomes contminated with agricultural wastes that significantly contributes to the amount of runoff that has to be stored or treated.
After Practice Situation	Field system meets "T" or "clean" storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultural waste. Associated practices are Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)
Scenario Feature Measure	Length of Conduit
Scenario Unit	Linear Foot
Scenario Typical Size	200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,723.84	$8.62
Equipment/Installation	$341.16	$1.71
Labor	$170.60	$0.85
Mobilization	$1,120.48	$5.60
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,356.08	$16.78

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost	Component Justification	Quantity Justification
Materials	1257	Catch Basin, concrete, 2'x2'x6'	Catch Basin, Precast Concrete, 2' square or round, cast grate, 6' deep. Includes materials, equipment and labor.	Cubic Yard	$524.72	1	$524.72	Inlet to corrugated HDPE pipe	Only I inlet needed.
Materials	1243	Pipe, HDPE, CPT, Double Wall, Soil Tight, 10"	Pipe, Corrugated HDPE Double Wall, 10" diameter with soil tight joints - AASHTO M252. Material cost only.	Foot	$5.64	200	$1,128.00	Pipe necessary to convey stormwater	200'
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	$71.12	1	$71.12	Necessary to provide stable outlet	1 CY
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	$5.52	2	$11.04	Manual compaction earth around inlet only!	2 Cubic Yards
Equipment/Installation	1227	Excavation, common earth, side cast, large equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	$1.66	84	$139.44	Trench excavated by excavator	4.83'x2.33'x200'/27 = 84 CY
Equipment/Installation	1220	Excavation, common earth, small equipment, 50 ft	Bulk excavation of common earth with dozer <100 HP with average push distance of 50 feet. Includes equipment and labor.	Cubic Yard	$2.27	84	$190.68	Trench backfilled by dozer	4.83'x2.33'x200'/27 = 84 CY
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60	Foreman or Supervisor	
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48	Mobilize one excavator and one small dozer.	To and from the site.

Scenario Worksheet

Practice and Scenario Description:	
Information Type	**Data**
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	620 - Underground Outlet
Scenario ID	2
Scenario Name	6" to 12" UO with Riser
Scenario Description	Install 200 feet of 10" approved plastic pipe to convey stormwater from one location to a new suitable and stable outlet. Trench Excavation is 58" deep and 28" wide. Costs include 10" HDPE pipe, 12" Perforated PVC Riser Inlet, trench excavation, trench backfill, rodent guard and laid up stone headwall at outlet. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or simlar practices.
Before Practice Situation	Excessive sedimentation and soil erosion as a result of gully, rill or sheet erosion which exceeds "T" from farm fields and other locations. Also, roof runoff or surface runoff that becomes contminated with agricultural wastes that significantly contributes to the amount of runoff that has to be stored or treated.
After Practice Situation	Field system meets "T" or "clean" storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultural waste. Associated practices are Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)
Scenario Feature Measure	Length of Conduit
Scenario Unit	Linear Foot
Scenario Typical Size	200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,881.36	$9.41
Equipment/Installation	$341.16	$1.71
Labor	$170.60	$0.85
Mobilization	$1,120.48	$5.60
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,513.60	$17.57

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost	Component Justification	Quantity Justification
Materials	1263	Inlet, riser, 10"	Riser, polymer, complete vertical perforated UGO inlet with Tee, orifice plate if needed, 10" diameter. Materials only.	Foot	$170.56	4	$682.24	Inlet for the pipe	Size should match the pipeline and the length is assumed to be 4 feet.
Materials	1243	Pipe, HDPE, CPT, Double Wall, Soil Tight, 10"	Pipe, Corrugated HDPE Double Wall, 10" diameter with soil tight joints - AASHTO M252. Material cost only.	Foot	$5.64	200	$1,128.00	Pipe necessary to convey stormwater	200'
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	$71.12	1	$71.12	Necessary to provide stable outlet	1 CY
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	$5.52	2	$11.04	Manual compaction earth around inlet only!	2 Cubic Yards
Equipment/Installation	1227	Excavation, common earth, side cast, large equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	$1.66	84	$139.44	Trench excavated by excavator	4.83'x2.33'x200'/27 = 84 CY
Equipment/Installation	1220	Excavation, common earth, small equipment, 50 ft	Bulk excavation of common earth with dozer <100 HP with average push distance of 50 feet. Includes equipment and labor.	Cubic Yard	$2.27	84	$190.68	Trench backfilled by dozer	4.83'x2.33'x200'/27 = 84 CY
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60	Foreman or Supervisor	
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48	Mobilize one excavator and one small dozer.	To and from the site.

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	629 - Waste Treatment
Scenario ID	2
Scenario Name	Deep Litter System
Scenario Description	This practice scenario utilizes layered material, 3 feet deep, starting on the bottom with 1ft 3" deep cinder, and aeration layer with 4" diameter aeration tubes embedded in the cinder mix and vented to the atmosphere; Next is a 12" deep layer of 24" long by 4-6" diameter logs (part of component ID#1098); Followed by a 6" layer of finer branches (part of component ID#1098); and, Finally, a 12" layer of wood chips (Sawdust is too impervious and facilitates the anaerobic process.) (component id#1237); for a total depth of litter of 36"). This material is confined inside the sunken pen area which is about 40" deep(4" of "freeboard"). The "walls" are necesary to contain the litter. This operation must be kept aerobic and thus the char-cinder layer with aeration tubes and the progressively smaller litter to allow for a walking surface for the animals. As per the Hawaii Department of Health, the floor of building needs to be impermeable (0.0000001 cm/sec = 1.242 inches per year), and thus the concrete floor. The animal density (hogs) is about 1,000 # per 78 SF (or 12.8 # per SF.).The purpose of the practice is to address resource concerns related to water quality degradation (excess nutrients). This is not a deep bedded pack and is to remain aerobic and thus the need for moisture control. The litter is not to be removed during the practice life, but only replenished (topped off) about every 6 months, on average.
Before Practice Situation	Hogs are confined in a non-acceptable pen resulting in water quality (pig sty, open lot susceptible to rain and and subsequent ersoion and runoff), odors due to the anerobic conditions, and related animal health issues.
After Practice Situation	A 12' x 12" pen is constructed to hold the deep litter for approximately 8 feeder hogs, with an ultimate weight of 220# per animal. Animal activity mixes the manure with the wood chips and microbial activity breaks down the manure. Moisture control is essential to maintain aerobic activity. Too dry - and activity is reduced. Too wet - and the anaerobic process takes over. The Univeristy of Hawaii recommends the layering as described in the Scenario desription. The university of Hawaii recommends the addition of indigenous microorganisms to facilitate the process. NEH Part 637, Chapter 2 Composting, verifies the effectivenss of IMO's. The pen needs a roof overhang of about 3 Ft, all around, which will be constructed with CPS 367, Roofs and Covers.
Scenario Feature Measure	Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	144

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$452.92	$3.15
Equipment/Installation	$2,590.72	$17.99
Labor	$999.90	$6.94
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$4,043.54	$28.08

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	978	Pipe, PVC, 4", SCH 40	Materials: - 4" - PVC - SCH 40 - ASTM D1785	Foot	$3.16	40	$126.40
Materials	45	Aggregate, Sand, Graded, Washed	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic yard	$28.84	3	$86.52
Materials	1237	Straw	Small grain straw (non organic and certified organic). Materials and shipping only.	Ton	$120.00	2	$240.00
Equipment/Installation	962	Tractor, agricultural, 120 HP	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hours	$47.06	2	$94.12
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$575.81	4	$2,303.24
Equipment/Installation	1098	Aggregate, Wood Chips	Includes materials, equipment and labor	Cubic yard	$24.17	8	$193.36
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hours	$24.91	2	$49.82
Labor	231	General Labor	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.	Hours	$26.15	24	$627.60
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hours	$40.31	8	$322.48

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	632 - Solid/Liquid Waste Separation Facility
Scenario ID	1
Scenario Name	Concrete Gravity Separator
Scenario Description	Liquid manure is transferred from the source to a 2-cell Solid/Liquid Waste Separation Facility which is equipped with separation screens. One cell is allowed to fill up and then the waste stream is diverted to the second cell. The liquid that drains from the cell is transferred to a storage facility, treatment lagoon, or digestor and is eventually applied to the land. The solids are allowed to settle until the manure is dry enough to transfer with a front-end loader for transport and subsequent spreading in the field or for composting. Associated practices include Nutrient Management (590), Composting Facility (317), Anaerobic Digester (366), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Pumping Plant (533), Vegetated Treatment Area (635), Pond Lining or Sealing (521A-D), and Waste Treatment (629).
Before Practice Situation	Applicable to situations where partitioning solids, liquids, and nutrients will facilitate the management of an animal waste management system, improve air quality (reduce odors), and address water quality concerns.
After Practice Situation	One 2-cell concrete settling basin structure (11 ft wide by 62 ft long with 5 ft high walls and weeping wall/picket structure or outlet control) constructed around or at a livestock feeding operation. Removes a portion of the solids that otherwise would leave with the runoff from an animal feeding operation. Part of an animal waste management system.
Scenario Feature Measure	Square Foot of Design Storage
Scenario Unit	Square Foot
Scenario Typical Size	682

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$989.52	$1.45
Equipment/Installation	$20,526.53	$30.10
Labor	$209.20	$0.31
Mobilization	$942.60	$1.38
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$22,667.85	$33.24

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1765	Weeping Wall	Weeping wall or picket screen structure for solid settling basin. Materials only.	Foot	$51.00	10	$510.00
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$29.97	16	$479.52
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	17	$6,450.82
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	$4.13	25	$103.25
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$602.58	23	$13,859.34
Equipment/Installation	48	Excavation, Common Earth, side cast, small equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	$2.24	50.5	$113.12
Labor	231	General Labor	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	$26.15	8	$209.20
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:	
Information Type	**Data**
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	634 - Waste Transfer
Scenario ID	4
Scenario Name	6" PVC Pipeline
Scenario Description	Pipeline used to transfer manure wastewater by gravity or pumping from the waste storage pond to the field where it is to be applied according to the CNMP. Pipelines can be between 3" and 12" diameter but 6" diameter is a commonly used pipe size. This pipeline is part of a manure transfer system for a planned waste management or comprehensive nutrient management plan. This scenario addresses the transport of liquid waste to a waste storage or treatment facility to prevent a water quality resource concern of excessive nutrients/organics and harmful levels of pathogens in surface water and/or excessive nutrients/organics in ground water. Associated practices may include: PS 313 Waste Storage Facility for storage structures; PS 533, Pumping Plant; PS 430, Irrigation Pipeline; PS 632, Solid/Liquid Waste Separation Facility; PS 468, Lined Waterway or Outlet; PS 590 Nutrient Management for waste application; PS 633, Waste Recycling; PS 635, Vegetated Treatment Area.
Before Practice Situation	The waste storage structure is separated from the application fields where wastewater nutrients are needed. Soil nutrients in the near fields have high phosphorus levels from over application near the waste storage facility. The current application operation is high in the use of time and energy and may cause water quality concerns as it is not efficient in transporting the waste to the field.
After Practice Situation	Install a 200 foot long 6 inch diameter PVC to transfer the manure wastewater. This scenario includes the pipe, inlet riser, couplers, air-vac vents, all other fittings, and risers placed as specified by the design, trench excavation, pipe bedding and backfill. The site should be evaluated by the designing engineer to make sure the design will function. The transfer pipeline will deliver the manure slurry to the fields for agronomic nutrient utilization according to the CNMP, thereby protecting water quality resources. If a pump is required, it should be planned under Pumping Plant (533).
Scenario Feature Measure	Length of pipe installed
Scenario Unit	Feet
Scenario Typical Size	200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,519.20	$7.60
Equipment/Installation	$1,112.56	$5.56
Labor	$1,417.10	$7.09
Mobilization	$1,047.86	$5.24
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$5,096.72	$25.48

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost	Component Justification	Quantity Justification
Materials	987	Pipe, PVC, 6", SDR 21	Materials: - 6" - PVC - SDR 21 200 psi - ASTM D2241	Foot	$6.33	240	$1,519.20	Includes the pipe, inlet and outlet risers, couplers, air-vac vents, clean-outs and all other fittings for pipeline installation.	Pipeline length used for typical scenario plus 20% for fittings.
Equipment/Installation	36	Concrete, CIP, formless, non reinforced	Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$186.16	1	$186.16	Thrust blocks and inlet	Estimated
Equipment/Installation	931	Hydraulic Excavator, 1 CY	Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included.	Hour	$92.64	10	$926.40	To excavate and back fill the trench.	30 ft installed per hour plus backfilling
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	8	$341.20	Contractor - overseeing the job	
Labor	231	General Labor	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	$26.15	24	$627.60	Crew hours for monitoring excavation grade, assembly of pipeline system, installation and site clean-up	1 day with 3 laborers
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	10	$448.30	To operate the excavator	
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	2	$1,047.86	Mobilization of hydraulic excavator	To and from site

Scenario Worksheet

Practice and Scenario Description:	
Information Type	**Data**
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	634 - Waste Transfer
Scenario ID	5
Scenario Name	Agitator
Scenario Description	This scenario is for a manure and wastewater agitator associated with an agricultural production operation to transfer agricultural waste product from the production source to a storage facility for proper utilization. This agitator is typically no more than 15 HP and is used for smaller waste storage facilities that are less than 10 feet deep. This scenario does not include a pump. Associated practices may include: PS 313 Waste Storage Facility for storage structures; PS 533, Pumping Plant; PS 430, Irrigation Pipeline; PS 632, Solid/Liquid Waste Separation Facility; PS 468, Lined Waterway or Outlet; PS 590 Nutrient Management for waste application; PS 633, Waste Recycling The waste transfer equipment is installed to address water quality concerns by facilitating timely land application of waste at agronomic rates according to the nutrient management plan. This scenario addresses the potential for surface water and groundwater quality degradation.
Before Practice Situation	In this typical setting, the operator has a small waste storage structure from a confined animal feeding operation without an effective waste handling and transfer system to manage the waste stream departing from the facility.
After Practice Situation	The typical installation would be for a small manure 10 HP agitator to put settled manure solids into suspension for removal from an animal waste storage structure and transfer to the next step of waste treatment, utilization or storage. Part of an animal waste management system to address water quality concerns. If required a wastewater reception pit, concrete channel or transfer conduit scenario may need to be contracted to support the operation of this waste transfer system equipment.
Scenario Feature Measure	Agitator for wastewater
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$15,000.00	$15,000.00
Equipment/Installation	$0.00	$0.00
Labor	$322.48	$322.48
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$15,322.48	$15,322.48

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost	Component Justification	Quantity Justification
Materials	1769	Manure agitator, with electrical hook-up and appurtenances	Liquid manure agitator with electrical hook-up and appurtenances. Materials only.	Each	$15,000.00	1	$15,000.00	Agitator to move put settled manure solids into suspension for removal from an animal waste storage structure	HP typically 7.5, 10 or 15 and used where mixing depth is less than 10 feet.
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	8	$322.48	Equipment installation by certified electrician	Electric hookup and appurtenances

Scenario Worksheet

Practice and Scenario Description:	
Information Type	**Data**
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	634 - Waste Transfer
Scenario ID	2
Scenario Name	Catch Basin
Scenario Description	Installation for a wastewater collection system that includes materials and structures to collect liquids of a design volume less than 1000 gallons such as silage leachate, lot runoff and other contaminated liquid effluent. This may include curbs, screens, precast manholes, sumps or catch basins. The wastewater will typically be transferred from the collection basin to a waste storage facility through a gravity or low pressure flow conduit. Associated practices may include: PS 313 Waste Storage Facility for storage structures; PS 533, Pumping Plant; PS 430, Irrigation Pipeline; PS 632, Solid/Liquid Waste Separation Facility; PS 468, Lined Waterway or Outlet; PS 590 Nutrient Management for waste application; PS 633, Waste Recycling. This scenario addresses the potential for surface water and groundwater quality degradation from liquid wastewater running unchecked out of silage bunkers and off of animal feeding lots.
Before Practice Situation	Inadequate storage is available to collect wastewater from an operation that may contaminate surface or groundwater resources. The liquids contain few solids or limited solids that can be easily screened out without blocking the collection intake.
After Practice Situation	This practice scenario is suitable where the estimated design volume for wastewater transfer is less than 1000 gallons of contaminated liquid that may flow from silage bunkers or animal lot areas after a precipitation event. The practice scenario typically includes materials and installation of flat and formed concrete for curbs and/or gutters to collect liquids. With the installation of a precast manhole with lid or catch basin with grate. The cost includes excavation, placement of bedding as needed, placement of structure and backfill with construction of concrete inlet collection area. Transfer pump if needed must be contracted under pumping plant, PS 533.
Scenario Feature Measure	Collection volume installed
Scenario Unit	Gallon
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$3,226.19	$3.23
Equipment/Installation	$2,476.54	$2.48
Labor	$2,057.16	$2.06
Mobilization	$1,120.48	$1.12
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,880.37	$8.88

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost	Component Justification	Quantity Justification
Materials	1754	Catch Basin, concrete, 60" dia.	Precast 60-in diameter catch basin, 6' deep, with collar and grate cover. Materials only.	Each	$3,118.34	1	$3,118.34	Precast catch basin with riser if needed to provided wastewater collection volume with collar adaptor and grate safety cover.	Volume up to 1000 gal. based on engineering evaluation.
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	$21.57	5	$107.85	Subgrade for concrete inlet slab and catch basin bedding	
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$379.46	5	$1,897.30	Inlet slab area and foundation for catch basin	Inlet slab estimated at 15 ft. x 15 ft. and 6 ft x 6 ft x 6in slab for catch basin.
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	4	$219.00	Dozer for shaping and grading site for proper drainage	
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.03	8	$360.24	Backhoe for excavation and placement of catch basin	
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	16	$682.40	Contract supervisor	
Labor	231	General Labor	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	$26.15	32	$836.80	Crew hours for precast basin placement, backfilling and shaping, grading and forming for inlet slab with curbing	
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	12	$537.96	Backhoe operator and dozer	
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48	Mobilization of dozer and backhoe	To and from the site

Scenario Worksheet

Practice and Scenario Description:	
Information Type	**Data**
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	634 - Waste Transfer
Scenario ID	3
Scenario Name	Concrete Channel
Scenario Description	Installation of a concrete channel that consists of a slab with curb and footing on each side of the slab for the entire length of the channel to enable the facility manager to direct liquid waste to an existing collection basin and/or waste storage facility. Water quality concerns will be addressed by preventing liquid waste from entering surface waters, and to facilitate timely land application of manure and wastewater at agronomic rates according to the CNMP. This scenario addresses the potential for surface water and groundwater quality degradation. Associated practices may include: PS 313 Waste Storage Facility for storage structures; PS 533, Pumping Plant; PS 430, Irrigation Pipeline; PS 632, Solid/Liquid Waste Separation Facility; PS 468, Lined Waterway or Outlet; PS 590 Nutrient Management for waste application; PS 633, Waste Recycling.
Before Practice Situation	Current facility operations are allowing liquid waste to flow uncontrolled during periods of precipitation events or cleaning operations such that water resources can be contaminated.
After Practice Situation	Typical installation of a 12 in wide, 60 ft long and 6 in deep concrete channel that consists of a 5" thick concrete slab with footing for the entire length. The purpose is to transfer liquids or manure slurry from one area to an existing collection basin or waste storage facility. Alternative configurations can consist of the installation of a more narrow or wider channel that may or may not have curbs or a deeper shaped channel and may include a half pipe on the bottom.
Scenario Feature Measure	Bottom surface area of concrete channel
Scenario Unit	Square Foot
Scenario Typical Size	60

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$43.14	$0.72
Equipment/Installation	$1,807.74	$30.13
Labor	$2,126.72	$35.45
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,977.60	$66.29

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost	Component Justification	Quantity Justification
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	$21.57	2	$43.14	Gravel required for subgrade.	Typical gravel subgrade depth is 4 inches under all concrete structures. The chosen typical size is 60 feet long with an inside dimension of 12 inches and curbs on each side that are 5" thick. 60 feet long x ((5" +12" + 5") x (1 ft/ 12")) feet wide = 110 SF. Volume = A x D = (110 sf x 0.333 ft / 4")/ 27 cf/cy = 1.36 CY. Add 30% for spillage and consolidation which results in 1.76 CY; Use 2.
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$602.58	3	$1,807.74	For the 12" wide x 6" deep concrete channel	Based on size. The cross-sectional area of the concrete for the channel is as follows: (((6" H x 5" W) x 2 + (5" W + 12" W + 5" W) x 5" T)) x (1 sf / 144 sq-in)) = 1.181 sf. The Volume of the concree is the Cross-sectional Area x the Length. A x L = 1.181sf x 60.0 ft = 70.83 cf = 2.62 CY. Use 3.
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	32	$1,289.92	Crew hours for shaping, grading, forming and finishing.	Typical for the area
Labor	231	General Labor	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	$26.15	32	$836.80	Crew hours for shaping, grading, forming and finishing.	Typical for the area

Scenario Worksheet

Practice and Scenario Description:	
Information Type	**Data**
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Environmental Engineering
Practice Code/Name	634 - Waste Transfer
Scenario ID	1
Scenario Name	Dry Litter System
Scenario Description	This practice scenario utilizes shallow litter (<2" deep) placed on the sloped concrete floor of the pens (about 20H:1V). The animal activity results in the migration of the waste to a cleanout trough on the outside edge of the pen. The waste is shoveled from the trough into an adjoining compost bin. Waste Treatment (629) is the best-fit practice to facilitate the operation. The purpose of the practice is to address resource concerns related to water quality degradation (excess nutrients). Associated practices: Nutrient Management (590), Waste Storage Facility (313), Irrigation Water Conveyance, Pipeline (430), Irrigation System, Spinkler (442), Irrigation System, Microirrigation (442), and Roofs and Covers (367).
Before Practice Situation	Hogs are confined in a non-acceptable pen resulting in water quality (pig sty, open lot susceptible to rain and and subsequent ersoion and runoff), odors due to the anerobic conditions, and related animal health issues.
After Practice Situation	6 each, 16' x 8' pens with 6" thick floors are constructed to hold the animals. The animal activity results in the migration of the waste to a cleanout trough on the outside edge of the pen. The waste is shoveled from the trough into an adjoining compost bin. The pen requires a roof with a 3 Ft overhang all around, which will be constructed with CPS 367, Roofs and Covers. Walls are not necesary for the Dry Litter system.
Scenario Feature Measure	Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	768

Cost Summary:		
Cost Category	**Scenario Cost**	**Scenario Cost/Unit**
Materials	$215.70	$0.28
Equipment/Installation	$9,321.06	$12.14
Labor	$1,888.38	$2.46
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$11,425.14	$14.88

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost	Component Justification	Quantity Justification
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	$21.57	10	$215.70	For foundation under concrete.	16' x 8' x 4" x 6Ea Pens = 9.5 CY; Use 10 CY.
Equipment/Installation	962	Tractor, agricultural, 120 HP	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	$47.06	6	$282.36	Prepare foundation and spread aggregate.	Use small blade on back of traactor to grade and smooth foundation.
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$602.58	15	$9,038.70	Floor of piggery	16' x 8' x 6" x 6Ea Pens = 14.2 CY; Use 15 CY.
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	6	$149.46	Prepare foundation and spread aggregate.	Typical for area.
Labor	231	General Labor	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	$26.15	48	$1,255.20	General construction	Typical from previous projects. 2 people for 3 days
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	12	$483.72	Direct installation	Typical from previous projects.

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	636 - Water Harvesting Catchment
Scenario ID	2
Scenario Name	Elevated Roof Catchment, with Gutters and Downspouts
Scenario Description	Build a wooden frame, "post-and-pier" structure, with a corrugated metal roof (dimensions are 24 feet wide by 20 feet long), to collect rain water. The structure is supported by 9-each, "poured-in-place", concrete footings (dimensions are 2'x2' square x1' thick), 8 feet on-center, with tie-down straps. Divert collected water from catchment area with guttering and downspout through a 4" diameter PVC Schedule 40 pipe, to a tank (not included)for a reliable storage and subsequent use. Resource concerns: Livestock production limitation - Inadequate livestock water. Associated practices: 382 - Fence; 614 - Watering Facility.
Before Practice Situation	Inadequate water available to address resource concerns. Client hauls water to supply needs.
After Practice Situation	The guttering and downspouts collects the roof runoff and the water is conveyed through a pipe, by gravity, to a storage tank for use by livestock or a very small irrigation system. This system is the primary collection component of a Water Harvesting Catchment (CPS 636) facility. Divert collected water from roof with guttering and downspout through a 4" diameter PVC Sch-40 pipe,
Scenario Feature Measure	Surface Area of Catchment
Scenario Unit	Square Yard
Scenario Typical Size	53

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,903.96	$35.92
Equipment/Installation	$903.87	$17.05
Labor	$6,543.20	$123.46
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$9,351.03	$176.43

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	980	Pipe, PVC, 6", SCH 40	Materials: - 6" - PVC - SCH 40 - ASTM D1785	Foot	$5.57	60	$334.20
Materials	1044	Dimension Lumber, Treated	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	$0.83	512	$424.96
Materials	1388	Gutter, Downspout, PVC, 5"	5" PVC guttering. Materials only.	Foot	$1.90	24	$45.60
Materials	223	Corrugated Steel, 28 gage	Corrugated or ribbed, galvanized, 28 gauge, includes fasteners, materials only.	sq ft	$2.29	480	$1,099.20
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$602.58	1.5	$903.87
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	40	$1,706.00
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	120	$4,837.20

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Water Management Engineering
Practice Code/Name	636 - Water Harvesting Catchment
Scenario ID	1
Scenario Name	Surface Catchment - Plastic Membrane
Scenario Description	Construct an apron, approximately 50 feet wide by 90 feet long, utilizing: a plastic or rubber membrane laid on a prepared ground surface; or an asphalt or concrete surface with curbing; to collect rain water. Divert collected water from the surface catchment by gravity through an 8" diameter, PVC SDR-35 pipe to an existing tank or plastic-lined earthen reservoir. Exclusion of animals is required, so conservation practice 382 - Fencing, may be needed to protect the catchment. Resource Concern: Livestock production limitation - Inadequate livestock water. Associated Practices: 382 - Fencing; 614 - Watering Facility; and 521A - Pond Sealing or Lining, Flexible Membrane.
Before Practice Situation	Inadequate water available to address resource concerns. Client hauls water to supply needs.
After Practice Situation	Design and construct an impervious surface as the primary collection component, and a pipe to convey the water to create a reliable water supply for livestock.
Scenario Feature Measure	Surface Area of Catchment
Scenario Unit	Square Yard
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$4,155.60	$8.31
Equipment/Installation	$657.00	$1.31
Labor	$3,444.36	$6.89
Mobilization	$560.24	$1.12
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,817.20	$17.63

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	994	Pipe, PVC, 8", SDR 35	Materials: - 8" - PVC - SDR 35 - ASTM D3034	Foot	$6.54	140	$915.60
Materials	1387	Synthetic Liner, 40 mil	Synthetic 40 mil HDPE, LLDPE, EPDM, etc membrane liner material. Materials only.	Square Yard	$6.48	500	$3,240.00
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	12	$657.00
Labor	231	General Labor	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	$26.15	72	$1,882.80
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	12	$537.96
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agricultural Engineering
Practice Code/Name	638 - Water & Sediment Control Basin
Scenario ID	1
Scenario Name	Excavated Basin, Earth Embankment or Ridge and Channel
Scenario Description	A 500,000 gal earthen sediment basin in an existing drainageway on a farm to capture and detain sediment laden runoff, or other debris for a sufficient length of time to allow it to settle out in the basin. Typical scenario s for the construction of 4000 CY earthen embankment. Outlet is typically an underground outlet or auxillary spillway. An earthen embankment or combination ridge and channel generally constructed across the slope and minor watercourses to form a sediment trap and water detention basin. Work is done with dozer, scraper, or road grader. Costs include all equipment necessary to excavate, shape, grade and compact the Water and Sediment Control Basin and mobilization of equipment. This practice is utilized to reduce watercourse and gully erosion, trap sediment, reduce and manage onsite and downstream runoff. Sheet and rill erosion will be controlled by other associated practices: contour cropping systems, grassed waterways, and gradient terraces.
Before Practice Situation	Farming fields with excessive slope length has resulted in multiple rills and/or ephemeral gullies that will continue to worsen over time. The excessive erosion may lead to deterioration of receiving waters due to excessive sedimentation and nutrient transport. Resource concern addressed includes soil erosion and water quality by trapping sediment and/or reduce erosion in a field to protect riparian areas and water bodies from sediment deposition. Surface water causes erosion and the sediment (and potentially pesticides) to be transported into the riparian areas and water bodies downstream.
After Practice Situation	Water and Sediment Control Basis is constructed with 4000 CY of excavation/earthfill with dozer, scraper and/or road grader. Rill and/or gully erosion is reduced. If riser and underground outlet are needed, then include Underground Outlet (620). Include Critical Area Planting (342) where necessary to prevent erosion following construction activities.
Scenario Feature Measure	CY of Excavation
Scenario Unit	Cubic Yard
Scenario Typical Size	4000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$23,036.00	$5.76
Labor	$1,472.50	$0.37
Mobilization	$1,812.58	$0.45
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$26,321.08	$6.58

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1222	Excavation, common earth, large equipment, 50 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 50 feet. Includes equipment and labor.	Cubic Yard	$1.41	4000	$5,640.00
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	$4.13	4000	$16,520.00
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	16	$876.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50
Labor	231	General Labor	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	$26.15	40	$1,046.00
Mobilization	1138	Mobilization, small equipment	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	$191.18	4	$764.72
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	2	$1,047.86

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	643 - Restoration and Management of Rare and Declining Habitats
Scenario ID	3
Scenario Name	Monitoring and Management, High Intensity and Complexity
Scenario Description	Setting is any land use with the potential to provide habitat for species or plants and animals identified as Rare and Declining and the habitat potential is not currently being captured. The identified habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted species. Management will be implemented based on the findings of the habitat assessment and monitoring. Habitat management and monitoring needed to treat the resource concerns may require training, qualitative data assessment, water quality monitoring and is high in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: qualitative data assessment or water quality monitoring, photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. No decision or treatment associated with this practice or facilitating practices will require income foregone. The planner will specify locations and identify the methods to the customer who will implement the monitoring and management plan.
Before Practice Situation	Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulted in inadequate use of the area by target rare and declining species and associated species.
After Practice Situation	Based on the results of a State-approved upland wildlife habitat assessment process, the application of habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate conditions and deficiencies have been addressed. Monitoring has maximized the benefits of the needed habitat treatment efforts.
Scenario Feature Measure	Acres Managed and Monitored
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$111.60	$11.16
Equipment/Installation	$236.84	$23.68
Labor	$397.21	$39.72
Mobilization	$63.39	$6.34
Acquisition of Technical Knowledge	$697.84	$69.78
Foregone Income	$0.00	$0.00
Total	$1,506.88	$150.69

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	967	Miscellaneous (Camera, clippers, plot frame, scale, tape measure).	Range field kit	Each	$44.24	2	$88.48
Materials	298	Miscellaneous, containers, traps, etc.	Pheromone Traps, Culture container with lid	Each	$2.89	8	$23.12
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	3	$127.50
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	$28.55	2	$57.10
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	2	$52.24
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	8	$322.48
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	3	$74.73
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	1	$38.71
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	2	$233.34
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	200	$112.00
Acquisition of Technical Knowledge	296	Training, Registration Costs	Conference Registration Fees	Each	$176.25	2	$352.50

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	643 - Restoration and Management of Rare and Declining Habitats
Scenario ID	1
Scenario Name	Monitoring and Management, Low Intensity and Complexity
Scenario Description	Setting is any land use with the potential to provide habitat for species of plants and animals identified as Rare and Declining and the habitat potential is not currently being captured. The identified habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring. Habitat management and monitoring needed to treat the resource concerns requires no qualitative data assessment, no water quality monitoring and is low in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. No decision or treatment associated with this practice or facilitating practices will require income foregone. The planner will specify locations and identify the methods to the customer who will implement the monitoring and management plan.
Before Practice Situation	Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulted in low use of the area by target species identified as Rare and Declining and associated species.
After Practice Situation	Based on the results of a State-approved upland wildlife habitat assessment process, the application of habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate habitat conditions have been addressed. Monitoring has maximized the benefits of the needed habitat treatment efforts.
Scenario Feature Measure	Acres Managed and Monitored
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$55.80	$5.58
Equipment/Installation	$182.17	$18.22
Labor	$235.97	$23.60
Mobilization	$63.39	$6.34
Acquisition of Technical Knowledge	$144.67	$14.47
Foregone Income	$0.00	$0.00
Total	$682.00	$68.20

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	967	Miscellaneous (Camera, clippers, plot frame, scale, tape measure).	Range field kit	Each	$44.24	1	$44.24
Materials	298	Miscellaneous, containers, traps, etc.	Pheromone Traps, Culture container with lid	Each	$2.89	4	$11.56
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	3	$127.50
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	$28.55	1	$28.55
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	4	$161.24
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	3	$74.73
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	1	$38.71
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	50	$28.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	643 - Restoration and Management of Rare and Declining Habitats
Scenario ID	2
Scenario Name	Monitoring and Management, Medium Intensity and Complexity
Scenario Description	Setting is any land use with the potential to provide habitat for species or plants and animals identified as Rare and Declining and the habitat potential is not currently being captured. The identified habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted species. Management will be implemented based on the findings of the habitat assessment and monitoring. Habitat management and monitoring needed to treat the resource concerns may require training, no qualitative data assessment, no water quality monitoring and is medium in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. No decision or treatment associated with this practice or facilitating practices will require income foregone. The planner will specify locations and identify the methods to the customer who will implement the monitoring and management plan.
Before Practice Situation	Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulted in low use of the area by target species identified as Rare and Declining and associated species.
After Practice Situation	Based on the results of a State-approved upland wildlife habitat assessment process, the application of habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate habitat conditions have been addressed. Monitoring has maximized the benefits of the needed habitat treatment efforts.
Scenario Feature Measure	Acres Managed and Monitored
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$61.58	$6.16
Equipment/Installation	$209.51	$20.95
Labor	$316.59	$31.66
Mobilization	$63.39	$6.34
Acquisition of Technical Knowledge	$348.92	$34.89
Foregone Income	$0.00	$0.00
Total	$999.99	$100.00

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	967	Miscellaneous (Camera, clippers, plot frame, scale, tape measure).	Range field kit	Each	$44.24	1	$44.24
Materials	298	Miscellaneous, containers, traps, etc.	Pheromone Traps, Culture container with lid	Each	$2.89	6	$17.34
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	3	$127.50
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	$28.55	1.5	$42.83
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1.5	$39.18
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	6	$241.86
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	3	$74.73
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	1	$38.71
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	100	$56.00
Acquisition of Technical Knowledge	296	Training, Registration Costs	Conference Registration Fees	Each	$176.25	1	$176.25

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	644 - Wetland Wildlife Management
Scenario ID	3
Scenario Name	Monitoring and Management, High Intensity and Complexity
Scenario Description	Setting is any lands with the potential to provide wetland wildlife habitat and that potential is not currently being captured. The identified wetland wildlife habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring.Wetland wildlife habitat management and monitoring needed to treat the resource concerns may require training, qualitative data assessment, water quality monitoring and is high in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: qualitative data assessment or water quality monitoring, photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. No decision or treatment associated with this practice or facilitating practices will require income foregone. The planner will
Before Practice Situation	Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulting in low use of the area by target and associated wetland wildlife species.
After Practice Situation	Based on the results of a State-approved upland wildlife habitat assessment process, the application of wetland wildlife habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate wetland wildlife habitat conditions have addressed. Monitoring has maximized the benefits of the needed upland wildlife habitat treatment efforts.
Scenario Feature Measure	Acres Managed and Monitored
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$111.60	$11.16
Equipment/Installation	$236.84	$23.68
Labor	$397.21	$39.72
Mobilization	$63.39	$6.34
Acquisition of Technical Knowledge	$697.84	$69.78
Foregone Income	$0.00	$0.00
Total	$1,506.88	$150.69

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	298	Miscellaneous, containers, traps, etc.	Pheromone Traps, Culture container with lid	Each	$2.89	8	$23.12
Materials	967	Miscellaneous (Camera, clippers, plot frame, scale, tape measure).	Range field kit	Each	$44.24	2	$88.48
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	3	$127.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	2	$52.24
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	$28.55	2	$57.10
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	8	$322.48
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	3	$74.73
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	1	$38.71
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	200	$112.00
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	2	$233.34
Acquisition of Technical Knowledge	296	Training, Registration Costs	Conference Registration Fees	Each	$176.25	2	$352.50

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	644 - Wetland Wildlife Management
Scenario ID	1
Scenario Name	Monitoring and Management, Low Intensity and Complexity
Scenario Description	Setting is any lands with the potential to provide wetland wildlife habitat and that potential is not currently being captured. The identified wetland wildlife habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring. Wetland wildlife habitat management and monitoring needed to treat the resource concerns requires no qualitative data assessment, no water quality monitoring and is low in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. No decision or treatment associated with this practice or facilitating practices will require income foregone. The planner will specify locations and identify the methods to the customer who will implement the
Before Practice Situation	Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulting in low use of the area by target and associated wetland wildlife species.
After Practice Situation	Based on the results of a State-approved upland wildlife habitat assessment process, the application of wetland wildlife habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate wetland wildlife habitat conditions have addressed. Monitoring has maximized the benefits of the needed upland wildlife habitat treatment efforts.
Scenario Feature Measure	Acres Managed and Monitored
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$55.80	$5.58
Equipment/Installation	$182.17	$18.22
Labor	$235.97	$23.60
Mobilization	$63.39	$6.34
Acquisition of Technical Knowledge	$144.67	$14.47
Foregone Income	$0.00	$0.00
Total	$682.00	$68.20

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	298	Miscellaneous, containers, traps, etc.	Pheromone Traps, Culture container with lid	Each	$2.89	4	$11.56
Materials	967	Miscellaneous (Camera, clippers, plot frame, scale, tape measure).	Range field kit	Each	$44.24	1	$44.24
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	3	$127.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	$28.55	1	$28.55
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	4	$161.24
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	3	$74.73
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	1	$38.71
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	50	$28.00
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	644 - Wetland Wildlife Management
Scenario ID	2
Scenario Name	Monitoring and Management, Medium Intensity and Complexity
Scenario Description	Setting is any lands with the potential to provide wetland wildlife habitat and that potential is not currently being captured. The identified wetland wildlife habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring.Wetland wildlife habitat management and monitoring needed to treat the resource concerns may require training, no qualitative data assessment, no water quality monitoring and is medium in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. No decision or treatment associated with this practice or facilitating practices will require income foregone. The planner will specify locations and identify the methods to the
Before Practice Situation	Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulting in low use of the area by target and associated wetland wildlife species.
After Practice Situation	Based on the results of a State-approved upland wildlife habitat assessment process, the application of wetland wildlife habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate wetland wildlife habitat conditions have addressed. Monitoring has maximized the benefits of the needed upland wildlife habitat treatment efforts.
Scenario Feature Measure	Acres Managed and Monitored
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$61.58	$6.16
Equipment/Installation	$209.51	$20.95
Labor	$316.59	$31.66
Mobilization	$63.39	$6.34
Acquisition of Technical Knowledge	$348.92	$34.89
Foregone Income	$0.00	$0.00
Total	$999.99	$100.00

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	298	Miscellaneous, containers, traps, etc.	Pheromone Traps, Culture container with lid	Each	$2.89	6	$17.34
Materials	967	Miscellaneous (Camera, clippers, plot frame, scale, tape measure).	Range field kit	Each	$44.24	1	$44.24
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	3	$127.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1.5	$39.18
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	$28.55	1.5	$42.83
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	6	$241.86
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	3	$74.73
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	1	$38.71
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	100	$56.00
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	296	Training, Registration Costs	Conference Registration Fees	Each	$176.25	1	$176.25

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	645 - Upland Wildlife Habitat Management
Scenario ID	3
Scenario Name	Monitoring and Management, High Intensity and Complexity
Scenario Description	Setting is any lands with the potential to provide upland wildlife habitat and that potential is not currently being captured. The identified upland wildlife habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring. Upland wildlife habitat management and monitoring needed to treat the resource concerns may require training, qualitative data assessment, water quality monitoring and is high in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: qualitative data assessment or water quality monitoring, photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. No decision or treatment associated with this practice or facilitating practices will require income foregone. The planner will
Before Practice Situation	Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulting in low use of the area by target and associated upland wildlife species.
After Practice Situation	Based on the results of a State-approved upland wildlife habitat assessment process, the application of upland wildlife habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate upland wildlife habitat conditions have addressed. Monitoring has maximized the benefits of the needed upland wildlife habitat treatment efforts.
Scenario Feature Measure	Acres Managed and Monitored
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$111.60	$11.16
Equipment/Installation	$236.84	$23.68
Labor	$397.21	$39.72
Mobilization	$63.39	$6.34
Acquisition of Technical Knowledge	$697.84	$69.78
Foregone Income	$0.00	$0.00
Total	$1,506.88	$150.69

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	298	Miscellaneous, containers, traps, etc.	Pheromone Traps, Culture container with lid	Each	$2.89	8	$23.12
Materials	967	Miscellaneous (Camera, clippers, plot frame, scale, tape measure).	Range field kit	Each	$44.24	2	$88.48
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	2	$52.24
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	$28.55	2	$57.10
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	3	$127.50
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	8	$322.48
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	3	$74.73
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	1	$38.71
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	2	$233.34
Acquisition of Technical Knowledge	296	Training, Registration Costs	Conference Registration Fees	Each	$176.25	2	$352.50
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	200	$112.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	645 - Upland Wildlife Habitat Management
Scenario ID	1
Scenario Name	Monitoring and Management, Low Intensity and Complexity
Scenario Description	Setting is any land use with the potential to provide habitat for species of plants and animals identified as Rare and Declining and the habitat potential is not currently being captured. The identified habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring. Habitat management and monitoring needed to treat the resource concerns requires no qualitative data assessment, no water quality monitoring and is low in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. No decision or treatment associated with this practice or facilitating practices will require income foregone. The planner will specify locations and identify the methods to the customer who will implement the monitoring and management plan.
Before Practice Situation	Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulted in low use of the area by target species identified as Rare and Declining and associated species.
After Practice Situation	Based on the results of a State-approved upland wildlife habitat assessment process, the application of habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate habitat conditions have been addressed. Monitoring has maximized the benefits of the needed habitat treatment efforts.
Scenario Feature Measure	Acres Managed and Monitored
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$55.80	$5.58
Equipment/Installation	$182.17	$18.22
Labor	$235.97	$23.60
Mobilization	$63.39	$6.34
Acquisition of Technical Knowledge	$144.67	$14.47
Foregone Income	$0.00	$0.00
Total	$682.00	$68.20

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	298	Miscellaneous, containers, traps, etc.	Pheromone Traps, Culture container with lid	Each	$2.89	4	$11.56
Materials	967	Miscellaneous (Camera, clippers, plot frame, scale, tape measure).	Range field kit	Each	$44.24	1	$44.24
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	$28.55	1	$28.55
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	3	$127.50
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	4	$161.24
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	3	$74.73
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	1	$38.71
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	50	$28.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	645 - Upland Wildlife Habitat Management
Scenario ID	2
Scenario Name	Monitoring and Management, Medium Intensity and Complexity
Scenario Description	Setting is any lands with the potential to provide upland wildlife habitat and that potential is not currently being captured. The identified upland wildlife habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring. Upland wildlife habitat management and monitoring needed to treat the resource concerns may require training, no qualitative data assessment, no water quality monitoring and is medium in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. No decision or treatment associated with this practice or facilitating practices will require income foregone. The planner will specify locations and identify the methods to the
Before Practice Situation	Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulting in low use of the area by target and associated upland wildlife species.
After Practice Situation	Based on the results of a State-approved upland wildlife habitat assessment process, the application of upland wildlife habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate upland wildlife habitat conditions have addressed. Monitoring has maximized the benefits of the needed upland wildlife habitat treatment efforts.
Scenario Feature Measure	Acres Managed and Monitored
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$61.58	$6.16
Equipment/Installation	$209.51	$20.95
Labor	$316.59	$31.66
Mobilization	$63.39	$6.34
Acquisition of Technical Knowledge	$348.92	$34.89
Foregone Income	$0.00	$0.00
Total	$999.99	$100.00

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	298	Miscellaneous, containers, traps, etc.	Pheromone Traps, Culture container with lid	Each	$2.89	6	$17.34
Materials	967	Miscellaneous (Camera, clippers, plot frame, scale, tape measure).	Range field kit	Each	$44.24	1	$44.24
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1.5	$39.18
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	$28.55	1.5	$42.83
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	$42.50	3	$127.50
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	6	$241.86
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	3	$74.73
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	1	$38.71
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67
Acquisition of Technical Knowledge	296	Training, Registration Costs	Conference Registration Fees	Each	$176.25	1	$176.25
Acquisition of Technical Knowledge	297	Transportation	Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan.	Mile	$0.56	100	$56.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	646 - Shallow Water Development and Management
Scenario ID	2
Scenario Name	Shallow Water Management, High
Scenario Description	This scenario addresses inadequate habitat for fish and wildlife on cropland. To facilitate practice code 643, 644, 645, or 395, seasonal shallow water is provided annually for target species by purchasing of water, lifting of such water, monitoring of the water quality, response by target plant community, use by target flora or fauna. Sites are flooded up to a depth of 18"with an average depth of 9". Monitoring and adaptive management accomplished of existing water control structures is accomplished to meet very specific conditions needed to address previously identified degraded plant conditions or inadequate habitat for fish and/or wildlife. This high-level managmenet is applied to lands used for crop, pasture, hay, forests or wildlife lands where target flora and fauna have been identified as a primary concern. Loss of some level of crop, forage, hay or forest products may occur depending on site specific conditions.
Before Practice Situation	The site has existing infrastructure (reliable water source, dikes, water control structures, pumps, gates) to provide a reliable seasonal water source. The site is not subject to frequent natural flooding. The potential benefits to target fauna and flora is not being captured. The purchase of water, supply of water and intensive managment of season water, coupled with monitoring, adaptive managment from highly trained individuals will fully address the identifed degraded plant conditions and/or inadequate habitat for fish and/or wildlife.
After Practice Situation	A single or series of shallow water areas that are managed per standard and specification. Water levels are regulated to maintain temporary wildlife habitat. Timing and duration of flooding and de-watering is dependent on specific species requirements. Water is pumped into area to be flooded. Flooded sites vary from mudflats to water depths of 18" with an average depth of 9". The hydrologic conditions of ponding and saturation (frequency, depth, duration, timing) provides optimum seasonal habitat for waterfowl, shorebirds, and other wildlife (amphibians, reptiles, mammals, invertebrates, etc.). If Dikes or Water Control Structures are not currently present on the fields planned to be flooded, these practices may be planned for the same fields and cost shared under Structure for Water Control (587) and Dike (356). If a natural water source (i.e. precipitation or flooding) is not available, Pumping Plant (533) may be cost shared to provide a water source. Depending on local conditions, other Conservation Practices may also be required.
Scenario Feature Measure	Acre of shallow water
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$143.00	$143.00
Labor	$26.15	$26.15
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$116.67	$116.67
Foregone Income	$0.00	$0.00
Total	$285.82	$285.82

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	969	Water management, Flooding & dewatering	Includes equipment and labor costs.	Acre Foot	$190.66	0.75	$143.00
Labor	231	General Labor	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	$26.15	1	$26.15
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	646 - Shallow Water Development and Management
Scenario ID	1
Scenario Name	Shallow Water Management, Low
Scenario Description	This scenario addresses inadequate habitat for fish and wildlife on cropland. The resource concern is addressed by providing shallow water habitat for wildlife such as shorebirds, waterfowl, wading birds, mammals, fish, reptiles, amphibians, and other species that require shallow water for at least part of their life cycle. Sites are flooded up to a depth of 18" with an average depth of 9". Water is provided by natural flooding and/or precipitation.
Before Practice Situation	There is inadequate habitat to provide optimum resting, nesting, and feeding habitat for waterfowl, shorebirds, and other wildlife (amphibians, reptiles, mammals, invertebrates, etc.).
After Practice Situation	A single or series of shallow water areas that are managed per standard and specification. Water levels are regulated to maintain temporary wildlife habitat. Timing and duration of flooding and de-watering is dependent on specific species requirements. Water is pumped into area to be flooded. Flooded sites vary from mudflats to water depths of 18" with an average depth of 9". The hydrologic conditions of ponding and saturation (frequency, depth, duration, timing) provides optimum seasonal habitat for waterfowl, shorebirds, and other wildlife (amphibians, reptiles, mammals, invertebrates, etc.). If needed and dikes or water control structures are not currently present on the fields planned to be flooded, these practices may be planned for the same fields and cost shared under Structure for Water Control (587) and Dike (356). If a natural water source (i.e. precipitation or flooding) is not available, Pumping Plant (533) may be cost shared to provide a water source. Depending on local conditions, other Conservation Practices may also be required.
Scenario Feature Measure	Acre of shallow water
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$0.00	$0.00
Labor	$26.15	$26.15
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$116.67	$116.67
Foregone Income	$0.00	$0.00
Total	$142.82	$142.82

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Labor	231	General Labor	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	$26.15	1	$26.15
Acquisition of Technical Knowledge	294	Training, Workshops	Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants.	Each	$116.67	1	$116.67

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	650 - Windbreak/Shelterbelt Renovation
Scenario ID	5
Scenario Name	Removal with Chainsaw, > 8 inches DBH
Scenario Description	Windbreak renovation requires the removal of degraded or inappropriate trees or shrubs within a windbreak using chainsaws. 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.
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, have grown too large and some are completley dead. Wind now moves freely through areas that lack any leaves.
After Practice Situation	Integrity and function of windbreak restored.
Scenario Feature Measure	Length of Renovation
Scenario Unit	Linear Foot
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,014.56	$2.01
Labor	$5,089.76	$5.09
Mobilization	$2,071.62	$2.07
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$9,175.94	$9.18

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	48	$259.20
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$34.80	8	$278.40
Equipment/Installation	1894	Stump Grinder	Mechanical stump grinder. Equipment only.	Hour	$23.24	48	$1,115.52
Equipment/Installation	1318	Pruning tools, hand tools	Pruning tools, hand tools, shears, loppers, pole saw, handsaw Equipment costs only. Labor not included.	Hour	$2.00	24	$48.00
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	56	$1,394.96
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	6	$504.72
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	48	$1,934.88
Labor	231	General Labor	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	$26.15	48	$1,255.20
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	6	$155.82
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12
Mobilization	1146	Mobilization, Specialist Labor	Mobilization of Specialist Labor. Includes Agronomists, Foresters, Biologists, etc.	Hour	$86.62	3	$259.86
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	6	$232.26

Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	6	$148.08
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	4	$1,120.48

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	650 - Windbreak/Shelterbelt Renovation
Scenario ID	1
Scenario Name	Chemical, Manual Application
Scenario Description	This practice involves the application of herbicides using backpack sprayer or similar equipment, and may be used for basal bark applications or in conjunction with manual vegetation cutting scenarios via hack-n-squirt for tree control, in order to kill or control degraded or inappropriate trees/shrubs within a windbreak. Resource concerns: Degrade plant condition- undesirable plant productivity and health; Livestock Production-Inadequate livestock shelter, Soil erosion-wind.
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 through areas that lack any leaves.
After Practice Situation	Integrity and function of windbreak restored. Cropped area or domestic animal protection restored.
Scenario Feature Measure	Area of treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$155.14	$31.03
Equipment/Installation	$249.60	$49.92
Labor	$110.27	$22.05
Mobilization	$112.59	$22.52
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$627.60	$125.52

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	3	$33.12
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	2	$122.02
Equipment/Installation	964	Chemical, spot treatment, single stem application	Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included.	Hour	$55.87	4	$223.48
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	1	$84.12
Labor	231	General Labor	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	$26.15	1	$26.15
Mobilization	1146	Mobilization, Specialist Labor	Mobilization of Specialist Labor. Includes Agronomists, Foresters, Biologists, etc.	Hour	$86.62	1	$86.62
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	650 - Windbreak/Shelterbelt Renovation
Scenario ID	2
Scenario Name	Crown Pruning
Scenario Description	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.
Before Practice Situation	Windbreak or Shelterbelt trees and/or shrubs have grown too 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 the windbreak is restored, impacts of wind are reduced.
Scenario Feature Measure	Length of Renovation
Scenario Unit	Linear Foot
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$125.04	$0.13
Labor	$586.64	$0.59
Mobilization	$267.71	$0.27
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$979.39	$0.98

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1318	Pruning tools, hand tools	Pruning tools, hand tools, shears, loppers, pole saw, handsaw Equipment costs only. Labor not included.	Hour	$2.00	4	$8.00
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	12	$64.80
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	2	$52.24
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	2	$168.24
Labor	231	General Labor	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	$26.15	16	$418.40
Mobilization	1146	Mobilization, Specialist Labor	Mobilization of Specialist Labor. Includes Agronomists, Foresters, Biologists, etc.	Hour	$86.62	1	$86.62
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	650 - Windbreak/Shelterbelt Renovation
Scenario ID	3
Scenario Name	Root Pruning
Scenario Description	Windbreak roots are pruned with a tractor-mounted single-tine ripper to reduce windbreak root competition with adjacent agricultural or orchard crops.
Before Practice Situation	Windbreak or Shelterbelt trees and/or shrubs have roots that have grown into adjacent cropland fields, causing undesired competition with production species. Resource concern is Degraded plant condition - undesirable plant productivity and health.
After Practice Situation	Root encroachment from windbreak into adjacent cropland is controlled, and competitive impacts of windbreak trees and shrubs to adjacent production crops are reduced.
Scenario Feature Measure	Length of Renovation
Scenario Unit	Linear Foot
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$55.80	$0.06
Labor	$49.82	$0.05
Mobilization	$382.36	$0.38
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$487.98	$0.49

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	$19.28	2	$38.56
Equipment/Installation	1235	Ripper or subsoiler, 16 to 36 inch depth	Deep ripper or subsoiler, (16-36 inches depth) includes tillage implement, power unit and labor.	Acre	$17.24	1	$17.24
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	2	$49.82
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	650 - Windbreak/Shelterbelt Renovation
Scenario ID	7
Scenario Name	Removal with Skidsteer, > 8 inches DBH
Scenario Description	Reduce wind impacts by renovating windbreaks or shelterbelts using heavy equipment to remove selected trees with average DBH > 8 inches. Typically trees and shrubs are cleared by dozer using a brush rake or blade. Windbreak renovation requires the removal of degraded or undesired 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 planting the necessary replacements, 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.
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, have grown too large and some are completley dead. Wind now moves freely through areas that lack any leaves.
After Practice Situation	Integrity and function of windbreak restored.
Scenario Feature Measure	Length of Renovation
Scenario Unit	Linear Foot
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,741.28	$2.74
Labor	$1,737.54	$1.74
Mobilization	$1,031.24	$1.03
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$5,510.06	$5.51

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	927	Dozer, 140 HP	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	$101.16	24	$2,427.84
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	6	$504.72
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	24	$1,075.92
Labor	231	General Labor	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	$26.15	6	$156.90
Mobilization	1146	Mobilization, Specialist Labor	Mobilization of Specialist Labor. Includes Agronomists, Foresters, Biologists, etc.	Hour	$86.62	3	$259.86
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	3	$133.23
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	650 - Windbreak/Shelterbelt Renovation
Scenario ID	9
Scenario Name	Topping, Tree Stems > 8" Diameter
Scenario Description	Reduce wind impacts by renovating windbreaks or shelterbelts using aerial lifts and licensed arborists to top trees with average stem diameter > 8 inches. Trees are typically topped 20-30 feet above ground level because they are growing too tall and are competing for light with adjacent crops or orchards, have crowns that are too sparse near the ground, or are becoming hazardous relating to human safety or adjacent infrastructure. Resource concerns include Degraded plant condition-undesirable plant productivity and health; Livestock Production-Inadequate livestock shelter, Soil erosion-wind.
Before Practice Situation	Plant (trees and/or shrubs) canopies have thinned thereby decreasing the effectiveness of the original windbreak design or have become too tall causing light competition with adjacent cropland. Trees and shrubs lack leaf cover, have gaps of no live green material, or trees have grown too tall. Wind now moves freely through areas that lack any leaves, shade is cast on adjacent production crops.
After Practice Situation	Integrity and function of windbreak restored, and competitive impacts of windbreak trees and shrubs to adjacent production crops are reduced.
Scenario Feature Measure	Length of Renovation
Scenario Unit	Linear Foot
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$5,076.80	$5.08
Labor	$17,813.60	$17.81
Mobilization	$3,341.36	$3.34
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$26,231.76	$26.23

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1893	Aerial lift, telescoping bucket	Aerial lift, bucket truck or cherry picker, typical 40' boom. Equipment only.	Hour	$44.13	80	$3,530.40
Equipment/Installation	1318	Pruning tools, hand tools	Pruning tools, hand tools, shears, loppers, pole saw, handsaw Equipment costs only. Labor not included.	Hour	$2.00	80	$160.00
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	160	$864.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	20	$522.40
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	100	$8,412.00
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	80	$1,992.80
Labor	231	General Labor	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	$26.15	160	$4,184.00
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	80	$3,224.80
Mobilization	1146	Mobilization, Specialist Labor	Mobilization of Specialist Labor. Includes Agronomists, Foresters, Biologists, etc.	Hour	$86.62	20	$1,732.40
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	10	$246.80
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	10	$259.70
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	10	$387.10
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	650 - Windbreak/Shelterbelt Renovation
Scenario ID	8
Scenario Name	Topping, Tree Stems < 8" Diameter
Scenario Description	Reduce wind impacts by renovating windbreaks or shelterbelts using aerial lifts and licensed arborists to top trees with average stem diameter < 8 inches. Trees are typically topped 20-30 feet above ground level because they are growing too tall and are competing for light with adjacent crops or orchards, have crowns that are too sparse near the ground, or are becoming hazardous relating to human safety or adjacent infrastructure. Resource concerns include Degraded plant condition-undesirable plant productivity and health; Livestock Production-Inadequate livestock shelter, Soil erosion-wind.
Before Practice Situation	Plant (trees and/or shrubs) canopies have thinned thereby decreasing the effectiveness of the original windbreak design or have become too tall causing light competition with adjacent cropland. Trees and shrubs lack leaf cover, have gaps of no live green material, or trees have grown too tall. Wind now moves freely through areas that lack any leaves, shade is cast on adjacent production crops.
After Practice Situation	Integrity and function of windbreak restored, and competitive impacts of windbreak trees and shrubs to adjacent production crops are reduced.
Scenario Feature Measure	Length of Renovation
Scenario Unit	Linear Foot
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,538.40	$2.54
Labor	$8,906.80	$8.91
Mobilization	$2,028.36	$2.03
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$13,473.56	$13.47

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1893	Aerial lift, telescoping bucket	Aerial lift, bucket truck or cherry picker, typical 40' boom. Equipment only.	Hour	$44.13	40	$1,765.20
Equipment/Installation	1318	Pruning tools, hand tools	Pruning tools, hand tools, shears, loppers, pole saw, handsaw Equipment costs only. Labor not included.	Hour	$2.00	40	$80.00
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	80	$432.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	10	$261.20
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	$84.12	50	$4,206.00
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.91	40	$996.40
Labor	231	General Labor	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	$26.15	80	$2,092.00
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$40.31	40	$1,612.40
Mobilization	1146	Mobilization, Specialist Labor	Mobilization of Specialist Labor. Includes Agronomists, Foresters, Biologists, etc.	Hour	$86.62	10	$866.20
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	5	$123.40
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	5	$129.85
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$38.71	5	$193.55
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24

Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	657 - Wetland Restoration
Scenario ID	1
Scenario Name	Depression Sediment Removal and Ditch Plug
Scenario Description	A Depressional HGM class wetland is to be restored. The tract size is 15 acres, and the actual wetland size is 10 acres. The site is a recharge depression, fed only from surface runoff. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11- WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate strucuture and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation.
Before Practice Situation	The wetland has been converted to agricultural production, and the tract drained with a surface ditch. The ditch is 4' average depth, and 12 feet average width. The wetland receives surface runoff from an adjacent upland watershed, and ponds water on a shallow perched layer. The watershed has been converted from native to agricultural landuse, and the resultant soil erosion has deposited 6" of sediment in the bottom of the depression.
After Practice Situation	The ditch has been plugged by the installation of a 50' long section of compacted clay fill, and the deposition has been removed down to the original topsoil layer. A herbaceous plant community has been seeded. Facilitative practices include Conservation Cover. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.
Scenario Feature Measure	Acres of Tract
Scenario Unit	Acre
Scenario Typical Size	15

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$19,427.05	$1,295.14
Labor	$0.00	$0.00
Mobilization	$3,143.58	$209.57
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$22,570.63	$1,504.71

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	48	Excavation, Common Earth, side cast, small equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	$2.36	8067	$19,038.12
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	$4.37	89	$388.93
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	6	$3,143.58

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	657 - Wetland Restoration
Scenario ID	2
Scenario Name	Riverine Channel and Floodplain Restoration
Scenario Description	A Riverine HGM landscape on a small stream on a low stream order riparian landscape has been converted to agricultural production. The stream channel has degraded. The reach is 1500 feet in length, and the tract size is 15 acres. The wetland area is 10 acres. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11- WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate strucuture and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation.
Before Practice Situation	Channel incision has broken the lateral connectivity between the stream and floodplain. The coversion to cropland was accompanied by filling and leveling of backswamp, side channel, and oxbow features which formerly ponded water or exposed the floodplain groundwater table. The site no longer has access to floodwater or water surface profile supported groundwater. No suitable seed bank exists for natural regeneration of the original hydrophytic plant community, either in the channel, or on the floodplain.
After Practice Situation	The hydrology of the site is restored by the installation of a series of rock check structures to raise the stream water surface profile. Floodplain macrotopographic features replicating the original side channels, oxbows, and backswamps are constructed by excavation. Spoil is placed adjacent to the excavations to replicate natural depositional features. The average depth of the excavated features is 2 feet, and the surface area of the excavations is 25% of the tract size. The eroding stream bank is stabilized with soil bio-engineering features, and fish habitat improvement measures are installed in the channel. The tract is seeded to appropriate hydrophytic and upland vegetation, both woody and herbaceous. Facilitating practices are Streambank and Shoreline protection, Structure for Water Control, Conservation Cover, Tree/Shrub Establishment, and Stream Habitat Improvement and Management. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.
Scenario Feature Measure	Acres of Tract
Scenario Unit	Acre
Scenario Typical Size	15

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$7,139.00	$475.93
Labor	$0.00	$0.00
Mobilization	$2,095.72	$139.71
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$9,234.72	$615.65

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	48	Excavation, Common Earth, side cast, small equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	$2.36	3025	$7,139.00
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	4	$2,095.72

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	659 - Wetland Enhancement
Scenario ID	1
Scenario Name	Depression Sediment Removal and Ditch Plug
Scenario Description	A Depressional HGM class wetland is to be enhanced. The tract size is 15 acres, and the actual wetland size is 10 acres. The site is a recharge depression, fed only from surface runoff. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11- WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate strucuture and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation.
Before Practice Situation	The wetland has been converted to agricultural production, and the tract drained with a surface ditch. The ditch is 4' average depth, and 12 feet average width. The wetland receives surface runoff from an adjacent upland watershed, and ponds water on a shallow perched layer. The watershed has been converted from native to agricultural landuse, and the resultant soil erosion has deposited 6" of sediment in the bottom of the depression.
After Practice Situation	The ditch has been plugged by the installation of a 50' long section of compacted clay fill, and the deposition has been removed down to the original topsoil layer. A herbaceous plant community has been seeded. Facilitative practices include Conservation Cover. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.
Scenario Feature Measure	Acres of Tract
Scenario Unit	Acre
Scenario Typical Size	15

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$29,570.11	$1,971.34
Labor	$0.00	$0.00
Mobilization	$3,143.58	$209.57
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$32,713.69	$2,180.91

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1221	Excavation, common earth, large equipment, 1500 ft	Bulk excavation of common earth including sand and gravel with scrapers with average haul distance of 1500 feet. Includes equipment and labor.	Cubic Yard	$3.62	8067	$29,202.54
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	$4.13	89	$367.57
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	6	$3,143.58

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Wildlife Wetland
Practice Code/Name	659 - Wetland Enhancement
Scenario ID	2
Scenario Name	Riverine Channel and Floodplain Restoration
Scenario Description	A Riverine HGM landscape on a small stream on a low stream order riparian landscape has been converted to agricultural production. The stream channel has degraded. The reach is 1500 feet in length, and the tract size is 15 acres. The wetland area is 10 acres. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11- WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate strucuture and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation.
Before Practice Situation	Channel incision has broken the lateral connectivity between the stream and floodplain. The coversion to cropland was accompanied by filling and leveling of backswamp, side channel, and oxbow features which formerly ponded water or exposed the floodplain groundwater table. The site no longer has access to floodwater or water surface profile supported groundwater. No suitable seed bank exists for natural regeneration of the original hydrophytic plant community, either in the channel, or on the floodplain.
After Practice Situation	The hydrology of the site is restored by the installation of a series of rock check structures to raise the stream water surface profile. Floodplain macrotopographic features replicating the original side channels, oxbows, and backswamps are constructed by excavation. Spoil is placed adjacent to the excavations to replicate natural depositional features. The average depth of the excavated features is 2 feet, and the surface area of the excavations is 25% of the tract size. The eroding stream bank is stabilized with soil bio-engineering features, and fish habitat improvement measures are installed in the channel. The tract is seeded to appropriate hydrophytic and upland vegetation, both woody and herbaceous. Facilitating practices are Streambank and Shoreline protection, Structure for Water Control, Conservation Cover, Tree/Shrub Establishment, and Stream Habitat Improvement and Management. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.
Scenario Feature Measure	Acres of Tract
Scenario Unit	Acre
Scenario Typical Size	15

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$6,776.00	$451.73
Labor	$0.00	$0.00
Mobilization	$2,095.72	$139.71
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,871.72	$591.45

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	48	Excavation, Common Earth, side cast, small equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	$2.24	3025	$6,776.00
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$523.93	4	$2,095.72

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	660 - Tree Pruning
Scenario ID	1
Scenario Name	Pruning, Fire Hazard
Scenario Description	Pruning trees of branches (canopy lifting) in a forest stand where wildfires are considered a high or very high hazard. Hand tools and power tools are used to cut branches from trees. Resource concerns include Degraded plant condition-wildfire hazard and Undesirable plant productivity and health.
Before Practice Situation	The forest stand is well- to over-stocked, generally with 200 to 300+ trees per acre. Branches are touching understory vegetation or are in close proximity to forest floor where a ground fire can ignite the lower branches and move into the upper canopy. Wildfire hazard is very high.
After Practice Situation	Trees are pruned to the desirable height (generally 8-10') based on desired separation space between ground vegetation and tree crown. Pruned branches are treated if they are a hazard, see Woody Residue Treatment standard.
Scenario Feature Measure	individual tree/shrub pruned
Scenario Unit	Each
Scenario Typical Size	250

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$259.80	$1.04
Labor	$1,007.40	$4.03
Mobilization	$272.92	$1.09
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,540.12	$6.16

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1318	Pruning tools, hand tools	Pruning tools, hand tools, shears, loppers, pole saw, handsaw Equipment costs only. Labor not included.	Hour	$2.00	8	$16.00
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	24	$129.60
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	4	$114.20
Labor	231	General Labor	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	$26.15	32	$836.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	4	$170.60
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	4	$103.88
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	4	$169.04

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	660 - Tree Pruning
Scenario ID	3
Scenario Name	Pruning, Overstory of Multi-Story Cropping
Scenario Description	Pruning is done by hand with chain saws, tree loppers, hand shears, or hand saws. To increase sunlight to understory shrubs and low growing trees that have been purposely established to grow on the same acre of ground, improve the quality of the stem wood or improve tree vigor, branches are pruned from the trees. Pruning trees and/or shrubs extends the life span of trees and or shrubs by delaying replacement requirements. Exposure of bare soil is reduced. Resouce concerns are degraded plant condition-undesireable plant productivity and health, soil erosion-sheet and rill.
Before Practice Situation	Overstory trees are expanding their crowns, providing too much shade and inhibiting the growth and productivity of desired understory plants. Pruning of branches and leaves is needed to maintain the desired amount of sunlight reaching the understory. Overstory trees may also be showing signs of reduced health (thinning crowns, less branching, pest or disease impacts) and fruit production. Loss of trees or shrubs may occur within a few years. Soil erosion and sedimentation is a concern if trees or shrubs are removed.
After Practice Situation	Pruning of the overstory tree crowns is completed, allowing the proper amount of sunlight to reach the understory vegetation while maintaining tree growth, health and vigor, and wildlife benefits.
Scenario Feature Measure	Overstory Trees Pruned
Scenario Unit	each
Scenario Typical Size	150

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$218.85	$1.46
Labor	$755.55	$5.04
Mobilization	$204.69	$1.36
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,179.09	$7.86

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1319	Pruning tool, pole saw	Gasoline powered pole chainsaw. Labor not included.	Hour	$6.00	6	$36.00
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	18	$97.20
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	3	$85.65
Labor	231	General Labor	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	$26.15	24	$627.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	3	$127.95
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	660 - Tree Pruning
Scenario ID	2
Scenario Name	Pruning, Low Height
Scenario Description	Pruning is done by hand with chain saws, tree loppers, hand shears, or hand saws. To improve the quality of the stem wood or improve tree vigor, branches are pruned from the trees. Pruning trees and/or shrubs extends the life span of trees and or shrubs by delaying replacement requirements. Exposure of bare soil is reduced. Resouce concerns are degraded plant condition-undesireable plant productivity and health, soil erosion-sheet and rill.
Before Practice Situation	Trees and/or shrubs are showing signs of reduced health (thinning crowns, less branching, pest or disease impacts) and fruit production. Loss of trees or shrubs may occur within a few years. Soil erosion and sedimentation is a concern if trees or shrubs are removed.
After Practice Situation	Tree/shrub pruning is completed on trees and/or shrubs. Cut vegetative material may be left on the ground providing cover, and increasing organic matter. Alternative row pruning, treating every other row (or one-half the plants), in the same field, is completed 2 times. Renovation pruning is conducted one time for the entire field.
Scenario Feature Measure	individual tree/shrub pruned
Scenario Unit	Each
Scenario Typical Size	300

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$194.85	$0.65
Labor	$755.55	$2.52
Mobilization	$204.69	$0.68
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,155.09	$3.85

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	1318	Pruning tools, hand tools	Pruning tools, hand tools, shears, loppers, pole saw, handsaw Equipment costs only. Labor not included.	Hour	$2.00	6	$12.00
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	18	$97.20
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	$28.55	3	$85.65
Labor	231	General Labor	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	$26.15	24	$627.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	3	$127.95
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	666 - Forest Stand Improvement
Scenario ID	5
Scenario Name	Chemical Competition Control, Ground Application
Scenario Description	This practice involves the application of herbicides using mechanized equipment (such as ATV or tractor mounted boom) in order to control or kill undesired vegetation or treat stumps or sprouts of undesired vegetation, and improve forest conditions and composition. Typical sites include forests that contain an adequate component of desirable tree species (more than 70 trees per acre, more than 50% crown cover) that will be retained after treatment such as native forests with encroaching invasive species, or timber plantations that require release. Resource concerns include degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition; Wildlife habitat degradation; Wildfire hazard; and Inadequate structure and composition.
Before Practice Situation	An adequately stocked stand of desirable trees is not growing to its potential for the site due to competition from undesirable trees and brush. Releasing the desirable trees from the competition will be achieved through the application of appropriate herbicides according to label directions. Application will be by ground equipment.
After Practice Situation	After adjusting the stocking to an acceptable level and/or controlling the competing vegetation, stand growth, condition, and overall quality is improved. The residual forest contains at least 70 desirable trees per acre representing a minimum 50% crown cover after treatment. In addition, wildlife habitat is improved with the resulting increase of sunlight reaching the forest floor.
Scenario Feature Measure	area of treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$160.59	$32.12
Equipment/Installation	$110.86	$22.17
Labor	$180.25	$36.05
Mobilization	$475.27	$95.05
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$926.97	$185.39

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	2	$122.02
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	5	$5.45
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	3	$33.12
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	$6.50	5	$32.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	3	$78.36
Labor	231	General Labor	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	$26.15	2	$52.30
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	3	$127.95
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$24.68	1	$24.68
Mobilization	1138	Mobilization, small equipment	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	$191.18	2	$382.36
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97

Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	666 - Forest Stand Improvement
Scenario ID	4
Scenario Name	Chemical Competition Control, Manual Application
Scenario Description	This practice involves the application of herbicides using backpack sprayer or similar equipment, and may be used alone (e.g. basal bark, broadcast) or in conjunction with manual tree and shrbu cutting scenarios (e.g. hack-n-squirt), in order to control or kill undesirable vegetation and improve forest conditions and composition. Typical sites include forests that contain an adequate component of desirable tree species (more than 70 trees per acre, more than 50% crown cover) that will be retained after treatment such as native forests with encroaching invasive species, or timber plantations that require release. Resource concerns include degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition; Wildlife habitat degradation; Wildfire hazard; and Inadequate structure and composition.
Before Practice Situation	An adequately stocked stand of desirable trees is not growing to its potential for the site due to competition from undesirable trees and brush. Releasing the desirable trees from the competition will be achieved through the application of appropriate herbicides according to label directions. Application will be by ground equipment.
After Practice Situation	After adjusting the stocking to an acceptable level and/or controlling the competing vegetation, stand growth, condition, and overall quality is improved. The residual forest contains at least 70 desirable trees per acre representing a minimum 50% crown cover after treatment. In addition, wildlife habitat is improved with the resulting increase of sunlight reaching the forest floor.
Scenario Feature Measure	area of treatment
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$160.59	$32.12
Equipment/Installation	$473.08	$94.62
Labor	$68.80	$13.76
Mobilization	$68.23	$13.65
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$770.70	$154.14

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyor	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$61.01	2	$122.02
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$1.09	5	$5.45
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	$11.04	3	$33.12
Equipment/Installation	964	Chemical, spot treatment, single stem application	Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included.	Hour	$55.87	8	$446.96
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	1	$26.12
Labor	231	General Labor	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	$26.15	1	$26.15
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	1	$42.65
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	666 - Forest Stand Improvement
Scenario ID	8
Scenario Name	Manual Competition Control, Heavy
Scenario Description	This practice involves the use of chainsaws or hand tools to remove above ground vegetation either by clearing or selective cutting in order to improve forest conditions or composition (Heavy Rating per PIA Size-Density-Slope Matrix). Typical sites include forests that contain an adequate component of desirable tree species (more than 70 trees per acre, more than 50% crown cover) that will be retained after treatment such as native forests with encroaching invasive species, or timber plantations that require thinning. Resource concerns include degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition; Wildlife habitat degradation; Wildfire hazard; and Inadequate structure and composition.
Before Practice Situation	An overstocked stand of desirable trees or an adequately stocked stand of desirable trees that is adversely affected by competition from undesirable or invasive species, neither condition meeting landowner objectives.
After Practice Situation	After adjusting the stocking to an acceptable level and/or controlling the competing vegetation, stand growth, condition, and overall quality is improved. The residual forest contains at least 70 desirable trees per acre representing a minimum 50% crown cover after treatment. In addition, wildlife habitat may be improved or sunlight reaching the understory may be increased.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,031.36	$406.27
Labor	$9,578.40	$1,915.68
Mobilization	$564.50	$112.90
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$12,174.26	$2,434.85

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	144	$777.60
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	48	$1,253.76
Labor	231	General Labor	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	$26.15	288	$7,531.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	48	$2,047.20
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	6	$155.82
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	6	$253.56
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	666 - Forest Stand Improvement
Scenario ID	6
Scenario Name	Manual Competition Control, Light
Scenario Description	This practice involves the use of chainsaws or hand tools to remove above ground vegetation either by clearing or selective cutting in order to improve forest conditions or composition (Light Rating per PIA Size-Density-Slope Matrix). Typical sites include forests that contain an adequate component of desirable tree species (more than 70 trees per acre, more than 50% crown cover) that will be retained after treatment such as native forests with encroaching invasive species, or timber plantations that require thinning. Resource concerns include degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition; Wildlife habitat degradation; Wildfire hazard; and Inadequate structure and composition.
Before Practice Situation	An overstocked stand of desirable trees or an adequately stocked stand of desirable trees that is adversely affected by competition from undesirable or invasive species, neither condition meeting landowner objectives.
After Practice Situation	After adjusting the stocking to an acceptable level and/or controlling the competing vegetation, stand growth, condition, and overall quality is improved. The residual forest contains at least 70 desirable trees per acre representing a minimum 50% crown cover after treatment. In addition, wildlife habitat may be improved or sunlight reaching the understory may be increased.
Scenario Feature Measure	Area treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$338.56	$67.71
Labor	$1,596.40	$319.28
Mobilization	$223.35	$44.67
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,158.31	$431.66

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	24	$129.60
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	8	$208.96
Labor	231	General Labor	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	$26.15	48	$1,255.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	8	$341.20
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	1	$42.26
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	666 - Forest Stand Improvement
Scenario ID	7
Scenario Name	Manual Competition Control, Medium
Scenario Description	This practice involves the use of chainsaws or hand tools to remove above ground vegetation either by clearing or selective cutting in order to improve forest conditions or composition (Medium Rating per PIA Size-Density-Slope Matrix). Typical sites include forests that contain an adequate component of desirable tree species (more than 70 trees per acre, more than 50% crown cover) that will be retained after treatment such as native forests with encroaching invasive species, or timber plantations that require thinning. Resource concerns include degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition; Wildlife habitat degradation; Wildfire hazard; and Inadequate structure and composition.
Before Practice Situation	An overstocked stand of desirable trees or an adequately stocked stand of desirable trees that is adversely affected by competition from undesirable or invasive species, neither condition meeting landowner objectives.
After Practice Situation	After adjusting the stocking to an acceptable level and/or controlling the competing vegetation, stand growth, condition, and overall quality is improved. The residual forest contains at least 70 desirable trees per acre representing a minimum 50% crown cover after treatment. In addition, wildlife habitat may be improved or sunlight reaching the understory may be increased.
Scenario Feature Measure	Acres treated
Scenario Unit	Acres
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,015.68	$203.14
Labor	$4,789.20	$957.84
Mobilization	$359.81	$71.96
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,164.69	$1,232.94

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	$5.40	72	$388.80
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	24	$626.88
Labor	231	General Labor	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	$26.15	144	$3,765.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	24	$1,023.60
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$77.56	2	$155.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	666 - Forest Stand Improvement
Scenario ID	3
Scenario Name	Mechanical Competition Control, Heavy
Scenario Description	Using heavy equipment such as a dozer to control vegetation that is competing with desirable trees and species or to reduce the stocking level of a stand of desirable trees (Heavy Rating per PIA Size-Density-Slope Matrix). Typical sites include forests that contain an adequate component of desirable tree species (more than 70 trees per acre, more than 50% crown cover) that will be retained after treatment such as native forests with encroaching invasive species, or timber plantations that require thinning. Resource concerns include degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition; Wildlife habitat degradation; Wildfire hazard; and Inadequate structure and composition.
Before Practice Situation	An overstocked stand of desirable trees or an adequately stocked stand of desirable trees that is adversely affected by competition from undesirable or invasive species, neither condition meeting landowner objectives.
After Practice Situation	After adjusting the stocking to an acceptable level and/or controlling the competing vegetation, stand growth, condition, and overall quality is improved. The residual forest contains at least 70 desirable trees per acre representing a minimum 50% crown cover after treatment. In addition, wildlife habitat may be improved or sunlight reaching the understory may be increased.
Scenario Feature Measure	Area Treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$2,712.40	$542.48
Labor	$2,847.30	$569.46
Mobilization	$1,071.50	$214.30
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$6,631.20	$1,326.24

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	40	$2,190.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	20	$522.40
Labor	231	General Labor	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	$26.15	24	$627.60
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	10	$426.50
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	40	$1,793.20
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	3	$77.91
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	5	$211.30
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	5	$222.05

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	666 - Forest Stand Improvement
Scenario ID	1
Scenario Name	Mechanical Competition Control, Light
Scenario Description	Using heavy equipment such as a dozer to control vegetation that is competing with desirable trees and species or to reduce the stocking level of a stand of desirable trees (Light Rating per PIA Size-Density-Slope Matrix). Typical sites include forests that contain an adequate component of desirable tree species (more than 70 trees per acre, more than 50% crown cover) that will be retained after treatment such as native forests with encroaching invasive species, or timber plantations that require thinning. Resource concerns include degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition; Wildlife habitat degradation; Wildfire hazard; and Inadequate structure and composition.
Before Practice Situation	An overstocked stand of desirable trees or an adequately stocked stand of desirable trees that is adversely affected by competition from undesirable or invasive species, neither condition meeting landowner objectives.
After Practice Situation	After adjusting the stocking to an acceptable level and/or controlling the competing vegetation, stand growth, condition, and overall quality is improved. The residual forest contains at least 70 desirable trees per acre representing a minimum 50% crown cover after treatment. In addition, wildlife habitat may be improved or sunlight reaching the understory may be increased.
Scenario Feature Measure	Area Treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$704.22	$140.84
Labor	$742.80	$148.56
Mobilization	$759.55	$151.91
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,206.57	$441.31

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	10	$547.50
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	6	$156.72
Labor	231	General Labor	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	$26.15	8	$209.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	2	$85.30
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	10	$448.30
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	1	$25.97
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	2	$84.52
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	2	$88.82

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Forestry
Practice Code/Name	666 - Forest Stand Improvement
Scenario ID	2
Scenario Name	Mechanical Competition Control, Medium
Scenario Description	Using heavy equipment such as a dozer to control vegetation that is competing with desirable trees and species or to reduce the stocking level of a stand of desirable trees (Medium Rating per PIA Size-Density-Slope Matrix). Typical sites include forests that contain an adequate component of desirable tree species (more than 70 trees per acre, more than 50% crown cover) that will be retained after treatment such as native forests with encroaching invasive species, or timber plantations that require thinning. Resource concerns include degraded plant condition - undesirable plant productivity and health, excessive plant pressure and inadequate structure and composition; Wildlife habitat degradation; Wildfire hazard; and Inadequate structure and composition.
Before Practice Situation	An overstocked stand of desirable trees or an adequately stocked stand of desirable trees that is adversely affected by competition from undesirable or invasive species, neither condition meeting landowner objectives.
After Practice Situation	After adjusting the stocking to an acceptable level and/or controlling the competing vegetation, stand growth, condition, and overall quality is improved. The residual forest contains at least 70 desirable trees per acre representing a minimum 50% crown cover after treatment. In addition, wildlife habitat may be improved or sunlight reaching the understory may be increased.
Scenario Feature Measure	Area Treated
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$0.00	$0.00
Equipment/Installation	$1,408.44	$281.69
Labor	$1,570.90	$314.18
Mobilization	$872.19	$174.44
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$3,851.53	$770.31

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$54.75	20	$1,095.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.12	12	$313.44
Labor	231	General Labor	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	$26.15	16	$418.40
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$42.65	6	$255.90
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.83	20	$896.60
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$280.12	2	$560.24
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$25.97	2	$51.94
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	$42.26	3	$126.78
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$44.41	3	$133.23

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Pacific Islands Area
State	Pacific Islands Area
Discipline Group	Agronomy
Practice Code/Name	798 - Seasonal High Tunnel for Crops
Scenario ID	1
Scenario Name	Seasonal High Tunnel with sides and ends
Scenario Description	Used for Non-Contiguous US (Pacific Islands Area, Alaska, Caribbean Area) in areas with low snowfall. A quonset-style (round) manufactured frame of tubular steel (30 x 72 ft.) covered with 4-year 6mil plastic. Costs are based on purchase of manufactured kit and landowner installing the structure. Structure must be installed to manufacturer's specifications.
Before Practice Situation	Cropland where extension of the growing season is needed. Additional resource concerns that may need to be addressed include; soil erosion, soil condition, water quality, water quantity, plant condition, and energy use.
After Practice Situation	A seasonal high tunnel has been installed and the growing season has been extended for 1-4 months on average. Plant health and vigor is improved and there is decreased energy use by producing food locally.
Scenario Feature Measure	Area of Tunnel Installed
Scenario Unit	Square Foot
Scenario Typical Size	2160

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$6,264.00	$2.90
Equipment/Installation	$0.00	$0.00
Labor	$1,856.65	$0.86
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$8,120.65	$3.76

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1277	Hoop House, quonset style, base package	Includes the framework complete with all predrilled steel, hardware and instructions. Includes 6 mil 4-year polyethylene film to cover tunnel, and polylock for sides and ends for a quonset style (round top) hoop house. Materials and shipping only, does not include labor.	Square Foot	$2.90	2160	$6,264.00
Labor	231	General Labor	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	$26.15	71	$1,856.65