

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	500 - Obstruction Removal
Scenario ID	1
Scenario Name	Removal and Disposal of Brush and Trees < 6 inch Diameter
Scenario Description	Removal of standing timber or brush that needs to be cleared to make room for construction of a cost shared structural conservation practice. Typical area is 1 acre. Materials are typically removed by grinding with a Fecon or similar equipment.
Before Practice Situation	On any land where existing obstructions interfere with planned land use development, public safety or infrastructure. The site may be abandoned mine lands, construction sites, recreation areas, farms, ranches, and areas affected by natural disasters. This is not intended for the removal of obstructions from aquatic environments.
After Practice Situation	The typical area will be a 1.0 acre impaired area. The removal of brush and trees < 6 inch diameter will be performed with the use of equipment and hand labor. Dispose of all brush and trees from the obstruction removal so that it does not impede subsequent work or cause onsite or offsite damage. Revegetate or otherwise protect from erosion disturbed areas as soon as possible. Refer to NRCS Conservation Practice Standard 342, Critical Area Planting for seedbed preparation, seeding, fertilizing, and mulching requirements. The practice is to improve site conditions in order to apply conservation practices or facilitate better use of the landscape.
Scenario Feature Measure	Land Area
Scenario Unit	Acre
Scenario Typical Size	1.0

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$1,085.04	\$1,085.04
Labor	\$227.44	\$227.44
Mobilization	\$361.28	\$361.28
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,673.76	\$1,673.76

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation	943	Mechanical cutter, chopper	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$135.63	8	\$1,085.04
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$28.43	8	\$227.44
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	\$180.64	2	\$361.28

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	500 - Obstruction Removal
Scenario ID	4
Scenario Name	Organic Debris Pile-Haul
Scenario Description	Removal of piles of organic debris such as berm rows or other debris and trash, approximately 60 CY. Materials are to be removed from the site and properly disposed of or buried on site in compliance with all laws and regulations. Burning is not considered an acceptable method of disposal under this scenario.
Before Practice Situation	On any land where existing obstructions interfere with planned land use development, public safety or infrastructure. The site may be abandoned mine lands, construction sites, recreation areas, farms, ranches, and areas affected by natural disasters. This is not intended for the removal of obstructions from aquatic environments.
After Practice Situation	The typical area will be a 1.0 acre impaired area. Dispose of all brush and trees from the obstruction removal so that it does not impede subsequent work or cause onsite or offsite damage. Revegetate or otherwise protect from erosion disturbed areas as soon as possible. Refer to NRCS Conservation Practice Standard 342, Critical Area Planting for seedbed preparation, seeding, fertilizing, and mulching requirements. The practice is to improve site conditions in order to apply conservation practices or facilitate better use of the landscape.
Scenario Feature Measure	Material Volume
Scenario Unit	Cubic Yard
Scenario Typical Size	60

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$1,093.20	\$18.22
Labor	\$452.16	\$7.54
Mobilization	\$529.34	\$8.82
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,074.70	\$34.58

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	\$106.68	4	\$426.72
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	\$83.31	8	\$666.48
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	\$37.68	12	\$452.16
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	500 - Obstruction Removal
Scenario ID	3
Scenario Name	Standing Timber-Bury or Haul
Scenario Description	Removal of standing timber or brush that needs to be cleared to make room for construction of a cost shared structural conservation practice. Typical area is 1 acre. Materials are typically removed by pushing aside (out of the way) into piles with a dozer or by dozing into piles. Material is then loaded into trucks and hauled off-site in compliance with all laws and regulations.
Before Practice Situation	On any land where existing obstructions interfere with planned land use development, public safety or infrastructure. The site may be abandoned mine lands, construction sites, recreation areas, farms, ranches, and areas affected by natural disasters. This is not intended for the removal of obstructions from aquatic environments.
After Practice Situation	The typical area will be a 1.0 acre impaired area. Dispose of all brush and trees from the obstruction removal so that it does not impede subsequent work or cause onsite or offsite damage. Revegetate or otherwise protect from erosion disturbed areas as soon as possible. Refer to NRCS Conservation Practice Standard 342, Critical Area Planting for seedbed preparation, seeding, fertilizing, and mulching requirements. The practice is to improve site conditions in order to apply conservation practices or facilitate better use of the landscape.
Scenario Feature Measure	Land Area
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$3,603.44	\$3,603.44
Labor	\$1,205.76	\$1,205.76
Mobilization	\$529.34	\$529.34
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$5,338.54	\$5,338.54

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	\$106.68	8	\$853.44
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	\$177.13	8	\$1,417.04
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	\$83.31	16	\$1,332.96
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	\$37.68	32	\$1,205.76
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	500 - Obstruction Removal
Scenario ID	2
Scenario Name	Standing Timber-Pile or Burn
Scenario Description	Removal of standing timber or brush that needs to be cleared to make room for construction of a cost shared structural conservation practice. Typical area is 1 acre. Materials are typically removed by pushing aside (out of the way) into piles with a dozer or by dozing into piles and burning in compliance with all laws and regulations.
Before Practice Situation	On any land where existing obstructions interfere with planned land use development, public safety or infrastructure. The site may be abandoned mine lands, construction sites, recreation areas, farms, ranches, and areas affected by natural disasters. This is not intended for the removal of obstructions from aquatic environments.
After Practice Situation	The typical area will be a 1.0 acre impaired area. Dispose of all brush and trees from the obstruction removal so that it does not impede subsequent work or cause onsite or offsite damage. Revegetate or otherwise protect from erosion disturbed areas as soon as possible. Refer to NRCS Conservation Practice Standard 342, Critical Area Planting for seedbed preparation, seeding, fertilizing, and mulching requirements. The practice is to improve site conditions in order to apply conservation practices or facilitate better use of the landscape.
Scenario Feature Measure	Land Area
Scenario Unit	Acre
Scenario Typical Size	1.0

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$1,417.04	\$1,417.04
Labor	\$301.44	\$301.44
Mobilization	\$529.34	\$529.34
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,247.82	\$2,247.82

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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	\$177.13	8	\$1,417.04
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	\$37.68	8	\$301.44
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	500 - Obstruction Removal
Scenario ID	5
Scenario Name	Removal and Disposal of Steel and or Concrete Structures
Scenario Description	Breaking up, loading, and hauling off-site concrete structures for proper disposal. Typical size is 15x25 slab or 10 CY prior to breaking. Larger projects do not apply under this scenario. Broken up concrete may also be disposed of by burial if this won't interfere with installation or function of structural conservation practice and is in compliance with all laws and regulations.
Before Practice Situation	On any land where existing obstructions interfere with planned land use development, public safety or infrastructure. The site may be abandoned mine lands, construction sites, recreation areas, farms, ranches, and areas affected by natural disasters. This is not intended for the removal of obstructions from aquatic environments.
After Practice Situation	Revegetate or otherwise protect from erosion disturbed areas as soon as possible. Refer to NRCS Conservation Practice Standard 342, Critical Area Planting for seedbed preparation, seeding, fertilizing, and mulching requirements. The practice is to improve site conditions in order to apply conservation practices or facilitate better use of the landscape.
Scenario Feature Measure	Land Area
Scenario Unit	Square Feet
Scenario Typical Size	375.0

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$690.24	\$1.84
Labor	\$273.16	\$0.73
Mobilization	\$1,262.42	\$3.37
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,225.82	\$5.94

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	\$178.50	2	\$357.00
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	\$83.31	4	\$333.24
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	\$30.61	4	\$122.44
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	\$37.68	4	\$150.72
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	\$495.05	2	\$990.10
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	\$37.33	4	\$149.32
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	4	\$123.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	500 - Obstruction Removal
Scenario ID	6
Scenario Name	Removal and Disposal of Wood Structures
Scenario Description	Breaking up, loading, and hauling off-site concrete structures for proper disposal. Typical size is a 1000 SF wooden structure. Larger projects do not apply under this scenario. Structure may also be disposed of by burial if this won't interfere with installation or function of structural conservation practice and is in compliance with all laws and regulations.
Before Practice Situation	On any land where existing obstructions interfere with planned land use development, public safety or infrastructure. The site may be abandoned mine lands, construction sites, recreation areas, farms, ranches, and areas affected by natural disasters. This is not intended for the removal of obstructions from aquatic environments.
After Practice Situation	Revegetate or otherwise protect from erosion disturbed areas as soon as possible. Refer to NRCS Conservation Practice Standard 342, Critical Area Planting for seedbed preparation, seeding, fertilizing, and mulching requirements. The practice is to improve site conditions in order to apply conservation practices or facilitate better use of the landscape.
Scenario Feature Measure	Land Area
Scenario Unit	Square Feet
Scenario Typical Size	1000.0

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$690.24	\$0.69
Labor	\$273.16	\$0.27
Mobilization	\$1,262.42	\$1.26
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,225.82	\$2.23

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	\$178.50	2	\$357.00
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	\$83.31	4	\$333.24
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	\$30.61	4	\$122.44
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	\$37.68	4	\$150.72
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	\$495.05	2	\$990.10
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	\$37.33	4	\$149.32
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	4	\$123.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	512 - Forage and Biomass Planting
Scenario ID	3
Scenario Name	Seedbed Prep, Seed & Seeding- Introduced Perennial Cool Season Grasses with lime.
Scenario Description	Establish or reseed adapted perennial introduced cool season grasses and legumes 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 perennial introduced cool season grasses for pasture, hayland, and wildlife openings. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, seed, equipment and labor for seed bed prep, tillage, seeding, and spreading.
Before Practice Situation	Poor or nonexistent stand of grass species. Resource concerns may include undesirable 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 Forage and Biomass Planting
Scenario Unit	Acre
Scenario Typical Size	30

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$19,628.86	\$654.30
Equipment/Installation	\$1,483.80	\$49.46
Labor	\$897.90	\$29.93
Mobilization	\$300.00	\$10.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$22,310.56	\$743.69

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	2	\$19.06
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	30	\$331.20
Materials	97	Timothy (Phleum pratense)	Introduced Perennial Grasses and shipping. Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$2.46	300	\$738.00
Materials	71	Nitrogen (N), Urea	Fertilizer: Limestone Spread on field. Price is not per pound of total product applied, no conversion is needed.	Pound	\$1.37	1800	\$2,466.00
Materials	75	Lime, ENM	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Ton	\$409.52	30	\$12,285.60
Materials	74	Potassium, K2O	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.93	900	\$837.00
Materials	73	Phosphorus, P2O5	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Pound	\$1.64	1800	\$2,952.00
Equipment/Installation	953	Lime application	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	\$8.36	30	\$250.80
Equipment/Installation	945	Tillage, Light	Chemical application performed by ground equipment. Equipment and labor costs included.	Acre	\$9.63	30	\$288.90
Equipment/Installation	948	Chemical, ground application	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.50	30	\$195.00
Equipment/Installation	950	Fertilizer, ground application, dry bulk	No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor. Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Acre	\$5.89	30	\$176.70
Equipment/Installation	960	Seeding Operation, No Till/Grass Drill	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.	Acre	\$19.08	30	\$572.40
Labor	234	Supervisor or Manager		Hour	\$59.86	15	\$897.90
Mobilization	1043	Mobilization, Material, distance > 50 miles		Dollar	\$1.00	300	\$300.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	512 - Forage and Biomass Planting
Scenario ID	4
Scenario Name	Seedbed Prep, Seed & Seeding- Introduced Perennial Cool Season Grasses with lime.
Scenario Description	Establish or reseed adapted perennial introduced cool season grasses and legumes 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 perennial introduced cool season grasses for pasture, hayland, and wildlife openings. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, seed, equipment and labor for seed bed prep, tillage, seeding, and spreading.
Before Practice Situation	Poor or nonexistent stand of grass species. Resource concerns may include undesirable 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 forage and biomass planted
Scenario Unit	Acre
Scenario Typical Size	30

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$7,343.26	\$244.78
Equipment/Installation	\$1,233.00	\$41.10
Labor	\$0.00	\$0.00
Mobilization	\$300.00	\$10.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$8,876.26	\$295.88

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	2	\$19.06
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	30	\$331.20
Materials	97	Timothy (Phleum pratense)	Introduced Perennial Grasses and shipping.	Pound	\$2.46	300	\$738.00
Materials	71	Nitrogen (N), Urea	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$1.37	1800	\$2,466.00
Materials	74	Potassium, K2O	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.93	900	\$837.00
Materials	73	Phosphorus, P2O5	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$1.64	1800	\$2,952.00
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	\$9.63	30	\$288.90
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Equipment and labor costs included.	Acre	\$6.50	30	\$195.00
Equipment/Installation	950	Fertilizer, ground application, dry bulk	Dry bulk Fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.89	30	\$176.70
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	30	\$572.40
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	300	\$300.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	512 - Forage and Biomass Planting
Scenario ID	1
Scenario Name	Seedbed Prep, Seed & Seeding-Native Perennial Grasses with Lime
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 perennial native grasses for pasture, hayland, and wildlife openings. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, seed, equipment and labor for seed bed prep, tillage, seeding, and spreading.
Before Practice Situation	Existing stand of perennial grasses or monoculture or no grasses present. Resource concerns may include undesirable plant productivity and health, inadequate feed and forage for livestock, soil erosion and soil quality.
After Practice Situation	Suitable native species are established to improve forage quality and quantity and reduce soil erosion on cropland, hayland, pasture and/or biomass production.
Scenario Feature Measure	Acre of Forage and Biomass Planting
Scenario Unit	Acre
Scenario Typical Size	30

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$22,580.86	\$752.70
Equipment/Installation	\$1,678.80	\$55.96
Labor	\$897.90	\$29.93
Mobilization	\$300.00	\$10.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$25,457.56	\$848.59

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	2011	Roemer's Fescue (Festuca roemeri (F. idahoensis ssp. roemeri))	Native Grasses & shipping	Pound	\$18.45	200	\$3,690.00
Materials	299	Test, Soil Test, Standard	Includes materials, labor, and equipment costs.	Each	\$9.53	2	\$19.06
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	30	\$331.20
Materials	71	Nitrogen (N), Urea	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$1.37	1800	\$2,466.00
Materials	75	Lime, ENM	Fertilizer: Limestone Spread on field.	Ton	\$409.52	30	\$12,285.60
Materials	74	Potassium, K2O	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.93	900	\$837.00
Materials	73	Phosphorus, P2O5	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$1.64	1800	\$2,952.00
Equipment/Installation	953	Lime application	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$8.36	30	\$250.80
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	\$9.63	30	\$288.90
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Equipment and labor costs included.	Acre	\$6.50	60	\$390.00
Equipment/Installation	950	Fertilizer, ground application, dry bulk	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.89	30	\$176.70
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. Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Acre	\$19.08	30	\$572.40
Labor	234	Supervisor or Manager		Hour	\$59.86	15	\$897.90
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	300	\$300.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	512 - Forage and Biomass Planting
Scenario ID	2
Scenario Name	Seedbed Prep, Seed & Seeding-Native Perennial Grasses with NO Lime
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 perennial native grasses for pasture, hayland, and wildlife openings. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, seed, equipment and labor for seed bed prep, tillage, seeding, and spreading.
Before Practice Situation	Existing stand of perennial grasses or monoculture or no grasses present. Resource concerns may include undesirable plant productivity and health, inadequate feed and forage for livestock, soil erosion and soil quality.
After Practice Situation	Suitable native species are established to improve forage quality and quantity and reduce soil erosion on cropland, hayland, pasture and/or biomass production.
Scenario Feature Measure	Acre of Forage and Biomass Planted
Scenario Unit	Acre
Scenario Typical Size	30

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$10,295.26	\$343.18
Equipment/Installation	\$1,233.00	\$41.10
Labor	\$897.90	\$29.93
Mobilization	\$300.00	\$10.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$12,726.16	\$424.21

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	2011	Roemer's Fescue (Festuca roemerii (F. idahoensis ssp. roemerii))	Native Grasses & shipping	Pound	\$18.45	200	\$3,690.00
Materials	299	Test, Soil Test, Standard	Includes materials, labor, and equipment costs.	Each	\$9.53	2	\$19.06
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	30	\$331.20
Materials	71	Nitrogen (N), Urea	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$1.37	1800	\$2,466.00
Materials	74	Potassium, K2O	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.93	900	\$837.00
Materials	73	Phosphorus, P2O5	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$1.64	1800	\$2,952.00
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	\$9.63	30	\$288.90
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Equipment and labor costs included.	Acre	\$6.50	30	\$195.00
Equipment/Installation	950	Fertilizer, ground application, dry bulk	Dry Bulk Fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.89	30	\$176.70
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. Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Acre	\$19.08	30	\$572.40
Labor	234	Supervisor or Manager		Hour	\$59.86	15	\$897.90
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	300	\$300.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	512 - Forage and Biomass Planting
Scenario ID	6
Scenario Name	Seedbed Prep, Seed & Seeding- Introduced Perennial Cool Season Grasses with No Lime [2012]
Scenario Description	Establish or reseed adapted perennial introduced cool season grasses and legumes 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 perennial introduced cool season grasses for pasture, hayland, and wildlife openings. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, seed, equipment and labor for seed bed prep, tillage, seeding, and spreading.
Before Practice Situation	Poor or nonexistent stand of grass species. Resource concerns may include undesirable 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 forage and biomass planted
Scenario Unit	Acre
Scenario Typical Size	30

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$6,704.26	\$223.48
Equipment/Installation	\$2,466.00	\$82.20
Labor	\$0.00	\$0.00
Mobilization	\$2,722.56	\$90.75
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$11,892.82	\$396.43

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	2	\$19.06
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	30	\$331.20
Materials	97	Timothy (Phleum pratense)	Introduced Perennial Grasses and shipping.	Pound	\$2.46	300	\$738.00
Materials	71	Nitrogen (N), Urea	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$1.37	1800	\$2,466.00
Materials	74	Potassium, K2O	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.93	1800	\$1,674.00
Materials	73	Phosphorus, P2O5	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$1.64	900	\$1,476.00
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	\$9.63	60	\$577.80
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Equipment and labor costs included.	Acre	\$6.50	60	\$390.00
Equipment/Installation	950	Fertilizer, ground application, dry bulk	Dry bulk Fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.89	60	\$353.40
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	60	\$1,144.80
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	2000	\$2,000.00
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	\$180.64	4	\$722.56

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	512 - Forage and Biomass Planting
Scenario ID	5
Scenario Name	Seedbed Prep, Seed & Seeding-Native Perennial Grasses with NO Lime
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 perennial native grasses for pasture, hayland, and wildlife openings. This practice may be utilized for organic or regular production. This scenario assumes fertilizer, seed, equipment and labor for seed bed prep, tillage, seeding, and spreading.
Before Practice Situation	Existing stand of perennial grasses or monoculture or no grasses present. Resource concerns may include undesirable plant productivity and health, inadequate feed and forage for livestock, soil erosion and soil quality.
After Practice Situation	Suitable native species are established to improve forage quality and quantity and reduce soil erosion on cropland, hayland, pasture and/or biomass production.
Scenario Feature Measure	Acre of Forage and Biomass Planted
Scenario Unit	Acre
Scenario Typical Size	30

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$10,295.26	\$343.18
Equipment/Installation	\$2,466.00	\$82.20
Labor	\$1,496.50	\$49.88
Mobilization	\$2,959.80	\$98.66
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$17,217.56	\$573.92

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	2011	Roemer's Fescue (Festuca roemeri (F. idahoensis ssp. roemeri))	Native Grasses & shipping	Pound	\$18.45	200	\$3,690.00
Materials	299	Test, Soil Test, Standard	Includes materials, labor, and equipment costs.	Each	\$9.53	2	\$19.06
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	30	\$331.20
Materials	71	Nitrogen (N), Urea	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$1.37	1800	\$2,466.00
Materials	74	Potassium, K2O	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.93	900	\$837.00
Materials	73	Phosphorus, P2O5	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$1.64	1800	\$2,952.00
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included.	Acre	\$9.63	60	\$577.80
Equipment/Installation	948	Chemical, ground application	Chemical application performed by ground equipment. Equipment and labor costs included.	Acre	\$6.50	60	\$390.00
Equipment/Installation	950	Fertilizer, ground application, dry bulk	Dry Bulk Fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.89	60	\$353.40
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. Labor involving supervision or management activities.	Acre	\$19.08	60	\$1,144.80
Labor	234	Supervisor or Manager	Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$59.86	25	\$1,496.50
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	2000	\$2,000.00
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	\$180.64	4	\$722.56
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	4	\$237.24

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Water Management Engineering
Practice Code/Name	516 - Pipeline
Scenario ID	2
Scenario Name	HDPE - Summer Use, remote
Scenario Description	Description: Below ground 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 500 feet of 1½-inch, Class 160 (DR-11, PE4710), HDPE Pipeline with appurtenances, installed below ground with a minimum 2 feet of ground cover. The scenario unit is weight of pipe material in pounds. 500 feet of 1½-inch, Class 160 (DR-11, PE4710), HDPE pipe weighs 0.309 lb/ft, or a total of 154.5 pounds. Appurtenances include: fittings, anchors, thrust blocks, gate valves (2), air release valves (2), drain valve (1), pressure relief valve (1), gravel drain (8 cf), 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	Feet of Pipe
Scenario Unit	Linear Foot
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$535.50	\$1.07
Equipment/Installation	\$985.12	\$1.97
Labor	\$472.32	\$0.94
Mobilization	\$609.13	\$1.22
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,602.07	\$5.20

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	\$3.15	170	\$535.50
Equipment/Installation	1383	Fuser for HDPE Pipe	Fusing machine for 1" to 12" diameter HDPE pipe joints. Equipment costs only. Does not include labor.	Hour	\$22.34	8	\$178.72
Equipment/Installation	53	Trenching, Earth, 12" x 48"	Trenching, earth, 12" wide x 48" depth, includes equipment and labor for trenching and backfilling	Foot	\$1.60	504	\$806.40
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$28.43	8	\$227.44
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	\$30.61	8	\$244.88
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	\$73.29	4.7	\$344.46
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	1	\$264.67

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Water Management Engineering
Practice Code/Name	516 - Pipeline
Scenario ID	1
Scenario Name	HDPE - Summer Use
Scenario Description	Description: Below ground installation of HDPE (Iron Pipe Size & Tubing) pipeline. HDPE 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 minimum size is 1¼-inch. Construct 500 feet of 1¼-inch, Class 160 (DR-11, PE4710), HDPE Pipeline with appurtenances, installed below ground with a minimum 2 feet of ground cover. The scenario unit is length of pipe material in feet. 500 feet of 1¼-inch, Class 160 (DR-11, PE4710), HDPE pipe weighs 0.309 lb/ft, or a total of 154.5 pounds. Appurtenances include: fittings, anchors, thrust blocks, gate valves (2), air release valves (2), drain valve (1), pressure relief valve (1), gravel drain (8 cf), 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	Foot of Pipe
Scenario Unit	Linear Foot
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$535.50	\$1.07
Equipment/Installation	\$985.12	\$1.97
Labor	\$472.32	\$0.94
Mobilization	\$168.98	\$0.34
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,161.92	\$4.32

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	\$3.15	170	\$535.50
Equipment/Installation	1383	Fuser for HDPE Pipe	Fusing machine for 1" to 12" diameter HDPE pipe joints. Equipment costs only. Does not include labor.	Hour	\$22.34	8	\$178.72
Equipment/Installation	53	Trenching, Earth, 12" x 48"	Trenching, earth, 12" wide x 48" depth, includes equipment and labor for trenching and backfilling	Foot	\$1.60	504	\$806.40
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$28.43	8	\$227.44
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	\$30.61	8	\$244.88
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	\$73.29	0.5	\$36.65
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	0.5	\$132.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Water Management Engineering
Practice Code/Name	516 - Pipeline
Scenario ID	4
Scenario Name	HDPE - Year Round Use, remote
Scenario Description	Description: Below ground 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 500 feet of 1½-inch, Class 160 (DR-11, PE4710), HDPE Pipeline with appurtenances, installed below ground with a minimum 8 feet of ground cover. The scenario unit is weight of pipe material in pounds. 500 feet of 1½-inch, Class 160 (DR-11, PE4710), HDPE pipe weighs 0.309 lb/ft, or a total of 154.5 pounds. Appurtenances include: fittings, anchors, thrust blocks, gate valves (2), air release valves (2), drain valve (1), pressure relief valve (1), gravel drain (8 cf), 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	Feet of Pipe
Scenario Unit	Linear Foot
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$535.50	\$1.07
Equipment/Installation	\$1,688.16	\$3.38
Labor	\$1,189.52	\$2.38
Mobilization	\$873.80	\$1.75
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$4,286.98	\$8.57

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	\$3.15	170	\$535.50
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	\$1.92	600	\$1,152.00
Equipment/Installation	1383	Fuser for HDPE Pipe	Fusing machine for 1" to 12" diameter HDPE pipe joints. Equipment costs only. Does not include labor.	Hour	\$22.34	24	\$536.16
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$28.43	16	\$454.88
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	\$30.61	24	\$734.64
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	\$73.29	4.7	\$344.46
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Water Management Engineering
Practice Code/Name	516 - Pipeline
Scenario ID	3
Scenario Name	HDPE - Year Round Use
Scenario Description	Description: Below ground 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 500 feet of 1½-inch, Class 160 (DR-11, PE4710), HDPE Pipeline with appurtenances, installed below ground with a minimum 8 feet of ground cover. The scenario unit is weight of pipe material in pounds. 500 feet of 1½-inch, Class 160 (DR-11, PE4710), HDPE pipe weighs 0.309 lb/ft, or a total of 154.5 pounds. Appurtenances include: fittings, anchors, thrust blocks, gate valves (2), air release valves (2), drain valve (1), pressure relief valve (1), gravel drain (8 cf), 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	Feet of Pipe
Scenario Unit	Linear Foot
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$535.50	\$1.07
Equipment/Installation	\$1,509.44	\$3.02
Labor	\$1,189.52	\$2.38
Mobilization	\$675.92	\$1.35
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$3,910.38	\$7.82

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	\$3.15	170	\$535.50
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	\$1.92	600	\$1,152.00
Equipment/Installation	1383	Fuser for HDPE Pipe	Fusing machine for 1" to 12" diameter HDPE pipe joints. Equipment costs only. Does not include labor.	Hour	\$22.34	16	\$357.44
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$28.43	16	\$454.88
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	\$30.61	24	\$734.64
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	\$73.29	2	\$146.58
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	521C - Pond Sealing or Lining, Bentonite Sealant
Scenario ID	1
Scenario Name	Bentonite Treatment - Covered
Scenario Description	Construction of a compacted soil liner, treated with bentonite, to reduce seepage from ponds or waste storage impoundment structures. Practice implementation includes incorporation of the bentonite with the soil under proper moisture conditions, compaction to the designed liner thickness, and placement of soil cover over the treated liner. Practice implementation may require filter compatibility with the subgrade (graded filter or geotextile). Associated practice PS378, PS313.
Before Practice Situation	In-place soils at site exhibit seepage rates in excess of acceptable limits. Soils are suitable for treatment with bentonite.
After Practice Situation	Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.
Scenario Feature Measure	Volume of Liner Material (includes 1 foot of soil cover over liner)
Scenario Unit	Cubic Yard
Scenario Typical Size	1613 Typical pond liner: 1 ft. thick with 1 ft. soil cover x 1 acre in area

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$79,764.02	\$49.45
Equipment/Installation	\$16,476.88	\$10.22
Labor	\$290.30	\$0.18
Mobilization	\$23,988.02	\$14.87
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$120,519.22	\$74.72

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	41	Bentonite	Bentonite, includes materials (50# bag)	Each	\$15.26	5227	\$79,764.02
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$5.02	3226	\$16,194.52
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
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$28.43	6	\$170.58
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	\$59.86	2	\$119.72
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	6	\$1,588.02
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	22400	\$22,400.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	528 - Prescribed Grazing
Scenario ID	7
Scenario Name	Pasture Deferment
Scenario Description	Defer the pasture for 90 days and up to a growing season to manage for invasive weeds when necessary, to improve the health of the plants and/or provide nesting habitat for wildlife species. Keep records of dates out and monitor to determine when desired objectives of deferment are met.
Before Practice Situation	Over-grazed pasture, a pasture with a low condition score, or a newly established pasture converted from cropland with a need for proper grazing management.
After Practice Situation	Improve the health and vigor of the sward, through deferment of grazing and improve the nesting habitat for wildlife.
Scenario Feature Measure	
Scenario Unit	Acre
Scenario Typical Size	100

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$44.24	\$0.44
Equipment/Installation	\$213.60	\$2.14
Labor	\$237.85	\$2.38
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$305.80	\$3.06
Total	\$801.49	\$8.01

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
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	5	\$150.35
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'. Equipment and labor costs included.	Mile	\$2.53	25	\$63.25
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	\$47.57	5	\$237.85
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	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	528 - Prescribed Grazing
Scenario ID	6
Scenario Name	Pasture Intensive
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: trend, 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 long term monitoring.
Scenario Feature Measure	
Scenario Unit	Acre
Scenario Typical Size	40

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$44.24	\$1.11
Equipment/Installation	\$821.75	\$20.54
Labor	\$3,025.85	\$75.65
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$326.67	\$8.17
Foregone Income	\$0.00	\$0.00
Total	\$4,218.51	\$105.46

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
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	\$32.87	25	\$821.75
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	\$47.57	25	\$1,189.25
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	\$30.61	60	\$1,836.60
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	295	Lodging	Hotel Accommodations	Each	\$77.00	2	\$154.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	528 - Prescribed Grazing
Scenario ID	5
Scenario Name	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, 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 protection of sensitive areas, and efficient harvest of forage resources. Grazing system success will be evaluated through short term monitoring.
Scenario Feature Measure	
Scenario Unit	Acre
Scenario Typical Size	40

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$44.24	\$1.11
Equipment/Installation	\$0.00	\$0.00
Labor	\$1,937.95	\$48.45
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$172.67	\$4.32
Foregone Income	\$0.00	\$0.00
Total	\$2,154.86	\$53.87

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
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	\$47.57	15	\$713.55
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	\$30.61	40	\$1,224.40
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

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	528 - Prescribed Grazing
Scenario ID	3
Scenario Name	Range Deferment
Scenario Description	Defer Rangeland for up to one year to manage for invasive weeds/brush, prescribed burning, to improve the rangeland health and/or provide nesting habitat for wildlife species. This will include deferments for reindeer range. Keep records of dates out and monitor to determine when desired objectives of deferment are met.
Before Practice Situation	Over-grazed pasture, a native rangeland with declining rangeland health, or a newly established range planting converted from cropland with a need for proper grazing management.
After Practice Situation	Improve the health and vigor native rangeland, through deferment of grazing and improve the nesting habitat for wildlife.
Scenario Feature Measure	
Scenario Unit	Acre
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$44.24	\$0.09
Equipment/Installation	\$577.55	\$1.16
Labor	\$713.55	\$1.43
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$458.70	\$0.92
Total	\$1,794.04	\$3.59

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
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	15	\$451.05
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'. Equipment and labor costs included.	Mile	\$2.53	50	\$126.50
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	\$47.57	15	\$713.55
Foregone Income	2079	FI, Grazing AUMs	Grazing is the Primary Land Use	AUM	\$15.29	30	\$458.70

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	528 - Prescribed Grazing
Scenario ID	2
Scenario Name	Range Long Term Monitoring
Scenario Description	Design and implementation of a grazing system that will enhance rangeland health and ecosystem function as well as optimize efficiency and economic return through monitoring (ex: trend, 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 rangeland health, 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 rangeland health 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 long term monitoring.
Scenario Feature Measure	
Scenario Unit	Acre
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$44.24	\$0.09
Equipment/Installation	\$986.10	\$1.97
Labor	\$5,915.20	\$11.83
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$558.92	\$1.12
Foregone Income	\$0.00	\$0.00
Total	\$7,504.46	\$15.01

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
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	\$32.87	30	\$986.10
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	\$47.57	60	\$2,854.20
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	\$30.61	100	\$3,061.00
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	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	1	\$116.67
Acquisition of Technical Knowledge	295	Lodging	Hotel Accommodations	Each	\$77.00	2	\$154.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	528 - Prescribed Grazing
Scenario ID	4
Scenario Name	Range Remote Reindeer
Scenario Description	Prescribed Grazing in remote locations such as the Seward Peninsula or on islands. Range is inaccessible by road and no fences are present. Herding and monitoring are by ATV or aircraft through out the year in extreme and hazardous conditions. Small groups of reindeer are scattered and difficult to locate. Implementation of a grazing schedule, record keeping which includes; number of animals, type and class of livestock, location and duration of grazing periods and rest/recovery periods, forage balance, monitoring and herding.
Before Practice Situation	Current grazing system exhibits undesirable and inefficient use of forage plants and such use may have a negative impact on rangeland health, 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 rangeland health and function through protection of sensitive areas, and efficient harvest of forage resources. Grazing system success will be evaluated through short term monitoring.
Scenario Feature Measure	
Scenario Unit	Acre
Scenario Typical Size	10,000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$44.24	\$0.00
Equipment/Installation	\$13,673.92	\$1.37
Labor	\$2,394.40	\$0.24
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$459.67	\$0.05
Foregone Income	\$0.00	\$0.00
Total	\$16,572.23	\$1.66

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
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	\$32.87	416	\$13,673.92
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	\$59.86	40	\$2,394.40
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	1	\$116.67
Acquisition of Technical Knowledge	295	Lodging	Hotel Accommodations	Each	\$77.00	3	\$231.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Range/Pasture Grazing
Practice Code/Name	528 - Prescribed Grazing
Scenario ID	1
Scenario Name	Range Standard
Scenario Description	Design and implementation of a grazing system that will enhance rangeland health and ecosystem function as well as optimize efficiency and economic return through monitoring (ex:photo points, stubble height after grazing, 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 rangeland health, 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 rangeland health and function through protection of sensitive areas, and efficient harvest of forage resources. Grazing system success will be evaluated through short term monitoring.
Scenario Feature Measure	
Scenario Unit	Acre
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$44.24	\$0.09
Equipment/Installation	\$629.40	\$1.26
Labor	\$3,739.40	\$7.48
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$228.67	\$0.46
Foregone Income	\$0.00	\$0.00
Total	\$4,641.71	\$9.28

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
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	10	\$300.70
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	\$32.87	10	\$328.70
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	\$47.57	40	\$1,902.80
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	\$30.61	60	\$1,836.60
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	1	\$116.67

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	1
Scenario Name	< 5 HP Submersible Pump with Pressure Tank
Scenario Description	<5 Hp submersible electric-powered pump is installed in a well or structure located on the road system. It is used for watering livestock as part of a prescribed grazing system; or for pressurizing a small irrigation system. Resource Concerns: Livestock Production Limitation - Inadequate livestock water; 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.
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.
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.
Scenario Feature Measure	Horse Power
Scenario Unit	Horse Power
Scenario Typical Size	0.75

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$611.90	\$815.86
Equipment/Installation	\$240.56	\$320.75
Labor	\$380.56	\$507.41
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,233.02	\$1,644.02

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1009	Pump, < 5 HP - Pump and motor, fixed cost portion	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	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	0.75	\$172.30
Materials	1038	Pressure Tank, 40 gallon	0	Each	\$264.00	1	\$264.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	8	\$240.56
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	\$47.57	8	\$380.56

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	5
Scenario Name	Manure Transfer
Scenario Description	Pump to move manure from storage location to manure distribution site/equipment. This scenario is typically used as a component of a waste management system which addresses the following resource concern: "Water quality degradation-excessive pathogens and chemicals from manure, biosolids, or compost".
Before Practice Situation	Inadequate manure transfer and/or storage system.
After Practice Situation	A 8 ft vertical manure chopper with a 15 hp pump installed to transfer manure to storage location. Transfer of animal waste as part of a manure transfer system to adequately address resource concerns.
Scenario Feature Measure	Each
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$10,500.00	\$10,500.00
Equipment/Installation	\$0.00	\$0.00
Labor	\$761.12	\$761.12
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$11,261.12	\$11,261.12

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1026	Pump, Chopper, Screw, >7 to 15 HP, includes pump & motor	Materials, labor, controls: Chopper/ Screw >7 to 15 HP includes pump & motor	Horsepower	\$700.00	15	\$10,500.00
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	\$47.57	16	\$761.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	2
Scenario Name	Livestock Nose Pump
Scenario Description	<p>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.</p> <p>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.</p>
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	\$30.07	\$30.07
Labor	\$91.83	\$91.83
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$514.52	\$514.52

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	\$30.07	1	\$30.07
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	\$30.61	3	\$91.83

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	4
Scenario Name	Photovoltaic-Powered Pump
Scenario Description	Complete solar power booster pump system to supply livestock water or irrigation needs from a storage reservoir. System requires 540 watts of power or less. 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 540-watt photovoltaic (PV) panel, capable of operating a 1/4 Hp (0.25 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 1/4 Hp solar-powered submersible pump to deliver about 1.5 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	Each
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$4,191.09	\$4,191.09
Equipment/Installation	\$0.00	\$0.00
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	\$4,191.09	\$4,191.09

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	0.54	\$1,802.36
Materials	1009	Pump, < 5 HP - Pump and motor, fixed cost portion	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	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	0.25	\$57.43
Materials	1031	Solar Panels, fixed cost portion	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	\$2,155.70

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Water Management Engineering
Practice Code/Name	533 - Pumping Plant
Scenario ID	3
Scenario Name	Windmill-Powered Pump
Scenario Description	A 12 foot windmill system is installed on the road system 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	12

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$9,499.05	\$791.59
Equipment/Installation	\$877.35	\$73.11
Labor	\$765.25	\$63.77
Mobilization	\$529.34	\$44.11
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$11,670.99	\$972.58

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1037	Windmill, 12' or larger, fan diameter	Includes materials costs for windmill head and 27' tower	Each	\$9,499.05	1	\$9,499.05
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-place 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	\$372.82	2	\$745.64
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	1	\$30.07
Equipment/Installation	1893	Aerial lift, telescoping bucket	Aerial lift, bucket truck or cherry picker, typical 40' boom. Equipment only.	Hour	\$50.82	2	\$101.64
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	\$30.61	25	\$765.25
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Environmental Engineering
Practice Code/Name	558 - Roof Runoff Structure
Scenario ID	4
Scenario Name	Gutter - Aluminum, remote
Scenario Description	<p>A roof runoff structure, consisting of 5" K-style aluminum gutter(s), downspout(s), and appropriate outlet facilities installed at a location off the Alaskan road system. Typical scenario is 160 feet of gutters on a 50 ft x 80 ft structure to prevent roof runoff from becoming contaminated in an animal lot. This scenario typically addresses the following resource concern: "Water quality degradation-excess pathogens and chemicals from manure, biosolids, or compost."</p> <p>Associated practices include Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Watering Facility (614), Underground Outlet (620), Diversion (362), and any relevant irrigation practices.</p>
Before Practice Situation	Applicable where: (1) a roof runoff management facility is included in 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 stable outlet.
After Practice Situation	A gutter, downspout, and outlet system servicing the portion of the building roof that would otherwise drain into a waste management system or create erosion. Roof line of 160 ft serviced with gutter, downspouts, and appurtenances.
Scenario Feature Measure	Linear Length of Roof to be Guttered
Scenario Unit	Linear Foot
Scenario Typical Size	160

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$640.93	\$4.01
Equipment/Installation	\$0.00	\$0.00
Labor	\$734.64	\$4.59
Mobilization	\$150.00	\$0.94
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,525.57	\$9.53

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1689	Gutter, Aluminum, Small	Aluminum gutter (4" to 6") in width with hangers. Materials only.	Foot	\$3.43	160	\$548.80
Materials	1700	Downspout, Aluminum, Small	Aluminum downspout (3" to 5") in width with hangers. Materials only.	Foot	\$3.55	20	\$71.00
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.22	0.6	\$21.13
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	\$30.61	24	\$734.64
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	150	\$150.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Environmental Engineering
Practice Code/Name	558 - Roof Runoff Structure
Scenario ID	3
Scenario Name	Gutter - Aluminum
Scenario Description	<p>A roof runoff structure, consisting of 5" K-style aluminum gutter(s), downspout(s), and appropriate outlet facilities installed at a location on the Alaskan road system. Typical scenario is 160 feet of gutters on a 50 ft x 80 ft structure to prevent roof runoff from becoming contaminated in an animal lot. This scenario typically addresses the following resource concern: "Water quality degradation-excess pathogens and chemicals from manure, biosolids, or compost."</p> <p>Associated practices include Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Watering Facility (614), Underground Outlet (620), Diversion (362), and any relevant irrigation practices.</p>
Before Practice Situation	Applicable where: (1) a roof runoff management facility is included in 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 stable outlet.
After Practice Situation	A gutter, downspout, and outlet system servicing the portion of the building roof that would otherwise drain into a waste management system or create erosion. Roof line of 160 ft serviced with gutter, downspouts, and appurtances.
Scenario Feature Measure	Linear Length of Roof to be Guttered
Scenario Unit	Linear Foot
Scenario Typical Size	160

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$640.93	\$4.01
Equipment/Installation	\$0.00	\$0.00
Labor	\$734.64	\$4.59
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,375.57	\$8.60

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1689	Gutter, Aluminum, Small	Aluminum gutter (4" to 6") in width with hangers. Materials only.	Foot	\$3.43	160	\$548.80
Materials	1700	Downspout, Aluminum, Small	Aluminum downspout (3" to 5") in width with hangers. Materials only.	Foot	\$3.55	20	\$71.00
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.22	0.6	\$21.13
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	\$30.61	24	\$734.64

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Environmental Engineering
Practice Code/Name	558 - Roof Runoff Structure
Scenario ID	2
Scenario Name	Gutter - Steel, remote
Scenario Description	<p>A roof runoff structure, consisting of 28 gauge, 5" K-style galvanized steel gutter(s), downspout(s), and appropriate outlet facilities installed in a location off the Alaskan road system. Typical scenario is 160 feet of gutters on a 50 ft x 80 ft structure to prevent roof runoff from becoming contaminated in an animal lot. This scenario typically addresses the following resource concern: "Water quality degradation-excess pathogens and chemicals from manure, biosolids, or compost."</p> <p>Associated practices include Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Watering Facility (614), Underground Outlet (620), Diversion (362), and any relevant irrigation practices.</p>
Before Practice Situation	Applicable where: (1) a roof runoff management facility is included in 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 stable outlet.
After Practice Situation	A gutter, downspout, and outlet system servicing the portion of the building roof that would otherwise drain into a waste management system or create erosion. Roof line of 160 ft serviced with gutter, downspouts, and appurtenances.
Scenario Feature Measure	Linear Length of Roof to be Guttered
Scenario Unit	Linear Feet
Scenario Typical Size	160

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$533.53	\$3.33
Equipment/Installation	\$0.00	\$0.00
Labor	\$734.64	\$4.59
Mobilization	\$150.00	\$0.94
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,418.17	\$8.86

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1702	Downspout, Galvanized steel, Small	Galvanized steel downspout (3" to 5") in width with hangers. Materials only.	Foot	\$3.14	20	\$62.80
Materials	1692	Gutter, Galvanized Steel, Small	Galvanized Steel gutter (4" to 6") in width with hangers. Materials only.	Foot	\$2.81	160	\$449.60
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.22	0.6	\$21.13
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	\$30.61	24	\$734.64
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	150	\$150.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Environmental Engineering
Practice Code/Name	558 - Roof Runoff Structure
Scenario ID	1
Scenario Name	Gutter - Steel
Scenario Description	<p>A roof runoff structure, consisting of 28 gauge, 5" K-style galvanized steel gutter(s), downspout(s), and appropriate outlet facilities installed at a location on the Alaskan road system. Typical scenario is 160 feet of gutters on a 50 ft x 80 ft structure to prevent roof runoff from becoming contaminated in an animal lot. This scenario typically addresses the following resource concern: "Water quality degradation-excess pathogens and chemicals from manure, biosolids, or compost."</p> <p>Associated practices include Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Watering Facility (614), Underground Outlet (620), Diversion (362), and any relevant irrigation practices.</p>
Before Practice Situation	Applicable where: (1) a roof runoff management facility is included in 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 stable outlet.
After Practice Situation	A gutter, downspout, and outlet system servicing the portion of the building roof that would otherwise drain into a waste management system or create erosion. Roof line of 160 ft serviced with gutter, downspouts, and appurtances.
Scenario Feature Measure	Linear Length of Roof to be Guttered
Scenario Unit	Linear Feet
Scenario Typical Size	160

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$533.53	\$3.33
Equipment/Installation	\$0.00	\$0.00
Labor	\$734.64	\$4.59
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,268.17	\$7.93

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1692	Gutter, Galvanized Steel, Small	Galvanized Steel gutter (4" to 6") in width with hangers. Materials only.	Foot	\$2.81	160	\$449.60
Materials	1702	Downspout, Galvanized steel, Small	Galvanized steel downspout (3" to 5") in width with hangers. Materials only.	Foot	\$3.14	20	\$62.80
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.22	0.6	\$21.13
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	\$30.61	24	\$734.64

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	561 - Heavy Use Area Protection
Scenario ID	1
Scenario Name	Concrete
Scenario Description	Reinforced concrete pad installed on a high-use livestock area, on wet pasture soils. This scenario typically used to protect and improve water quality.
Before Practice Situation	This practice is used to treat the resultant trampled area around the water trough or heavily used livestock area.
After Practice Situation	The stabilized area is surfaced with approximately 200 SF of reinforced concrete with 6 inch thickness and 1.48 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	Measured in Sq. Ft.
Scenario Unit	Square Foot
Scenario Typical Size	200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$101.36	\$0.51
Equipment/Installation	\$1,502.16	\$7.51
Labor	\$0.00	\$0.00
Mobilization	\$90.32	\$0.45
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,693.84	\$8.47

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	\$25.34	4	\$101.36
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-place 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	\$372.82	4	\$1,491.28
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	\$2.72	4	\$10.88
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	\$180.64	0.5	\$90.32

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	561 - Heavy Use Area Protection
Scenario ID	6
Scenario Name	GeoCell, remote
Scenario Description	A 15 foot wide, 30 foot long, biaxial geogrid type protection filled with 3/4 inch crushed rock installed at a boat ramp located off the road system to improve access and prevent further degradation. This scenario typically addresses the following resource concern: "Water quality degradation-excessive sediment deposition caused by bank erosion from streams, shorelines, or water conveyance channels".
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 450 square feet gravel with approximately 450 square feet of biaxial geogrid material for surfacing areas 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 GeoCell
Scenario Unit	Square Foot
Scenario Typical Size	450

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$316.98	\$0.70
Equipment/Installation	\$862.74	\$1.92
Labor	\$61.22	\$0.14
Mobilization	\$722.78	\$1.61
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,963.72	\$4.36

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	\$35.22	9	\$316.98
Equipment/Installation	1054	GeoCell, 4"	Polymer 3-D cellular grid 4" deep that is filled with stone or earth. Includes materials, labor and equipment for the geocell only, does not include backfill.	Square Yard	\$16.33	50	\$816.50
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	\$2.72	17	\$46.24
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	\$30.61	2	\$61.22
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	300	\$300.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	2	\$61.50
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	\$180.64	2	\$361.28

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	561 - Heavy Use Area Protection
Scenario ID	5
Scenario Name	GeoCell
Scenario Description	A 15 foot wide, 30 foot long, biaxial geogrid type protection filled with 3/4 inch crushed rock installed at a boat ramp located on the road system to improve access and prevent further degradation. This scenario typically addresses the following resource concern: "Water quality degradation-excessive sediment deposition caused by bank erosion from streams, shorelines, or water conveyance channels".
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 450 square feet gravel with approximately 450 square feet of biaxial geogrid material for surfacing areas 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 GeoCell
Scenario Unit	Square Foot
Scenario Typical Size	450

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$316.98	\$0.70
Equipment/Installation	\$862.74	\$1.92
Labor	\$30.61	\$0.07
Mobilization	\$361.28	\$0.80
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,571.61	\$3.49

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	\$35.22	9	\$316.98
Equipment/Installation	1054	GeoCell, 4"	Polymer 3-D cellular grid 4" deep that is filled with stone or earth. Includes materials, labor and equipment for the geocell only, does not include backfill.	Square Yard	\$16.33	50	\$816.50
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	\$2.72	17	\$46.24
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	\$30.61	1	\$30.61
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	\$180.64	2	\$361.28

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	561 - Heavy Use Area Protection
Scenario ID	2
Scenario Name	Gravel
Scenario Description	Gravel pad installed on high-use livestock area, on wet pasture soils. This scenario typically used to protect and improve water quality.
Before Practice Situation	This practice is used to treat the resultant trampled area around the water trough.
After Practice Situation	The stabilized area is surfaced with approximately 200 square feet of gravel with 1 foot depth 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 Gravel
Scenario Unit	Square Foot
Scenario Typical Size	200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$202.72	\$1.01
Equipment/Installation	\$21.76	\$0.11
Labor	\$0.00	\$0.00
Mobilization	\$180.64	\$0.90
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$405.12	\$2.03

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	\$25.34	8	\$202.72
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	\$2.72	8	\$21.76
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	\$180.64	1	\$180.64

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	561 - Heavy Use Area Protection
Scenario ID	4
Scenario Name	Porous Paver, remote
Scenario Description	A 15 foot wide, 30 foot long, porous pavement type protection installed at a boat ramp located off the road system to improve access and prevent further degradation. This scenario typically addresses the following resource concern: "Water quality degradation-excessive sediment deposition caused by bank erosion from streams, shorelines, or water conveyance channels".
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 450 square feet gravel in approximately 450 square yards of geoblock for surfacing areas 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 Porous Paver
Scenario Unit	Square Foot
Scenario Typical Size	450

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,523.16	\$3.38
Equipment/Installation	\$0.00	\$0.00
Labor	\$1,163.18	\$2.58
Mobilization	\$722.78	\$1.61
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$3,409.12	\$7.58

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	\$35.22	3	\$105.66
Materials	1391	Porous Paver, polyethylene	Polyethylene porous paver, interlocking, polyethylene paving units, 2" or less depth, typically 20"x40" units. Includes materials and shipping only.	Square Foot	\$3.15	450	\$1,417.50
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	\$30.61	38	\$1,163.18
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	300	\$300.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	2	\$61.50
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	\$180.64	2	\$361.28

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	561 - Heavy Use Area Protection
Scenario ID	3
Scenario Name	Porous Paver
Scenario Description	A 15 foot wide, 30 foot long, porous pavement type protection installed at a boat ramp located on the road system to improve access and prevent further degradation. This scenario typically addresses the following resource concern: "Water quality degradation-excessive sediment deposition caused by bank erosion from streams, shorelines, or water conveyance channels".
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 450 square feet gravel in approximately 450 square yards of geoblock for surfacing areas 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 Porous Paver
Scenario Unit	Square Foot
Scenario Typical Size	450

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,523.16	\$3.38
Equipment/Installation	\$0.00	\$0.00
Labor	\$1,163.18	\$2.58
Mobilization	\$105.70	\$0.23
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,792.04	\$6.20

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	\$35.22	3	\$105.66
Materials	1391	Porous Paver, polyethylene	Polyethylene porous paver, interlocking, polyethylene paving units, 2" or less depth, typically 20"x40" units. Includes materials and shipping only.	Square Foot	\$3.15	450	\$1,417.50
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	\$30.61	38	\$1,163.18
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	0.5	\$15.38
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	\$180.64	0.5	\$90.32

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	
Practice Code/Name	568 - Trails and Walkways
Scenario ID	1
Scenario Name	Porous Pavement, 30 mm
Scenario Description	A 6.56 foot wide, 2000 foot long, porous pavement type trail installed on level or rolling topography. The panel thickness is 30mm (1.2inch) thick. This type of trail is typically used on ground that is not saturated and has moderate bearing strength. This scenario typically addresses the following resource concern: "Inadequate habitat for fish and wildlife-habitat degradation".
Before Practice Situation	Habitat is impacted, generally in the form of erosion and impacts to critical nesting habitat, due to ATV's and other traffic.
After Practice Situation	Hardened trail surface provides a stable, and favorable traffic corridor, which prevents erosion and reduces impacts to critical habitat. 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 trail 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 trail should be covered by Diversion (362). When seeding or revegetation is required, use Critical Area Planting (342). Dust control is addressed under Dust Control on Unpaved Roads and Surfaces (373).
Scenario Feature Measure	Square footage of trail surface installed
Scenario Unit	Square Foot
Scenario Typical Size	13120

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$42,512.96	\$3.24
Equipment/Installation	\$622.72	\$0.05
Labor	\$19,481.60	\$1.48
Mobilization	\$2,438.10	\$0.19
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$65,055.38	\$4.96

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1391	Porous Paver, polyethylene	Polyethylene porous paver, interlocking, polyethylene paving units, 2" or less depth, typically 20"x40" units. Includes materials and shipping only.	Square Foot	\$3.15	13120	\$41,328.00
Materials	1833	Plywood, 3/4 inch, untreated	Untreated 4' x 8' sheets of 3/4 inch exterior grade plywood	Each	\$23.12	8	\$184.96
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	\$32.87	16	\$525.92
Equipment/Installation	1505	Trailer, flatbed, small	Small flatbed trailer (typically less than 30' in length) pulled by a pickup to transport materials and equipment. Truck not included. 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	\$6.05	16	\$96.80
Labor	231	General Labor	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$30.61	480	\$14,692.80
Labor	234	Supervisor or Manager	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$59.86	80	\$4,788.80
Mobilization	1142	Mobilization, General labor	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$30.75	60	\$1,845.00
Mobilization	1145	Mobilization, Supervisor or Manager		Hour	\$59.31	10	\$593.10

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	
Practice Code/Name	568 - Trails and Walkways
Scenario ID	3
Scenario Name	Porous Pavement, 30 mm, with infill
Scenario Description	A 6.56 foot wide, 100 foot long, porous pavement type trail installed on level or rolling topography. The panel thickness is 30mm (1.2inch) thick. This type of trail is typically used on ground that is not saturated. In this scenario the porous pavement cells are infilled with mineral soil available adjacent to the trail. The infill material provides additional stability on some soil types. This scenario typically addresses the following resource concern: "Inadequate habitat for fish and wildlife-habitat degradation".
Before Practice Situation	Habitat is impacted, generally in the form of erosion and impacts to critical nesting habitat, due to ATV and other traffic.
After Practice Situation	Harded trail surface provides a stable, and favorable traffic corridor, which prevents erosion and reduces impacts to critical habitat. 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 trail 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 trail should be covered by Diversion (362). When seeding or revegetation is required, use Critical Area Planting (342). Dust control is addressed under Dust Control on Unpaved Roads and Surfaces (373).
Scenario Feature Measure	Square footage of trail surface installed
Scenario Unit	Square Foot
Scenario Typical Size	656

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$3,089.52	\$4.71
Equipment/Installation	\$155.68	\$0.24
Labor	\$1,823.00	\$2.78
Mobilization	\$182.31	\$0.28
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$5,250.51	\$8.00

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1391	Porous Paver, polyethylene	Polyethylene porous paver, interlocking, polyethylene paving units, 2" or less depth, typically 20"x40" units. Includes materials and shipping only.	Square Foot	\$3.15	656	\$2,066.40
Materials	1833	Plywood, 3/4 inch, untreated	Untreated 4' x 8' sheets of 3/4 inch exterior grade plywood	Each	\$23.12	1	\$23.12
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	\$32.87	4	\$131.48
Equipment/Installation	1505	Trailer, flatbed, small	Small flatbed trailer (typically less than 30' in length) pulled by a pickup to transport materials and equipment. Truck not included.	Hour	\$6.05	4	\$24.20
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	\$30.61	40	\$1,224.40
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	\$59.86	10	\$598.60
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	4	\$123.00
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	1	\$59.31

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	
Practice Code/Name	568 - Trails and Walkways
Scenario ID	4
Scenario Name	Porous Pavement, 30 mm, with infill - remote site
Scenario Description	A 6.56 foot wide, 100 foot long, porous pavement type trail installed on level or rolling topography. The panel thickness is 30mm (1.2inch) thick. This type of trail is typically used on ground that is not saturated. In this scenario the porous pavement cells are infilled with mineral soil available adjacent to the trail. The infill material provides additional stability on some soil types. The remote designation indicates that the porous pavement panels will be shipped to the project site via barge or air freight. This scenario typically addresses the following resource concern: "Inadequate habitat for fish and wildlife-habitat degradation".
Before Practice Situation	Habitat is impacted, generally in the form of erosion and impacts to critical nesting habitat, due to ATV and other traffic.
After Practice Situation	Harded trail surface provides a stable, and favorable traffic corridor, which prevents erosion and reduces impacts to critical habitat. 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 trail 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 trail should be covered by Diversion (362). When seeding or revegetation is required, use Critical Area Planting (342). Dust control is addressed under Dust Control on Unpaved Roads and Surfaces (373).
Scenario Feature Measure	Square footage of trail surface installed
Scenario Unit	Square Foot
Scenario Typical Size	656

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$3,089.52	\$4.71
Equipment/Installation	\$155.68	\$0.24
Labor	\$1,823.00	\$2.78
Mobilization	\$1,107.31	\$1.69
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$6,175.51	\$9.41

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1391	Porous Paver, polyethylene	Polyethylene porous paver, interlocking, polyethylene paving units, 2" or less depth, typically 20"x40" units. Includes materials and shipping only.	Square Foot	\$3.15	656	\$2,066.40
Materials	1833	Plywood, 3/4 inch, untreated	Untreated 4' x 8' sheets of 3/4 inch exterior grade plywood	Each	\$23.12	1	\$23.12
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	\$32.87	4	\$131.48
Equipment/Installation	1505	Trailer, flatbed, small	Small flatbed trailer (typically less than 30' in length) pulled by a pickup to transport materials and equipment. Truck not included.	Hour	\$6.05	4	\$24.20
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	\$30.61	40	\$1,224.40
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	\$59.86	10	\$598.60
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 i	Dollar	\$1.00	925	\$925.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	4	\$123.00
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	1	\$59.31

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	
Practice Code/Name	568 - Trails and Walkways
Scenario ID	2
Scenario Name	Porous Pavement, 30 mm - remote site
Scenario Description	A 6.56 foot wide, 2000 foot long, porous pavement type trail installed on level or rolling topography. The panel thickness is 30mm (1.2inch) thick. This type of trail is typically used on ground that is not saturated. The remote designation indicates that the porous pavement panels will be shipped to the project site via barge or air freight. This scenario typically addresses the following resource concern: "Inadequate habitat for fish and wildlife-habitat degradation".
Before Practice Situation	Habitat is impacted, generally in the form of erosion and impacts to critical nesting habitat, due to ATV and other traffic.
After Practice Situation	Hardened trail surface provides a stable, and favorable traffic corridor, which prevents erosion and reduces impacts to critical habitat. 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 trail 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 trail should be covered by Diversion (362). When seeding or revegetation is required, use Critical Area Planting (342). Dust control is addressed under Dust Control on Unpaved Roads and Surfaces (373).
Scenario Feature Measure	Square footage of trail surface installed
Scenario Unit	Square Foot
Scenario Typical Size	13120

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$42,512.96	\$3.24
Equipment/Installation	\$1,556.80	\$0.12
Labor	\$19,481.60	\$1.48
Mobilization	\$20,907.10	\$1.59
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$84,458.46	\$6.44

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1391	Porous Paver, polyethylene	Polyethylene porous paver, interlocking, polyethylene paving units, 2" or less depth, typically 20"x40" units. Includes materials and shipping only.	Square Foot	\$3.15	13120	\$41,328.00
Materials	1833	Plywood, 3/4 inch, untreated	Untreated 4' x 8' sheets of 3/4 inch exterior grade plywood	Each	\$23.12	8	\$184.96
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	\$32.87	40	\$1,314.80
Equipment/Installation	1505	Trailer, flatbed, small	Small flatbed trailer (typically less than 30' in length) pulled by a pickup to transport materials and equipment. Truck not included.	Hour	\$6.05	40	\$242.00
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	\$30.61	480	\$14,692.80
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	\$59.86	80	\$4,788.80
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.	Dollar	\$1.00	18469	\$18,469.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	60	\$1,845.00
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	10	\$593.10

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	
Practice Code/Name	568 - Trails and Walkways
Scenario ID	5
Scenario Name	Porous Pavement, 50 mm
Scenario Description	A 6.56 foot wide, 2000 foot long, porous pavement type trail installed on level or rolling topography. The 2" thickness scenario will generally only be utilized on very wet or otherwise poor subbase trail conditions. When the ground condition will permit the trail shall be treated with 1.2 inch porous pavement panels. This scenario typically addresses the following resource concern: "Inadequate habitat for fish and wildlife-habitat degradation".
Before Practice Situation	Habitat is impacted, generally in the form of erosion and impacts to critical nesting habitat, due to ATV and other traffic.
After Practice Situation	Harded trail surface provides a stable, and favorable traffic corridor, which prevents erosion and reduces impacts to critical habitat. 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 trail 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 trail should be covered by Diversion (362). When seeding or revegetation is required, use Critical Area Planting (342). Dust control is addressed under Dust Control on Unpaved Roads and Surfaces (373).
Scenario Feature Measure	Square footage of trail surface installed
Scenario Unit	Square Foot
Scenario Typical Size	13120

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$76,624.96	\$5.84
Equipment/Installation	\$622.72	\$0.05
Labor	\$19,481.60	\$1.48
Mobilization	\$2,438.10	\$0.19
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$99,167.38	\$7.56

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	
Practice Code/Name	568 - Trails and Walkways
Scenario ID	6
Scenario Name	Porous Pavement, 50 mm - remote site
Scenario Description	A 6.56 foot wide, 2000 foot long, porous pavement type trail installed on level or rolling topography. The 2" thickness scenario will generally only be utilized on very wet or otherwise poor subbase trail conditions. When the ground condition will permit the trail shall be treated with 1.2 inch porous pavement panels. This scenario typically addresses the following resource concern: "Inadequate habitat for fish and wildlife-habitat degradation". Practice is located at an off-road, remote Alaskan site.
Before Practice Situation	Habitat is impacted, generally in the form of erosion and impacts to critical nesting hadbitat, due to ATV and other traffic.
After Practice Situation	Harded trail surface provides a stable, and favorable traffic corridor, which prevents erosion and reduces impacts to critical habitat. 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 trail 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 trail should be covered by Diversion (362). When seeding or revegetation is required, use Critical Area Planting (342). Dust control is addressed under Dust Control on Unpaved Roads and Surfaces (373).
Scenario Feature Measure	Square footage of trail surface installed
Scenario Unit	Square Foot
Scenario Typical Size	13120

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$76,624.96	\$5.84
Equipment/Installation	\$622.72	\$0.05
Labor	\$17,087.20	\$1.30
Mobilization	\$32,792.10	\$2.50
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$127,126.98	\$9.69

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	
Practice Code/Name	568 - Trails and Walkways
Scenario ID	9
Scenario Name	Gravel trail
Scenario Description	A 6 foot wide, 2000 foot long, compacted gravel fill type trail installed on level or rolling topography. The gravel lift thickness is typically 8 inches and the side slopes are 2H:1V. In the typical scenario the trail is underlain by a woven geotextile fabric. This trail is viable in areas with an adequate supply of gravel that is suitable for trail building. And in locations that make the gravel transportation and placement viable. As well as on soils that will permit this type of construction. This scenario typically addresses the following resource concern: "Inadequate habitat for fish and wildlife-habitat degradation".
Before Practice Situation	Habitat is impacted, generally in the form of erosion and impacts to critical nesting habitat, due to ATV and other traffic.
After Practice Situation	Hardened trail surface provides a stable, and favorable traffic corridor, which prevents erosion and reduces impacts to critical habitat. 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 trail 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 trail should be covered by Diversion (362). When seeding or revegetation is required, use Critical Area Planting (342). Dust control is addressed under Dust Control on Unpaved Roads and Surfaces (373).
Scenario Feature Measure	Linear foot of trail constructed
Scenario Unit	Linear Foot
Scenario Typical Size	2000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$10,566.78	\$5.28
Equipment/Installation	\$16,466.54	\$8.23
Labor	\$19,141.50	\$9.57
Mobilization	\$2,552.34	\$1.28
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$48,727.16	\$24.36

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$5.02	417	\$2,093.34
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$3.10	2000	\$6,200.00
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	\$25.34	417	\$10,566.78
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	\$32.87	210	\$6,902.70
Equipment/Installation	1505	Trailer, flatbed, small	Small flatbed trailer (typically less than 30' in length) pulled by a pickup to transport materials and equipment. Truck not included.	Hour	\$6.05	210	\$1,270.50
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	\$30.61	420	\$12,856.20
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	\$59.86	105	\$6,285.30
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	56	\$1,722.00
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	14	\$830.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	
Practice Code/Name	568 - Trails and Walkways
Scenario ID	10
Scenario Name	Gravel Trail - remote site
Scenario Description	A 6 foot wide, 2000 foot long, compacted gravel fill type trail installed on level or rolling topography. In the typical scenario the trail is underlain by a woven geotextile fabric. This trail is viable in areas with an adequate supply of gravel that is suitable for trail building. And in locations that make the gravel transportation and placement viable. As well as on soils that will permit this type of construction. This scenario typically addresses the following resource concern: "Inadequate habitat for fish and wildlife-habitat degradation".
Before Practice Situation	Habitat is impacted, generally in the form of erosion and impacts to critical nesting habitat, due to ATV and other traffic.
After Practice Situation	Harded trail surface provides a stable, and favorable traffic corridor, which prevents erosion and reduces impacts to critical habitat. 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 trail 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 trail should be covered by Diversion (362). When seeding or revegetation is required, use Critical Area Planting (342). Dust control is addressed under Dust Control on Unpaved Roads and Surfaces (373).
Scenario Feature Measure	Linear foot of trail constructed
Scenario Unit	Linear Foot
Scenario Typical Size	2000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$10,566.78	\$5.28
Equipment/Installation	\$16,466.54	\$8.23
Labor	\$19,141.50	\$9.57
Mobilization	\$3,172.34	\$1.59
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$49,347.16	\$24.67

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$5.02	417	\$2,093.34
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$3.10	2000	\$6,200.00
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	\$25.34	417	\$10,566.78
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment and labor costs.	Hour	\$32.87	210	\$6,902.70
Equipment/Installation	1505	Trailer, flatbed, small	Small flatbed trailer (typically less than 30' in length) pulled by a pickup to transport materials and equipment. Truck not included.	Hour	\$6.05	210	\$1,270.50
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	\$30.61	420	\$12,856.20
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	\$59.86	105	\$6,285.30
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 i	Dollar	\$1.00	620	\$620.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	56	\$1,722.00
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	14	\$830.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	
Practice Code/Name	568 - Trails and Walkways
Scenario ID	7
Scenario Name	Timber puncheon trail
Scenario Description	A 6 foot wide, 200 foot long, timber puncheon type trail installed on level or rolling topography. This trail is constructed from dimensional lumber. The trail type is generally constructed on seasonally or continuously wet or saturated ground. This scenario typically addresses the following resource concern: "Inadequate habitat for fish and wildlife-habitat degradation".
Before Practice Situation	Habitat is impacted, generally in the form of erosion and impacts to critical nesting habitat, due to ATV and other traffic.
After Practice Situation	Harded trail surface provides a stable, and favorable traffic corridor, which prevents erosion and reduces impacts to critical habitat. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). When seeding or revegetation is required, use Critical Area Planting (342).
Scenario Feature Measure	Square footage of trail surface installed
Scenario Unit	Square Foot
Scenario Typical Size	1200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$7,199.00	\$6.00
Equipment/Installation	\$622.72	\$0.52
Labor	\$1,948.16	\$1.62
Mobilization	\$243.81	\$0.20
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$10,013.69	\$8.34

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	
Practice Code/Name	568 - Trails and Walkways
Scenario ID	8
Scenario Name	Timber puncheon trail - remote site
Scenario Description	A 6 foot wide, 200 foot long, timber puncheon type trail installed on level or rolling topography. This trail is constructed from dimensional lumber. The trail type is generally constructed on seasonally or continuously wet or saturated ground. This scenario typically addresses the following resource concern: "Inadequate habitat for fish and wildlife-habitat degradation". Practice is located at an off-road, remote Alaskan site.
Before Practice Situation	Habitat is impacted, generally in the form of erosion and impacts to critical nesting habitat, due to ATV and other traffic.
After Practice Situation	Harded trail surface provides a stable, and favorable traffic corridor, which prevents erosion and reduces impacts to critical habitat. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). When seeding or revegetation is required, use Critical Area Planting (342).
Scenario Feature Measure	Square footage of trail surface installed
Scenario Unit	Square Foot
Scenario Typical Size	1200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$7,199.00	\$6.00
Equipment/Installation	\$622.72	\$0.52
Labor	\$1,948.16	\$1.62
Mobilization	\$10,606.81	\$8.84
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$20,376.69	\$16.98

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	570 - Stormwater Runoff Control
Scenario ID	2
Scenario Name	Combination, Most common Best Management Practices, remote
Scenario Description	This scenario involves installation of silt fence, straw wattles, coconut fabric mats or jute mats, and synthetic mats including woven or non woven geotextile on the construction site as part of one conservation engineering system. The combined system shall include two or more components and will address the resource concerns related with concentrated flow erosion, excessive sediment in surface waters as well as protection of existing inlets and structures depending on the combination. The scenario is to be used for Off-Road situations.
Before Practice Situation	The combination scenario is applicable in all construction sites and watersheds including those in the urban and suburban areas. Which component would apply in a particular situation would depend on the site condition, slope etc.
After Practice Situation	When properly installed, the combination structures slow down runoff flow velocity and reduce high velocity erosion, detain and filter the stormwater runoff and provide a controlled release to the downstream areas. In seeded areas, straw wattles also enable seeds to settle and germinate, aiding the revegetation process. By filtering overland runoff and holding sediment on the slope, Straw Wattles also help to protect lakes, ponds, rivers and streams from sediment pollution. By filtering overland runoff and holding sediment on the slope, geotextile fabrics also help to protect water quality. When properly installed, coconut mats slow and spread the overland water flow and provide a filtering effect. They also help to reduce sediment transport and stabilize the construction area. Silt fence are installed along the downstream perimeter of a construction site to prevent sediment transport off construction areas. A typical silt fence consists of a synthetic filter fabric stretched between a series of fence stakes, with the stakes installed on the downstream side of the perimeter and the fabric trenched into the soil on the upstream side and backfilled. If earthen basins are warranted for water quality improvement purpose, use Sediment Basin (350). If seeding is warranted for water quality and erosion
Scenario Feature Measure	Area of construction site
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,070.80	\$1,070.80
Equipment/Installation	\$1,533.11	\$1,533.11
Labor	\$395.89	\$395.89
Mobilization	\$1,205.03	\$1,205.03
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$4,204.83	\$4,204.83

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1213	Erosion Control Blanket, biodegradable	Biodegradable erosion control blanket, typically a composite of natural fibers with reinforcing polymer netting. Materials only.	Square Yard	\$1.46	480	\$700.80
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.97	100	\$97.00
Materials	1405	Wattles, straw, 8-9"x25'	Tubes of rice straw, approximately 8-9 inch in diameter, 25 feet long. Materials only (including stakes).	Foot	\$2.73	100	\$273.00
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$3.10	480	\$1,488.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	1.5	\$45.11
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	\$30.61	10	\$306.10
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	\$59.86	1.5	\$89.79
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	0.5	\$15.38
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	1160	\$1,160.00
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	0.5	\$29.66

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	570 - Stormwater Runoff Control
Scenario ID	1
Scenario Name	Combination, Most common Best Management Practices
Scenario Description	This scenario involves installation of silt fence, straw wattles, coconut fabric mats or jute mats, and synthetic mats including woven or non woven geotextile on the construction site as part of one conservation engineering system. The combined system shall include two or more components and will address the resource concerns related with concentrated flow erosion, excessive sediment in surface waters as well as protection of existing inlets and structures depending on the combination. This scenario is to be used for On-Road situations.
Before Practice Situation	The combination scenario is applicable in all construction sites and watersheds including those in the urban and suburban areas. Which component would apply in a particular situation would depend on the site condition, slope etc.
After Practice Situation	When properly installed, the combination structures slow down runoff flow velocity and reduce high velocity erosion, detain and filter the stormwater runoff and provide a controlled release to the downstream areas. In seeded areas, straw wattles also enable seeds to settle and germinate, aiding the revegetation process. By filtering overland runoff and holding sediment on the slope, Straw Wattles also help to protect lakes, ponds, rivers and streams from sediment pollution. By filtering overland runoff and holding sediment on the slope, geotextile fabrics also help to protect water quality. When properly installed, coconut mats slow and spread the overland water flow and provide a filtering effect. They also help to reduce sediment transport and stabilize the construction area. Silt fence are installed along the downstream perimeter of a construction site to prevent sediment transport off construction areas. A typical silt fence consists of a synthetic filter fabric stretched between a series of fence stakes, with the stakes installed on the downstream side of the perimeter and the fabric trenched into the soil on the upstream side and backfilled. If earthen basins are warranted for water quality improvement purpose, use Sediment Basin (350). If seeding is warranted for water quality and erosion
Scenario Feature Measure	Area of construction site
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,070.80	\$1,070.80
Equipment/Installation	\$1,533.11	\$1,533.11
Labor	\$395.89	\$395.89
Mobilization	\$45.03	\$45.03
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$3,044.83	\$3,044.83

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1213	Erosion Control Blanket, biodegradable	Biodegradable erosion control blanket, typically a composite of natural fibers with reinforcing polymer netting. Materials only.	Square Yard	\$1.46	480	\$700.80
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.97	100	\$97.00
Materials	1405	Wattles, straw, 8-9"x25'	Tubes of rice straw, approximately 8-9 inch in diameter, 25 feet long . Materials only (including stakes).	Foot	\$2.73	100	\$273.00
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$3.10	480	\$1,488.00
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	1.5	\$45.11
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	\$30.61	10	\$306.10
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	\$59.86	1.5	\$89.79
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	0.5	\$15.38
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	0.5	\$29.66

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agricultural Engineering
Practice Code/Name	572 - Spoil Spreading
Scenario ID	1
Scenario Name	Spoil Spreading
Scenario Description	A spoil pile is spread over a designated area according to an approved plan. The resource concerns are Soil Erosion and Water Quality Degradation.
Before Practice Situation	Spoil material is available from excavation of channels, drainage ditches, irrigation canals, or other construction sites.
After Practice Situation	Land has been shaped to the required elevations and grades. Resource concerns have been treated. Associated practices, like critical area planting or irrigation/drainage water management practices, would be contracted separately as needed.
Scenario Feature Measure	Cubic yards of spoil spread
Scenario Unit	Cubic Yard
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$1,164.90	\$1.16
Labor	\$376.80	\$0.38
Mobilization	\$990.10	\$0.99
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,531.80	\$2.53

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	\$116.49	10	\$1,164.90
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	\$37.68	10	\$376.80
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	\$495.05	2	\$990.10

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	6
Scenario Name	ATV Bridge, remote
Scenario Description	This scenario is for an ATV bridge to cross a stream. The typical bridge is 7' wide with a 5' wide travel width, and is 16 feet long. The abutments are concrete or timber, and the stringers are glulam beams. Decking is timber, and a pipe handrail is installed. Allowed traffic includes ATVs, horses, pedestrians, and snowmachines.
Before Practice Situation	Water flow could not cross trail without erosion; or trail could not cross channel.
After Practice Situation	Trail 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	Linear Foot
Scenario Unit	Linear Foot
Scenario Typical Size	16

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$6,045.91	\$377.87
Equipment/Installation	\$0.00	\$0.00
Labor	\$3,209.92	\$200.62
Mobilization	\$1,564.62	\$97.79
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$10,820.45	\$676.28

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1044	Dimension Lumber, Treated	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.93	4970	\$4,622.10
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.22	4	\$140.88
Materials	1779	Steel, structural steel members	Structural steel, includes materials and fabrication.	Pound	\$1.07	1199	\$1,282.93
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	\$47.57	16	\$761.12
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	\$30.61	80	\$2,448.80
Mobilization	1043	Mobilization, Material, distance > 50 miles	Includes 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	1200	\$1,200.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	8	\$246.00
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	2	\$118.62

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	5
Scenario Name	ATV Bridge
Scenario Description	This scenario is for an ATV bridge to cross a stream. The typical bridge is 7' wide with a 5' wide travel width, and is 16 feet long. The abutments are concrete or timber, and the stringers are glulam beams. Decking is timber, and a pipe handrail is installed. Allowed traffic includes ATVs, horses, pedestrians, and snowmachines.
Before Practice Situation	Water flow could not cross trail without erosion; or trail could not cross channel.
After Practice Situation	Trail 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	Linear Foot
Scenario Unit	Linear Foot
Scenario Typical Size	16

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$6,045.91	\$377.87
Equipment/Installation	\$0.00	\$0.00
Labor	\$3,209.92	\$200.62
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$9,255.83	\$578.49

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1044	Dimension Lumber, Treated	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.93	4970	\$4,622.10
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.22	4	\$140.88
Materials	1779	Steel, structural steel members	Structural steel, includes materials and fabrication.	Pound	\$1.07	1199	\$1,282.93
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	\$47.57	16	\$761.12
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	\$30.61	80	\$2,448.80

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	1
Scenario Name	Bridge
Scenario Description	Install a bridge to allow stream flows to cross under access road or animal trail. Bridge opening determined by sizing for storm event dictated in standard. Scenario includes dewatering, abutments, girders, decking. Work consists of site preparation, dewatering, acquiring and installing abutments, girders, decking with necessary hardware, backfilling abutments, and armoring with geotextile and riprap. Riprap and geotextile are used to stabilize and protect abutments as needed. Scenario based on cast in place concrete abutments, steel girders, and timber deck. Travel surface shall be wooden deck surface. If a different travel surface is needed, refer to another appropriate standard for the surfacing. Span is less than 10 feet. Load is H-20. Width is 14 feet including curbs. Abutments are <= 6 feet. Use (396) Aquatic Organism Passage instead, when the primary intent is biological concerns, not hydrologic.
Before Practice Situation	Access 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.
After Practice Situation	
Scenario Feature Measure	square footage of bridge deck
Scenario Unit	Square Foot
Scenario Typical Size	140

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$10,241.60	\$73.15
Equipment/Installation	\$810.48	\$5.79
Labor	\$4,107.04	\$29.34
Mobilization	\$1,588.02	\$11.34
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$16,747.14	\$119.62

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1779	Steel, structural steel members	Structural steel, includes materials and fabrication.	Pound	\$1.07	3000	\$3,210.00
Materials	1045	Dimension Lumber, untreated	Untreated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.87	2000	\$1,740.00
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.97	100	\$97.00
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	\$47.57	80	\$3,805.60
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	\$1.92	75	\$144.00
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.22	20	\$704.40
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	\$83.57	20	\$1,671.40
Materials	1496	Block, pre-cast concrete, modular	Pre-cast concrete blocks, typically 2ft x 2ft x 6ft, includes installation and delivery.	Cubic Yard	\$156.60	18	\$2,818.80
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	\$37.68	8	\$301.44
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	\$83.31	8	\$666.48
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	6	\$1,588.02

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	4
Scenario Name	Culvert-remote
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 32 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	768

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$2,488.58	\$3.24
Equipment/Installation	\$1,247.57	\$1.62
Labor	\$682.90	\$0.89
Mobilization	\$1,834.84	\$2.39
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$6,253.89	\$8.14

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	\$83.57	4	\$334.28
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.22	35	\$1,232.70
Materials	1322	Pipe, CMP, 18-16 gauge, weight priced	18 & 16 gauge galvanized helical corrugated metal pipe priced by the weight of the pipe materials. Materials only.	Pound	\$1.44	640	\$921.60
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	\$106.68	10	\$1,066.80
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$5.02	32	\$160.64
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$6.71	3	\$20.13
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	\$37.68	10	\$376.80
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	\$30.61	10	\$306.10
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	640	\$640.00
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	4	\$1,058.68
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	2	\$61.50
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	\$37.33	2	\$74.66

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	3
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 32 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	768

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$2,488.58	\$3.24
Equipment/Installation	\$1,247.57	\$1.62
Labor	\$682.90	\$0.89
Mobilization	\$529.34	\$0.69
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$4,948.39	\$6.44

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	\$83.57	4	\$334.28
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.22	35	\$1,232.70
Materials	1322	Pipe, CMP, 18-16 gauge, weight priced	18 & 16 gauge galvanized helical corrugated metal pipe priced by the weight of the pipe materials. Materials only.	Pound	\$1.44	640	\$921.60
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	\$106.68	10	\$1,066.80
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$5.02	32	\$160.64
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$6.71	3	\$20.13
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	\$37.68	10	\$376.80
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	\$30.61	10	\$306.10
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	2
Scenario Name	Low water crossing
Scenario Description	Stabilize the bottom and slope of a stream channel using rock riprap or cast in place concrete. This scenario includes site preparation, dewatering, acquiring and installing gravel or geotextile with rock riprap or cast in place concrete on channel bottom and approaches. Final travel surface shall be the rocks or concrete. If a different travel surface is needed, refer to another appropriate standard for the surfacing. Typical stream has 30 foot bottom width and approaches. Width is 14 feet for a total area as 420sf. Even if primary concern is fish passage, use this practice because the design of a low water crossing would be the same.
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	420

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,504.26	\$3.58
Equipment/Installation	\$759.96	\$1.81
Labor	\$301.44	\$0.72
Mobilization	\$529.34	\$1.26
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$3,095.00	\$7.37

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	\$83.57	18	\$1,504.26
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	\$83.31	4	\$333.24
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	\$106.68	4	\$426.72
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	\$37.68	8	\$301.44
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	580 - Streambank and Shoreline Protection
Scenario ID	7
Scenario Name	Coir Logs with live fascines
Scenario Description	Stabilizing eroding lakeshores where erosion is caused by boatwakes. Coir logs are used to break the wave energy and fascines are used to reveg the shoreline. Bank is typically 3-4 feet of vertical height with two rows of fascines parallel to the waterline. This scenario typically addresses the following resource concern: "Water quality degradation-excessive sediment deposition caused by bank erosion from streams, shorelines, or water conveyance channels". The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank, critical area vegetation, livestock, rootwads and revetments: a 6-foot high bank at 3(H):1(V) slope for 1000 linear feet (0.46 acres) is used for estimation purposes. Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation. Associated Practices include: 560 - Access Road; 342 - Critical Area Planting; 382 - Fence; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream
Before Practice Situation	A eroding shoreline due to overgrazing or human manipulation or natural processes; the shoreline is unstable and show signs of active erosion. Soil Erosion: The streambank is unstable. Water Quality Degradation: The sediment load has increased in the stream resulting in elevated water temperatures. Excess/Insufficient Water: The excessive sediment load has reduced the water conveyance capacity, storage capacity and flow within the stream. Inadequate Habitat for Fish and Wildlife: The deficiencies in the stream's habitat limit survival, growth, reproduction, and/or diversity of aquatic organisms within the stream.
After Practice Situation	The shoreline is stable against further erosion and encourages natural vegetation growth. Loss of riparian areas and sediment load is reduced in the water body. For Soil Erosion: The streambank is stable. For Water Quality Degradation: The sediment load has decreased in the stream resulting in improved aquatic habitat. For Excess/Insufficient Water: The water conveyance capacity, storage capacity and flow within the stream has been stabilized. For Inadequate Habitat for Fish and Wildlife: The reduction in the sediment load promotes survival, growth, reproduction, and/or diversity of aquatic organisms within the stream's habitat.
Scenario Feature Measure	Linear Feet of Streambank/Shoreline Protected
Scenario Unit	Linear Feet
Scenario Typical Size	200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$4,918.98	\$24.59
Equipment/Installation	\$284.69	\$1.42
Labor	\$2,421.60	\$12.11
Mobilization	\$1,016.24	\$5.08
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$8,641.51	\$43.21

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1579	Stakes, wood, 1" x 2" x 24"	1" x 2" x 24" wood stakes to fasten items in place. Materials only.	Each	\$0.36	200	\$72.00
Materials	1904	Wattles or fascines, 6 to 8 inch diameter	Fascines, or wattles: bundles of live tree stems of species that sprout roots, bound together. 6"-8" diameter. Materials only.	Foot	\$6.50	400	\$2,600.00
Materials	2035	Log, un-anchored	Price of log picked up at the Mill. Includes material only.	Ton	\$37.12	54	\$2,004.48
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.97	250	\$242.50
Equipment/Installation	1259	Trencher, wheel type	Wheel type Trencher, typically 350 HP with 6' max depth. Equipment only.	Hour	\$284.69	1	\$284.69
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	\$59.86	20	\$1,197.20
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	\$30.61	40	\$1,224.40
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	2	\$118.62
Mobilization	1043	Mobilization, Material, distance > 50 miles	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	480	\$480.00
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	\$28.17	2	\$56.34
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	\$180.64	2	\$361.28

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	580 - Streambank and Shoreline Protection
Scenario ID	2
Scenario Name	Riprap with joint plantings
Scenario Description	<p>Stabilizing eroding streambanks using riprap and joint plantings of willow. Bank is typically 8 feet of vertical height and section to be treated approximately 1000 feet long. Joint plantings are spaced on 3' centers and riprap is underlain by nonwoven geotextile. This scenario typically addresses the following resource concern: "Water quality degradation-excessive sediment deposition caused by bank erosion from streams, shorelines, or water conveyance channels".</p> <p>The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank, critical area vegetation, livestock, rootwads and revetments: a 6-foot high bank at 3(H):1(V) slope for 1000 linear feet (0.46 acres) is used for estimation purposes.</p> <p>Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.</p> <p>Associated Practices include: 560 - Access Road; 342 - Critical Area Planting; 382 - Fence; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream</p>
Before Practice Situation	<p>A eroding stream threatens valuable infrastructure such as building or access roads and has had all of the woody vegetation removed due to overgrazing or human manipulation; the stream has degraded streambanks that are unstable and show signs of active erosion.</p> <p>Soil Erosion: The streambank is unstable.</p> <p>Water Quality Degradation: The sediment load has increased in the stream resulting in elevated water temperatures.</p> <p>Excess/Insufficient Water: The excessive sediment load has reduced the water conveyance capacity, storage capacity and flow within the stream.</p> <p>Inadequate Habitat for Fish and Wildlife: The deficiencies in the stream's habitat limit survival, growth, reproduction, and/or diversity of aquatic organisms within the stream.</p>
After Practice Situation	<p>The streambank is stable against further erosion and encourages natural sediment transport and deposition. Loss of riparian areas and sediment load is reduced in the stream.</p> <p>For Soil Erosion: The streambank is stable.</p> <p>For Water Quality Degradation: The sediment load has decreased in the stream resulting in improved aquatic habitat.</p> <p>For Excess/Insufficient Water: The water conveyance capacity, storage capacity and flow within the stream has been stabilized.</p> <p>For Inadequate Habitat for Fish and Wildlife: The reduction in the sediment load promotes survival, growth, reproduction, and/or diversity of aquatic organisms within the stream's habitat.</p>
Scenario Feature Measure	Linear Feet of Streambank/Shoreline Protected
Scenario Unit	Linear Feet
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$172,794.00	\$172.79
Equipment/Installation	\$32,280.24	\$32.28
Labor	\$24,197.40	\$24.20
Mobilization	\$7,715.74	\$7.72
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$236,987.38	\$236.99

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	8000	\$3,520.00
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.97	2200	\$2,134.00
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	\$83.57	2000	\$167,140.00
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	\$1.92	445	\$854.40
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	\$83.31	85	\$7,081.35
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	\$4.17	3600	\$15,012.00
Equipment/Installation	40	Clearing and Grubbing	Clearing and Grubbing, includes materials, equipment and labor	Acre	\$366.80	0.5	\$183.40
Equipment/Installation	1619	Front End Loader, 185 HP	Wheeled front end loader with horsepower range of 160 to 210. Equipment and power unit costs. Labor not included.	Hour	\$95.77	85	\$8,140.45
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	\$63.04	16	\$1,008.64
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	\$59.86	180	\$10,774.80
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	\$37.68	210	\$7,912.80

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	\$30.61	180	\$5,509.80
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	18	\$1,067.58
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	\$495.05	8	\$3,960.40
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	\$37.33	72	\$2,687.76

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	580 - Streambank and Shoreline Protection
Scenario ID	3
Scenario Name	Riprap Toe with soil wraps and brush layering
Scenario Description	Stabilizing eroding streambanks using riprap at the toe and soil wraps with brush layering of willows between the soil wraps above the riprap. Bank is typically 8 feet of vertical height and section to be treated approximately 1000 feet long. This scenario typically addresses the following resource concern: "Water quality degradation-excessive sediment deposition caused by bank erosion from streams, shorelines, or water conveyance channels". The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank, critical area vegetation, livestock, rootwads and revetments: a 6-foot high bank at 3(H):1(V) slope for 1000 linear feet (0.46 acres) is used for estimation purposes. Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation. Associated Practices include: 560 - Access Road; 342 - Critical Area Planting; 382 - Fence; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream
Before Practice Situation	A eroding stream with all of the woody vegetation removed due to overgrazing or human manipulation or natural processes; the stream has degraded streambanks that are unstable and show signs of active erosion. Soil Erosion: The streambank is unstable. Water Quality Degradation: The sediment load has increased in the stream resulting in elevated water temperatures. Excess/Insufficient Water: The excessive sediment load has reduced the water conveyance capacity, storage capacity and flow within the stream. Inadequate Habitat for Fish and Wildlife: The deficiencies in the stream's habitat limit survival, growth, reproduction, and/or diversity of aquatic organisms within the stream.
After Practice Situation	The streambank is stable against further erosion and encourages natural sediment transport and deposition. Loss of riparian areas and sediment load is reduced in the stream. For Soil Erosion: The streambank is stable. For Water Quality Degradation: The sediment load has decreased in the stream resulting in improved aquatic habitat. For Excess/Insufficient Water: The water conveyance capacity, storage capacity and flow within the stream has been stabilized. For Inadequate Habitat for Fish and Wildlife: The reduction in the sediment load promotes survival, growth, reproduction, and/or diversity of aquatic organisms within the stream's habitat.
Scenario Feature Measure	Linear Feet of Streambank/Shoreline Protected
Scenario Unit	Linear Feet
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$112,951.19	\$112.95
Equipment/Installation	\$39,728.34	\$39.73
Labor	\$54,807.40	\$54.81
Mobilization	\$7,715.74	\$7.72
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$215,202.67	\$215.20

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1426	Tree, willow	Willow tree for planting, 18" to 36" seedling. Materials only.	Each	\$0.72	48000	\$34,560.00
Materials	1213	Erosion Control Blanket, biodegradable	Biodegradable erosion control blanket, typically a composite of natural fibers with reinforcing polymer netting. Materials only.	Square Yard	\$1.46	5334	\$7,787.64
Materials	1579	Stakes, wood, 1" x 2" x 24"	1" x 2" x 24" wood stakes to fasten items in place. Materials only.	Each	\$0.36	1000	\$360.00
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.97	2200	\$2,134.00
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	\$83.57	815	\$68,109.55
Equipment/Installation	1227	Excavation, common earth, side cast, large equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$1.92	445	\$854.40
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	\$83.31	85	\$7,081.35
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	\$4.17	3600	\$15,012.00
Equipment/Installation	40	Clearing and Grubbing	Clearing and Grubbing, includes materials, equipment and labor	Acre	\$366.80	0.5	\$183.40
Equipment/Installation	1619	Front End Loader, 185 HP	Wheeled front end loader with horsepower range of 160 to 210. Equipment and power unit costs. Labor not included.	Hour	\$95.77	85	\$8,140.45
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$6.71	1110	\$7,448.10
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	\$63.04	16	\$1,008.64
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	\$59.86	180	\$10,774.80

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. 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	\$37.68	210	\$7,912.80
Labor	231	General Labor	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$30.61	1180	\$36,119.80
Mobilization	1145	Mobilization, Supervisor or Manager	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Hour	\$59.31	18	\$1,067.58
Mobilization	1140	Mobilization, large equipment	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.	Each	\$495.05	8	\$3,960.40
Mobilization	1144	Mobilization, Heavy Equipment Operator		Hour	\$37.33	72	\$2,687.76

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	580 - Streambank and Shoreline Protection
Scenario ID	5
Scenario Name	Rootwad Revetment with live fascines
Scenario Description	<p>Stabilizing eroding streambanks using rootwad revetment for toe protection. Bank is typically 8 feet of vertical height and section to be treated approximately 1000 feet long. Live fascines are used on 5 foot slope intervals above OHW to reveg bank. This scenario typically addresses the following resource concern: "Water quality degradation-excessive sediment deposition caused by bank erosion from streams, shorelines, or water conveyance channels".</p> <p>The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank, critical area vegetation, livestake, rootwads and revetments: a 6-foot high bank at 3(H):1(V) slope for 1000 linear feet (0.46 acres) is used for estimation purposes.</p> <p>Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.</p> <p>Associated Practices include: 560 - Access Road; 342 - Critical Area Planting; 382 - Fence; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream Habitat Improvement and Management; 614 - Watering Facility</p>
Before Practice Situation	<p>A eroding stream with all of the woody vegetation removed due to overgrazing or human manipulation or natural processes; the stream has degraded streambanks that are unstable and show signs of active erosion.</p> <p>Soil Erosion: The streambank is unstable.</p> <p>Water Quality Degradation: The sediment load has increased in the stream resulting in elevated water temperatures.</p> <p>Excess/Insufficient Water: The excessive sediment load has reduced the water conveyance capacity, storage capacity and flow within the stream.</p> <p>Inadequate Habitat for Fish and Wildlife: The deficiencies in the stream's habitat limit survival, growth, reproduction, and/or diversity of aquatic organisms within the stream.</p>
After Practice Situation	<p>The streambank is stable against further erosion and encourages natural sediment transport and deposition. Loss of riparian areas and sediment load is reduced in the stream.</p> <p>For Soil Erosion: The streambank is stable.</p> <p>For Water Quality Degradation: The sediment load has decreased in the stream resulting in improved aquatic habitat.</p> <p>For Excess/Insufficient Water: The water conveyance capacity, storage capacity and flow within the stream has been stabilized.</p> <p>For Inadequate Habitat for Fish and Wildlife: The reduction in the sediment load promotes survival, growth, reproduction, and/or diversity of aquatic organisms within the stream's habitat.</p>
Scenario Feature Measure	Linear Feet of Streambank/Shoreline Protected
Scenario Unit	Linear Feet
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$96,349.82	\$96.35
Equipment/Installation	\$19,235.60	\$19.24
Labor	\$32,353.32	\$32.35
Mobilization	\$39,297.83	\$39.30
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$187,236.57	\$187.24

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1904	Wattles or fascines, 6 to 8 inch diameter	Fascines, or wattles: bundles of live tree stems of species that sprout roots, bound together. 6"-8" diameter. Materials only.	Foot	\$6.50	2400	\$15,600.00
Materials	2045	Root Wad	Tree stump buried into the streambank with the roots left exposed. Includes material only.	Ton	\$22.00	100	\$2,200.00
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.97	1200	\$1,164.00
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	\$83.57	926	\$77,385.82
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	\$1.62	1482	\$2,400.84
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	\$83.31	42	\$3,499.02
Equipment/Installation	40	Clearing and Grubbing	Clearing and Grubbing, includes materials, equipment and labor	Acre	\$366.80	0.5	\$183.40
Equipment/Installation	1619	Front End Loader, 185 HP	Wheeled front end loader with horsepower range of 160 to 210. Equipment and power unit costs. Labor not included.	Hour	\$95.77	42	\$4,022.34
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$4.11	1000	\$4,110.00
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$5.02	1000	\$5,020.00
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	\$59.86	180	\$10,774.80
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	\$37.68	134	\$5,049.12

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	\$30.61	540	\$16,529.40
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	18	\$1,067.58
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	30480	\$30,480.00
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	\$495.05	10	\$4,950.50
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	\$37.33	75	\$2,799.75

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	580 - Streambank and Shoreline Protection
Scenario ID	6
Scenario Name	Rootwad Revetment with soil wraps and brush layering
Scenario Description	<p>Stabilizing eroding streambanks using rootwad revetment for toe protection. Bank is typically 8 feet of vertical height and section to be treated approximately 1000 feet long. Soil wraps and brush layering are used above rootwads to stabilize upper bank. This scenario typically addresses the following resource concern: "Water quality degradation-excessive sediment deposition caused by bank erosion from streams, shorelines, or water conveyance channels".</p> <p>The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank, critical area vegetation, livestock, rootwads and revetments: a 6-foot high bank at 3(H):1(V) slope for 1000 linear feet (0.46 acres) is used for estimation purposes.</p> <p>Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.</p> <p>Associated Practices include: 560 - Access Road; 342 - Critical Area Planting; 382 - Fence; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream</p>
Before Practice Situation	<p>A eroding stream with all of the woody vegetation removed due to overgrazing or human manipulation or natural processes; the stream has degraded streambanks that are unstable and show signs of active erosion.</p> <p>Soil Erosion: The streambank is unstable.</p> <p>Water Quality Degradation: The sediment load has increased in the stream resulting in elevated water temperatures.</p> <p>Excess/Insufficient Water: The excessive sediment load has reduced the water conveyance capacity, storage capacity and flow within the stream.</p> <p>Inadequate Habitat for Fish and Wildlife: The deficiencies in the stream's habitat limit survival, growth, reproduction, and/or diversity of aquatic organisms within the stream.</p>
After Practice Situation	<p>The streambank is stable against further erosion and encourages natural sediment transport and deposition. Loss of riparian areas and sediment load is reduced in the stream.</p> <p>For Soil Erosion: The streambank is stable.</p> <p>For Water Quality Degradation: The sediment load has decreased in the stream resulting in improved aquatic habitat.</p> <p>For Excess/Insufficient Water: The water conveyance capacity, storage capacity and flow within the stream has been stabilized.</p> <p>For Inadequate Habitat for Fish and Wildlife: The reduction in the sediment load promotes survival, growth, reproduction, and/or diversity of aquatic organisms within the stream's habitat.</p>
Scenario Feature Measure	Linear Feet of Streambank/Shoreline Protected
Scenario Unit	Linear Feet
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$102,288.02	\$102.29
Equipment/Installation	\$20,925.60	\$20.93
Labor	\$43,372.92	\$43.37
Mobilization	\$39,297.83	\$39.30
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$205,884.37	\$205.88

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1426	Tree, willow	Willow tree for planting, 18" to 36" seedling. Materials only.	Each	\$0.72	24000	\$17,280.00
Materials	1213	Erosion Control Blanket, biodegradable	Biodegradable erosion control blanket, typically a composite of natural fibers with reinforcing polymer netting. Materials only.	Square Yard	\$1.46	2670	\$3,898.20
Materials	1579	Stakes, wood, 1" x 2" x 24"	1" x 2" x 24" wood stakes to fasten items in place. Materials only.	Each	\$0.36	1000	\$360.00
Materials	2045	Root Wad	Tree stump buried into the streambank with the roots left exposed. Includes material only.	Ton	\$22.00	100	\$2,200.00
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.97	1200	\$1,164.00
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	\$83.57	926	\$77,385.82
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	\$1.62	1482	\$2,400.84
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	\$83.31	42	\$3,499.02
Equipment/Installation	40	Clearing and Grubbing	Clearing and Grubbing, includes materials, equipment and labor	Acre	\$366.80	0.5	\$183.40
Equipment/Installation	1619	Front End Loader, 185 HP	Wheeled front end loader with horsepower range of 160 to 210. Equipment and power unit costs. Labor not included.	Hour	\$95.77	42	\$4,022.34
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$4.11	1000	\$4,110.00
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$6.71	1000	\$6,710.00
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	\$59.86	180	\$10,774.80

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. 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	\$37.68	134	\$5,049.12
Labor	231	General Labor	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$30.61	900	\$27,549.00
Mobilization	1145	Mobilization, Supervisor or Manager	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.	Hour	\$59.31	18	\$1,067.58
Mobilization	1043	Mobilization, Material, distance > 50 miles	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Dollar	\$1.00	30480	\$30,480.00
Mobilization	1140	Mobilization, large equipment	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.	Each	\$495.05	10	\$4,950.50
Mobilization	1144	Mobilization, Heavy Equipment Operator		Hour	\$37.33	75	\$2,799.75

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	580 - Streambank and Shoreline Protection
Scenario ID	4
Scenario Name	Streambarbs with live fascines
Scenario Description	<p>Stabilizing eroding streambanks using rock stream barbs to stabilize the toe. Bank is typically 8 feet of vertical height and a section to be treated approximately 1000 feet long and consist of 5 streambarbs. Bank is revegetated using fascines on 5 foot slope centers. This scenario typically addresses the following resource concern: "Water quality degradation-excessive sediment deposition caused by bank erosion from streams, shorelines, or water conveyance channels". The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank, critical area vegetation, livestock, rootwads and revetments: a 6-foot high bank at 3(H):1(V) slope for 1000 linear feet (0.46 acres) is used for estimation purposes.</p> <p>Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.</p> <p>Associated Practices include: 560 - Access Road; 342 - Critical Area Planting; 382 - Fence; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream</p>
Before Practice Situation	<p>A eroding stream with all of the woody vegetation removed due to overgrazing or human manipulation or natural processes; the stream has degraded streambanks that are unstable and show signs of active erosion.</p> <p>Soil Erosion: The streambank is unstable.</p> <p>Water Quality Degradation: The sediment load has increased in the stream resulting in elevated water temperatures.</p> <p>Excess/Insufficient Water: The excessive sediment load has reduced the water conveyance capacity, storage capacity and flow within the stream.</p> <p>Inadequate Habitat for Fish and Wildlife: The deficiencies in the stream's habitat limit survival, growth, reproduction, and/or diversity of aquatic organisms within the stream.</p>
After Practice Situation	<p>The streambank is stable against further erosion and encourages natural sediment transport and deposition. Loss of riparian areas and sediment load is reduced in the stream.</p> <p>For Soil Erosion: The streambank is stable.</p> <p>For Water Quality Degradation: The sediment load has decreased in the stream resulting in improved aquatic habitat.</p> <p>For Excess/Insufficient Water: The water conveyance capacity, storage capacity and flow within the stream has been stabilized.</p> <p>For Inadequate Habitat for Fish and Wildlife: The reduction in the sediment load promotes survival, growth, reproduction, and/or diversity of aquatic organisms within the stream's habitat.</p>
Scenario Feature Measure	Linear Feet of Streambank/Shoreline Protected
Scenario Unit	Linear Feet
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$92,159.03	\$92.16
Equipment/Installation	\$37,467.91	\$37.47
Labor	\$38,495.16	\$38.50
Mobilization	\$31,617.83	\$31.62
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$199,739.93	\$199.74

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1904	Wattles or facines, 6 to 8 inch diameter	Facines, or wattles: bundles of live tree stems of species that sprout roots, bound together. 6"-8" diameter. Materials only.	Foot	\$6.50	3600	\$23,400.00
Materials	1200	Rock Riprap, graded, angular, material and shipping	Graded Rock Riprap for all gradation ranges. Includes materials and delivery only.	Ton	\$38.13	1284	\$48,958.92
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.97	1200	\$1,164.00
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	\$83.57	223	\$18,636.11
Equipment/Installation	1228	Excavation, common earth, wet, side cast, large equipment	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.63	458	\$2,120.54
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	\$1.62	3200	\$5,184.00
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	\$83.31	82	\$6,831.42
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	\$4.17	223	\$929.91
Equipment/Installation	40	Clearing and Grubbing	Clearing and Grubbing, includes materials, equipment and labor	Acre	\$366.80	0.5	\$183.40
Equipment/Installation	1619	Front End Loader, 185 HP	Wheeled front end loader with horsepower range of 160 to 210. Equipment and power unit costs. Labor not included.	Hour	\$95.77	232	\$22,218.64
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	\$59.86	180	\$10,774.80
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	\$37.68	297	\$11,190.96

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	\$30.61	540	\$16,529.40
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	18	\$1,067.58
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	22800	\$22,800.00
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	\$495.05	10	\$4,950.50
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	\$37.33	75	\$2,799.75

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	580 - Streambank and Shoreline Protection
Scenario ID	1
Scenario Name	Vegetative
Scenario Description	Protection of streambanks consisting of conventional plantings of vegetation to stabilize and protect against scour and erosion. The purpose of this practice is to maintain, improve, or restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Payment cost include shaping bank, critical area vegetation and erosion control fabric; a 6-foot high bank at 3(H):1(V) slope for 1000 linear feet (0.46 acres) is used for estimation purposes. Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation. Associated Practices include: 560 - Access Road; 342 - Critical Area Planting; 382 - Fence; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream Habitat Improvement and Management; 614 - Watering Facility
Before Practice Situation	A stream bisects the agricultural property and has had all of the woody vegetation removed due to overgrazing or human manipulation; the stream has marginally degraded streambanks that are unstable and show signs of active erosion. Soil Erosion: The streambank is unstable. Water Quality Degradation: The sediment load has increased in the stream resulting in elevated water temperatures. Excess/Insufficient Water: The excessive sediment load has reduced the water conveyance capacity, storage capacity and flow within the stream. Inadequate Habitat for Fish and Wildlife: The deficiencies in the stream's habitat limit survival, growth, reproduction, and/or diversity of aquatic organisms within the stream.
After Practice Situation	The streambank is stable against further erosion and encourages natural sediment transport and deposition. Loss of riparian areas and sediment load is reduced in the stream. For Soil Erosion: The streambank is stable. For Water Quality Degradation: The sediment load has decreased in the stream resulting in improved aquatic habitat. For Excess/Insufficient Water: The water conveyance capacity, storage capacity and flow within the stream has been stabilized. For Inadequate Habitat for Fish and Wildlife: The reduction in the sediment load promotes survival, growth, reproduction, and/or diversity of aquatic organisms within the stream's habitat.
Scenario Feature Measure	Linear Feet of Streambank/Shoreline Protected
Scenario Unit	Linear Feet
Scenario Typical Size	1000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$3,549.12	\$3.55
Equipment/Installation	\$7,819.34	\$7.82
Labor	\$10,663.68	\$10.66
Mobilization	\$2,334.85	\$2.33
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$24,366.99	\$24.37

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	176	Ryegrass, Annual (Lolium multiflorum)	Annual Grasses, Cover Crops and shipping.	Pound	\$1.25	100	\$125.00
Materials	1213	Erosion Control Blanket, biodegradable	Biodegradable erosion control blanket, typically a composite of natural fibers with reinforcing polymer netting. Materials only.	Square Yard	\$1.46	2222	\$3,244.12
Materials	87	Fescue, Tall (Festuca arundinacea)	Introduced Perennial Grasses and shipping.	Pound	\$1.80	100	\$180.00
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	\$23.27	0.46	\$10.70
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	\$2.72	2500	\$6,800.00
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	\$63.04	16	\$1,008.64
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	\$59.86	56	\$3,352.16
Labor	232	Equipment Operators, Light	Includes: skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$28.43	16	\$454.88
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	\$30.61	224	\$6,856.64
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$59.31	7	\$415.17
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	4	\$1,058.68
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	28	\$861.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	585 - Stripcropping
Scenario ID	1
Scenario Name	Stripcropping - water erosion
Scenario Description	For the median Alaskan field size of 8 Acres, this scenario describes the implementation of a stripcropping system that is designed specifically for the control of water and wind erosion. This minimizes the transport from cropland of sediments, plus other water-borne and air-borne contaminants. 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 as possible to water flows and the critical wind direction. The designed system will reduce to desired objectives erosion, sediment, contaminants and particulate matter emissions. 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 and wind erosion resistant species.
Before Practice Situation	In this geographic area, excessive water erosion is caused by raising crops in a manner that allows water flows to travel unimpeded down the slope due to lack of residue or other conservation measures causing sheet and rill erosion or concentrated flow conditions, 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 erosion resistant crop species with non-water erosion resistant crop species. Widths will be determined using current water erosion prediction technology to meet objectives. The design and implementation of a stripcropping system will minimize sheet and rill 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	8

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$60.14	\$7.52
Labor	\$210.14	\$26.27
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$270.28	\$33.79

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	\$30.07	2	\$60.14
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	\$74.46	2	\$148.92
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	\$30.61	2	\$61.22

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	587 - Structure for Water Control
Scenario ID	7
Scenario Name	Concrete Structure, remote site
Scenario Description	A reinforced concrete structure equipped with various slide boards or panels to divert water for a number of purposes, such as diverting ditch or canal flows into a field or field ditch. This scenario is meant to cover a concrete structure containing approximately 4 CY of reinforced concrete, though it may be used for larger or smaller structures. Practice is located off the Alaskan road system.
Before Practice Situation	A ditch or canal exists, but a means to move water from the ditch into a smaller ditch or field does not exist. A water supply of sufficient quantity and quality is available.
After Practice Situation	Water is collected and/or diverted from a canal, ditch, or pipeline. The concrete structure is 5'x5'x5' and has 8" thick walls and floor. The structure delivers water to field elevation or ditch bottom elevation. The top of the pipe inlet is below canal water surface elevation.
Scenario Feature Measure	Volume of concrete
Scenario Unit	Cubic Yard
Scenario Typical Size	4

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$25.34	\$6.34
Equipment/Installation	\$2,252.61	\$563.15
Labor	\$56.86	\$14.22
Mobilization	\$2,259.07	\$564.77
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$4,593.88	\$1,148.47

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	\$25.34	1	\$25.34
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-place 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	\$592.03	3	\$1,776.09
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-place 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	\$372.82	1	\$372.82
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	\$51.85	2	\$103.70
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$28.43	2	\$56.86
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	133	\$133.00
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	6	\$1,588.02
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	\$28.17	19.1	\$538.05

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	587 - Structure for Water Control
Scenario ID	6
Scenario Name	Concrete Structure
Scenario Description	A reinforced concrete structure equipped with various slide boards or panels to divert water for a number of purposes, such as diverting ditch or canal flows into a field or field ditch. This scenario is meant to cover a concrete structure containing approximately 4 CY of reinforced concrete, though it may be used for larger or smaller structures.
Before Practice Situation	A ditch or canal exists, but a means to move water from the ditch into a smaller ditch or field does not exist. A water supply of sufficient quantity and quality is available.
After Practice Situation	Water is collected and/or diverted from a canal, ditch, or pipeline. The concrete structure is 5'x5'x5' and has 8" thick walls and floor. The structure delivers water to field elevation or ditch bottom elevation. The top of the pipe inlet is below canal water surface elevation.
Scenario Feature Measure	Volume of concrete
Scenario Unit	Cubic Yard
Scenario Typical Size	4

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$25.34	\$6.34
Equipment/Installation	\$2,252.61	\$563.15
Labor	\$56.86	\$14.22
Mobilization	\$604.00	\$151.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,938.81	\$734.70

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	\$25.34	1	\$25.34
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-place 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	\$592.03	3	\$1,776.09
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-place 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	\$372.82	1	\$372.82
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	\$51.85	2	\$103.70
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$28.43	2	\$56.86
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34
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	\$37.33	2	\$74.66

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	587 - Structure for Water Control
Scenario ID	4
Scenario Name	Flap Gate, remote site
Scenario Description	This scenario is the installation of a permanent flap (tide) gate structure to control the direction of flow resulting from tides or high water or back-flow from flooding. The typical size is a 2' diameter opening. The gate is installed on a pipeline. It is made of steel and operates automatically. This scenario assists in addressing the resource concerns: water management.
Before Practice Situation	A wetland or other area is in need of a flap gate to control the direction of the water.
After Practice Situation	A flap gate 2' wide is installed.
Scenario Feature Measure	Feet Diameter (of Gate)
Scenario Unit	Foot
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$500.00	\$250.00
Equipment/Installation	\$414.80	\$207.40
Labor	\$273.16	\$136.58
Mobilization	\$779.34	\$389.67
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,967.30	\$983.65

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	2099	Flap Gate, 24"	24" diameter cast flap gate. Materials only.	Each	\$500.00	1	\$500.00
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	\$51.85	8	\$414.80
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	\$30.61	4	\$122.44
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	\$37.68	4	\$150.72
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34
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	250	\$250.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	587 - Structure for Water Control
Scenario ID	3
Scenario Name	Flap Gate
Scenario Description	This scenario is the installation of a permanent flap (tide) gate structure to control the direction of flow resulting from tides or high water or back-flow from flooding. The typical size is a 2' diameter opening. The gate is installed on a pipeline. It is made of steel and operates automatically. This scenario assists in addressing the resource concerns: water management.
Before Practice Situation	A wetland or other area is in need of a flap gate to control the direction of the water.
After Practice Situation	A flap gate 2' wide is installed.
Scenario Feature Measure	Feet Diameter (of Gate)
Scenario Unit	Foot
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$500.00	\$250.00
Equipment/Installation	\$414.80	\$207.40
Labor	\$273.16	\$136.58
Mobilization	\$529.34	\$264.67
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,717.30	\$858.65

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	2099	Flap Gate, 24"	24" diameter cast flap gate. Materials only.	Each	\$500.00	1	\$500.00
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	\$51.85	8	\$414.80
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	\$30.61	4	\$122.44
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	\$37.68	4	\$150.72
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	587 - Structure for Water Control
Scenario ID	5
Scenario Name	Flow Meter
Scenario Description	<p>Permanently installed water flow meter with mechanical, cumulative volume and rate index. Meters can be any flow measurement device that meets CPS 433, (i.e. meters: turbine, propeller, acoustic, magnetic, venturi, orifice, etc.) with or without straightening vanes. This scenario may also be used for electronic meters, as costs appear to be similar. Applicable to small meters for high tunnel microirrigation systems as well as larger meters for surface, subsurface, or sprinkler irrigation.</p> <p>Scenario applicable to both on-road and off-road installations. Typical installations are 1" or 2" meters with minimal shipping/mob costs even for off-road installations.</p> <p>Resource Concerns: Insufficient Water - Inefficient use of irrigation water, and Degraded Plant Condition - Undesirable plant productivity and health, and Inefficient Energy Use - Equipment and facilities</p> <p>Associated Practices: 533-Pumping Plant, 449-Irrigation Water Management, 441-Irrigation System, Microirrigation, 443-Irrigation System Surface and Subsurface, 442-Irrigation System, Sprinkler, 328-Conservation Crop Rotation, 634-Waste Transfer, and 590-Nutrient Management.</p>
Before Practice Situation	Producer estimates seasonal and individual irrigation application flow rate and volumes based on energy costs, system operating pressure, or other means.
After Practice Situation	Producer is able to access instantaneous rate and cumulative flow volume data at the meter location. The information gained will enable the irrigator to improve irrigation water management, recognize system performance issues before they become critical, and reduce energy use.
Scenario Feature Measure	Nominal Diameter of Meter
Scenario Unit	Foot
Scenario Typical Size	0.833

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,141.12	\$1,369.89
Equipment/Installation	\$0.00	\$0.00
Labor	\$0.00	\$0.00
Mobilization	\$73.29	\$87.98
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,214.41	\$1,457.88

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1450	Flow Meter, with mechanical Index	10 inch, Turbine Type Flow Meter with Mechanical Index, permanently installed. Includes material, labor and installation.	Each	\$1,141.12	1	\$1,141.12
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	\$73.29	1	\$73.29

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	587 - Structure for Water Control
Scenario ID	1
Scenario Name	Simple Culvert ≤30'
Scenario Description	Install a new culvert 30 inches in diameter or less, to convey water under roads or other barriers. A typical scenario would be an 24 inch diameter pipe, 30 feet in length. The pipe material used in this scenario is Corrugated Metal Pipe (CMP), but other material types (HDPE, concrete, etc) may also be used. Work includes site preparation, acquiring and installing culvert pipe with gravel bedding and fill (compacted), and riprap protection of side slopes. Road topping has been included. 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	720

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,354.56	\$1.88
Equipment/Installation	\$885.60	\$1.23
Labor	\$306.10	\$0.43
Mobilization	\$590.84	\$0.82
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$3,137.10	\$4.36

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	\$31.32	30	\$939.60
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	\$25.34	7	\$177.38
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	\$83.57	2	\$167.14
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.22	2	\$70.44
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$4.11	64	\$263.04
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$6.71	64	\$429.44
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. Labor performed using basic tools such as	Cubic yard	\$2.72	71	\$193.12
Labor	231	General Labor	power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.61	10	\$306.10
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	2	\$61.50

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Engineering General
Practice Code/Name	587 - Structure for Water Control
Scenario ID	2
Scenario Name	Simple Culvert ≤30', remote site
Scenario Description	Install a new culvert 30 inches in diameter or less, to convey water under roads or other barriers. Practice is located off the Alaskan road system. A typical scenario would be an 24 inch diameter pipe, 30 feet in length. The pipe material used in this scenario is Corrugated Metal Pipe (CMP), but other material types (HDPE, concrete, etc) may also be used. Work includes site preparation, acquiring and installing culvert pipe with gravel bedding and fill (compacted), and riprap protection of side slopes. Road topping has been included. 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	720

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,354.56	\$1.88
Equipment/Installation	\$885.60	\$1.23
Labor	\$306.10	\$0.43
Mobilization	\$1,590.84	\$2.21
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$4,137.10	\$5.75

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	\$31.32	30	\$939.60
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	\$25.34	7	\$177.38
Materials	44	Rock Riprap, Placed with geotextile	Rock Riprap, placed with geotextile, includes materials, equipment and labor to transport and place	Cubic yard	\$83.57	2	\$167.14
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.22	2	\$70.44
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$4.11	64	\$263.04
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$6.71	64	\$429.44
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	\$2.72	71	\$193.12
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	\$30.61	10	\$306.10
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$264.67	2	\$529.34
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	1000	\$1,000.00
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$30.75	2	\$61.50

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	590 - Nutrient Management
Scenario ID	4
Scenario Name	Basic High Tunnel NM
Scenario Description	This scenario describes the implementation of a basic nutrient management system on the typical Alaskan High Tunnel field of 2160 SF of intensive vegetable crops where there is no manure application. 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. 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 NRCS 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 High Tunnel field based on soil test analysis and land grant university recommendations or crop removal rates. On planning units of the typical Alaskan High Tunnel field of 2160 SF, soil testing is completed according to LGU recommendations. The use of annual pre-plant soil tests (results interpreted by crop consultant) will assist with the proper development of the annual nutrient budget. This 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 analyses, consultant recommendations, 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	High Tunnel mgt. applied
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$38.12	\$38.12
Equipment/Installation	\$60.14	\$60.14
Labor	\$984.50	\$984.50
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,082.76	\$1,082.76

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	4	\$38.12
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	2	\$60.14
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	\$74.46	3	\$223.38
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	\$47.57	16	\$761.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	590 - Nutrient Management
Scenario ID	2
Scenario Name	Basic Large Farm NM
Scenario Description	This scenario describes the implementation of a basic nutrient management system on cropland or hayland where there is no manure application. Field size is 16 acres and greater. 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. 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 of the median Alaskan field size of 8 acres, soil testing is completed according to LGU recommendations. The use of annual pre-plant soil tests (results interpreted by crop consultant) will assist with the proper development of the annual nutrient budget. This 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 analyses, consultant recommendations, 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	Acres of management applied
Scenario Unit	Acre
Scenario Typical Size	20

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$38.12	\$1.91
Equipment/Installation	\$93.01	\$4.65
Labor	\$1,017.60	\$50.88
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,148.73	\$57.44

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	4	\$38.12
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	\$32.87	1	\$32.87
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	2	\$60.14
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	\$74.46	6	\$446.76
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	\$47.57	12	\$570.84
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	\$47.57		\$0.00

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	590 - Nutrient Management
Scenario ID	3
Scenario Name	Basic Organic NM
Scenario Description	The planned NM system for organic production methods of intensive vegetable production will meet the current 590 standard. This scenario is NOT for hay or grain production unless it is rotation with vegetables. Maximum farm size is 8 acres. 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, manure and/or compost analysis, and consultant services that provide nutrient recommendations. Records demonstrating implementation of the 4 R's of NM standard will be required. This Scenario is designed to encourage organic method producers to effectively utilize organic fertilizers, manure, and/or compost appropriately improving soil quality and minimizing runoff of nutrients from fields to surface waters. The basis for nutrient applications will be recommendations based on analyses of soil and organic nutrient sources.
Before Practice Situation	In this geographic area, an organic method fertility program does not meet the 590 nutrient management standard. Soil testing is not completed on a regular basis and applications of organic fertilizers and amendments are not based on a nutrient budget. Nutrients are transported to surface waters through runoff or erosion and to ground waters 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 during critical periods often times resulting in sheet, rill, and ephemeral erosion.
After Practice Situation	A nutrient management system will be developed to meet the NRCS 590 standard and NOP regulations. A nutrient management budget will be developed annually for each field(s) based on soil test analysis and crop needs. Soil testing is completed according to LGU instructions. 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 of nutrients via manures, composts, cover crops or NOP-approved commercial forms are applied in a manner that minimizes nutrient runoff and leaching. Records will be provided annually of the current soil and organic nutrient test analyses, consultant recommendations, amount of application, forms and rates of nutrients for each field.
Scenario Feature Measure	Acres of management applied
Scenario Unit	Acre
Scenario Typical Size	6

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$193.75	\$32.29
Equipment/Installation	\$93.01	\$15.50
Labor	\$965.05	\$160.84
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,251.81	\$208.64

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	3	\$28.59
Materials	307	Test, Compost Analysis	Moisture, Total N, P, K	Each	\$39.52	2	\$79.04
Materials	306	Test, Manure Analysis	Moisture, Total N, P, K	Each	\$43.06	2	\$86.12
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	\$32.87	1	\$32.87
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	2	\$60.14
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	\$47.57	3	\$142.71
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	\$30.61	2	\$61.22
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	\$47.57	16	\$761.12

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	590 - Nutrient Management
Scenario ID	1
Scenario Name	Basic Small Farm NM
Scenario Description	This scenario describes the implementation of a basic nutrient management system on small farms with cropland or hayland where there is no manure application. Field size ranges from less than one acre to a maximum farm size of 16 acres. This planned Basic Small Farm NM system will meet the current 590 standard. 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 of the median Alaskan field size of 8 acres, soil testing is completed according to LGU recommendations. The use of annual pre-plant soil tests (results interpreted by crop consultant) will assist with the proper development of the annual nutrient budget. This 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 analyses, consultant recommendations, 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	Acres of management applied
Scenario Unit	Acre
Scenario Typical Size	8

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$19.06	\$2.38
Equipment/Installation	\$93.01	\$11.63
Labor	\$760.30	\$95.04
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$872.37	\$109.05

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	2	\$19.06
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	\$32.87	1	\$32.87
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	2	\$60.14
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	\$74.46	3	\$223.38
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	\$30.61	2	\$61.22
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	\$47.57	10	\$475.70

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	590 - Nutrient Management
Scenario ID	8
Scenario Name	Enhanced High Tunnel NM
Scenario Description	This scenario describes the implementation of an Enhanced High Tunnel nutrient management system on the typical Alaskan High Tunnel field of 2160 SF of intensive vegetable crops where there is no manure application. 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. Payment for implementation is to defray the costs of soil and tissue 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 High Tunnel field based on soil test analysis and land grant university recommendations or crop removal rates. On planning units of the typical Alaskan High Tunnel field of 2160 SF, soil testing is completed according to LGU recommendations. The use of annual pre-plant soil tests (results interpreted by crop consultant) will assist with the proper development of the annual nutrient budget. This 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 analyses, consultant recommendations, 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	High Tunnel mgt. applied
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$194.92	\$194.92
Equipment/Installation	\$71.34	\$71.34
Labor	\$903.83	\$903.83
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$337.72	\$337.72
Foregone Income	\$0.00	\$0.00
Total	\$1,507.81	\$1,507.81

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	311	Test, Soil Nitrogen Testing	Pre-Side Dress/Deep Soil Testing	Each	\$14.59	4	\$58.36
Materials	301	Test, Plant Tissue Test	Tissue analysis for crops	Each	\$24.61	4	\$98.44
Materials	299	Test, Soil Test, Standard	Includes materials, labor, and equipment costs.	Each	\$9.53	4	\$38.12
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	2	\$60.14
Equipment/Installation	1125	Chlorophyll Reader	Applicator and chlorophyll sensor includes labor. No materials	Acre	\$11.20	1	\$11.20
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	\$47.57	3	\$142.71
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	\$47.57	16	\$761.12
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	80	\$44.80

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	590 - Nutrient Management
Scenario ID	6
Scenario Name	Enhanced Large Farm NM
Scenario Description	This scenario takes a conventional cropping system on a large Alaskan field size of 16 acres and more where either no nutrient management or only a basic nutrient management is being practiced. An enhanced nutrient management system includes split applications and multiple nutrient concentration tests (other than only soil tests) and methods that more concisely enable scheduling of appropriate fertilizer applications. Nutrients are transported to surface waters through runoff or wind erosion in quantities that degrade water quality and limit use of intended purposes. Inefficient energy utilization occurs due to traditional methods and forms of fertilizer applications.
Before Practice Situation	In this geographic area, conventional fertility programs involve very little or no soil or manure testing. Application of fertilizers, including manures and amendments, are completed annually based upon tradition that does not specifically consider the detrimental affects of improper timing or rates of nutrients, or excess nutrient build-up in the soil. Fields are overwintered with little or no erosion protection often times resulting in sheet, rill, and ephemeral erosion by spring. Runoff flows into adjacent streams, water courses, tile drains, field surface drains, or other water courses causing degradation to receiving waters or leaching of nutrients to shallow ground water sources. There is typically no environmental evaluation of the potential for off-site movement. Soil quality may also be detrimentally affected. The current system is also typically inefficient energy user due to traditional methods, forms, and amounts of nutrient applications.
After Practice Situation	The development and implementation of a Nutrient Management Plan (NMP) will benefit plant productivity and reduce off-site movement of nutrients. The use of annual pre-plant soil tests will assist with the development of the annual nutrient budget in accordance with Land Grant University fertilizer guides. The NMP will stress the use of the four R's (Right Source of Nutrients, Right Time of Application, Right Rate, and Right Method of Application). These include practices such as use of split applications, slow release nutrients, nitrogen inhibitors, proper timing of application, more appropriate formulations, banding, etc. Additional nutrient tests including Pre-Sidedress Nitrogen, tissue tests (like last fully expanded leaf at flowering), chlorophyll meters, spectral analysis, etc., may be used to further refine nutrient applications. Record keeping will document application of nutrients based on the 4 R's. Use of a post-harvest soil test or tissue tests (interpreted by a 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. Further minimization of risk is accomplished by identifying the variability across the field(s) by using soil survey maps or other simple techniques to
Scenario Feature Measure	Acres of management applied
Scenario Unit	Acre
Scenario Typical Size	20

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$281.04	\$14.05
Equipment/Installation	\$243.48	\$12.17
Labor	\$1,825.88	\$91.29
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$337.72	\$16.89
Foregone Income	\$0.00	\$0.00
Total	\$2,688.12	\$134.41

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	311	Test, Soil Nitrogen Testing	Pre-Side Dress/Deep Soil Testing	Each	\$14.59	4	\$58.36
Materials	301	Test, Plant Tissue Test	Tissue analysis for crops	Each	\$24.61	4	\$98.44
Materials	299	Test, Soil Test, Standard	Includes materials, labor, and equipment costs.	Each	\$9.53	4	\$38.12
Materials	306	Test, Manure Analysis	Moisture, Total N, P, K	Each	\$43.06	2	\$86.12
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	\$32.87	4	\$131.48
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	\$47.57	6	\$285.42
Equipment/Installation	1125	Chlorophyll Reader	Applicator and chlorophyll sensor includes labor. No materials	Acre	\$11.20	10	\$112.00
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	\$74.46	8	\$595.68
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	\$30.61	6	\$183.66
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	\$47.57	16	\$761.12
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	80	\$44.80

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	590 - Nutrient Management
Scenario ID	7
Scenario Name	Enhanced Organic NM

Scenario Description	The planned Enhanced Organic NM system for organic production methods of intensive vegetable production will meet the current 590 standard. This scenario is NOT for hay or grain production unless it is rotation with vegetables. Maximum farm size is 8 acres. 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 and tissue testing, manure and/or compost analysis, and consultant services that provide nutrient recommendations. Records demonstrating implementation of the 4 R's of NM standard will be required. This Scenario is designed to encourage organic method producers to effectively utilize organic fertilizers, manure, and/or compost appropriately improving soil quality and minimizing runoff of nutrients from fields to surface waters. The basis for nutrient applications will be recommendations based on analyses of soil and organic nutrient sources.
Before Practice Situation	In this geographic area, an organic method fertility program does not meet the 590 nutrient management standard. Soil testing is not completed on a regular basis and applications of organic fertilizers and amendments are not based on a nutrient budget. Nutrients are transported to surface waters through runoff or erosion and to ground waters 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 during critical periods often times resulting in sheet, rill, and ephemeral erosion.
After Practice Situation	The development and implementation of a Nutrient Management Plan (NMP) will benefit plant productivity and reduce off-site movement of nutrients. The use of annual pre-plant soil tests will assist with the development of the annual nutrient budget in accordance with Land Grant University fertilizer guides. The NMP will stress the use of the four R's (Right Source of Nutrients, Right Time of Application, Right Rate, and Right Method of Application). These include practices such as use of split applications, slow release nutrients, nitrogen inhibitors, proper timing of application, more appropriate formulations, banding, etc. Additional nutrient tests including Pre-Sidedress Nitrogen, tissue tests (like last fully expanded leaf at flowering), chlorophyll meters, spectral analysis, etc., may be used to further refine nutrient applications. Record keeping will document application of nutrients based on the 4 R's. Use of a post-harvest soil test or tissue tests (interpreted by a 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. Further minimization of risk is accomplished by identifying the variability across the field(s) by using soil survey maps or other simple techniques to
Scenario Feature Measure	Acres of management applied
Scenario Unit	Acre
Scenario Typical Size	6

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$360.08	\$60.01
Equipment/Installation	\$93.74	\$15.62
Labor	\$1,465.59	\$244.27
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$337.72	\$56.29
Foregone Income	\$0.00	\$0.00
Total	\$2,257.13	\$376.19

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	311	Test, Soil Nitrogen Testing	Pre-Side Dress/Deep Soil Testing	Each	\$14.59	4	\$58.36
Materials	301	Test, Plant Tissue Test	Tissue analysis for crops	Each	\$24.61	4	\$98.44
Materials	299	Test, Soil Test, Standard	Includes materials, labor, and equipment costs.	Each	\$9.53	4	\$38.12
Materials	307	Test, Compost Analysis	Moisture, Total N, P, K	Each	\$39.52	2	\$79.04
Materials	306	Test, Manure Analysis	Moisture, Total N, P, K	Each	\$43.06	2	\$86.12
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	\$47.57	1	\$47.57
Equipment/Installation	999	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$30.07	2	\$60.14
Equipment/Installation	1125	Chlorophyll Reader	Applicator and chlorophyll sensor includes labor. No materials	Acre	\$11.20	3	\$33.60
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	\$74.46	8	\$595.68
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	\$30.61	2	\$61.22
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	\$47.57	16	\$761.12
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	80	\$44.80

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	590 - Nutrient Management
Scenario ID	5
Scenario Name	Enhanced Small Farm NM
Scenario Description	This scenario takes a conventional cropping system on the median Alaskan field size of 8 acres where either no nutrient management or only a basic nutrient management is being practiced. Field size ranges from less than one acre to a maximum farm size of 16 acres. An enhanced nutrient management system includes split applications and multiple nutrient concentration tests (other than only soil tests) and methods that more concisely enable scheduling of appropriate fertilizer applications. Nutrients are transported to surface waters through runoff or wind erosion in quantities that degrade water quality and limit use of intended purposes. Inefficient energy utilization occurs due to traditional methods and forms of fertilizer applications.
Before Practice Situation	In this geographic area, conventional fertility programs involve very little or no soil or manure testing. Application of fertilizers, including manures and amendments, are completed annually based upon tradition that does not specifically consider the detrimental affects of improper timing or rates of nutrients, or excess nutrient build-up in the soil. Fields are overwintered with little or no erosion protection often times resulting in sheet, rill, and ephemeral erosion by spring. Runoff flows into adjacent streams, water courses, tile drains, field surface drains, or other water courses causing degradation to receiving waters or leaching of nutrients to shallow ground water sources. There is typically no environmental evaluation of the potential for off-site movement. Soil quality may also be detrimentally affected. The current system is also typically inefficient energy user due to traditional methods, forms, and amounts of nutrient applications.
After Practice Situation	The development and implementation of a Nutrient Management Plan (NMP) will benefit plant productivity and reduce off-site movement of nutrients. The use of annual pre-plant soil tests will assist with the development of the annual nutrient budget in accordance with Land Grant University fertilizer guides. The NMP will stress the use of the four R's (Right Source of Nutrients, Right Time of Application, Right Rate, and Right Method of Application). These include practices such as use of split applications, slow release nutrients, nitrogen inhibitors, proper timing of application, more appropriate formulations, banding, etc. Additional nutrient tests including Pre-Sidedress Nitrogen, tissue tests (like last fully expanded leaf at flowering), chlorophyll meters, spectral analysis, etc., may be used to further refine nutrient applications. Record keeping will document application of nutrients based on the 4 R's. Use of a post-harvest soil test or tissue tests (interpreted by a 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. Further minimization of risk is accomplished by identifying the variability across the field(s) by using soil survey maps or other simple techniques to
Scenario Feature Measure	Acres of management applied
Scenario Unit	Acre
Scenario Typical Size	8

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$281.04	\$35.13
Equipment/Installation	\$176.28	\$22.04
Labor	\$1,635.60	\$204.45
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$337.72	\$42.22
Foregone Income	\$0.00	\$0.00
Total	\$2,430.64	\$303.83

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	311	Test, Soil Nitrogen Testing	Pre-Side Dress/Deep Soil Testing	Each	\$14.59	4	\$58.36
Materials	301	Test, Plant Tissue Test	Tissue analysis for crops	Each	\$24.61	4	\$98.44
Materials	299	Test, Soil Test, Standard	Includes materials, labor, and equipment costs.	Each	\$9.53	4	\$38.12
Materials	306	Test, Manure Analysis	Moisture, Total N, P, K	Each	\$43.06	2	\$86.12
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	\$32.87	4	\$131.48
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	\$47.57	6	\$285.42
Equipment/Installation	1125	Chlorophyll Reader	Applicator and chlorophyll sensor includes labor. No materials	Acre	\$11.20	4	\$44.80
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	\$74.46	8	\$595.68
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	\$30.61	6	\$183.66
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	\$47.57	12	\$570.84
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	80	\$44.80

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	3
Scenario Name	Advanced Field 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 Field/Forage Crops 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).
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	40

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$0.00	\$0.00
Labor	\$2,415.76	\$60.39
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,415.76	\$60.39

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	\$47.57	32	\$1,522.24
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	\$74.46	12	\$893.52

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
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	Plans 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	\$2,035.20	\$2,035.20
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,035.20	\$2,035.20

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	\$47.57	24	\$1,141.68
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	\$74.46	12	\$893.52

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	2
Scenario Name	Basic IPM Field >1RC
Scenario Description	A basic IPM plan with LGU-approved pest monitoring techniques and pest thresholds (where available) is applied in Large Scale Field/Forage 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 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).
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	Acre of management applied
Scenario Unit	Acre
Scenario Typical Size	40

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$0.00	\$0.00
Labor	\$1,737.36	\$43.43
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,737.36	\$43.43

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	\$47.57	24	\$1,141.68
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	\$74.46	8	\$595.68

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	1
Scenario Name	Basic IPM Field 1RC
Scenario Description	A basic IPM plan with LGU-approved pest monitoring techniques and pest thresholds (where available) is applied in Large Scale Field/Forage 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 one identified rresource 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	40

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$0.00	\$0.00
Labor	\$1,207.88	\$30.20
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,207.88	\$30.20

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	\$47.57	16	\$761.12
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	\$74.46	6	\$446.76

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	5
Scenario Name	IPM S-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	Plans 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	\$1,431.26	\$1,431.26
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,431.26	\$1,431.26

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	\$47.57	16	\$761.12
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	\$74.46	9	\$670.14

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
Discipline Group	Agronomy
Practice Code/Name	595 - Integrated Pest Management
Scenario ID	4
Scenario Name	IPM S-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	Plans 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	\$901.78	\$901.78
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$901.78	\$901.78

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	\$47.57	8	\$380.56
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	\$74.46	7	\$521.22

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Alaska
State	Alaska
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	Plans of management applied
Scenario Unit	Acre
Scenario Typical Size	10

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$0.00	\$0.00
Labor	\$1,505.72	\$150.57
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,505.72	\$150.57

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. Labor requiring a specialized skill set. Includes	Hour	\$47.57	16	\$761.12
Labor	235	Specialist Labor	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	\$74.46	10	\$744.60