Practice: 449 - Irrigation Water Management

Scenario: #1 - Basic IWM < = 30 acres

Scenario Description: A low Intensity irrigation water management system for producers using a checkbook method (crop grown, soil moisture conditions prior to irrigation, dates of irrigation start and stop, depths of irrigation applied, duration of irrigations, and amount of rainfall). For a typical scenario, soil moisture is determined by the feel method, volumes of irrigation water are based on energy or water district bills, records are kept on paper copies, and calculations are made by hand. Resource Concerns: Insufficient Water Supply-Inefficient use of irrigation water; Degraded Plant Condition-Undesirable plant productivity and health, and Inefficient Energy Use-Equipment and facilities. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler, 443-Irrigation System Surface and Subsurface.

Before Situation: The irrigator decides when to irrigate based on general crop or soil appearance or limited soil moisture monitoring. System run times are based on past apparent success. The typical irrigated field is a 30 acre corn field with a surface irrigation system.

After Situation: Irrigations are scheduled based on measured crop water requirements. Records are used to evaluate results of past irrigation events and influence future irrigations. The irrigator keeps records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.

Scenario Feature Measure: Irrigated Area Managed

Scenario Unit: Acre

Scenario Typical Size: 30

Total Scenario Cost: $1,046.68

Scenario Cost/Unit: $34.89

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$43.61	24	$1,046.68

Practice: 449 - Irrigation Water Management

Scenario: #2 - Basic IWM > 30 acres

Scenario Description: A low Intensity irrigation water management system for producers using a checkbook method (crop grown, soil moisture conditions prior to irrigation, dates of irrigation start and stop, depths of irrigation applied, duration of irrigations, and amount of rainfall). For a typical scenario, soil moisture is determined by the feel method, volumes of irrigation water are based on energy or water district bills, records are kept on paper copies, and calculations are made by hand. Resource Concerns: Insufficient Water Supply-Inefficient use of irrigation water; Degraded Plant Condition-Undesirable plant productivity and health, and Inefficient Energy Use-Equipment and facilities. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler, and 443-Irrigation System Surface and Subsurface.

Before Situation: The irrigator decides when to irrigate based on general crop or soil appearance or limited soil moisture monitoring. System run times are based on past apparent success. The typical irrigated field is a 125 acre corn field with a sprinkler irrigation system.

After Situation: Irrigations are scheduled based on measured crop water requirements. Records are used to evaluate results of past irrigation events and influence future irrigations. The irrigator keeps records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.

Scenario Feature Measure: Irrigated Area Managed

Scenario Unit: Acre

Scenario Typical Size: 125

Total Scenario Cost: $1,604.79

Scenario Cost/Unit: $12.84

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$26.15	8	$209.22
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$43.61	32	$1,395.58

Practice: 449 - Irrigation Water Management

Scenario: #3 - Intermediate IWM < = 30 acres

Scenario Description: A medium intensity irrigation water management system for producers using a checkbook method (crop grown, soil moisture conditions prior to irrigation, dates of irrigation start and stop, depths of irrigation applied, duration of irrigations, and amount of rainfall). For a typical scenario, soil moisture is determined by in-field moisture sensors with manual downloads. Irrigation amounts are recorded from a flow meter near the pump. Records are input manually into an irrigation scheduling computer program. Resource Concerns: Insufficient Water Supply-Inefficient use of irrigation water; Degraded Plant Condition-Undesirable plant productivity and health, and Inefficient Energy Use-Equipment and facilities. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler, and 443-Irrigation System Surface and Subsurface.

Before Situation: The farmer decides when to irrigate based on general crop or soil appearance or limited soil moisture monitoring. System run times are based on past apparent success. The typical irrigated field is a 30 acre corn field with a surface irrigation system.

After Situation: Irrigations are scheduled based on measured crop water requirements. Records are used to evaluate results of past irrigation events and influence future irrigations. The irrigator keeps records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.

Scenario Feature Measure: Irrigated Area Managed

Scenario Unit: Acre

Scenario Typical Size: 30

Total Scenario Cost: $1,395.58

Scenario Cost/Unit: $46.52

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$43.61	32	$1,395.58

Practice: 449 - Irrigation Water Management

Scenario: #4 - Intermediate IWM > 30 acres

Scenario Description: A medium intensity irrigation water management system for producers using a checkbook method (crop grown, soil moisture conditions prior to irrigation, dates of irrigation start and stop, depths of irrigation applied, duration of irrigations, and amount of rainfall). For a typical scenario, soil moisture is determined by in field moisture sensors with manual downloads. Irrigation amounts are recorded from a flow meter near the pump. Records are input manually into an irrigation scheduling computer program. Resource Concerns: Insufficient Water Supply-Inefficient use of irrigation water; Degraded Plant Condition-Undesirable plant productivity and health, and Inefficient Energy Use-Equipment and facilities. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler, and 443-Irrigation System Surface and Subsurface.

Before Situation: The farmer decides when to irrigate based on general crop or soil appearance or limited soil moisture monitoring. System run times are based on past apparent success. The typical irrigated field is a 125 acre corn field with a sprinkler irrigation system.

After Situation: Irrigations are scheduled based on measured crop water requirements. Records are used to evaluate results of past irrigation events and influence future irrigations. The irrigator keeps records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.

Scenario Feature Measure: Irrigated Area Managed

Scenario Unit: Acre

Scenario Typical Size: 125

Total Scenario Cost: $2,058.29

Scenario Cost/Unit: $16.47

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$26.15	12	$313.82
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$43.61	40	$1,744.47

Practice: 449 - Irrigation Water Management

Scenario: #5 - Advanced IWM < = 30 acres

Scenario Description: A high intensity irrigation water management system for producers using a checkbook method with advanced methods of determining irrigation water applied, and estimating crop evapotranspiration, monitoring field soil moisture, or monitoring crop temperature stress. Typical methods include flow measurement, daily record keeping, and use of real-time evapotranspiration estimates (such as those provided dedicated weather stations) and/or soil moisture sensors with automated data logging to monitor field soil moisture content and/or crop temperature. For this scenario, soil moisture is determined by automated soil moisture monitoring stations equiped with telemetry data. Irrigation amounts are recorded from a flow meter near the pump. Telemetry data is automatically sent to a computer with irrigation software. Irrigator also receives real time data via mobile phone applications. Some data such as total water applied may be entered into computer software manually. Resource Concerns: Insufficient Water Supply-Inefficient use of irrigation water; Degraded Plant Condition-Undesirable plant productivity and health, and Inefficient Energy Use-Equipment and facilities. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler, and 443-Irrigation System Surface and Subsurface.

Before Situation: The farmer decides when to irrigate based on general crop or soil appearance or limited soil moisture monitoring. System run times are based on past apparent success. The typical irrigated field is a 30 acre corn field with a surface irrigation system.

After Situation: Irrigations are scheduled based on measured crop water requirements. Records are used to evaluate results of past irrigation events and influence future irrigations. The irrigator keeps records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.

Scenario Feature Measure: Irrigated Area Managed

Scenario Unit: Acre

Scenario Typical Size: 30

Total Scenario Cost: $1,744.47

Scenario Cost/Unit: $58.15

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$43.61	40	$1,744.47

Practice: 449 - Irrigation Water Management

Scenario: #6 - Advanced IWM > 30 acres

Scenario Description: A high intensity irrigation water management system for producers using a checkbook method with advanced methods of determining irrigation water applied, and estimating crop evapotranspiration, monitoring field soil moisture, or monitoring crop temperature stress. Typical methods include flow measurement, daily record keeping, and use of real-time evapotranspiration estimates (such as those provided dedicated weather stations) and/or soil moisture sensors with automated data logging to monitor field soil moisture content and/or crop temperature. For this scenario, soil moisture is determined by automated soil moisture monitoring stations equiped with telemetry data. Irrigation amounts are recorded from a flow meter near the pump. Telemetry data is automatically sent to a computer with irrigation software. Irrigator also receives real time data via mobile phone applications. Some data such as total water applied may be entered into computer software manually. Resource Concerns: Insufficient Water Supply-Inefficient use of irrigation water; Degraded Plant Condition-Undesirable plant productivity and health, and Inefficient Energy Use-Equipment and facilities. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler, and 443-Irrigation System Surface and Subsurface.

Before Situation: The farmer decides when to irrigate based on general crop or soil appearance or limited soil moisture monitoring. System run times are based on past apparent success. The typical irrigated field is a 125 acre corn field with sprinkler irrigation.

After Situation: Irrigations are scheduled based on measured crop water requirements. Records are used to evaluate results of past irrigation events and influence future irrigations. The irrigator keeps records of soil moisture, crop water use, rainfall amounts and irrigation timing and amounts. At the end of the irrigation season all the data has been reviewed and evaluated. Improvements planned for the next season have been determined.

Scenario Feature Measure: Irrigated Area Managed

Scenario Unit: Acre

Scenario Typical Size: 125

Total Scenario Cost: $2,511.80

Scenario Cost/Unit: $20.09

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$26.15	16	$418.43
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$43.61	48	$2,093.36

Practice: 449 - Irrigation Water Management

Scenario: #7 - Soil Moisture Sensors_1st Year

Scenario Description: This practice includes the installation of soil moisture sensors such as tensiometers, gyp blocks, capacitance sensors etc, that are installed and read to determine point in time soil moisture by depth; and the labor of using the equipment for the first year. The installation includes the purchase of soil moisture meters and sensors, installation equipment, and labor to install and utilize sensors and readings in making IWM decisions during first year. Typical Scenario involves installation of resistance sensor blocks in a 80 acre field of irrigated cropland. Producer periodically monitors soil moisture sensors during the growing season. Meters used to read sensors may be portable. This scenario only applies to year one IWM. The appropriate labor on ly IWM scenario applies in subsequent contract years. 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. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler, and 443-Irrigation System Surface and Subsurface, 587-Structure for water Control, 328-Conservation Crop Rotation, and 590-Nutrient Management.

Before Situation: Producer uses feel method to estimate soil moisture for scheduling irrigation.

After Situation: Producer has installed four sensors at each monitoring site to a depth of four feet with one sensor representing each foot of depth. Producer uses periodic soil moisture measurements to schedule irrigation resulting in improved irrigation water managment and reduced energy use.

Scenario Feature Measure: Number of Measuring Sites

Scenario Unit: Each

Scenario Typical Size: 2

Total Scenario Cost: $2,778.67

Scenario Cost/Unit: $1,389.33

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$26.15	12	$313.82
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$43.61	40	$1,744.47
Mobilization						
Mobilization, very small equipment	1137	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	$70.49	2	$140.98
Materials						
Soil Moisture Meter	1455	Soil Moisture Sensor Reader. Equipment only.	Each	$285.50	1	$285.50
Soil Moisture Sensor	1456	Soil moisture resistance sensor W/10' cables. Equipment only.	Each	$36.74	8	$293.89

Practice: 449 - Irrigation Water Management

Scenario: #8 - Soil Moisture Sensors with Data Recorder_1stYear

Scenario Description: This practice includes the installation of electrical soil moisture sensors such as capacitance or resistance sensors that are monitored to determine soil moisture. The installation includes the purchase of soil moisture sensors, installation equipment (probe or auger), and a data logger to log continuous soil moisture data that can be downloaded to a personal computer and associated graphing software. The scenario also includes the labor associated wtih using the equipment for the first year. Typical Scenario involves installation of resistance sensor blocks in a 120 acre field of sprinkler irrigated cropland. Producer periodically monitors soil moisture sensors during the growing season. This scenario only applies to year one of the IWM. The appropriate labor only IWM scenario applies in subsequent contract years. 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. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler, and 443-Irrigation System Surface and Subsurface, 587-Structure for water Control, 328-Conservation Crop Rotation, and 590-Nutrient Management.

Before Situation: Producer uses feel method to estimate soil moisture for scheduling irrigation in the field.

After Situation: Producer has installed four sensors at each monitoring site to a depth of four feet with one sensor representing each foot of depth. Producer periodically downloads continuously recorded soil moisture measurements that are used to schedule irrigation more effectively resulting in improved irrigation water managment and reduced energy use.

Scenario Feature Measure: Number of Measuring Sites

Scenario Unit: Each

Scenario Typical Size: 2

Total Scenario Cost: $3,686.15

Scenario Cost/Unit: $1,843.08

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$26.15	12	$313.82
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$43.61	40	$1,744.47
Mobilization						
Mobilization, very small equipment	1137	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	$70.49	2	$140.98
Materials						
Data Logger	1453	Data Logger W/Graphic Output for water management. Materials only.	Each	$596.50	2	$1,192.99
Soil Moisture Sensor	1456	Soil moisture resistance sensor W/10' cables. Equipment only.	Each	$36.74	8	$293.89

Practice: 449 - Irrigation Water Management

Scenario: #9 - Cranberry Auto Start

Scenario Description: An autostart system designed to remotely monitor and control irrigation, frost protection, and crop cooling through user-defined start and stop settings for temperature and soil moisture. This is the installation of a self-contained control unit, custom harness, one pump-house master radio, two field radios with up to 1 mile line of sight in protective enclosure each with wireless temperature and soil moisture sensors, heavy-duty discharge pressure sensor, and cellular communications kit. An internet connection is required. One auto-start system is required for each irrigation pump. Typical scenario is a 15 acre irrigated cranberry bog. Resource concerns: Insufficient water - Inefficient use of irrigation water; Inefficient energy use - Equipment and facilities and Farming/ranching practices and field operations. Associated Practices: 374 - Farmstead Energy Improvement; 430 - Irrigation Pipeline; 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler, and 443-Irrigation System Surface and Subsurface.

Before Situation: Irrigation Setting: Producer uses feel method to estimate soil moisture for scheduling irrigation in the fields, traveling to and from multiple pumps to manually start and stop them. Result is over/under water application, runoff, water loss and energy loss. Frost Protection Setting: Producer uses weather forecasts and thermometers to estimate air temperature in the fields, traveling to and from multiple pumps to manually start and stop them. Result is over/under water application, runoff, water loss and energy loss. Crop Cooling Setting: Producer uses weather forecasts, thermometers, and visual observation to estimate air temperature and crop stress in the fields, traveling to and from multiple pumps to manually start and stop them. Result is over/under water application, runoff, water loss and energy loss.

After Situation: An autostart system is installed on an existing pumping plant meeting Nebraska performance criteria. The pump is remotely controlled allowing user-defined start and stop settings based on real-time data collected by soil moisture sensors and wireless temperature sensors in the fields, reducing water, energy usage, and runoff.

Scenario Feature Measure: Number of pumps

Scenario Unit: Each

Scenario Typical Size: 1

Total Scenario Cost: $8,603.42

Scenario Cost/Unit: $8,603.42

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Labor						
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$42.19	20	$843.76
Materials						
Solar Panels, fixed cost portion	1031	Fixed cost portion of the Solar Panels. This portion is a base cost for all Solar Panels and is not dependant on KiloWatt. The total cost of any Solar Panels will include this fixed cost plus a variable cost portion. The completed Solar Panels will include all materials (electrical, controllers, service drops and etc). This cost will include material, labor and equipment.	Each	$460.51	1	$460.51
Solar Panels, variable cost portion	1135	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	$8,258.60	0.6	$4,955.16
Switches and Controls, programmable controller	1193	Programmable logic controller (with or without wireless telecommunications) commonly used to control pumps and irrigation systems	Each	$160.35	1	$160.35
Switches and Controls, radio system	1195	Output radio, field transmitter, and receiver commonly used to control pumps and irrigation systems	Each	$767.55	1	$767.55
Switches and Controls, temp sensors	1192	Temperature and soil moisture sensors installed as part of an electronic monitoring (with or without wireless telecommunications) commonly used to control pumps and irrigation systems	Each	$627.96	1	$627.96
Switches and Controls, Wi-Fi system and software	1194	Software with built-in cellular or Wi-Fi communication commonly used to control pumps and irrigation systems	Each	$430.47	1	$430.47
Weather Station, Basic	314	Basic Weather Station which collects and records recording rainfall, humidity, barometric pressure, wind speed, and temperature to a home weather console. Includes materials only.	Each	$287.17	1	$287.17

Mobilization

Mobilization, very small equipment	1137	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	$70.49	1	$70.49

Practice: 449 - Irrigation Water Management

Scenario: #14 - IWM w weather station

Scenario Description: This practice includes the installation of a weather station that is monitored to determine crop water use, status of heat and/or frost conditions to permit the producer to make informed irrigation decisions. The installation includes the purchase and installation of equipment, and a data logger to log continuous weather data including rainfall, temp, solar radiation, humidity, wind speed and soil moisture sensors that can be downloaded to a personal computer and associated graphing software. Typical Scenario involves installation on a 120 acre field of irrigated cropland. Producer periodically monitors the station during the growing season to determine timing and amounts of water to apply based on soil moisture sensors, field checks and weather station data. Producer keeps records of collected data and resulting irrigation decisions. This scenario only applies to year one of IWM. The appropriate labor-only IWM scenario applies in subsequent contract years. Resource Concerns: Insufficient Water Supply-Inefficient use of irrigation water; Water Quality; Degraded Plant Condition-Undesirable plant productivity and health, and Inefficient Energy Use-Equipment and facilities. Associated Practices: 441-Irrigation System Microirrigation, 442-Irrigation System Sprinkler, 443-Irrigation System Surface and Subsurface

Before Situation: To meet crop water requirements, the producer schedules irrigations based on the calendar and what has apparently worked in the past. For cooling/frost protection, irrigation start and run times are based on broad regional weather forecasts.

After Situation: Producer has installed a weather station and periodically downloads continuously recorded data that is used to schedule irrigation more effectively resulting in improved irrigation water management and reduced energy use. Field checks are made by irrigator to ground truth station data with crop.

Scenario Feature Measure: Number of weather stations

Scenario Unit: Each

Scenario Typical Size: 1

Total Scenario Cost: $5,179.35

Scenario Cost/Unit: $5,179.35

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
Materials						
Data Logger with Telemetry System	1454	Data Logger W/Graphic Output for water management and telemetry - data communication device with power supply in a weather proof enclosure. Equipment only.	Each	$1,679.44	1	$1,679.44
Soil Moisture Meter	1455	Soil Moisture Sensor Reader. Equipment only.	Each	$285.50	1	$285.50
Soil Moisture Sensor	1456	Soil moisture resistance sensor W/10' cables. Equipment only.	Each	$36.74	2	$73.47
Solar Panels, fixed cost portion	1031	Fixed cost portion of the Solar Panels. This portion is a base cost for all Solar Panels and is not dependant on KiloWatt. The total cost of any Solar Panels will include this fixed cost plus a variable cost portion. The completed Solar Panels will include all materials (electrical, controllers, service drops and etc). This cost will include material, labor and equipment.	Each	$460.51	1	$460.51
Switches and Controls, temp sensors	1192	Temperature and soil moisture sensors installed as part of an electronic monitoring (with or without wireless telecommunications) commonly used to control pumps and irrigation systems	Each	$627.96	1	$627.96
Weather Station, Advanced	2550	Advance Weather Station which collects and records recording rainfall, humidity, barometric pressure, wind speed, temperature, and solar radiation from a solar powered self-standing tripod to an advance weather recording console. Used for both 449 advance irrigation water management and for Activity 202 water quality monitoring .	Each	$1,024.76	1	$1,024.76
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	$26.15	20	$523.04
Specialist Labor	235	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	$108.54	4	$434.18
Mobilization						

Mobilization, very small equipment	1137	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	$70.49	1	$70.49