Iowa

Environmental Quality Incentives Program (EQIP)

List of Eligible Practices and Payment Schedule FY2020

February 2020

EQIP Scenario Booklet Glossary

Practice Code Table - The table of Practices is in alphabetical order. The practice code for each has a hot link to the individual Practice Code Scenario Descriptions.

Conservation Practice Description - Each Conservation Practice has the Practice Code, Livestock or non-Livestock practice and whether structural or vegetative, PRS Unit of Measure, Definition, Purpose, and Applicability for the conservation practice from the Iowa Field Office Technical Guide.

Limitations - This area will list any limitations a conservation practice may have related to EQIP, i.e., payment limitations, planning considerations, practice requirements, etc.

Maintenance - This is the Conservation Practice Lifespan.

Payment Schedule Headers:

ID - This is a numeric identifier for internal tracking purposes.

Scenario Name - Unique name for each scenario.

Scenario and After Practice Description - For each Conservation Practice Scenario Name this column provides the **Scenario Description, After Practice Description** and may include associated practices.

Scenario Feature Measure - This provides additional description of the scenario unit, if different than the scenario unit.

Scenario Unit - Unit of measure for the scenario.

PAYMENT RATE – The payment rate is the amount of financial assistance ($/unit) available through EQIP.

EQIP – Payment rate is based on 50% of the estimated incurred costs and foregone income (if applicable) associated with practice implementation.

EQIP – HU – Payment rate is based on 75% of the estimated incurred costs and foregone income (if applicable) associated with practice implementation.

Initiative – Payment rate is based on 75% of the estimated incurred costs and foregone income (if applicable) associated with practice implementation.

Initiative – HU - Payment rate is based on 90% of the estimated incurred costs and foregone income (if applicable) associated with practice implementation.

HU = Historically Underserved: Includes, Beginning Farmers/Ranchers, Limited Resource Farmers/Ranchers, Socially Disadvantaged Farmers/Ranchers, Tribal Farmers/Ranchers and Veteran Farmers/Ranchers. The payment rate is higher for HU producers on most practices. To determine if you are a HU producer go to:

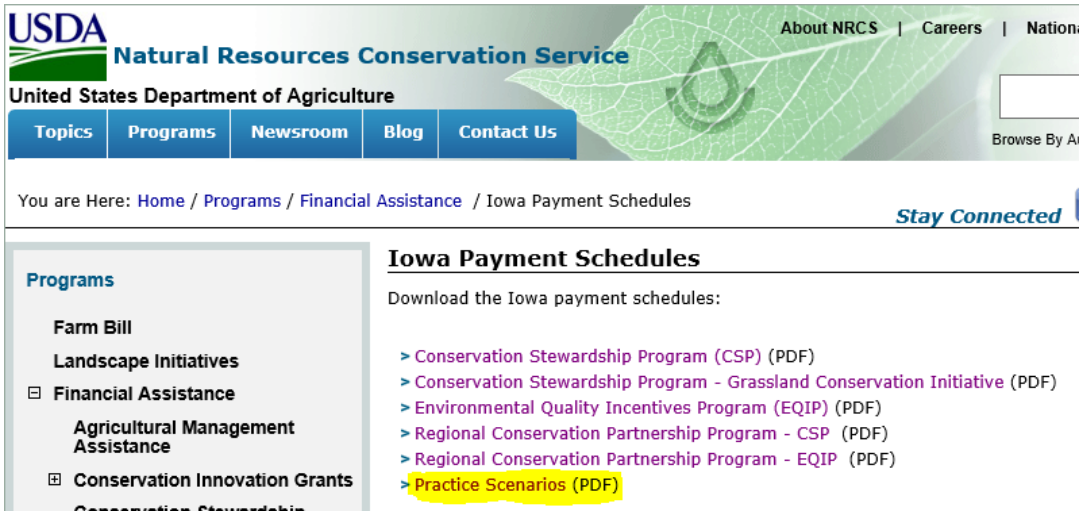
http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/people/outreach/slbfr

Initiative – All National Initiatives offered in Iowa including Mississippi River Basin Initiative (MRBI), High Tunnel Initiative, On Farm Energy Initiative, Organic Initiative, and the National Water Quality Initiative (NWQI) use the Initiative and Initiative HU Payment Rates. The Statewide Wildlife Sub Accounts will use the Initiative and Initiative HU Payment Rates.

General Information:

- Management practices (Practices with a 1-year Lifespan) allow up to 3 years of Financial Assistance. The up to 3 years of Practice implementation is tied to the land not to the participant.
- There are 38 conservation practices where the regular EQIP Payment Rate is 75% and the EQIP HU rate is 90% for local sub accounts. These include: 472 Access Control, 396 Aquatic Organism Passage, 314 Brush Management, 327 Conservation Cover, 328 Conservation Crop Rotation, 656 Constructed Wetland, 332 Contour Buffer Strips, 605 Denitrifying Bioreactor, 554 Drainage Water Management, 647 Early Successional Habitat Development, 386 Field Border, 393 Filter Strip, 394 Firebreak, 512 Forage and Biomass Planting, 655 Forest Trails and Landings, 422 Hedgerow Planting, 315 Herbaceous Weed Treatment, 338 Prescribed Burning, 528 Prescribed Grazing, 643 Restoration of Rare or Declining Natural Communities, 391 Riparian Forest Buffer, 390 Riparian Herbaceous Cover, 604 Saturated Buffer, 646 Shallow Water Development and Management, 381 Silvopasture Establishment, 580 Streambank and Shoreline Protection, 395 Stream Habitat Improvement and Management, 649 Structures for Wildlife, 612 Tree/Shrub Establishment, 490 Tree/Shrub Site Preparation, 645 Upland Wildlife Habitat Development, 658 Wetland Creation, 659 Wetland Enhancement, 657 Wetland Restoration, 644 Wetland Wildlife Habitat Management, 380 Windbreak/Shelterbelt Establishment, 650 Windbreak/Shelterbelt Renovation and 666 Forest Stand Improvement. These payment rates are reflected in the FY2020 Cost List.

Full Payment Scenario Descriptions including the components used to support the Payment Scenario are located on the State Payment Schedules website (nationally maintained). Select Practice Scenarios (PDF).



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ACCESS CONTROL

Practice Code 472

Practice Units: **ACRE**

Definition: The temporary or permanent exclusion of animals, people, vehicles, and/or equipment from an area.

Purpose: Achieve and maintain desired resource conditions by monitoring and managing the intensity of use by animals, people, vehicles, and/or equipment in coordination with the application schedule of practices, measures and activities specified in the conservation plan.

Conditions Where Practice Applies: This practice applies on all land uses.

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
472-2	Animal exclusion from sensitive areas	**Scenario Description:** Excluding animals from an area in order to address identified resource concerns. This is for facilitating exclusion of animals to protect or enhance natural resource values. Any need for permanent fencing will be planned and installed using the Fence practice (382). Clearing of brush and trees is not necessary. Resource concerns include Wildlife Habitat degradation, Undesirable plant productivity and health, and/or Excessive sediment in surface waters. **After Practice Description:** Sensitive areas are protected from the adverse actions of domestic and/or wild animals by excluding them from the area. Cost represents forgone income for typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** Prescribed Grazing (528), Pipeline (516), Water Well (642), Spring Development (574), Heavy Use Area (561), Pumping Plant (533), Watering Facility (614), Forage and Biomass Planting (512), Critical Area Planting (342), Fence (382).	Acres excluded	Acre	$50.27	$50.44	$50.27	$50.44

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ACCESS ROAD

Practice Code 560

Practice Units: FEET

Definition: An n established route for equipment and vehicles.

Purpose: To provide a fixed route for vehicular travel for resource activities involving the management of timber, livestock, agriculture, wildlife habitat, and other conservation enterprises.

Conditions Where Practice Applies: Where access is needed from a private or public road or highway to a land use enterprise or conservation measure, or where access is needed in a planned land use area. Access roads range from single purpose, seasonal use roads, designed for low speed and rough driving conditions, to all-purpose, all-weather roads. Single purpose roads provide access to areas such as forest fire lines, forest management activities, remote recreation areas, or for maintenance of facilities.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
560-1	New gravel road, 6in, wet level terrain	**Scenario Description:** Newly Constructed gravel road with min. 6-inch-thick compacted gravel surface in relatively level ground in wet areas. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice. **After Practice Description:** The single lane road will be graveled to a width of 10 feet, plus 2-foot shoulders for a total width of 14 feet wide. Gravel will be a minimum of 6 inches, underlain with geotextile fabric. It is mostly in embankment less than 3 feet in height, (average 1.5 ft.) typical side slopes 2:1. A properly constructed, well defined access road will greatly reduce sheet, rill and wind erosion, eliminate compaction in land use areas where it is harmful, reduce emissions of particulate matter (PM) and PM precursors and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373).	Length of Roadway	Foot	$4.92	$7.38	$7.38	$8.85

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
560-2	New gravel road, 6in, dry level terrain	**Scenario Description:** Newly Constructed gravel road with min. 6-inch-thick compacted gravel surface in relatively level ground in dry areas. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice. **After Practice Description:** The single lane road will be graveled to a width of 10 feet, plus 2-foot shoulders for a total width of 14 feet wide. Gravel will be a minimum of 6 inches. It is mostly in embankment less than 3 feet in height, (average 1.5 ft.) typical side slopes 2:1. A properly constructed, well defined access road will greatly reduce sheet, rill and wind erosion, eliminate compaction in land use areas where it is harmful, reduce emissions of particulate matter (PM) and PM precursors and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373).	Length of Roadway	Foot	$4.08	$6.12	$6.12	$7.35

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
560-3	New gravel road, 8in x 10ft, wet level terrain	**Scenario Description:** Newly Constructed 10-foot-wide gravel road with min. 8-inch-thick compacted gravel surface in relatively level ground in wet areas. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice. **After Practice Description:** The single lane road will be graveled to a width of 10 feet, plus 2-foot shoulders for a total width of 14 feet wide. Gravel will be a minimum of 8 inches, underlain with geotextile fabric. It is mostly in embankment less than 3 feet in height, (average 1.5 ft.) typical side slopes 2:1. A properly constructed, well defined access road will greatly reduce sheet, rill and wind erosion, eliminate compaction in land use areas where it is harmful, reduce emissions of particulate matter (PM) and PM precursors and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373).	Length of Roadway	Foot	$5.62	$8.43	$8.43	$10.12

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
560-4	New gravel road, 8in x 12ft, wet level terrain	**Scenario Description:** Newly Constructed 12-foot-wide gravel road with min. 8-inch-thick compacted gravel surface in relatively level ground in wet areas. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice. **After Practice Description:** The single lane road will be graveled to a width of 12 feet, plus 2-foot shoulders for a total width of 16 feet wide. Gravel will be a minimum of 8 inches, underlain with geotextile fabric. It is mostly in embankment less than 3 feet in height, (average 1.5 ft.) typical side slopes 2:1. A properly constructed, well defined access road will greatly reduce sheet, rill and wind erosion, eliminate compaction in land use areas where it is harmful, reduce emissions of particulate matter (PM) and PM precursors and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373).	Length of Roadway	Foot	$6.55	$9.82	$9.82	$11.78

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
560-5	New gravel road, 8in x 16ft, wet level terrain	**Scenario Description:** Newly Constructed 16-foot-wide gravel road with min. 8-inch-thick compacted gravel surface in relatively level ground in wet areas. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice. **After Practice Description:** The road will be graveled to a width of 16 feet, plus 2-foot shoulders for a total width of 20 feet wide. Gravel will be a minimum of 8 inches, underlain with geotextile fabric. It is mostly in embankment less than 3 feet in height, (average 1.5 ft.) typical side slopes 2:1. A properly constructed, well defined access road will greatly reduce sheet, rill and wind erosion, eliminate compaction in land use areas where it is harmful, reduce emissions of particulate matter (PM) and PM precursors and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373).	Length of Roadway	Foot	$8.59	$12.89	$12.89	$15.46

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AGRICHEMICAL HANDLING FACILITY

Practice Code 309

Practice Units: NUMBER

Definition: A facility with an impervious surface to provide an environmentally safe area for the handling of on-farm agrichemicals.

Purpose: To provide an environmentally-safe facility to:

- Store, mix, load, and clean-up agrichemicals;
- Retain incidental spillage or leakage; and
- Reduce pollution to surface water, ground water, air, and/or soil

Conditions Where Practice Applies: This practice applies where:

- The handling of agrichemicals creates significant potential for pollution of surface water, ground water, air and/, or soil, and a facility is needed to properly manage and handle the chemical;
- An adequate water supply is available for filling application equipment tanks, rinsing application equipment and chemical containers as needed for the operation;
- Soils and topography are suitable for construction.

Limitations: Contact Area Engineer before planning and implementation of 309 - Agrichemical Handling Facility. Design documentation may need to be sent to the IA Department of Agriculture and Land Stewardship for approval.

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
309-1	Liquid Agrichemical Storage, Concrete Block Walls	**Scenario Description:** This practice scenario is an agrichemical handling facility for storage of liquid agrichemicals. Due to topography, limited site space and/or geological conditions a fabricated structure is needed. This practice addresses water quality degradation and due to mishandling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. **After Practice Description:** An agrichemical handling facility is constructed for storage of liquid agrichemicals. The average size of the agrichemical handling facility for proper storage of liquid agrichemicals are in fabricated containment that is 30 ft x 40ft with flexible membrane lined walls. The walls are made of modular blocks stacked two high for a 4ft wall height on four sides. This practice will contain agrichemicals and prevent contamination of surface and ground water resources. **Associated Practices:** Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Pond Sealing or Lining Flexible Membrane (521A), Roofs and Covers (367).	Square Feet of storage area	Square Foot	$2.98	$4.47	$4.47	$5.37
309-2	Liquid Agrichemical Storage, Treated Timber Walls	**Scenario Description:** This practice scenario is an agrichemical handling facility for storage of liquid agrichemicals. Due to topography, limited site space and/or geological conditions a fabricated structure is needed. This practice addresses water quality degradation and due to mishandling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. **After Practice Description:** An agrichemical handling facility is constructed for storage of liquid agrichemicals. The average size of the agrichemical handling facility for proper storage of liquid agrichemicals are in fabricated containment that is 24' x 36' x3' with flexible membrane lined walls. The walls are made of treated timber. This practice will contain agrichemicals and prevent contamination of surface and ground water resources. **Associated Practices:** Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Pond Sealing or Lining Flexible Membrane (521A), Roofs and Covers (367).	Square Feet of storage area	Square Foot	$4.26	$6.39	$6.39	$7.66

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
309-3	Concrete Agrichemical Handling Pad for mixing and loading	**Scenario Description:** This practice scenario is an agrichemical handling facility for mixing and loading operations. This practice addresses water quality degradation and due to mishandling, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. **After Practice Description:** This scenario is an agrichemical handling facility pad for mixing and loading operations. The average size of the agrichemical handling pad for mixing and loading is 16' x 40' x 6" with an application equipment length of 36 ft. The handling pad for mixing and loading operations is sized to contain the length of the agrichemical spray tank and its volume. The concrete is sealed and sloped to a collection sump, containment of the pad is surrounded by sloped and ramped reinforced concrete. This practice will contain agrichemicals and prevent contamination of surface and ground water resources. **Associated Practices:** Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Roofs and Covers (367), Pond Sealing or Lining, Flexible Membrane (521a).	Square Feet of handling area	Square Foot	$4.49	$6.73	$6.73	$8.08
309-4	Liquid Agrichemical Storage, Concrete Walls and 5-inch Floor	**Scenario Description:** This practice scenario is an agrichemical handling facility for storage of liquid agrichemicals. This practice addresses water quality degradation and due to mishandling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. **After Practice Description:** An agrichemical storage and handling facility is constructed with a concrete floor and 1' concrete perimeter walls. The average size of the agrichemical handling facility for storage is 35' x 40' with a 5" thick slab. The concrete is sealed and sloped to a collection sump. This practice will contain agrichemicals and prevent contamination of surface and ground water resources. **Associated Practices:** Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Pond Sealing or Lining Flexible Membrane (521A), Roofs and Covers (367)	Square Feet of storage area	Square Foot	$4.77	$7.15	$7.15	$8.59

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
309-6	Liquid Agrichemical Storage, Double walled tank	**Scenario Description:** This practice scenario is an agrichemical handling facility for storage of liquid agrichemicals. This practice addresses water quality degradation and due to mishandling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. **After Practice Description:** An agrichemical handling facility is constructed for storage of liquid agrichemicals. Self-contained 1800-gallon double walled tank that provides secondary containment meeting NRCS Conservation Practice Standard 309 and local requirements for secondary containment. Tank is set on a 12'x12'x6" gravel pad. This practice will contain agrichemicals and prevent contamination of surface and ground water resources. **Associated Practices:** Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Pond Sealing or Lining Flexible Membrane (521A), Roofs and Covers (367)	Each	Each	$3,281.07	$4,921.61	$4,921.61	$5,905.93
309-7	Liquid Agrichemical Storage, Lined earthen basin	**Scenario Description:** This practice scenario is an agrichemical handling facility for storage of liquid agrichemicals along with a mixing and loading pad. This practice addresses water quality degradation and due to mishandling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. **After Practice Description:** An agrichemical storage and handling facility is constructed as a lined earthen basin. The average size of the agrichemical handling facility for storage is 40' x 40' (bottom dimensions). Typical depth is 30", and earthwork balances cut/fill. Following earthwork, 4" of sand or #8 bank run gravel is placed on the bottom as a liner base and sloped to a collection sump. When this scenario is used, the complete installation also includes a synthetic liner under code 521A. This practice will contain agrichemicals and prevent contamination of surface and ground water resources. **Associated Practices:** Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Pond Sealing or Lining Flexible Membrane (521A), Roofs and Covers (367)	Square Feet of storage area	Square Foot	$0.63	$0.95	$0.95	$1.13

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AGRICULTURAL ENERGY MANAGEMENT PLAN - WRITTEN

Practice Code 128

Practice Units: NUMBER

Definition: An Agricultural Energy Management Plan (AgEMP) is a detailed documentation of energy consuming activities and components.

Purpose: The AgEMP will provide appropriate energy savings for each major activity (including a comparison to the baseline energy use) that reduces energy use and addresses the energy management needs for the agricultural operation.

Conditions Where Practice Applies: On lands in Iowa that will benefit from the development and implementation of an Agricultural Energy Management Plan.

Limitations: Contracts that include Agricultural Energy Management Plans shall have energy plans or audits sent to the Area Engineer who will forward a copy to State Office Environmental Engineer (Mark Garrison) for administrative review before certification of plans or installation of practices outlined in plans or audits. Plans or audits must meet the technical requirements of ASABE S612 - Performing On-farm Energy Audits and criteria for a CAP 128.

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-39	AgEMP Small, One Enterprise	**Scenario Description:** Typical operation has either < 300 Acres < 300 AU Up to 2 irrigation pumps <20,000 sq. ft of heater greenhouse, or A maple syrup enterprise One enterprise as defined in the ASABE S612 Standard on-farm energy audit standard. A small operation is as described above. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128 CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource: Energy Conservation **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$1,721.55	$2,065.86	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-41	AgEMP Medium, One Enterprise	**Scenario Description:** Typical operation has either 301 to 2500 Ac 301 to 1000 AU 3 to 6 Irrigation Pumps, or 20,001 to 40,000 sq. ft heated greenhouse One enterprise as defined in the ASABE S612 Standard on-farm energy audit standard. A medium operation as described above. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128 CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource: Energy Conservation **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$2,139.30	$2,567.16	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-43	AgEMP Large, One Enterprise	**Scenario Description:** Typical operation has either > 2,500 Ac > 1000 AU More than 7 irrigation pumps or > 40,001 sq. ft of heater greenhouse One enterprise as defined in the ASABE S612 Standard on-farm energy audit standard in combination with a large operation with one enterprise, one of which is described above. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128 CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource: Energy Conservation. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$2,776.37	$3,331.65	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-44	AgEMP Small, Two Enterprise	**Scenario Description:** Typical operation has either <300 Ac <300 AU Up to 2 irrigation pumps, or <20,000 sq. ft heated greenhouse Two enterprises as defined in the ASABE S612 Standard on-farm energy audit standard. A small operation as described above. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128 CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource: Energy Conservation **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$2,666.50	$3,199.80	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-45	AgEMP Medium Two Enterprises	**Scenario Description:** Typical operation has either 301 to 2500 Ac 301 to 1000 AU 3 to 6 Irrigation Pumps, or 20,001 to 40,000 sq. ft heated greenhouse Two enterprises as defined in the ASABE S612 Standard on-farm energy audit standard in combination with a medium operation, one of which is described above. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128 CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource: Energy Conservation **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$3,611.45	$4,333.74	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-46	AgEMP Large, Two Enterprises	**Scenario Description:** Typical operation has either > 2,500 Ac > 1000 AU More than 7 irrigation pumps or > 40,001 sq. ft of heater greenhouse Two enterprises as defined in the ASABE S612 Standard on-farm energy audit standard in combination with a large operation, one of which is described above. Multiple irrigation systems or a mixture of irrigation types may be counted as one of extra enterprises. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128 CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource: Energy Conservation **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$4,895.10	$5,874.11	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-47	AgEMP Small, Three Enterprise	**Scenario Description:** Typical operation has either < 300 Acres < 300 AU Up to 2 irrigation pumps <20,000 sq. ft of heater greenhouse, or Three enterprises as defined in the ASABE S612 Standard on-farm energy audit standard in combination with a small operation, one of which is described above. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128 CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource Concern: Energy Conservation **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$3,084.25	$3,701.10	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-48	AgEMP Medium, Three Enterprise	**Scenario Description:** Typical operation has either 301 to 2500 Ac 301 to 1000 AU 3 to 6 Irrigation Pumps, or 20,001 to 40,000 sq. ft heated greenhouse Three enterprises as defined in the ASABE S612 Standard on-farm energy audit standard in combination with a medium operation, one of which is described above. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128 CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource Concern: Energy Conservation. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$4,029.20	$4,835.04	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-49	AgEMP Large, Three Enterprise	**Scenario Description:** Typical operation has either > 2,500 Ac > 1000 AU More than 7 irrigation pumps or > 40,001 sq. ft of heater greenhouse Three enterprises as defined in the ASABE S612 Standard on-farm energy audit standard in combination with a large operation, one of which is described above. Multiple irrigation systems or a mixture of irrigation types may be counted as one of extra enterprises. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128 CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource Concern: Energy Conservation. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$5,380.59	$6,456.70	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-50	AgEMP Small, Four Enterprises	**Scenario Description:** Typical operation has either < 300 Acres < 300 AU Up to 2 irrigation pumps, or <20,000 sq. ft of heater greenhouse Four enterprises as defined in the ASABE S612 Standard on-farm energy audit standard in combination with a small operation, one of which is described above. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource Concern: Energy Conservation. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$3,721.32	$4,465.58	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-51	AgEMP 128 Medium, Four Enterprise	**Scenario Description**: Typical operation has either 301 to 2500 Ac 301 to 1000 AU 3 to 6 Irrigation Pumps, or 20,001 to 40,000 sq. ft. heated greenhouse Four enterprise as defined in the ASABE S612 Standard on-farm energy audit standard in combination with a medium operation, one of which is described above. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128 CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource Concern: Energy Conservation. **After Practice Description**: After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$4,666.27	$5,599.52	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
128-52	AgEMP 128 Large, Four Enterprise	**Scenario Description**: Typical operation has either > 2,500 Ac > 1000 AU More than 7 irrigation pumps or > 40,001 sq. ft. of heater greenhouse Four enterprises as defined in the ASABE S612 Standard on-farm energy audit standard in combination with a large livestock operation, one of which is described above. Multiple irrigation systems or a mixture of irrigation types may be counted as one of extra enterprises. Agricultural producer currently has minimal knowledge of and no plan for energy conservation. Producer is willing to collaborate with a certified TSP to develop an AgEMP 128 CAP. The AgEMP is a grouping of conservation measures and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. An AgEMP incorporates recommended measures to maximize energy conservation and efficiency. Natural Resource Concern: Energy Conservation. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Agricultural Energy Management Plan'. The CAP criteria requires the plan to meet quality criteria for energy conservation and efficiency. The CAP plan may include recommendations for associated conservation practices which address energy conservation. The CAP meets the basic quality criteria for the 128 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$6,085.40	$7,302.48	N/A	N/A

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AIR FILTRATION AND SCRUBBING

Practice Code 371

Practice Units: NUMBER

Definition: A device or system for reducing emissions of air contaminants from a structure via interception and/or collection.

Purpose: To control gaseous and particulate air emissions from ventilated structures by inertial collection, filtration, electrostatic collection, adsorption, scrubbing, and/or bioremoval. Specifically, this practice standard can be used to reduce emissions of the following air contaminates that contribute to air quality resource concerns:

- direct emissions of particulate matter
- volatile organic compounds (VOCs)
- ammonia
- odorous sulfur compounds
- methane

Conditions Where Practice Applies: This practice applies to any agricultural operation that includes a naturally or mechanically ventilated structure from which the air contaminants identified in the Purpose section above may be emitted.

Limitations: Contact State Environmental Engineer before planning and implementation of this practice. Follow guidance contained in Iowa Instruction 210-384 - Planning and Certification Guidance in the Implementation of Conservation Practice Standard371 - "Air Filtration and Scrubbing Practices".

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
371-1	Single Pit Fan Biofilter	**Scenario Description:** Establishment of a biofilter used to treat the air flow from a single waste pit ventilation fan in instances where control of the exhaust from all pit ventilation fans is not needed. Adequate moisture in the wood chip media is maintained for proper growth of bacteria. For each waste pit ventilation fan servicing a waste storage facility that is identified as exhausting odorous and/or particulate laden air into the atmosphere, a separate biofilter is installed. Payment includes materials, equipment, and labor costs for installing the biofilter. A stabilized area around the biofilter is not included and must be addressed through the associated practice of Heavy Use Area Protection (561), if needed. **After Practice Description:** Air Quality resource concerns are addressed through installation of the practice by reducing odors and/or particulate matter emissions. Exhaust from a 24" waste pit ventilation fan is piped to a 16' wide by 20' long by 4' high horizontal biofilter constructed of a formed concrete bin that is filled with wood chip media, capable of handling 5,500 cubic feet per minute of airflow. The loading of odor and/or particulates into the air at the production facility is significantly reduced, resulting in a substantial improvement in air quality. Ammonia emissions are reduced approximately 60%; hydrogen sulfide about 80% and odor 60 to 80%. **Associated practices include** Heavy Use Area Protection (561), Amendments for Treatment of Agricultural Waste (591), Windbreak (380), Waste Storage Facility (313) and CAP-Comprehensive Air Quality Management Plan (126).	Number of Biofilters Installed	Each	$8,301.61	$12,452.42	$12,452.42	$14,942.90

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ALLEY CROPPING

Practice Code 311

Practice Units: ACRE

Definition: Trees or shrubs are planted in sets of single or multiple rows with agronomic, horticultural crops or forages produced in the alleys between the sets of woody plants that produce additional products.

Purpose:

- Enhance microclimatic conditions to improve crop or forage quality and quantity.
- Reduce surface water runoff and erosion.
- Improve soil health by increasing utilization and cycling of nutrients.
- Alter subsurface water quantity or water table depths.
- Enhance wildlife and beneficial insect habitat.
- Increase crop diversity
- Decrease offsite movement of nutrients or chemicals.
- Increase carbon storage in plant biomass and soils.
- Develop renewable energy systems
- Improve air quality.

Conditions Where Practice Applies: On all cropland and hayland where trees, shrubs, crops and/or forages can be grown in combination.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
311-2	Single row bareroot planting stock	**Scenario Description:** The crop or grass land is planted with rows of bareroot trees to increase crop diversity. Final row width and spacing of trees within the row is based on farm equipment size, growth form of trees, light needs of annual crop or grass, and intent of the landowner. Payment includes the trees, tree planting costs and foregone income for the area of land being removed from crop production and put into trees. The resource concerns are plant condition - inadequate structure and composition. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Trees have been established to diversify the crop production of the field. Typically, the area planted is 10 acres on approximately 12 x 40 foot spacing. **Associated practices may include**: 490 Tree/Shrub Site Preparation, 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, and 484 Mulching	Planted seedling	Each	$1.36	$1.59	$1.59	$1.73
311-3	Single row bareroot planting stock with tree shelters	**Scenario Description:** The crop or grass land is planted with rows of bareroot trees to increase crop diversity. Final row width and spacing of trees within the row is based on farm equipment size, growth form of trees, light needs of annual crop or grass, and intent of the landowner. Payment includes the trees, tree planting costs. tree shelters, and foregone income for the area of land being removed from crop production and put into trees. The resource concerns are plant condition - inadequate structure and composition. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Trees have been established to diversify the crop production of the field. Typically, the area planted is 10 acres on approximately 12 x 40 foot spacing. **Associated practices may include**: 490 Tree/Shrub Site Preparation, 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, 484 Mulching	Planted seedling	Each	$4.15	$5.77	$5.77	$6.74

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
311-251	Single row container planting stock, less than 2 gallons with tree shelters	**Scenario Description:** The crop or grass land is planted with rows of container stock trees to increase crop diversity. Final row width and spacing of trees within the row is based on farm equipment size, growth form of trees, light needs of annual crop or grass, and the intent of the landowner. Payment includes the trees, tree planting costs, tree shelters, and foregone income for the area of land being removed from crop production and put into trees. The resource concerns are plant condition - inadequate structure and composition. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Trees have been established to diversify the crop production of the field. Typically, the area planted is 10 acres on approximately 12 x 40 foot spacing. **Associated practices may include:** 490 Tree/Shrub Site Preparation, 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning and 484 Mulching.	Planted seedling	Each	$8.69	$12.59	$12.59	$14.93
311-253	Single row container planting stock, less than 2 gallons	**Scenario Description:** The crop or grass land is planted with rows of container stock trees to increase crop diversity. Final row width and spacing of trees within the row is based on farm equipment size, growth form of trees, light needs of annual crop or grass, and intent of the landowner. Payment includes the trees, tree planting costs and foregone income for the area of land being removed from crop production and put into trees. The resource concerns are plant condition - inadequate structure and composition. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Trees have been established to diversify the crop production of the field. Typically, the area planted is 10 acres on approximately 12 x 40 foot spacing. **Associated practices may include:** 490 Tree/Shrub Site Preparation, 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, and 484 Mulching	Planted seedling	Each	$4.63	$6.50	$6.50	$7.62

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AMENDMENTS FOR THE TREATMENT OF AGRICULTURAL WASTE

Practice Code 591

Practice Units: ANIMAL UNITS

Definition: The use of chemical or biological additives to change the properties of manure, process wastewater, contaminated storm water runoff and other wastes.

Purpose:

- Facilitate the management, handling and processing of manure and waste
- Reducing risk associated with the spread and contamination from pathogens
- Improve or protect air quality
- Improve or protect water quality
- Improve or protect animal health

Conditions Where Practice Applies: This practice applies where the use of a chemical or biological amendment will alter the physical and chemical characteristics of the waste stream as a part of a planned waste management system. This practice does not include amendments added to the animal feed.

Limitations: Follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP).

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
591-3	Litter Amendments applied for Air Quality resource concerns	**Scenario Description:** This practice scenario includes the application of a litter treatment amendment that is approved by NRCS to the entire poultry house to reduce ammonia emissions from the house and facilitate manure management. The amendment used is proven to reduce ammonia levels in the house by transforming nitrogen into a form of ammonium. The purpose of the practice is to address resource concerns from existing nutrient levels that may contribute to air quality impacts such as objectionable odors and ammonia emissions and impacts on bird health due to excess nutrients and pathogens. **After Practice Description:** This scenario is based on a typical poultry operation with a 2-house facility and each house size is 40' x 400', 16,000 SF. An NRCS approved amendment is applied between flocks, 5 flocks annually, at rate required to meet air quality resource concern, typically 100 pounds per 1000 SF. Formula to calculate the amount of amendment per year on a 1000 SF basis: (Square Feet of house) / 1000 SF X (Number of houses) X (Number of Applications per Year) = Number of 1000SF. 16,000 SF / 1000 SF X 2 houses X 5 applications/year= 160 units of 1000SF An NRCS approved amendment is applied between each flock, 5 applications, at rate required for treatment to address air quality resource concerns. For most products, this is 100 pounds per 1000 SF. The amendment is proven to control the odor, and to reduce ammonia emissions. The selected amendment is applied in conformance with the manufacturer's recommendations and the rates required. The resulting litter contains higher levels of nutrients and nutrient management plans must account for this. Nutrient level testing of the litter and nutrient planning shall be in conformance with CPS Nutrient Management, Code 590. The amendment successfully addresses the air quality impacts of objectionable odors, ammonia emissions, PM and PM precursors and bird health resource concerns. **Associated Practices:** Nutrient Management (590).	Number of 1000SF applications per year	1,000 Square Foot	$14.90	$22.35	$22.35	$26.81

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
591-4	Litter Amendments applied on a %w/w basis for Water Quality Impacts	**Scenario Description:** This practice scenario includes the application of a litter treatment amendment that is approved by NRCS to the entire poultry house to reduce water-soluble phosphorous in the poultry litter by a specified percentage. The amendment used is proven to and transform nitrogen into a form of ammonium and reduce the concentration of water-soluble phosphorous in the litter and reduces ammonia levels in the house. Resource concerns from existing nutrient levels may contribute to water quality degradation from nutrient runoff and leaching from fields fertilized with poultry litter and air quality impacts such as objectionable odors and ammonia emissions. **After Practice Description:** This scenario is based on a typical poultry operation with a desired application rate is 10% by weight of the litter (10%w/w) of a phosphorus binding amendment. Typical operation consists of 2 houses, 40' x 400' house (16,000 SF), 20,000 birds (4-pound finished bird weight), 0.5 lb. litter/bird (assume 54 pounds P205/Ton of litter). The operation raises 5 flocks per year. Formula to calculate required amendment at the prescribed rate in tons per year is: **(Number of birds) X (Finish weight of birds (lbs.)) X (Pounds of litter)/bird) X (Number of houses) X (application rate) X (Number of applications per year) / 2000 pounds/ton 20,000 birds X 4 lb. bird X 0.50 lb. litter/bird X 2 houses X 0.10 lb. amendment/lb. litter X 5 app/year / 2000 lb./ton = 20 tons/year.** An NRCS approved amendment is applied between each flock at the prescribed rate. The selected amendment is applied in conformance with the manufacturer's recommendations and the rates required. The amendment is proven to reduce soluble phosphorus in the litter, to control the odor, and to reduce ammonia emissions. The resulting litter contains higher levels of nutrients and nutrient management plans must account for this. Nutrient level testing of the litter and nutrient planning shall be in conformance with CPS Nutrient Management, Code 590. The amendment successfully addresses water quality degradation due to nutrients in surface and ground water and air quality impacts from objectionable odors, ammonia emissions, PM and PM precursors and bird health resource concerns. **Associated Practices:** Nutrient Management (590).	Tons of amendment per year.	Ton	$225.44	$338.15	$338.15	$405.79

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ANAEROBIC DIGESTER

Practice Code 366

Practice Units: NUMBER

Definition: A component of a waste management system that provides biological treatment in the absence of oxygen.

Purpose: For the treatment of manure and other byproducts of animal agriculture operations for one or more of the following reasons: capture biogas for energy production; manage odors; reduce the net effect of greenhouse gas emissions; or reduce pathogens.

Conditions Where Practice Applies: Biogas production and capture are components of a planned animal waste byproducts management system. Sufficient and suitable organic feed stocks are readily available. Existing facilities can be modified to the requirements of this standard or for new construction. The operator has the interest and skills to monitor and maintain processes or contracts with a consultant to provide these services.

Limitations: Contact State Environmental Engineer before planning and implementation of this practice. Follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice must be maintained for a lifespan of 25 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
366-1	Anaerobic Digester	**Scenario Description:** An anaerobic digester can be part of a waste management system. It provides biological treatment of the waste in the absence of oxygen. This process for manure and other by-products of animal agricultural operations will manage odors, reduce the net effect of greenhouse gas emissions, and/or reduce pathogens. This scenario is for a generic anaerobic digester. Energy generation is not included with this scenario. **After Practice Description:** Manure and other agricultural by-products are being treated such that odors are managed and/or pathogens are reduced. Effluent from the digester is disposed of or utilized in a proper manner in accordance with a nutrient management plan. The typical scenario also includes items necessary to maintain mesophylic or thermophylic temperatures for bacterial activity (i.e. piping and boiler or other heat source). Typical Design Scenario is each. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Waste Separation Facility (632), Waste Treatment Lagoon (359), and Waste Storage Facility (313).	Each	Number	$625,505.04	$938,257.56	$938,257.56	$1,125,909.07

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
366-7	Covered Lagoon/Holding Pond	**Scenario Description:** A covered lagoon that is part of a waste management system to provide biological treatment of the waste in the absence of oxygen. This process for manure and other byproducts of animal agricultural operations will manage odors, reduce the net effect of greenhouse gas emissions, and/or reduce pathogens. This scenario is for all livestock operation sizes. Scenario applies to retrofitting an existing anaerobic lagoon, or as an addition to a new construction using waste treatment lagoon (359) or waste storage facility (313), and roofs and covers (367). Payment includes system controls, gas collection, and flaring system. Energy generation is not included with this scenario. **After Practice Description:** Manure and other agricultural by-products are being treated such that odors are managed and/or pathogens are reduced. Effluent from the digester is disposed of or utilized in a proper manner in accordance with a nutrient management plan. A covered lagoon/holding pond typically has a flexible top installed over an earthen storage/treatment facility for the purpose of capturing the biogas. Typical Design Scenario: 1,000 animal units (715 - 1,400 lbs. dairy cows). **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Waste Treatment Lagoon (359), and Waste Storage Facility (313).	Animals Units Contributing to Digester	Animal Unit	$142.71	$214.07	$214.07	$256.88

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ANIMAL MORTALITY FACILITY

Practice Code 316

Practice Units: NUMBER

Definition: An on-farm facility for the treatment or disposal of animal carcasses due to routine mortality.

Purpose: This practice may be applied to achieve one or more of the following purposes:

- reduce pollution impacts to surface water and groundwater resources
- reduce the impact of odors
- decrease the spread of pathogens

Conditions Where Practice Applies: Livestock and poultry operations where routine animal carcass storage, treatment, or disposal is needed.

This standard does not apply to catastrophic animal mortality. In cases of catastrophic animal mortality, use Emergency Animal Mortality Management (368). In cases of disease related catastrophic mortality, contact the Iowa Department of Agriculture and Land Stewardship (IDALS) as their rules and regulations apply.

Where animal carcass treatment or disposal must be a component of a waste management system for livestock or poultry operations. This applies where on-farm carcass treatment and disposal are permitted by federal, state, and local laws, rules, and regulations. It also applies where a waste management system plan as described in the AWMFH has been developed that accounts for the end use of the product from the mortality facility.

Limitations: Nonmortality composting will be done under Practice 317 – Composting Facility. Follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP).

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
316-1	Incinerator	**Scenario Description:** This scenario consists of installing a manufactured Type IV incinerator. Payment includes the incinerator, fuel tank and concrete slab to support the incinerator and fuel tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. The purpose of the practice is to address resource concerns related to water quality degradation due to excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. **After Practice Description:** Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete incineration, and protection from predators to minimize pathogen survival or spreading. Included is a concrete slab to set the incinerator on and a fuel tank. Ash materials to be stored in suitable containers until land disposal as per the nutrient management plan or landfilled. **Potential Associated Practices:** Heavy Use Area Protection (561), Fence (382), Critical Area Planting (342), Access Road (560), Waste Storage Facility (313), Nutrient Management (590), Roofs and Covers (367), Critical Area Planting (342).	Pounds capacity of incinerator	Pounds per Day	$15.28	$22.92	$22.92	$27.50

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
316-20	Medium- High Animal Composter	**Scenario Description:** This scenario applies to composting of medium-sized animals, regardless of technology; each state is responsible for determining the size range of the animals to which this scenario applies. The typical scenario is a series of concrete bins, open on one end, on top of a concrete pad, to compost mortality in static piles with sufficient bulking material to allow natural aeration. The producer will be managing the composting with heavy equipment, requiring durable, concrete walls. Facility sizing parameters include primary and secondary composting area requirements, to allow piles to be turned at least once to go into another heat cycle prior to final disposal, typically land application. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Where needed, use Practice Standard 561 - Heavy Use Area Protection adjacent to the composting facility for protected access, and Practice Standard 362 - Diversion to divert surface flow away from the facility. Typical scenario design uses the process outlined in the Illinois supplement to Chapter 10 of the Ag Waste Field Handbook (IL651.1007(f)), using a volume factor of 20 cubic feet. Animals being composted are grow-finish swine at an average weight of 165 lb., and the average mortality rate (death loss) for the operation is 4%, or 87 lbs./day for a 2400-head operation with 2 turns per year. The resulting typical design has twelve bins, each 10' x 9.8' by 5'7" high (reference standard drawing IL-ENG-149). Site preparation includes topsoil removal, minimal re-grading and compaction, installing gravel or sand sub base and then concrete. **After Practice Description:** Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. An overall plan covers normal and catastrophic mortality events. **Potential Associated Practices:** Roofs and Covers (367), Roof Runoff Structure (558), Heavy Use Area Protection (561), Underground Outlet (620), Diversion (362), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Structure for Water Control (587), Subsurface Drain (606).	Pounds of dead animals per day	Pounds per Day	$145.51	$218.27	$218.27	$261.92

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
316-21	Large Animal Composter	**Scenario Description:** This scenario applies to composting of larger animals, regardless of technology; each state is responsible for determining the size range of the animals to which this scenario applies. The typical scenario is a concrete pad sized for composting animal mortality in windrow(s), including equipment access to the material. Facility sizing parameters include primary and secondary composting area requirements to allow piles to be turned at least once to go into another heat cycle prior to final disposal, typically land application. Site to be located out of drainage areas, off-site water diverted and any runoff to spread out into a grassed area or vegetated treatment area as per regulations. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Where needed, use Practice Standard 561 - Heavy Use Area Protection adjacent to the composting facility for protected access, and Practice Standard 362 - Diversion to divert surface flow away from the facility. Typical scenario design is Example 4 from the Ohio Livestock and Poultry Mortality Composting Manual. Animals being composted are cattle at an average weight of 1,400 lb., and the average mortality rate (death loss) for the operation is 20 lbs./day. The windrow system includes a primary and a secondary composting operation, with 30 days' worth of storage. The resulting typical design is a 25' x 60' concrete pad, 5" thick, with light reinforcement. Site preparation includes topsoil removal, minimal regrading and compaction, installing gravel or sand sub base and then concrete. An earthen berm (2' tall, 4' top width with 2:1 side slopes) around three sides of the facility captures any leachate. **After Practice Description:** Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. An overall plan covers normal and catastrophic mortality events. **Potential Associated Practices:** Roofs and Covers (367), Roof Runoff Structure (558), Heavy Use Area Protection (561), Underground Outlet (620), Diversion (362), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Structure for Water Control (587), Subsurface Drain (606).	Pounds of dead animals per day	Pounds per Day	$216.07	$324.11	$324.11	$388.93

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
316-22	Small Animal Composter	**Scenario Description:** This scenario applies to composting of small animals, regardless of technology; each state is responsible for determining the size range of the animals to which this scenario applies. The typical scenario is a series of concrete bins, open on one end, on top of a concrete pad, to compost mortality in static piles with sufficient bulking material to allow natural aeration. The producer will be managing the composting with heavy equipment, requiring durable, concrete walls. Facility sizing parameters include primary and secondary composting area requirements, to allow piles to be turned at least once to go into another heat cycle prior to final disposal, typically land application. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Where needed, use Practice Standard 561 - Heavy Use Area Protection adjacent to the composting facility for protected access, and Practice Standard 362 - Diversion to divert surface flow away from the facility. Typical scenario design uses the Indiana NRCS composter design spreadsheet process. Animals being composted are poultry at an average weight of 3 lb., and the average mortality rate (death loss) for the operation is 4%, or 267 lbs./day for a 100,000-chicken operation with a 45-day cycle time. The resulting typical design has four bins, each 10' x 9.8' by 5'7" high (reference standard drawing IL-ENG-161. Site preparation includes topsoil removal, minimal regrading and compaction, installing gravel or sand sub base and then concrete. **After Practice Description:** Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. An overall plan covers normal and catastrophic mortality events. **Potential Associated Practices:** Roofs and Covers (367), Roof Runoff Structure (558), Heavy Use Area Protection (561), Underground Outlet (620), Diversion (362), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Structure for Water Control (587), Subsurface Drain (606).	Pounds of dead animals per day	Pounds per Day	$15.18	$22.78	$22.78	$27.33

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
316-23	Medium - Low Animal Composter	**Scenario Description:** This scenario applies to composting of medium-sized animals, regardless of technology; each state is responsible for determining the size range of the animals to which this scenario applies. The typical scenario is a series of concrete bins, open on one end, on top of a concrete pad, to compost mortality in static piles with sufficient bulking material to allow natural aeration. The producer will be managing the composting with heavy equipment, requiring durable, concrete walls. Facility sizing parameters include primary and secondary composting area requirements, to allow piles to be turned at least once to go into another heat cycle prior to final disposal, typically land application. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Where needed, use Practice Standard 561 - Heavy Use Area Protection adjacent to the composting facility for protected access, and Practice Standard 362 - Diversion to divert surface flow away from the facility. Typical scenario design uses the process outlined in the Illinois supplement to Chapter 10 of the Ag Waste Field Handbook (IL651.1007(f)), using a volume factor of 10 cubic feet. Animals being composted are large poultry at an average weight of 12 lbs., and the average mortality rate (death loss) for the operation is 7%, or 108 lbs./day for a 14,500 - head operation with 3 turns per year. The resulting typical design has four bins, each 14' x 9.33' by 5' high. Site preparation includes topsoil removal, minimal re-grading and compaction, installing gravel or sand sub base and then concrete. **After Practice Description:** Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. An overall plan covers normal and catastrophic mortality events. **Potential Associated Practices:** Roofs and Covers (367), Roof Runoff Structure (558), Heavy Use Area Protection (561), Underground Outlet (620), Diversion (362), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Structure for Water Control (587), Subsurface Drain (606).	Pounds of dead animals per day	Pounds per Day	$61.72	$92.58	$92.58	$111.10

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
316-30	Extra Large Animal, Static Pile	**Scenario Description:** This scenario consists of installing an impervious earthen pad to compost large animal mortalities, typically dairy cow, beef, sow or boar, in a static windrow or single pile. Additional carbon based bulking material is added to facilitate aeration and provide a proper C: N ratio. Piles turned at least once to go into another heat cycle prior to land application. Access is infrequent. This option requires at least 2 more times the area in vegetation for runoff treatment. This may not be an option for sites will limited areas, karst topography, and not isolated from of public view. The purpose of the practice is to address resource concerns related to water quality degradation due to excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Air quality impacts due to odors will also be addressed. Any roofed portion of the facility will be addressed with Roofs and Covers (367). Any approach areas will be addressed with Heavy Use Area Protection (561). **After Practice Description:** Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. An overall plan covers normal and catastrophic mortality events. Typical system consists of a 50' x 50' compacted earth surface. Site can handle mortality for a 100-cow dairy with associated heifers and calves. On site soils can be recompacted to meet required imperviousness. Include sufficient area for processing equipment access. Use single piles or windrows to minimize runoff. Site to be located out of drainage areas, off-site water diverted and any runoff to spread out into a grassed area or vegetated treatment area as per regulations. Site preparation includes removal of top 1.5' and recompacting. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Diversion (362), Subsurface Drain (606), and Underground Outlet (620). Vegetative Treatment Area (635), Composting (317), Roofs and Covers (367), Heavy Use Area Protection (561)	Pad Area	Square Foot	$0.36	$0.54	$0.54	$0.64

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AQUATIC ORGANISM PASSAGE

Practice Code 396

Practice Units: MILE

Definition: Modification or removal of barriers that restrict or impede movement of aquatic organisms.

Purpose: Improve or provide passage for aquatic organisms.

Conditions Where Practice Applies: All aquatic habitats where barriers impede passage of aquatic organisms.

Limitations:

Maintenance: Practice will be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
396-1	Concrete Dam Removal	**Scenario Description:** The full or partial removal of a concrete or earthen dam which is restricting or impeding movement of aquatic organisms to restore aquatic organism passage, improve water quality, and promote functional river ecology and geomorphology. The extent of removal (full or partial) is determined through consultations with the dam owner in consideration of prevailing regulations and site historical status. Adjacent floodplain surfaces above and below the target dam are considered in the planning process to account for shifts in streamflow and geomorphic regime. Resulting channel dimensions and profile are determined on a site-specific basis to reflect--to the fullest extent possible--pre-dam conditions. Removal is completed with an assortment of equipment, including tracked excavators outfitted with hydraulic chisels, hammers and/or buckets with 'thumbs', bull dozers, skid steers, cranes, front-end loaders, and dump trucks. Alternative demolition techniques may include the use of high explosives, diamond-chain, or similar circular saws to remove the dam in a piecewise manner. Removed materials are trucked away and disposed or recycled off-site. **After Practice Description:** A 7-foot-tall, 85-foot-long low head concrete dam is demolished, and debris is removed. The geometry and slope of the reach impacted by removal of the dam are restored to pre-dam conditions to the fullest extent practicable. Aquatic organism passage and river ecology and geomorphic conditions are restored to pre-dam conditions to the fullest extent practicable. Resource Concerns are addressed within the context of the site. **Associated practices for practice installation include:** (326) Clearing and Snagging, (342) Critical Area Planting, (382) Fence, (390) Riparian Herbaceous Cover, (391) Riparian Forest Buffer, (612) Tree/Shrub Establishment, (395) Stream Habitat Improvement and Management, (410) Grade Stabilization Structure, (584) Channel Bed Stabilization, (580) Streambank and Shoreline Protection, (587) Structure for Water Control, and (578) Stream Crossing.	Linear Feet of Low Head Dam and Abutments	Foot	$320.19	$384.22	$320.19	$384.22

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
396-2	Culvert Replacement	**Scenario Description:** A corrugated metal (galvanized steel or aluminum) pipe culvert (CMP) of any shape (round, elliptical, or squash) used where a field access road intersects with a stream crossing. The aquatic organism passage (AOP) will provide and promote stream ecological and geomorphic function. CMPs used for AOP are filled with a mixture of rock and gravel sized to emulate site stream conditions and geomorphic units in the channel. The simulated streambed material is continuous throughout the culvert barrel and blended with the intact streambed at the culvert inlet and outlet. Any associated road surface reinstallation is not included as part of this practice. If the reinstallation of a field access lane is needed, consider the planning and application of the associated road surface reinstallation through (560) Access Road. **After Practice Description:** The undersized culvert is replaced with a CMP sized, placed, and backfilled with material determined by geomorphic analyses performed in a reference upstream reach of the crossing location. Geomorphic and ecological functions are preserved through the crossing site, enhancing AOP, water quality, and culvert longevity. In addition, because the culvert is sized to transport the streamflow, the culvert requires decreased maintenance activities over time. Landowners are able to access their property across a range of flows and are able to seek and receive emergency and post-flood recovery services. **Other associated practices include, but is not limited to** (342) Critical Area Planting, (382) Fence, (390) Riparian Herbaceous Cover, (391) Riparian Forest Buffer, (612) Tree/Shrub Establishment; (395) Stream Habitat Improvement and Management, (410) Grade Stabilization Structure, (584) Channel Bed Stabilization, (580) Streambank and Shoreline Protection	CMP	Each	$3,860.23	$4,632.27	$3,860.23	$4,632.27

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BRUSH MANAGEMENT

Practice Code 314

Practice Units: ACRE

Definition: The management or removal of woody (non-herbaceous or succulent) plants including those that are invasive and noxious.

Purpose:

- Create the desired plant community consistent with the ecological site.
- Restore or release desired vegetative cover to protect soils, control erosion, reduce sediment, improve water quality or enhance stream flow.
- Maintain, modify, or enhance fish and wildlife habitat.
- Improve forage accessibility, quality and quantity for livestock and wildlife.
- Manage fuel loads to achieve desired conditions.

Conditions Where Practice Applies: On all lands except active cropland where the removal, reduction, or manipulation of woody (non-herbaceous or succulent) plants is desired.

Limitations: Brush management will be planned in a manner that will not adversely affect threatened or endangered species or their habitats.

Maintenance: Practice will be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
314-1	Light Brush Management	**Scenario Description:** Light brush management is used on non-cropland acres (including forestland, pasture, and wildlife areas) where less than 10% canopy cover across the treatment area is in undesirable non-herbaceous cover, and the treatment area is less than 18% slope on average. Payment is based on impacted acres only. Treatment may consist of chemical, mechanical, manual, or a combination of methods. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. **After Practice Description:** Undesirable non-herbaceous species are controlled with a pass with a brush hog over the treatment area followed by spot chemical treatment. The treatment area is mechanically treated early in the growing season to reduce above ground biomass. The treated plants will readily re-sprout, and after adequate re-sprouting occurs herbicide will be applied to the new growth. This combined treatment will allow better access for the herbicide application equipment, better coverage on target plants, and less overall herbicide applied.	Acres treated	Acre	$37.47	$44.97	$37.47	$44.97
314-2	Medium Brush Management	**Scenario Description:** Medium brush management is used on non-cropland acres (including forestland, pasture, and wildlife areas) where 10% - 39% canopy cover across the treatment area is in undesirable non-herbaceous cover, and the treatment area is less than 18% slope on average. Payment is based on impacted acres only. Treatment may consist of chemical, mechanical, manual, or a combination of methods. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. **After Practice Description:** Undesirable non-herbaceous species are controlled with a pass with a brush hog over the treatment area followed by spot chemical treatment. The treatment area is mechanically treated early in the growing season to reduce above ground biomass. The treated plants will readily resprout, and after adequate re-sprouting occurs herbicide will be applied to the new growth. This combined treatment will allow better access for the herbicide application equipment, better coverage on target plants, and less overall herbicide applied.	Acres planned	Acre	$60.97	$73.16	$60.97	$73.16

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
314-3	Heavy Brush Management	**Scenario Description:** High brush management is used on non-cropland acres (including forestland, pasture, and wildlife areas) where 40%-60% canopy cover across the treatment area is in undesirable non-herbaceous cover, or the treatment area is on land with 18% - 25% slopes on average regardless of percent cover of undesirable species. Payment is based on impacted acres only. Treatment may consist of chemical, mechanical, manual, or a combination of methods. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. **After Practice Description:** Undesirable non-herbaceous species are controlled with a combination of manual chain sawing, pass with a brush hog over the treatment area, and spot chemical treatment. The treatment area is mechanically treated early in the growing season to reduce above ground biomass. The treated plants will readily resprout, and after adequate re-sprouting occurs herbicide will be applied to the new growth. This combined treatment will allow better access for the herbicide application equipment, better coverage on target plants, and less overall herbicide applied.	Acres planned	Acre	$147.49	$176.99	$147.49	$176.99
314-4	Very Heavy Brush Management	**Scenario Description:** High brush management is used on non-cropland acres (including forestland, pasture, and wildlife areas) where greater than 60% canopy cover across the treatment area is in undesirable non-herbaceous cover, or the treatment area is on land with greater than 25% slopes on average regardless of percent cover of undesirable species. Payment is based on impacted acres only. Treatment may consist of chemical, mechanical, manual, or a combination of methods. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. **After Practice Description:** Undesirable non-herbaceous species are controlled with a combination of manual chain sawing, pass with a brush hog over the treatment area, and spot chemical treatment. The treatment area is mechanically treated early in the growing season to reduce above ground biomass. The treated plants will readily resprout, and after adequate re-sprouting occurs herbicide will be applied to the new growth. This combined treatment will allow better access for the herbicide application equipment, better coverage on target plants, and less overall herbicide applied.	Acres planned	Acre	$240.61	$288.73	$240.61	$288.73

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
314-284	Linear Tree Removal for Grassland Bird Habitat	**Scenario Description:** Scenario is to open the vista and visual ranges for Prairie Chickens and other grassland dependent birds and reduce grassland habitat fragmentation by removing undesirable trees. Establishment of herbaceous vegetative cover on the cleared site is accomplished through associated practices such as 327 Conservation Cover. **After Practice Description:** Habitat is improved by removal of mature trees and brush. Typical size of area cleared is 1,800 ft. long by 30 ft. wide. Due to the mature trees in the area to be cleared a dozer is typically required. Removed debris is piles and burned and the cleared area is seeded to wildlife friendly vegetation through associated practice 327 Conservation Cover. If needed, associated practice 382 Fence is utilized to protect the area from livestock.	Size of area cleared	Acre	$901.87	$1,082.24	$901.87	$1,082.24
314-320	Removal of Invasive Woody Understory, Light	**Scenario Description:** All materials, equipment and labor required to remove invasive species on woodland. Treat scattered individual invasive woody plants. Less than 1/10th of the forest understory is composed of the invasive woody plant species. Invasive woody plants are not yet interfering with understory sunlight or forest health, but these plants will impact forest health if left untreated. Cut and stump treat, stem inject (hack and squirt), or basal bark apply specific forestry herbicides to prevent re-sprouting. Use a Current and approved Forest Management Plan for estimate of infested plants per acre that are to be removed. **After Practice Description:** The land is no longer impacted by the invasive woody species and the overall condition of the woodland stand is improved. Additionally, the wildlife habitat is improved with the resulting increase in sunlight reaching the woodland floor.	Area of Treatment	Acre	$65.14	$78.17	$65.14	$78.17

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
314-321	Removal of Invasive Woody Understory, Medium	**Scenario Description:** All materials, equipment and labor required to remove invasive species on woodland. Between 10 and 50% of the woodland understory/midstory is compromised by woody invasive plants. The invasive woody plants are beginning to actively shade out native understory plants and forest regeneration, and/or are mature enough to start reproducing. Cut and stump treat, stem inject (hack and squirt), or basal bark apply with herbicide to prevent re-sprouting. Use a Current and approved Forest Management Plan for estimate of infested plants per acre that are to be removed. **After Practice Description:** The land is no longer impacted by the invasive woody species and the overall condition of the woodland stand is improved. Additionally, the wildlife habitat is improved with the resulting increase in sunlight reaching the woodland floor.	Area of Treatment	Acre	$92.86	$111.43	$92.86	$111.43
314-322	Removal of Invasive Woody Understory, Heavy	**Scenario Description:** All materials, equipment and labor required to remove invasive species on woodland. 50-100% of the woodland understory/midstory is compromised by invasive woody plants. Both parent trees/shrubs and their sprouts or seedlings are present. Most native understory plants and forest regeneration are suppressed. Cut and stump treat, stem inject (hack and squirt), or basal bark apply specific forestry herbicides to prevent re-sprouting and suckering. This practice may also be used to mechanically shred or chip invasive woody plants with machinery like forestry mowers. Use a current and approved forest management plan for estimate of infested plants per acre that are to be removed. **After Practice Description:** The land is no longer impacted by the invasive woody species and the overall condition of the woodland stand is improved. Additionally, the wildlife habitat is improved with the resulting increase in sunlight reaching the woodland floor.	Area of Treatment	Acre	$436.81	$524.17	$436.81	$524.17

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BUILDING ENVELOPE IMPROVEMENT

Practice Code 672

Practice Units: NUMBER

Definition: Modification or retrofit of the building envelope of an existing agricultural structure.

Purpose: This practice may be applied to reduce energy use by regulating heat transfer.

Conditions Where Practice Applies: This practice applies to any agricultural facility which is climate controlled at least part of the time with a completed energy analysis that complies with the guidelines for a Type 2 on-farm energy audit per the American Society of Agricultural and Biological Engineers (ASABE) S612. The audit will have at a minimum addressed the major activities of ventilation, air heating and air cooling that exists in the building.

Limitations: Contracts that include Agricultural Energy Management Plans or audits as required for 672 – Building Envelope Improvement shall have energy plans or audits sent to the Area Engineer who will forward a copy to the State Office Environmental Engineer (Mark Garrison) for administrative review before certification of plans or installation of practices outlined in plans or audits. Plans must meet the technical requirements of ASABE S612 - Performing On-farm Energy Audits and/or CAP 128 criteria. The Farm Energy Improvement Practices Implementation and Certification Record worksheet will be completed and signed by the participant prior to practice certification for payment.

Maintenance: Practice will be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
672-1	Building Envelope - Attic Insulation	**Scenario Description:** Install a minimum R-7 insulation in an existing attic or ceiling to reduce heat transfer. Increased insulation reduces seasonal heat loss and heat gain which reduces the respective need for heating and cooling equipment to operate. Payment includes materials, equipment and labor to install. **After Practice Description:** A more effective and efficient building envelope can be created through addition of, or increased, attic insulation. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities:** 122-AgEMP - HQ, 670-Lighting System Improvement, and 374-Farmstead Energy Improvement.	Area of Attic Insulated	Square Foot	N/A	N/A	$0.55	$0.66
672-2	Building Envelope - Wall Insulation with Foam Insulation	**Scenario Description:** Enclose both sidewalls and endwalls from ceiling to floor with closed-cell polyurethane foam application (minimum 1" thickness (R-7) of 2.5 lbs./cu. ft. or higher density, (3.0 or higher density preferred) with a form of physical protective barrier on lower 2' (may be 6 lbs./cu. ft. or higher density 1/8" thick foam, or treated lumber). Installation also includes a thermal and ignition barrier intumescent coating or equivalent per NI_210-301. Payment includes materials, equipment and labor to install. **After Practice Description:** A more effective and efficient building envelope can be created through addition of, or increased, insulation in a 40' x 400' livestock building. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities:** may include 122-AgEMP - HQ, 670- Lighting System Improvement, and 374-Farmstead Energy Improvement.	Area of Wall Insulated	Square Foot	N/A	N/A	$2.24	$2.69

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
672-3	Building Envelope - Sealant	**Scenario Description:** Seal the gaps between walls, gables, ceiling, etc. in a poultry house or greenhouse. Payment includes materials, equipment and labor performed by a professional contractor. **After Practice Description:** A more effective and efficient building envelope can be created through interior sealing of the exterior walls at the footer plate, eaves, ridge cap, and gable ends. The sealant reduces seasonal heat loss and heat gain due to infiltration which reduces the respective need for heating and cooling equipment to operate. The unit basis of payment in this scenario is each house based on 60' x 500' poultry house with an assumed need of sealant to seal 2400 linear feet of gap. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities**: may include 122-AgEMP - HQ, 670- Lighting System Improvement, and 374-Farmstead Energy Improvement.	Perimeter of heated structure	Foot	N/A	N/A	$1.27	$1.52
672-4	Building Envelope - Greenhouse Screens	**Scenario Description:** Installation of a mechanical energy screen system associated with a greenhouse consisting of a drive motor, support cables, controls, and shade material, which may be woven, knitted, or non-woven strips of aluminum fiber, polyethylene, nylon or other synthetic material. The screen provides a means to better control solar heat gain and heat transfer during night or cold weather conditions to reduce energy use. Screens and similar devices may also be used to divide internal areas and allow for differentiated heating, ventilation, or cooling system operation to reduce energy use. Payment includes materials and labor to install. **After Practice Description:** The greenhouse is fitted with a mechanically controlled energy screen installed truss-to-truss or gutter-to-gutter, with side screens as necessary, reducing heat loss in the greenhouse. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities:** may include 122-AgEMP - HQ, 670- Lighting System Improvement, and 374-Farmstead Energy Improvement.	Area of Screen	Square Foot	N/A	N/A	$1.66	$1.99

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
672-5	Building Envelope - Greenhouse Unglazed Wall Insulation	**Scenario Description:** Installation of insulation in greenhouse to address energy loss. The insulation can be either of the cellulose or bubble type (or equivalent). The increased insulation reduces seasonal heat loss and heat gain which reduces the respective need for heating and cooling equipment to operate. Payment includes materials and labor to install. **After Practice Description:** The greenhouse is fitted with insulation installed truss-to-truss or gutter-to-gutter and/or non-glazed end walls and/or sidewalls, reducing heat loss and gain in the greenhouse. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities** may include 122-AgEMP - HQ, 670- Lighting System Improvement, and 374-Farmstead Energy Improvement.	Square Feet of Insulation	Square Foot	N/A	N/A	$0.24	$0.29
672-6	Building Envelope - Insulated Door Upgrade	**Scenario Description:** Replace an existing door with an insulated door, such as but not limited to a steel roll up door in a poultry building. Increased insulation reduces seasonal heat loss and heat gain which reduces the respective need for heating and cooling equipment to operate. Payment includes materials and labor to install. **After Practice Description:** A 20-gauge 12' x 12' rolling service insulated steel door is installed as a replacement for an existing less efficient door on a poultry building. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities may include**: 122-AgEMP - HQ, 670- Lighting System Improvement, and 374-Farmstead Energy Improvement.	Square foot	Square Foot	N/A	N/A	$9.79	$11.75

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
672-7	Building Envelope - Insulated Curtain Upgrade	**Scenario Description:** Replacement of an existing non-insulated curtain with a seven-layer insulated curtain with an R-value of 3 for a livestock building. The curtain's two outer layers are vinyl and polyethylene and the five inner layers are composed of insulating materials with air trapping fibers and a vapor barrier. Payment includes curtain and labor to install. Payment does not include mounting accessories because the scenario assumes the curtain is replacing a non-insulated curtain. **After Practice Description:** A 7-layer insulated curtain is installed as a replacement for an existing less efficient curtain on a livestock building. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities may include**: 122-AgEMP - HQ, 670- Lighting System Improvement, and 374-Farmstead Energy Improvement.	Square Foot	Square Foot	N/A	N/A	$1.90	$2.28
672-8	Building Envelope - Curtain Wall Conversion	**Scenario Description:** Converting part or all of a curtain wall to solid insulated wall by installation of an insulated metal cover in a livestock building. Payment includes materials and labor for the installation of a weather proof exterior such as, but not limited to, corrugated steel, and insulation such as, but not limited to polyurethane R-7. Payment does not include upgrade to ventilation. **After Practice Description:** An insulated metal wall is installed as a replacement for an existing less efficient curtain on a livestock building. Conversion is for a building that requires 3040 sq. ft. of wall to replace the curtains. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, and 374-Farmstead Energy Improvement.	Square Foot	Square Foot	N/A	N/A	$2.91	$3.50

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
672-81	Building Envelope - Wall Insulation with Fiberglass Batt Insulation	**Scenario Description:** Enclose both sidewalls and endwalls from ceiling to floor with 3.5" fiberglass batts (R-11), vapor barrier, and interior plywood or OSB sheathing. Payment includes materials, equipment and labor to install. **After Practice Description:** A more effective and efficient building envelope can be created through addition of, or increased, insulation in a 40' x 400' livestock building. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, and 374-Farmstead Energy Improvement.	Area of wall insulated	Square Feet	NA	NA	$1.55	$1.86

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CLEARING AND SNAGGING

Practice Code 326

Practice Units: FEET

Definition: Removal of vegetation along the bank (clearing) and/or selective removal of snags, drifts, or other obstructions (snagging) from natural or improved channels and streams.

Purpose: Reduce risks to agricultural resources or civil infrastructure by removing obstructions that hinder channel flow or sediment transport to:

- Restore flow capacity and direction
- Prevent excessive bank erosion by eddies or redirection of flow
- Reduce the undesirable formation of bars
- Minimize blockages by debris and ice.

Conditions Where Practice Applies: Any natural or improved channel where the removal of vegetation, trees, brush, and other obstructions is needed to accomplish on or more of the listed purposes.

Limitations:

Maintenance: Practice will be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
326-1	Clearing and Snagging	**Scenario Description:** Removal of vegetation, logs, or other material that impedes the proper functioning along a length of stream channel or water course to restore flow capacity; prevent bank erosion by eddies; reduce the formation of sediment bars; and/or minimize blockages by debris. Addresses resource concerns such as water quantity and soil erosion-streambanks. **After Practice Description:** Vegetation, logs, or other material have been removed to allow unrestricted flow in the channel and appurtenant structures. Material that poses no blockage threat is left in place to enhance aquatic habitat. Channel bed and banks are in equilibrium with the flow.	Length of Channel	Foot	$7.68	$11.51	$11.51	$13.82

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COMPOSTING FACILITY

Practice Code 317

Practice Units: NUMBER

Definition: A structure or device to contain and facilitate the controlled aerobic decomposition of manure or other organic material by microorganisms into a biologically stable organic material that is suitable for use as a soil amendment.

Purpose: To reduce the pollution potential and improve the handling characteristics of organic waste solids; and produce a soil amendment that adds organic matter and beneficial organisms, provides slow-release plant-available nutrients, and improves soil condition.

Conditions Where Practice Applies: This practice applies where:

- Organic waste material is generated by agricultural production or processing
- The facility is a component of a planned waste management system
- The facility can be constructed, operated and maintained without polluting air and/or water resources; and
- The compost can be applied to the land or marketed to the public.

Limitations: Dead animal composting will be done under Practice 316 – Animal Mortality Facility. Municipal sludge, solid waste and other non-farm wastes are not included in this standard. For applications involving animal waste management application follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP).

Maintenance: Practice will be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
317-1	Concrete Slab Under Wood Bin Dividers	**Scenario Description:** A composting facility for manure and other agricultural organic by-products designed with a concrete slab under wooden bin dividers. Composter is installed to address water quality concerns and results in a composted product that can be used in multiple ways. Payment includes materials and equipment necessary for pad and bin construction. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Not to be used for animal mortality composting. All animal mortality composting shall be done using Practice Standard 316 - Animal Mortality Facility. **After Practice Description:** Manure, litter and other agricultural by-products are being controlled, by the collection at the source, and stored properly, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner. This scenario is based upon a 40' x 56' concrete slab with 5' high bin dividers, and 5 bins (configured 2 at 20'x28' and 3 at 20'x18.5'). Preparation includes stripping the top 1' of soil and roll compact same back into sub-floor. The bins are constructed on a 5" concrete slab used to store and stabilize manure, litter and other agricultural by-products. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Structure for water control (587), Diversion (362), Pipeline (516), Subsurface Drain (606), Heavy Use Area Protection (561), Roofs and Covers (367), Roof Runoff Structure (558), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Underground Outlet (620) and Vegetative Treatment Area (635).	Cubic Foot of Storage	Cubic Foot	$0.91	$1.36	$1.36	$1.64

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
317-2	Concrete Slab Under Concrete Bin Dividers	**Scenario Description:** A composting facility for manure and other agricultural organic by-products designed with a concrete slab under concrete bin dividers. Composter is installed to address water quality concerns and results in a composted product that can be used in multiple ways. Payment includes materials and equipment necessary for pad and bin construction. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Not to be used for animal mortality composting. All animal mortality composting shall be done using Practice Standard 316 - Animal Mortality Facility. **After Practice Description:** Manure, litter and other agricultural by-products are being controlled, by the collection at the source, and stored properly, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner. This scenario is based upon a 40' x 56' concrete slab with 5' high bin dividers, and 5 bins (configured 2 at 20'x28' and 3 at 20'x18.5'). Preparation includes stripping the top 1' of soil and roll compact same back into sub-floor. The bins are constructed on a 5" concrete slab used to store and stabilize manure, litter and other agricultural by-products. Note regarding scenario for concrete walls versus wood walls: the sturdier concrete walls are necessary in situations where a producer is managing the composting with heavy equipment that would easily damage and compromise the integrity of wooden walls. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Structure for water control (587), Diversion (362), Pipeline (516), Subsurface Drain (606), Heavy Use Area Protection (561), Roofs and Covers (367), Roof Runoff Structure (558), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Underground Outlet (620) and Vegetative Treatment Area (635).	Cubic Foot of Storage	Cubic Foot	$1.33	$2.00	$2.00	$2.40

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
317-4	Concrete Pad	**Scenario Description:** A composting facility for manure and other agricultural organic by-products designed with a concrete pad. Composter is installed to address water quality concerns and results in a composted product that can be used in multiple ways. Payment includes materials and equipment necessary for pad construction. This scenario is applicable when geological, soil, climate conditions or state and local regulations prohibit the use of an earthen surface. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Not to be used for animal mortality composting. All animal mortality composting shall be done using Practice Standard 316 - Animal Mortality Facility. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner. This scenario consists of removing and compacting back into place the top 1' of soil to create a compacted, impervious earthen floor to act as a working area to compost organic material in a static pile, windrow, that has sufficient carbon based bulking material to allow natural aeration. Piles typically turned at least once to go into another heat cycle prior to final disposal, typically land application. Construct a 75'x226' concrete surface 5" thick on an improved compacted earthen surface. Include sufficient area for processing equipment access. Single piles or windrows to minimize runoff. Site to be located out of drainage areas, off-site water diverted and any runoff to spread out into a grassed area or vegetated treatment area as per regulations. Site preparation includes topsoil removal, compaction of subsoil, and reinstalling topsoil, compacted. Note regarding scenario for concrete versus just earthen pad: concrete pads are necessary in situations such as, but not limited to, a site with soils that are permeable, karst, frequently accessed or have regulatory requirements that do not allow for an earthen surface. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Structure for water control (587), Diversion (362), Pipeline (516), Subsurface Drain (606), Heavy Use Area Protection (561), Roofs and Covers (367), Roof Runoff Structure (558), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Underground Outlet (620) and Vegetative Treatment Area (635).	Square Foot Floor Area	Square Foot	$2.78	$4.17	$4.17	$5.00

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
317-5	Compacted Gravel Pad, 6-inch compacted gravel	**Scenario Description:** A composting facility for manure and other agricultural organic by-products designed with a 6" compacted gravel pad. Composter is installed to address water quality concerns and results in a composted product that can be used in multiple ways. Payment includes materials and equipment necessary for pad construction. This scenario is applicable when geological, soil, climate conditions or state and local regulations prohibit the use of an earthen surface but does not require a hard-working surface such as concrete. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Not to be used for animal mortality composting. All animal mortality composting shall be done using Practice Standard 316 - Animal Mortality Facility. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored properly, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner. This scenario consists of installing a gravel pad over impervious soil to act as a working area to compost organic material in a static pile, windrow, that has sufficient carbon based bulking material to allow natural aeration. Piles typically turned at least once to go into another heat cycle prior to final disposal, typically land application. Construct a 75'x226' area on an improved gravel surface. Sub base material sufficiently compacted or improved. Include sufficient area for processing equipment access. Single piles or windrows to minimize runoff. Site to be located out of drainage areas, off-site water diverted and any runoff to spread out into a grassed area or vegetated treatment area as per regulations. Site preparation includes topsoil removal, compaction of subsoil, and installing 6" of compacted gravel. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Structure for water control (587), Diversion (362), Pipeline (516), Subsurface Drain (606), Heavy Use Area Protection (561), Roofs and Covers (367), Roof Runoff Structure (558), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Underground Outlet (620) and Vegetative Treatment Area (635).	Square Foot Floor Area	Square Foot	$0.37	$0.56	$0.56	$0.67

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COMPREHENSIVE NUTRIENT MANAGEMENT PLAN (CNMP) - WRITTEN

Practice Code 102

Practice Units: NUMBER

Definition: A CNMP is a conservation plan that is unique to animal feeding operation (AFO). It is a grouping of conservation practices and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. A CNMP incorporates practices to utilize animal manure and organic by-products as a beneficial resource. A CNMP addresses natural resource concerns dealing with soil erosion, manure, and organic by-products and their potential impacts on water quality, which may derive from an AFO. A CNMP is developed to assist an AFO owner/operator in meeting all applicable local, tribal, State, and Federal water quality goals or regulations. The four components of a CNMP are Signature Page, Record of Decisions for Farmstead/Production Areas, Record of Decisions for Land Treatment Areas Receiving Manure, and Nutrient Management Plan.

Purpose: To document the AFO owner's and/or operator's plan to manage manure and organic by-products by combining conservation practices and management activities into a conservation system that, when implemented, will achieve the goal of the producer and protect or improve water quality.

Conditions Where Practice Applies: Where a livestock facility exists in Iowa that will benefit from the development and implementation of a Comprehensive Nutrient Management Plan.

+The four required components of a CNMP are Manure and Wastewater Handling and Storage; Land Treatment; Nutrient Management and Recordkeeping. Feed Management and Other Utilization Activities are not required for all contracts.

Limitations: Although this is considered a management practice, it is a one-time payment. A CNMP must be developed before any design work is begun on contracted structures.

For nutrient impaired stream segments or water bodies, additional management activities or conservation practices may be required to meet local, tribal, State, or Federal water quality goals or regulations.

Landowner must obtain any required permits or certifications - Federal, Tribal, State, local, manure applicator, or inspection for this practice. Non-USDA fees such as permit fees are ineligible for payment.

Technical Service Providers (TSP): TSPs must be certified through NRCS in any of the components they contract for. For more detailed information on how to use a TSP go to https://www.nrcs.usda.gov/wps/portal/nrcs/ia/technical/cp/tsp/.

For applications involving animal waste management application follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice will be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
102-135	CNMP Less Than or Equal to 300 AU with Land Application (Minimal Engineer Assistance)	**Scenario Description:** A Comprehensive Nutrient Management Plan (CNMP) will be developed to address resource concerns on a small non- dairy Animal Feeding Operation (AFO) of less than 300 animal units (AU)--primarily swine, poultry, and beef AFOs. This scenario is for sites or states where the services of a professional engineer are minimal. The producer may export modest amounts of the manure or organic products from the farm. For operations where manure is both applied to land the AFO owner/operator controls and exported offsite, guidance to determine appropriate CNMP CAP scenario selection shall be provided by NRCS at the state level. The producer has an animal production area, farms cropland and applies most nutrients. The CNMP is a conservation plan that addresses resource concerns on the AFO production area and land application areas. Production area components of the plan must include animal confinement facilities, feeding and lounging lots, animal mortality facilities, and manure containment and storage facilities. Land application components of the plan includes all lands under the control of the AFO owner or operator where waste materials are being applied. Planned practices on the production area and land application areas result in meeting NRCS planning criteria for water quality, soil erosion, and air quality concerns. Any applicable air emission and negative air quality impacts occurring as a result of planned CNMP activities, or existing on-farm activities must be mitigated in the CNMP if feasible. The CNMP meets the AFO owner's/operator's production objectives. **After Practice Description:** A certified Technical Services Provider (TSP) has delivered, to the AFO owner/operator, a comprehensive nutrient management plan meeting CNMP CAP criteria (GM - Part 405 - Comprehensive Nutrient Management Plans) and to NRCS with the CNMP Case File data that describes management and conservation practice systems to address all identified resource concerns on the AFO production area and land application areas. Collection, transfer, and storage of manure and wastewater systems, mortality management facilities, as well as any rainfall or runoff diversion systems will be inventories-evaluated and planned for adequacy according to applicable NRCS conservation practice standard technical criteria. Management and conservation practices in the CNMP document delivered to the client ensure that, if implemented, the AFO will properly, within applicable NRCS standards and specifications, store, handle, and contain manure and wastewater materials generated by the AFO; dispose of AFO mortality; implement conservation practices to address soil erosion, water quality, and air quality within the NRCS planning criteria. Accurate record keeping documents for crop yields, operation and maintenance of existing and new CNMP-related practices, manure application, AFO manure imports and exports, and other information relevant to the management and compliance of the AFO with state and/or local rules and regulations are included in the CNMP.	Each	Number	$3,521.40	$4,225.68	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
102-136	CNMP Less Than or Equal to 300 AU without Land Application (Minimal Engineer Assistance)	**Scenario Description:** A Comprehensive Nutrient Management Plan (CNMP) will be developed to address resource concerns on the Animal Feeding Operation (AFO) of less than 300 or equal animal units (AU). This scenario is for sites or states where the services of a professional engineer are minimal. The producer exports nearly all of the manure or organic products from the farm. The CNMP is a conservation plan that addresses soil erosion, water quality, and air quality resource concerns on the AFO production area and land application areas owned or controlled by the AFO owner/operator. In this scenario, the primary focus will be addressing soil erosion, water quality, and air quality resource concerns present on the production area, including manure/wastewater handling and storage, and documentation of manure generation by the AFO, and its export. Production area components of the plan must include animal confinement facilities, feeding and lounging areas, animal mortality facilities, and manure containment and storage facilities. Planned practices on the production area must result in meeting NRCS planning criteria for water quality and soil erosion. Any applicable air emission and negative air quality impacts occurring as a result of planned CNMP activities, or existing on-farm activities must be mitigated in the CNMP if feasible. The CNMP meets the AFO owner's/operator's production objectives. **After Practice Description:** A certified Technical Services Provider (TSP) has delivered, to the AFO owner/operator, a comprehensive conservation plan meeting CNMP CAP criteria (GM - Part 405 - Comprehensive Nutrient Management Plans) and to NRCS a the CNMP Case File that describes management and conservation practice practices to address all identified soil erosion, water quality, and air quality resource concerns on the AFO production area and any applicable land application areas. Collection, transfer, and storage of manure and wastewater systems, mortality management facilities, as well as any rainfall or runoff diversion systems will be inventories/evaluated and planned for adequacy according to applicable NRCS conservation practice standard technical criteria. Conservation practices in the CNMP document delivered to the client ensure that, if implemented, the AFO will properly, within applicable NRCS standards and specifications, store, handle, and contain manure and wastewater materials generated by the AFO; dispose of AFO mortality; minimize erosion and runoff from feeding and lounging areas, keep accurate AFO animal inventory information, and document AFO manure generation and exports. Decisions presented within the CNMP have been made to mitigate, if feasible, negative air quality impacts and improve farmland safety and security. Decisions selected in the Record of Decision will provide estimated quantities for conservation practices to be installed in units of measure that align with those in the conservation practice. Accurate record keeping documents for operation and maintenance of existing and new CNMP-related practices, AFO manure imports and exports, and other information relevant to the management and compliance of the AFO with state and/or local rules and regulations are included in the CNMP.	Each	Number	$2,099.40	$2,519.28	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
102-137	CNMP Greater Than 300 AU with Land Application (Minimal Engineer Assistance)	**Scenario Description:** A Comprehensive Nutrient Management Plan (CNMP) will be developed to address resource concerns on an Animal Feeding Operation (AFO) of greater than or equal to 300 animal units (AU). This scenario is for sites or states where the services of a professional engineer are minimal. The producer may export modest amounts of the manure or organic products from the farm. For operations where manure is both applied to land the AFO owner/operator controls and exported offsite, guidance to determine appropriate CNMP CAP scenario selection shall be provided by NRCS at the state level. The producer has an animal production area, farms cropland and applies most manure nutrients. The CNMP is a conservation plan that addresses resource concerns on the AFO production area and land application areas. Production area components of the plan must include animal confinement facilities, feeding and lounging lots, animal mortality facilities, and manure containment and storage facilities. Land application components of the plan must include all lands under the control of the AFO owner or operator where waste materials are being applied. Planned practices on the production area and land application areas must result in meeting NRCS planning criteria for water quality and soil erosion. Any applicable air emission and negative air quality impacts occurring as a result of planned CNMP activities, or existing on-farm activities must be mitigated in the CNMP if feasible. The CNMP meets the AFO owner's/operator's production objectives. **After Practice Description:** A certified Technical Services Provider (TSP) has delivered, to the AFO owner/operator, a comprehensive nutrient management plan meeting CNMP CAP criteria (GM - Part 405 - Comprehensive Nutrient Management Plans) and to NRCS with the CNMP Case File data that describes management and conservation practices to address all identified soil erosion, water quality, and air quality resource concerns on the AFO production area and land application areas. Collection, transfer, and storage of manure and wastewater systems, mortality management facilities, as well as any rainfall or runoff diversion systems will be inventories-evaluated and planned for adequacy according to applicable NRCS conservation practice standard technical criteria. Management and conservation practices in the CNMP document delivered to the client ensure that, if implemented, the AFO will properly, within applicable NRCS standards and specifications, store, handle, and contain manure and wastewater materials generated by the AFO; dispose of AFO mortality; implement conservation practices to reduce soil erosion on land application areas to sustainable levels; land apply waste material nutrients in a manner than meets NRCS 590 Nutrient Management standard technical criteria. Decisions presented within the CNMP have been made to mitigate, if feasible, negative air quality impacts. Practices selected in the Record of Decision will provide estimated quantities for conservation practices to be installed in units of measure that align with the practice standards. Accurate record keeping documents for crop yields, operation and maintenance of existing and new CNMP-related practices, manure application, AFO manure imports and exports, and other information relevant to the management and compliance of the AFO with state and/or local rules and regulations are included in the CNMP.	Each	Number	$4,713.30	$5,655.96	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
102-138	CNMP Greater Than 300 AU without Land Application (Minimal Engineer Assistance)	**Scenario Description:** A Comprehensive Nutrient Management Plan (CNMP) will be developed to address resource concerns on an Animal Feeding Operation (AFO) of greater than 300 animal units (AU). This scenario is for sites or states where the services of a professional engineer are minimal. The producer exports nearly all of the manure or organic products from the farm. For operations where manure is both applied to land the AFO owner/operator controls and exported offsite, guidance to determine appropriate CNMP CAP scenario selection shall be provided by NRCS at the state level. The CNMP is a conservation plan that addresses the soil erosion, water quality, and air quality resource concerns on the AFO production area and land application areas owned or controlled by the AFO owner/operator. In this scenario, the primary focus will be addressing resource concerns present on the production area, including manure/wastewater handling and storage, and documentation of manure generation by the AFO, and its export. Production area components of the plan must include animal confinement facilities, feeding and lounging lots, animal mortality facilities, and manure containment and storage facilities. Planned practices on the production area must result in meeting NRCS planning criteria for water quality and soil erosion. Any applicable air emission and negative air quality impacts occurring as a result of planned CNMP activities, or existing on-farm activities must be mitigated in the CNMP if feasible. The CNMP meets the AFO owner's/operator's production objectives. **After Practice Description:** A certified Technical Services Provider (TSP) has delivered to the AFO owner/operator, a comprehensive conservation plan meeting CNMP CAP criteria (GM - Part 405 - Comprehensive Nutrient Management Plans) and to NRCS a the CNMP Case File that describes management and conservation practice solutions to all identified resource concerns on the small sized AFO production area and any applicable land application areas. Collection, transfer, and storage of manure and wastewater systems, mortality management facilities, as well as any rainfall or runoff diversion systems are inventoried/evaluated and planned for adequacy according to applicable NRCS conservation practice standard technical criteria. Conservation practices in the CNMP document delivered to the client ensure that, if implemented, the AFO will properly, within applicable NRCS standards and specifications, store, handle, and contain manure and wastewater materials generated by the AFO; dispose of AFO mortality; minimize soil erosion, water quality, and air quality concerns from feeding and lounging areas, keep accurate AFO animal inventory information, and document AFO manure generation and exports. Decisions presented within the CNMP have been made to mitigate, if feasible, negative air quality impacts. Decisions selected in the Record of Decisions will provide estimated quantities for conservation practices to be installed in units of measure that align with those in the conservation practice. Accurate record keeping documents for operation and maintenance of existing and new CNMP-related practices, AFO manure imports and exports, and other information relevant to the management and compliance of the AFO with state and/or local rules and regulations are included in the CNMP.	Each	Number	$2,383.80	$2,860.56	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
102-141	CNMP Revision	**Scenario Description:** A Comprehensive Nutrient Management Plan (CNMP) will be revised to address changes in manure management, volume or analysis, plants and crops, or plant and crop management or to adjust the nutrient balance on an Animal Feeding Operation (AFO). No modifications are required to engineered practices in the farmstead/production area. This scenario is where the services of a professional engineer are typically not required. The producer may export manure or organic products from the farm. The producer has an animal production area and land applies nutrients. The CNMP is a conservation plan that addresses resource concerns on the AFO production area and land application areas. Production area components of the plan may include animal confinement facilities, feeding and lounging lots, animal mortality facilities, and manure containment and storage facilities. All production area components are considered adequate. Land application components of the plan includes all lands under the control of the AFO owner or operator where nutrients are being applied. Planned practices on the land application area result in meeting NRCS planning criteria for water quality, soil erosion, and air quality concerns. Any applicable air emission and negative air quality impacts occurring because of planned CNMP activities, or existing on-farm activities must be mitigated in the CNMP if feasible. The CNMP meets the AFO owner/operator's production objectives. CNMP Revision CAP may not be used more often that once every five years, although it is recognized the nutrient management plan may be updated more frequently based on soil test frequency or other factors. **After Practice Description:** A certified Technical Services Provider (TSP) has developed a comprehensive nutrient management plan meeting CNMP CAP criteria (GM - Part 405 - Comprehensive Nutrient Management Plans) for the AFO owner/operator and has delivered to NRCS the CNMP with the CNMP Case File data that describes management and conservation practice systems to address all identified required resource concerns on the AFO production area and land application areas. Management and conservation practices in the CNMP document delivered to the client ensure that, if implemented, the AFO will operate properly, within applicable NRCS standards and specifications, to store, handle, and contain manure and wastewater materials generated by the AFO; dispose of AFO mortality; implement conservation practices to address soil erosion, water quality, and air quality within the NRCS planning criteria. Required record keeping for land treatment, nutrient management, and other information relevant to the management and compliance of the AFO with state and/or local rules and regulations are identified in the CNMP.	Each	Number	$2,613.90	$3,136.68	N/A	N/A

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CONSERVATION COVER

Practice Code 327

Practice Units: ACRE

Definition: Establishing and maintaining permanent vegetative cover.

Purpose: This practice is applied to support one or more of the following purposes:

- Reduce sheet, rill, and wind erosion and sedimentation.
- Reduce ground and surface water quality degradation by nutrients and surface water quality degradation by sediment
- Reduce emissions of particulate matter (PM), PM precursors, and greenhouse gases.)
- Enhance wildlife, pollinator and beneficial organism habitat.
- Improve soil health.

Conditions Where Practice Applies: This practice applies on all lands needing permanent herbaceous vegetative cover.

Limitations:

Maintenance: Practice will be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
327-1	Introduced Species	**Scenario Description:** The land is covered with permanent non-native grass vegetation resulting in reduced soil erosion and water/sediment runoff, and the elimination of dust emissions which improves air quality significantly. Plants sown for conservation cover may provide cover for beneficial insects and wildlife. This scenario does not apply to plantings for forage production or to critical area plantings. Applies to conventional or organic systems. **After Practice Description:** The 327 Implementation Requirements have been developed for the site and applied. The land is covered with permanent non-native grass vegetation resulting in reduced soil erosion and water/sediment runoff, and the elimination of significant dust emissions which improves air quality. Plants sown for conservation cover may provide cover for beneficial insects and wildlife. This scenario does not apply to plantings for forage production or to critical area plantings.	Area planted	Acre	$112.27	$134.72	$112.27	$134.72
327-2	Native Species	**Scenario Description:** This practice applies on land to be retired from agricultural production and on other lands needing permanent protective cover. This practice typically involves conversion from a clean-tilled (conventional tilled) intensive cropping system to permanent native vegetation (scenario includes native grass). The typical size of the practice is 50 acres. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality, develop wildlife habitat, and reduce air quality impacts. Applies to conventional or organic systems **After Practice Description:** The 327 Implementation Requirements have been developed for the site and applied. The land is covered with permanent native grass vegetation which reduces soil erosion and water/sediment runoff and eliminates dust emissions which improves air quality. Plants sown for conservation cover may provide cover for beneficial insects and wildlife. This scenario does not apply to plantings for forage production or to critical areaplantings.	Area planted	Acre	$131.86	$158.23	$131.86	$158.23

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
327-3	Orchard or Vineyard Alleyways	**Scenario Description:** This practice applies on orchards and vineyards needing permanent protective cover in the alleyways between tree and vine rows. The typical size of this practice is 20 acres. This practice typically involves conversion from a clean-tilled (conventional tilled) intensive cropping system to permanent vegetation (scenario includes non-native grass and legume mix). This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality, enhance wildlife and/or pollinator habitat, manage plant pests, and reduce air quality impacts. Typically, 60% of the surface area is conservation cover per acre. **After Practice Description:** The 327 Implementation Requirements have been developed for the site and has been applied. Orchard or Vineyard area between vine/tree rows are planted with permanent introduced grass/legume mix. Area covered has reduced soil erosion, reduced water/sediment runoff, and improved air quality as a result of the elimination of significant amounts of dust emissions. Plants sown for conservation cover may provide cover for beneficial insects, pollinators, and wildlife.	Area planted	Acre	$77.13	$92.56	$77.13	$92.56
327-4	Pollinator Species	**Scenario Description:** Permanent vegetation, including a mix of native grasses, legumes, and forbs (mix may also include non-native species), established on any land needing permanent vegetative cover that provides habitat for pollinators. Typical practice size is variable depending on site; this scenario uses 1 ac as the typical size. In addition to providing pollinator habitat, this practice scenario may also reduce sheet, rill, and wind erosion, improve soil quality, improve water quality, and improve air quality. The practice may also provide wildlife habitat. Practice applicable on cropland, odd areas, corners, etc. Applies to conventional or organic systems. **After Practice Description:** The 327 Implementation Requirements have been developed for the site and applied. Land is covered with permanent pollinator habitat including a mix of native grasses, legumes, forbs (mix may also include non-native species). This practice may also have reduced soil erosion, reduced water/sediment runoff, and improved air quality as a result of the elimination of dust emissions. Plants sown for pollinator habitat may also provide cover for beneficial insects and wildlife. This scenario does not apply to critical area plantings.	Area planted	Acre	$833.46	$1,000.15	$833.46	$1,000.15

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
327-22	Monarch Species Mix	**Scenario Description:** Establish permanent vegetative cover for pollinator habitat according to state specifications. Typically used for high quality nectar and pollen species. Assumes seed/plugs, equipment and labor for seed bed prep/planting, and weed management during establishment. Used for conventional or organic land on small, intensive areas that are central to specialty crop production. Not typically used for large- scale plantings. This is applicable to both organic and non- organic conditions. **After Practice Description:** The 327 Implementation Requirements have been developed and applied for the site. Land covered with permanent monarch habitat including a mix of milkweed species, native grasses, legumes, and forbs. Plants sown for monarch habitat may also provide cover for beneficial insects and wildlife.	Area planted	Acre	$738.88	$886.66	$738.88	$886.66
327-55	Interseeding Native Forbs, Pollinator or Monarch Mixes	**Scenario Description:** Enhance existing perennial vegetative cover with the interseeding of native forbs, and/or milkweeds and/or other high quality nectar and pollen species to enhance beneficial organism habitat. Scenario is appropriate for conventional or organic production. Payment includes seed, seeding and fertility for interseeding establishment. **After Practice Description:** A more diverse mix of forbs, milkweed species, native grasses, legumes, and/or forbs provides improved habitat. Payment scenario is based on running a no till drill through 1/2 of the area to enhance the current perennial vegetation.	Area interceded	Acre	$213.65	$256.38	$213.65	$256.38

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
327-72	Introduced with Forgone Income	**Scenario Description:** This practice applies on organically managed land needing permanent protective cover. This practice typically involves conversion from an intensive organic cropping system to permanent non-native vegetation (scenario includes non-native grass/legume mix). The typical size of the practice is 20 acres. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality, develop wildlife habitat, and reduce air quality impacts. **After Practice Description:** The 327 Implementation Requirements have been developed for the site and has been applied. Organically managed land covered with permanent non- native grass/legume mix vegetation has reduced soil erosion, reduced water/sediment runoff, and improved air quality due to the elimination of dust emissions. Plants sown for conservation cover may provide cover for beneficial insects and wildlife. This scenario does not apply to plantings for forage production or to critical area plantings.	Area planted	Acre	$422.72	$442.22	$422.72	$442.22
327-73	Native Species with Forgone Income	**Scenario Description:** This practice applies on conventional or organically managed land needing permanent protective cover. This practice typically involves conversion from an intensive cropping system to permanent native vegetation (scenario includes native grass/legume mix). The typical size of the practice is 50 acres. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality, develop wildlife habitat, and reduce air quality impacts. Applies to conventional or organic systems. **After Practice Description:** The 327 Implementation Requirements have been developed for the site and applied. Managed land covered with permanent native grass/legume mix vegetation has reduced soil erosion, reduced water/sediment runoff, and improved air quality due to the elimination of dust emissions. Plants sown for conservation cover may provide cover for beneficial insects and wildlife. This scenario does not apply to plantings for forage production or to critical area plantings.	Area planted	Acre	$457.08	$483.45	$457.08	$483.45

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
327-74	Pollinator Species with Forgone Income	**Scenario Description:** Permanent vegetation, including a mix of native grasses, legumes, and forbs (mix may also include non-native species), established on land needing permanent vegetative cover that provides habitat for pollinators. Typical practice size is variable depending on site; this scenario uses 1 ac as the typical size. In addition to providing pollinator habitat, this practice scenario may also reduce sheet and rill erosion, improve soil quality, improve water quality, and improve air quality. The practice may also provide wildlife habitat. Practice applicable on cropland, odd areas, corners, etc. Applies to conventional or organic systems. **After Practice Description:** The 327 Implementation Requirements have been developed for the site and applied. Managed land covered with permanent pollinator habitat including a mix of native grasses, legumes, and forbs (mix may also include non-native species). This practice may also reduce soil erosion, reduce water/sediment runoff, and improve air quality due to the elimination of dust emissions. Plants sown for pollinator habitat may also provide cover for beneficial insects and wildlife. This scenario does not apply to critical area plantings.	Area planted	Acre	$1,054.42	$1,200.26	$1,054.42	$1,200.26
327-84	Monarch Species Mix with Foregone Income	**Scenario Description:** Permanent vegetation, including a mix of native grasses, legumes, and forbs (mix may also include non-native species), established on land needing permanent vegetative cover that provides habitat for pollinators such as the Monarch butterfly. Typical practice size is variable depending on site but is most typical in smaller-scale plantings. As such, this scenario uses 1 ac as the typical size. In addition to providing pollinator habitat, this practice scenario may also reduce sheet and rill erosion, improve soil quality, improve water quality, and improve air quality. The practice may also provide wildlife habitat. Practice applicable on cropland, odd areas, corners, etc. Applies to conventional or organic systems. **After Practice Description:** The 327 Implementation Requirements have been developed for the site and applied. Managed land covered with permanent pollinator habitat established to specifically promote Monarch butterfly habitat. Vegetation includes a mix of milkweed species, native grasses, legumes, and forbs (mix may also include non-native species). This practice may also reduce soil erosion, reduce water/sediment runoff, and improve air quality due to the elimination of dust emissions. Plants sown for pollinator habitat may also provide cover for beneficial insects and wildlife. This scenario does not apply to critical area plantings.	Area planted	Acre	$1,395.41	$1,609.45	$1,395.41	$1,609.45

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CONSERVATION CROP ROTATION

Practice Code 328

Practice Units: ACRE

Definition: A planned sequence of crops grown on the same ground over a period of time (i.e. the rotation cycle).

Purpose: This practice is applied to support one or more of the following purposes:

- Reduce sheet, rill and wind erosion.
- Maintain or increase soil health and organic matter content.
- Reduce water quality degradation due to excess nutrients.
- Improve soil moisture efficiency.
- Reduce plant pest pressures.
- Provide feed and forage for domestic livestock.
- Provide food and cover habitat for wildlife, including pollinator forage, and nesting.

Conditions Where Practice Applies: This practice applies to all cropland where at least one annually-planted crop is included in the crop rotation.

Organic Crop Production incentive is meant to offset some of the costs incurred by conversion to organic farming.

Limitations: The Conservation Crop Rotation practice may be paid annually for up to 3 consecutive years.

Maintenance: Practice will be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
328-1	Basic Rotation Organic and Non-Organic	**Scenario Description:** In this region this practice may be part of a conservation management system on both organic and non-organic operations to: 1) Reduce sheet, rill and wind erosion, 2) Maintain or increase soil health and organic matter content, 3) Reduce water quality degradation due to excess nutrients, 4) Improve soil moisture efficiency, 5) Reduce the concentration of salts and other chemicals from saline seeps, 6) Reduce plant pest pressures, 7) Provide feed and forage for domestic livestock, and 8) Provide food and cover habitat for wildlife, including pollinator forage, and nesting. This practice payment is provided to the producer for the time needed to plan and implement the logistics of changing the rotation to effectively implement a conservation crop rotation on a typical 200-acre cropland farm. No foregone income. Cost represents typical situations for conventional and organic producers. **After Practice Description:** A rotation is established that provides additional high residue and/or perennial crops that may treat one or more of the following purposes: reduce sheet, rill and wind erosion, maintain or increase soil health and organic matter content, reduce water quality degradation due to excess nutrients, improve soil moisture efficiency, reduce the concentration of salts and other chemicals from saline seeps, reduce plant pest pressures, provide feed and forage for domestic livestock, or provide food and cover habitat for wildlife, including pollinator forage, and nesting.	Area planted	Acre	$9.37	$11.24	$9.37	$11.24

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
328-5	Specialty Crops Organic and Non-Organic	**Scenario Description:** In this region a rotation of organic or non-organic specialty crops (fruits and vegetable) are produced as part of a conservation management system to treat one or more of the following resource concerns: 1) Reduce sheet, rill and wind erosion, 2) Maintain or increase soil health and organic matter content, 3) Reduce water quality degradation due to excess nutrients, 4) Improve soil moisture efficiency, 5) Reduce the concentration of salts and other chemicals from saline seeps, 6) Reduce plant pest pressures, 7) Provide feed and forage for domestic livestock, and 8) Provide food and cover habitat for wildlife, including pollinator forage, and nesting. This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 50-acre specialty crop farm. No foregone income. Cost represents typical situations for organic and non-organic producers. **After Practice Description:** The rotation established adds higher residue crop(s) to the rotation that will treat one or more of the following resource concerns on organic and non- organic farms: 1) Reduce sheet, rill and wind erosion, 2) Maintain or increase soil health and organic matter content, 3) Reduce water quality degradation due to excess nutrients, 4) Improve soil moisture efficiency, 5) Reduce the concentration of salts and other chemicals from saline seeps, 6) Reduce plant pest pressures, 7) Provide feed and forage for domestic livestock, and 8) Provide food and cover habitat for wildlife, including pollinator forage, and nesting.	Area planted	Acre	$24.98	$29.97	$24.98	$29.97

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CONSERVATION PLAN SUPPORTING ORGANIC TRANSITION - WRITTEN

Practice Code 138

Practice Units: NUMBER

Definition: A “Conservation Plan Supporting Organic Transition” is a conservation activity plan documenting decision by producers/growers who agree to implement a system of conservation practices which assist the producer to transition from conventional farming or ranching systems to an organic production system.

Purpose: The Conservation Plan Supporting Organic Transition” will:

- At a minimum address and achieve the planning criteria for the NRCS resource concerns for soil erosion, water quality, and plant condition. Other resource concerns can also be addressed based on the land user objectives.
- Develop the linkage between the resource concerns addressed to the National Organic Program requirements for organic farming. This will assist the grower to develop their Organic System Plan (OSP) as defined in the USDA National Organic Program (NOP) Standards (www.ams.usda.gov/nop).
- Comply with federal, state, tribal, and local laws, regulations and permit requirements.
- Document the producer’s objectives and decisions for practice implementation during the transition period.

Note: The plan can help support a producer’s efforts to become a certified operation. However, this plan is not a replacement for an Organic System Plan (OSP) as required by the National Organic Program.

Conditions Where Practice Applies: On lands in Iowa that will benefit from the development and implementation of a Conservation Plan Supporting Organic Transition.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
138-10	Conservation Plan Supporting Organic Transition CAP Crops and Livestock	**Scenario Description:** Agricultural operation where producer will transition from conventional to organic to meet USDA National Organic Program (NOP) requirements. Natural Resource Concern: Soil Erosion, Water Quality, Plant Condition, and other identified natural resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP to develop the 'Conservation Plan Supporting Organic Transition' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to implement a system of conservation practices which assist the producer to transition from conventional farming or ranching to an organic production system with crops and livestock. The CAP plan will include conservation practices which address related resource concerns. CAP meets the basic quality criteria for the 138 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$4,266.00	$5,119.20	N/A	N/A
138-11	Conservation Plan Supporting Organic Transition CAP Crops or Livestock	**Scenario Description:** Agricultural operation where producer will transition from conventional to organic to meet USDA National Organic Program (NOP) requirements. Natural Resource Concern: Soil Erosion, Water Quality, Plant Condition, and other identified natural resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP to develop the 'Conservation Plan Supporting Organic Transition' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to implement a system of conservation practices which assist the producer to transition from conventional farming or ranching to an organic production system with crops only. The CAP plan will include conservation practices which address related resource concerns. CAP meets the basic quality criteria for the 138 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$3,640.32	$4,368.38	N/A	N/A

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CONSTRUCTED WETLAND

Practice Code 656

Practice Units: ACRE

Definition: An artificial ecosystem with hydrophytic vegetation for water treatment.

Purpose: For treatment of wastewater and contaminated runoff from agricultural processing, livestock, and aquaculture facilities, or for improving the quality of storm water runoff or other water flows lacking specific water quality discharge criteria.

Conditions Where Practice Applies: Constructed wetlands for the purpose of wastewater treatment apply where a constructed wetland is a component of an agricultural wastewater management system. Constructed wetlands for the purpose of water quality improvement apply where wetland effluent is not required to meet specific water quality discharge criteria.

This standard should not be used in lieu of NRCS Conservation Practice Standards, Wetland Restoration (657), Wetland Creation 658, or Wetland Enhancement (659), when the main purpose is to restore, create, or enhance, wetland functions other than wastewater treatment or water quality improvement.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
656-1	Constructed Wetland, Dense Planting	**Scenario Description:** This practice scenario includes the basic earthwork and native and/or organic wetland vegetation needed to create a constructed wetland to treat contaminated agricultural runoff or effluent from a drainage system high in nutrients. All other components, such as water control structures, dikes or upstream sediment basins, must be paid for under facilitating practices. Soil, water and tissue sampling are required. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrients and pathogens. **After Practice Description:** A 1 acre constructed wetland (measured by the size of the treatment pool suitable for wetland vegetation) will be constructed with an average 18" depth. Only the earthwork and wetland vegetation are considered in this scenario. Vegetation is planted at a spacing of 3 by 3 feet. Any structures or sediment basins will be designed under a separate practice. The constructed wetland is sited near the property boundary, but still takes cropland out of production (1/2 wetland acreage). The constructed wetland treats the effluent by creating conditions at the plant/soil/water interface for biochemical nutrient removal before the effluent is transported to a waste storage facility or discharged off site if permitted by regulation. **Associated Practices:** Structure for Water Control (587); Sediment Basin (350); Dike (356); Pond Sealing or Lining, Compacted Soil Treatment (520); Pond Sealing or Lining, Flexible Membrane (521A); Fence (382); Grade Stabilization Structure (410); Pumping Plant (533); Waste Transfer (634); Critical Area Planting (342); Filter Strip (393).	Area of Constructed Wetland	Acre	$8,568.58	$10,249.77	$8,568.58	$10,249.77

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
656-2	Constructed Wetland, Light Planting	**Scenario Description:** This practice scenario includes the basic earthwork and native and/or organic wetland vegetation needed to create a constructed wetland to treat contaminated agricultural runoff or effluent from a drainage system high in nutrients. All other components, such as water control structures, dikes or upstream sediment basins, must be paid for under facilitating practices. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrients and pathogens. **After Practice Description:** A 1 acre constructed wetland (measured by the size of the treatment pool suitable for wetland vegetation) will be constructed with an average 18" depth. Only the earthwork and wetland vegetation are considered in this scenario. Vegetation is planted at a wide spacing of 4 by 4 feet. Any structures or sediment basins will be designed under a separate practice. The constructed wetland is sited near the property boundary, but still takes cropland out of production (1/2 wetland acreage). The constructed wetland treats the effluent by creating conditions at the plant/soil/water interface for biochemical nutrient removal before the effluent is transported to a waste storage facility or discharged off site if permitted by regulation. **Associated Practices:** Structure for Water Control (587); Sediment Basin (350); Dike (356); Pond Sealing or Lining, Compacted Soil Treatment (520); Pond Sealing or Lining, Flexible Membrane (521A); Fence (382); Grade Stabilization Structure (410); Pumping Plant (533); Waste Transfer (634); Critical Area Planting (342); Filter Strip (393).	Area of Constructed Wetland	Acre	$6,647.68	$7,944.69	$6,647.68	$7,944.69

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
656-12	Constructed Wetland, Earthwork only	**Scenario Description:** This practice scenario includes the basic earthwork needed to create a constructed wetland to treat storm water runoff or outflow from a subsurface drainage system high in nutrients. Hydrophytic vegetation will be established through natural regeneration. All other components, such as water control structures, dikes, vegetation or upstream sediment basins, must be paid for under facilitating practices. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrients and pathogens. **After Practice Description:** A 1 acre constructed wetland (measured by the size of the treatment pool suitable for wetland vegetation) will be constructed with an average 18" depth. Only the earthwork is considered in this scenario. Hydrophytic vegetation will be established through natural regeneration. Any structures, vegetation or sediment basins will be designed under a separate practice. The constructed wetland is sited near the property boundary, but still takes cropland out of production (1/2 wetland acreage). The constructed wetland treats the inflow by creating conditions at the plant/soil/water interface for biochemical nutrient removal before it is discharged off site. **Associated practices:** Structure for Water Control (587); Sediment Basin (350); Dike (356); Pond Sealing or Lining, Compacted Soil Treatment (520); Pond Sealing or Lining, Geomembrane or Geosynthetic Clay Liner (521); Fence (382); Grade Stabilization Structure (410); Pumping Plant (533); Waste Transfer (634); Critical Area Planting (342); Filter Strip (393).	Area of Constructed Wetland	Acres	$3,987.32	$4,752.26	$3,987.32	$4,752.26

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CONTOUR BUFFER STRIPS

Practice Code 332

Practice Units: ACRE

Definition: Narrow strips of permanent, herbaceous vegetative cover established around the hill slope, and alternated down the slope with wider cropped strips that are farmed on the contour.

Purpose: This practice is applied to support one or more of the following purposes:

- Reduce sheet and rill erosion.
- Reduce water quality degradation from the transport of sediment and other water-borne contaminants downslope.
- Improve soil moisture management through increased water infiltration.
- Reduce water quality degradation from the transport of nutrients downslope.

Conditions Where Practice Applies: This practice applies on all sloping cropland, including orchards, vineyards and nut crops. Where the width of the buffer strips will be equal to or exceed the width of the adjoining crop strips, the practice Stripcropping (code 585) applies.

The narrow strips of permanent vegetative cover are not a part of the normal crop rotation.

This standard does not apply to situations where the width of the buffer strips will be equal to or exceed the width of the adjoining crop strips.

Limitations: The practice is more difficult to establish on undulating to rolling topography because of the difficulty of maintaining parallel strip boundaries across the hill slope or staying within row grade limits. Contour Buffer Strips are a permanent vegetative cover not part of the normal crop rotation.

Maintenance: Practice must be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
332-12	Native Species, Foregone Income (Organic and Non-organic)	**Scenario Description:** Narrow strips of permanent, herbaceous vegetative cover established around the hill slope and alternated down the slope with wider cropped strips in between that are organically or non-organically farmed on the contour. This practice applies to all cropland. Practice includes seedbed prep and planting of native species. The area of the contour grass strip is taken out of production. **After Practice Description:** Native grasses, legumes and forbs will be established in strips in the field to meet the Contour Buffer Strips (332) criteria, resource needs, and producer objectives. Minimum widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Native species shall be selected that do not function as a host for diseases of a field crop and have physical characteristics necessary to control water erosion to tolerable levels in the cropped area of the field.	Number of acres	Acre	$331.49	$344.75	$331.49	$344.75
332-13	Introduced Species, Foregone Income (Organic and Non-Organic)	**Scenario Description:** Narrow strips of permanent, herbaceous vegetative cover established around the hill slope and alternated down the slope with wider cropped strips in between that are farmed on the contour. This practice applies to all cropland. Practice includes seedbed prep and planting of introduced species. The area of the contour grass strip is taken out of production. This applies to both organic and non-organic. **After Practice Description:** Introduced grasses and legumes will be established in strips in the field to meet the Contour Buffer Strips (332) criteria, resource needs, and producer objectives. Minimum widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Introduced species shall be selected that do not function as a host for diseases of a field crop and have physical characteristics necessary to control water erosion to tolerable levels in the cropped area of the field.	Number of acres	Acre	$392.97	$406.52	$392.97	$406.52

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
332-14	Wildlife/Pollinator Foregone Income (Organic and Non-Organic)	**Scenario Description:** Narrow strips of permanent, herbaceous vegetative cover established around the hill slope and alternated down the slope with wider cropped strips in between that are farmed on the contour. This practice applies to all cropland. Practice includes seedbed prep and planting of mainly pollinator friendly species. The area of the field border is taken out of production. This applies to organic and non-organic. **After Practice Description:** Plant species will be established in strips in the field to meet the Contour Buffer Strips (332) criteria, resource needs, producer objectives, and the targeted wildlife/pollinators necessary food and/or cover. Minimum widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Species selected shall meet the wildlife/pollinator habitat requirements of the state and be adapted to site; not function as a host for diseases of a field crop and; have physical characteristics necessary to control sheet and rill erosion to tolerable levels on the cropped area of the field.	Number of acres	Acre	$1,003.99	$1,139.74	$1,003.99	$1,139.74

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CONTOUR FARMING

Practice Code 330

Practice Units: ACRE

Definition: Aligning ridges, furrows, and roughness formed by tillage, planting and other operations to alter velocity and/or direction of water flow to around the hillslope.

Purpose: This practice is applied to achieve one or more of the following:

- Reduce sheet and rill erosion - Resource Concern (SOIL EROSION – Sheet, rill, & wind erosion).
- Reduce transport of sediment, other solids and the contaminants attached to them - Resource Concern (SOIL EROSION – Sheet, rill, & wind erosion).
- Reduce transport of contaminants found in solution runoff - Resource Concern (WATER QUALITY DEGRADATION – Excess nutrients in surface and ground waters; Pesticides transported to surface and ground waters; Excess pathogens and chemicals from manure, bio-solids or compost applications).
- Increase water infiltration – Resource Concern (INSUFFICIENT WATER - Inefficient Moisture Management).

Conditions Where Practice Applies: This practice applies on sloping land where crops are grown. For orchards, vineyards and nut crops use Conservation Practice Standard Contour Orchard and Other Fruit Areas (code 331).

This practice is most suitable on uniform slopes with slope lengths equal to or less than the Critical Slope Length, determined using the RUSLE2 or current erosion prediction model “P” factor procedure.

The effect on erosion reduction for this practice is reduced on fields where slope length exceeds the Critical Slope Length for contouring, unless the slope length is shortened by the installation of other practices such as terraces.

Limitations: This practice is unsuitable for use on irregular sloping topography because of the difficulty of staying within-row grade limits and the number of point rows.

Maintenance: Contour Farming will be maintained for a lifespan of 5 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
330-3	Contour Farming	**Scenario Description:** This scenario meets the specifications of the NRCS Contour Farming Standard. This scenario applies to fields greater than 5 acres. Payment reflects the extra labor and initial supervision costs in laying out and implementing contour farming. Annual erosion rates for the rotation exceeds tolerance levels. Excessive runoff leads to sedimentation of waterways **After Practice Description:** Implementation Requirements are prepared according to 330 Contour Farming and implemented. This practice is installed on the entire field. A survey is completed by trained and certified Federal, State, local personnel or consultant to determine and 'stake' contour row arrangement. Permanent row markers are established to ensure that this practice is maintained for the life of this practice. All field operations including: disking, bedding, planting, and cultivation are performed on the contour which is near perpendicular to the field slope. The farm manager is initially on site to ensure that equipment operator is properly following contour methods. Soil erosion rates are reduced by nearly half and may be below tolerance depending on the rotation. Likewise, sedimentation has be significantly reduced.	Acre	Acre	$4.43	$6.64	$6.64	$7.97

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COVER CROP

Practice 340

Practice Units: ACRE

Definition: Grasses, legumes, and forbs planted for seasonal vegetative cover

Purpose: This practice is applied to support one or more of the following purposes:

- Reduce erosion from wind and water.
- Maintain or increase soil health and organic matter content.
- Reduce water quality degradation by utilizing excessive soil nutrients.
- Suppress excessive weed pressures and break pest cycles.
- Improve soil moisture use efficiency.
- Minimize soil compaction

Conditions Where Practice Applies: All lands requiring seasonal vegetative cover for natural resource protection or improvement.

Limitations: Conservation Practice 340 Cover Crops is a management practice (One-year lifespan) and may be scheduled for up to 3 consecutive years. The Cover Crop practice is to be used on Cropland following row-crop, or annual small grains production. As a management practice if scheduled for multiple years on the same land unit the practice needs to be scheduled in consecutive years. As an example, the applicant can do three consecutive years on the same land unit. Another example could be Year 1 of the contract in field 1, Year 2 in field 2 and year three in field 3 or in field 2 (consecutive with the previous year). In this example you could not go back to field 1 in year 3 since this was not consecutive.

For Scenario ID 340-6 Cover Crop Adaptive Management, refer to Technical Note 10 for guidance. This hotlink will take you to Agronomy Tech Note 10: Agronomy Technical Note No. 10: Adaptive Management for Conservation Practices

Exception to the limit for 3 years of payments for management practices in a contract. Conservation Practice 340 Cover Crops may be scheduled for up to 5 separate payments during the term of a single contract if the practice is applied as a component of a complete conservation system to address resource concerns related to Soil Health (such as soil erosion and soil quality degradation) and the following items are also met:

- Field is planned to meet the Soil Quality Criteria, specifically the Soil Conditioning Index (SCI) is positive and the field is at or below Tolerable Soil Loss limits (T).
- The planned conservation system includes 329 Residue and Tillage Management, No-Till for all five years of the contract covering the acres impacted by the planned Cover Crop practice.
- Minimum of 2 or more species in the Cover Crop mix in the last two years of the contract with at least one species being a winter hardy species.
- Expectation of at least 6 inches of growth under normal growing conditions at the time of termination.

Maintenance: Cover Crop will be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
340-1	Cover Crop - Basic (Organic and Non-organic)	**Scenario Description:** Typically, a small grain or legume (may also use forage sorghum, radishes, turnips, buckwheat, etc.) will be planted as a cover crop immediately after harvest of a row crop and will be followed by a row crop that will utilize the residue as a mulch. This scenario assumes that seed will be planted with a drill. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using an approved herbicide prior to planting the subsequent crop. **After Practice Description:** Implementation Requirements according to Cover Crop (340) are prepared and implemented. Within 30 days after harvest of the row crop, fields are planted with a small grain or legume cover crop (may also use forage sorghum, radishes, turnips, buckwheat, etc.), typically rye or clover. The average field size is 40 acres. The cover crop is seeded with a drill. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover by late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced. Wind erosion is reduced by standing residues. The cover crop is terminated with an approved herbicide prior to spring planting as late as feasible to maximize plant biomass production. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity introduced to the cropping system. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.	Area planted	Acre	$29.82	$44.73	$44.73	$53.68

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
340-6	Cover Crop - Adaptive Management	**Scenario Description:** The practice scenario is for the implementation of cover crops in small replicated plots to allow the producer to learn how to manage cover crops on their operation. Scenario includes implementing replicated strip trials on a field plot to evaluate, identify and implement a particular cover crop management strategy (e.g., cover crop vs no cover crop, multiple species vs, single species, evaluate different termination methods or timings, using a legume vs no legume for nitrogen credits). This will be done following the guidance in the NRCS Technical Note 10 - Adaptive Management. **After Practice Description:** Implementation Requirements for Cover Crop (340) will be prepared along with the Adaptive Management plan for the replicated cover crop plots and implemented. Installation of this scenario will result in establishment of a cover crop replicated plots to compare to different management strategies for cover crop management following the guidance in the Agronomy Technical Note 10 - Adaptive Management. Implementation involves establishing the replicated plots to evaluate one or more cover crop management strategies. The plot will consist of at least 4 replicated plots designed, laid out, managed and evaluated with the assistance of a consultant knowledgeable in cover crop management. Results are used to make cover crop management decisions to address erosion and water quality issues. Yields will be measured and statistically summarized following the procedures in Agronomy Technical Note 10 - Adaptive Management. The yields for each plot will be adjusted to the appropriate moisture content. This would be repeated for 3 years.	Based on 10 acres	Each	$1,120.40	$1,680.60	$1,680.60	$2,016.72

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
340-11	Cover Crop - Multiple Species (Organic and Non-organic)	**Scenario Description:** Typically, the multi-species cover crop (two or more species) mix includes a small grain, a legume, and may include other species such as forage sorghum, radishes, turnips, buckwheat, etc.). This mix will address all the purposes of the Cover Crop (340) standard. Typically, the cover crop is seeded immediately after harvest of a row crop but may be inter-seeded into a row crop using a broadcast seeder, drill, or similar device. The cover crop will be followed by another row crop and will utilize the residue as a mulch. The cover crop should be allowed to generate as much biomass as possible without delaying planting of the following crop. The cover crop will be terminated using an approved herbicide or tillage prior to planting the subsequent crop and terminated per the NRCS Cover Crop Termination Guidelines. **After Practice Description:** Implementation Requirements according to Cover Crop (340) are prepared and implemented. Within 30 days after the harvest of row crop, fields are planted with a multi-species (2 or more species) cover crop mix that generally includes a small grain, a legume, and may include other species such as forage sorghum, radishes, turnips, buckwheat, etc. The average field size is 40 acres. The cover crop is seeded with a drill, broadcast seeder, aerial broadcast, or other method. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover by late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced. Wind erosion is reduced by standing residues. The cover crop is terminated with an approved herbicide prior to spring planting as late as feasible to maximize plant biomass production. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity introduced to the cropping system. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.	Area planted	Acre	$35.65	$53.47	$53.47	$64.17

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
340-20	Winter Kill Cover Crop Species	**Scenario Description:** Typically, a single species grass/legume/brassica or multiple species mix of grass/legume/brassica cover will be planted as a cover crop using appropriate methods into standing crop or immediately after harvest of a row crop and will be followed by a row crop that will utilize fixed nitrogen, and cover crop biomass as a mulch. This scenario reflects costs associated with aerial seeding, but any appropriate seeding method may be used. The cover crop should be allowed to generate as much biomass as possible before the crop is winter killed. This scenario assumes the cover crop species will 'winter kill', therefore no additional termination measures are included. However, appropriate termination methods should be used as needed based on the specific situation, prior to planting the subsequent crop. **After Practice Description:** Implementation requirements according to Cover Crop (340) are prepared and implemented. Within 30 days after harvest of row crop, fields are planted with a single species or mix species cover crop, as outlined in the plan details. The average corn belt field size is 100 acres. The cover crop is seeded with a no-till drill, broadcast seeder, aerial seeding, or other method. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover by late fall, into or throughout the winter, and potentially into the early spring. Runoff and erosion are reduced, and no rills are visible on the soil surface in the spring. The cover crop is established using winter kill species which should not require termination in the spring. Over time, soil health is improved due to the additional biomass, ground cover, and plant diversity introduced to the cropping system. Wind erosion is reduced by standing residues. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.	Area Planted	Acre	$17.60	$26.40	$26.40	$31.68

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
340-47	Cover Crop - 1 acre or less	**Scenario Description:** Typically, a small grain or legume will be planted as a cover crop immediately after harvest of a crop and will be followed by a crop. This scenario assumes that seed will be planted by hand. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will typically be terminated by mowing or tilling prior to planting the subsequent crop. **After Practice Description:** Implementation Requirements according to Cover Crop (340) are prepared and implemented. Within 10 days after harvest of the crop, fields are planted with a small grain or legume cover crop, typically rye or clover. The average field size is 0.25 acres. The cover crop is seeded by hand. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover by late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced. Wind erosion is reduced by standing residues. The cover crop is terminated with an approved herbicide prior to spring planting as late as feasible to maximize plant biomass production. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity introduced to the cropping system. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect.	Area Planted	Acre	$133.34	$200.01	$200.01	$240.02

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CRITICAL AREA PLANTING

Practice Code 342

Practice Units: ACRE

Definition: Establishing permanent vegetation on sites that have, or are expected to have, high erosion rates, and on sites that have physical, chemical, or biological conditions that prevent the establishment of vegetation with normal seeding/planting methods.

Purpose:

- Stabilize areas with existing or expected high rates of soil erosion by wind or water.
- Stabilize stream and channel banks, pond and other shorelines, earthen features of structural conservation practices.
- Stabilize areas such as sand dunes and riparian areas.

Conditions Where Practice Applies: This practice applies to highly disturbed areas such as—

- Active or abandoned mined lands.
- Urban restoration sites.
- Construction areas.
- Conservation practice construction sites.
- Areas needing stabilization before or after natural disasters such as floods, hurricanes, tornados, and wildfires.
- Eroded banks of natural channels, banks of newly constructed channels, and lake shorelines.
- Other areas degraded by human activities or natural events.

Examples of applicable areas are dams, terraces, dikes, mine spoil, levees, cuts, fills, surface-mined areas and denuded or gullied areas where vegetation is difficult to establish by usual planting methods.

Limitations: Critical Area Planting is not to be scheduled with Grassed Waterways as the seeding is accounted for in the Grassed Waterway Scenarios.

Maintenance: Practice will be maintained for a lifespan of 10 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
342-1	Native or Introduced Vegetation - Normal Tillage (Organic and Non-Organic)	**Scenario Description:** Establishment of permanent vegetation (Native and Introduced) on a site (both organic and non-organic) that is void or nearly void of vegetation due to a natural occurrence or a newly constructed conservation practice. Costs include seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application. **After Practice Description:** Implementation Requirements are prepared and implemented according to the Critical Area Planting (342) standard. This typical 1.0-acre critical area is stabilized by applying fertilizer, lime and seed. Soil amendments will be incorporated at a depth of four to six inches to improve fertility and ensure establishment of permanent vegetative cover. The site will be stabilized, erosion reduced, and offsite damages reduced/eliminated.	Area seeded	Acre	$87.08	$130.62	$130.62	$156.74
342-4	Native or Introduced Vegetation - Moderate Grading (Organic and Non-Organic)	**Scenario Description:** Establishment of permanent vegetation (native and introduced) on a site that is void or nearly void of vegetation due to a natural or human disturbance. Costs include a dozer for grading and shaping of small gullies, seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application. **After Practice Description:** Implementation Requirements are prepared and implemented according to the Critical Area Planting (342) standard. This typical 1.0-acre critical area is stabilized by grading and shaping the small gullies with a dozer and then applying fertilizer, lime and seed. The site will be stabilized, erosion reduced, and offsite damages reduced/eliminated.	Area seeded	Acre	$278.69	$418.03	$418.03	$501.64

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
342-22	Small Area Disturbance	**Scenario Description:** Establishment of permanent vegetation on a small site that is void or nearly void of vegetation due to a natural occurrence or a newly constructed conservation practice. Costs include seedbed preparation with typical tillage implements, grass seed, fertilizer and lime with application. **After Practice Description:** This typical 1000 sq. ft. critical area is stabilized by applying fertilizer, lime and seed. Soil amendments will be incorporated at a depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 90 lbs. of nitrogen, 90 lbs. of phosphorus, and 90 lbs. of potassium, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, broadcast the following mixture for a vegetative cover: Tall Fescue (40 lbs./ac), Perennial Ryegrass (25 lbs./ac), and Kentucky Blue (20 lbs./ac).	Area of Planting	1,000 Square Foot	$2.48	$3.72	$3.72	$4.46
342-51	Gully Repair and Seeding with Native or Introduced Vegetation	**Scenario Description:** Repair and seeding of an area with gully erosion where repair requires a dozer for earthmoving to fill in and reshape the area followed by seeding. Scenario is generally for locations in pasture/hayland or farmsteads with watershed areas 5 acres or less; however, scenario may also be applicable to other locations. This scenario is not to be used in a location with a well-defined channel. Costs include a dozer for grading and shaping, seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime. **After Practice Description:** Implementation requirements are prepared and implemented according to the Critical Area Planting (342) standard. The area is stabilized by grading and shaping the area with gully erosion with a dozer and then applying fertilizer, lime and seed. Livestock will be excluded or have limited access to the area until vegetation is established. The site will be stabilized, erosion reduced, and offsite damages reduced/eliminated.	Area repaired and seeded	Acres	$1,420.90	$2,131.35	$2,131.35	$2,557.62

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DENITRIFYING BIOREACTOR

Practice Code 605

Practice Units: NUMBER

Definition: A structure that uses a carbon source to reduce the concentration of nitrate nitrogen in subsurface agricultural drainage flow via enhanced denitrification.

Purpose: This practice is applied to achieve the following purpose:

- Improve water quality by reducing the nitrate nitrogen content of subsurface agricultural drainage flow.

Conditions Where Practice Applies: This practice applies to sites where there is a need to reduce nitrate nitrogen concentration in subsurface drainage flow. This practice does not apply to underground outlets with surface intakes.

Limitations: Water Control Structure (587) will not be included as an associated practice. This practice is included in the component costs for the Denitrifying Bioreactor.

Maintenance: Practice must be maintained for a lifespan 10 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
605-5	Denitrifying Bioreactor with liner, no soil cover	**Scenario Description:** Scenario describes a structure containing a carbon source installed to intercept subsurface drain (tile) flow or ground water and reduce the concentration of nitrate-nitrogen in subsurface agricultural drainage flow via enhanced nitrification. Woodchips serve as the carbon source necessary to the denitrification process. This bioreactor has a geotextile fabric (or polyethylene - PE) LINER between the wood chips and the surrounding soil plus the following components: woodchip filled pit, two water control structures (to allow management of the flow rate and free water elevation within the bioreactor) and piping to convey water to and from the bioreactor. Woodchips serve as the carbon source necessary to the denitrification process. Resource concern: Water Quality Degradation - Excess nutrients in surface and ground waters. Management and maintenance of the bioreactor (including chip replenishment), as well as monitoring and reporting to demonstrate the performance of the practice are not included in this scenario. **After Practice Description:** Bioreactor has geotextile fabric (or polyethylene - PE) LINER between the wood chips and the surrounding soil plus the following components: woodchip filled pit, two water control structures (to allow management of the flow rate and free water elevation within the bioreactor) and piping to convey water to and from the bioreactor. The approximate bioreactor excavated pit volume is 333 cubic yards (e.g. 6 feet deep, 15 feet wide and 100 feet long). Woodchips occupy 6 feet of the pit plus 10% crowned (366 cu. yd.) and will be mounded above ground level to shed precipitation. A geotextile fabric (or PE material) LINER surrounds the chips to prevent migration of soil into the pit. Water control structures should be installed using practice standard (587) Structure for Water Control. Two inline water control structures are in place. Upper WCS connected to the upper 6" diameter single-wall CPT manifold pipe (15' each, note that 6' HDPE dual wall is the only type available and used in the scenario components) by 6" diameter dual wall pipe (20' each). 20' of 6" dual wall pipe connects the downstream manifold to the lower WCS which is connected back to the main with additional 20' of 6" dual wall pipe. Flow rates are dependent upon the availability of drainage water from the 10' drainage mainline. 40' of mainline is replaced with non-perforated 10' above and below the upper WCS. The soil excavated from the pit is spoiled onto the nearby field. **Associated Practices:** Subsurface Drain (606), Drainage Water Management (554).	Volume of Carbon Source	Cubic Yard	$51.04	$61.25	$51.04	$61.25

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
605-6	Denitrifying Bioreactor, without Liner, Soil Cover	**Scenario Description:** Scenario describes a structure containing a carbon source installed to intercept subsurface drain (tile) flow or ground water and reduce the concentration of nitrate-nitrogen in subsurface agricultural drainage flow via enhanced denitrification. Woodchips serve as the carbon source necessary to the denitrification process. This bioreactor has the following components: woodchip filled pit, a soil cover, two water control structures (to allow management of the flow rate and free water elevation within the bioreactor) and piping to convey water to and from the bioreactor. Woodchips serve as the carbon source necessary to the denitrification process. Resource concern: Water Quality Degradation - Excess nutrients in surface and ground waters. Management and maintenance of the bioreactor (including chip replenishment), as well as monitoring and reporting to demonstrate the performance of the practice are not included in this scenario. **After Practice Description:** Bioreactor has the following components: woodchip filled pit, a soil cover, two water control structures (to allow management of the flow rate and free water elevation within the bioreactor) and piping to convey water to and from the bioreactor. The approximate bioreactor excavated pit volume is 333 cubic yards (e.g. 6 feet deep, 15 feet wide and 100 feet long). Woodchips occupy the lower 4 feet of the pit (222 cu. yd.) and a soil blanket over the woodchips is 2.0 ft. and will be mounded above ground level to shed precipitation. Water control structures should be installed using practice standard (587) Structure for Water Control. Two inline water control structures are in place. Upper WCS connected to the upper 6" diameter single-wall CPT manifold pipe (15' each, note that 6' HDPE dual wall is the only type available and used in the scenario components) by 6" diameter dual wall pipe (20' each). 20' of 6" dual wall pipe connects the downstream manifold to the lower WCS which is connected back to the main with additional 20' of 6" dual wall pipe. Flow rates are dependent upon the availability of drainage water from the 10' drainage mainline. 40' of mainline is replaced with non-perforated 10' above and below the upper WCS. The soil excavated from the pit is spoiled onto the nearby field. **Associated Practices:** Subsurface Drain (606, Drainage Water Management (554).	Volume of Carbon Source	Cubic Yard	$55.75	$66.90	$55.75	$66.90

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
605-16	Denitrifying Bioreactor, with liner and soil cover	**Scenario Description:** Scenario describes a structure containing a carbon source installed to intercept subsurface drain (tile) flow or ground water and reduce the concentration of nitrate-nitrogen in subsurface agricultural drainage flow via enhanced nitrification. Woodchips serve as the carbon source necessary to the denitrification process. This bioreactor has a geotextile fabric (or polyethylene - PE) LINER between the wood chips and the surrounding soil plus the following components: woodchip filled pit, a soil cover, two water control structures (to allow management of the flow rate and free water elevation within the bioreactor) and piping to convey water to and from the bioreactor. Woodchips serve as the carbon source necessary to the denitrification process. Resource concern: Water Quality Degradation - Excess nutrients in surface and ground waters. Management and maintenance of the bioreactor (including chip replenishment), as well as monitoring and reporting to demonstrate the performance of the practice are not included in this scenario. **After Practice Description:** Bioreactor has geotextile fabric (or polyethylene - PE) LINER between the wood chips and the surrounding soil plus the following components: woodchips occupying the lower 4 feet of the pit (222 cy) and a 2 foot soil blanket over the wood chips that will be mounded above ground level to shed precipitation, two water control structures (to allow management of the flow rate and free water elevation within the bioreactor), and piping to convey water to and from the bioreactor. The approximate bioreactor excavated pit volume is 333 cubic yards (e.g. 6 feet deep, 15 feet wide and 100 feet long). Woodchips occupy 4 feet of the pit and a soil cover occupies the remaining 2 feet, plus 10% crowned and will be mounded above ground level to shed precipitation. A geotextile fabric (or PE material) LINER surrounds the chips to prevent migration of soil into the pit. Water control structures should be installed using practice standard (587) Structure for Water Control. Two inline water control structures are in place. Upper WCS connected to the upper 6" diameter single-wall CPT manifold pipe (15' each, note that 6' HDPE dual wall is the only type available and used in the scenario components) by 6" diameter dual wall pipe (20' each). 20' of 6" dual wall pipe connects the downstream manifold to the lower WCS which is connected back to the main with additional 20' of 6" dual wall pipe. Flow rates are dependent upon the availability of drainage water from the 10' drainage mainline. 40' of mainline is replaced with non-perforated 10' above and below the upper WCS. The soil excavated from the pit is spoiled onto the nearby field. **Associated Practices:** Subsurface Drain (606), Drainage Water Management (554).	Volume of Carbon Source	Cubic Yard	$59.34	$71.21	$59.34	$71.21

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
605-17	Denitrifying Bioreactor, without liner, no soil cover	**Scenario Description:** Scenario describes a structure containing a carbon source installed to intercept subsurface drain (tile) flow or ground water and reduce the concentration of nitrate-nitrogen in subsurface agricultural drainage flow via enhanced nitrification. Woodchips serve as the carbon source necessary to the denitrification process. This bioreactor includes the following components: woodchip filled pit, two water control structures (to allow management of the flow rate and free water elevation within the bioreactor) and piping to convey water to and from the bioreactor. Woodchips serve as the carbon source necessary to the denitrification process. Resource concern: Water Quality Degradation - Excess nutrients in surface and ground waters. Management and maintenance of the bioreactor (including chip replenishment), as well as monitoring and reporting to demonstrate the performance of the practice are not included in this scenario. **After Practice Description:** Bioreactor the following components: woodchip filled pit, two water control structures (to allow management of the flow rate and free water elevation within the bioreactor) and piping to convey water to and from the bioreactor. The approximate bioreactor excavated pit volume is 333 cubic yards (e.g. 6 feet deep, 15 feet wide and 100 feet long). Woodchips occupy 6 feet of the pit plus 10% crowned (366 cu. yd.) and will be mounded above ground level to shed precipitation. Water control structures should be installed using practice standard (587) Structure for Water Control. Two inline water control structures are in place. Upper WCS connected to the upper 6" diameter single-wall CPT manifold pipe (15' each, note that 6' HDPE dual wall is the only type available and used in the scenario components) by 6" diameter dual wall pipe (20' each). 20' of 6" dual wall pipe connects the downstream manifold to the lower WCS which is connected back to the main with additional 20' of 6" dual wall pipe. Flow rates are dependent upon the availability of drainage water from the 10' drainage mainline. 40' of mainline is replaced with non-perforated 10' above and below the upper WCS. The soil excavated from the pit is spoiled onto the nearby field. **Associated Practices:** Subsurface Drain (606), Drainage Water Management (554).	Volume of Carbon Source	Cubic Yard	$48.86	$58.63	$48.86	$58.63

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
605-21	Denitrifying Bioreactor Recharge	**Scenario Description:** Recharge of an existing denitrifying bioreactor that was designed and installed to meet NRCS standards. Recharge is needed when the bioreactor has operated for its 10-year design life. The water control structure will be re-used. The wood chips will be replaced along with the distribution and collection pipe plumbing and the liner in the bioreactor chamber. Resource concern: Water Quality Degradation - Excess nutrients in surface and ground waters. Management and maintenance of the bioreactor, as well as monitoring and reporting to demonstrate the performance of the practice are not included in this scenario. **After Practice Description:** After recharge, the bioreactor is again functioning to remove nitrates from drainage water as designed. Bioreactor has new 6" corrugated plastic tubing in the bioreactor chamber, and new wood chip media. Wood chips occupy the lower 4 feet of the pit (222 cy), with a new geotextile fabric liner above the wood chips (15 feet wide by 100 feet long), and 2 feet of soil cover on top plus 10% mounded above ground level to shed precipitation. If the newly constructed soil cover will not be cropped, revegetate using Critical Area Planting (342). **Associated practices:** Subsurface Drain (606), Structure for Water Control (587), Drainage Water Management (554), Critical Area Planting (342).	Volume of Carbon Source	Cubic Yards	$45.11	$54.13	$45.11	$54.13

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DIKE

Practice Code 356

Practice Units: FEET

Definition: A barrier constructed of earth or manufactured materials.

Purpose: To protect people and property from floods and to control water level in connection with crop production; fish and wildlife management; or wetland maintenance, improvement, restoration, or construction.

Conditions Where Practice Applies: Sites where the control of water level is desired; all sites that are subject to damage by flooding or inundation and where it is desirable to reduce the hazard to people and to reduce damage to land and property.

Dikes used to reduce flooding are normally constructed adjacent and/or parallel to a stream, river, wetland or water body and are not constructed across the stream, river or water body. Dikes used to control water levels usually have small interior drainage areas in comparison to the surface area of the regulated water.

Limitations: The dike standard does not apply to sites where NRCS conservation practice standards Pond (378), Water and Sediment Control Basin (638), Diversion (362), or Terrace (600) are appropriate.

Maintenance: Practice will be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
356-1	Dike	**Scenario Description:** Construction a barrier of either earth or manufactured materials for the purpose of the protection of people or property from floods or to control water levels in connection with crop production; fish and wildlife management; or wetland maintenance, improvement, restoration, or construction. Embankment structure to provide adequate freeboard, allowance for settlement, and foundation and embankment stability. **After Practice Description:** Water level is controlled by a stable earthen structure installed with compacted fill material. Material haul < 1 mile. Typical earthen dike assumed 1000 lineal feet, Class II (6 ft. in height, 8 ft. top width, 2H:1V side slopes). Potential hazard to public safety, land or property mitigated; environmental benefit provided. Scenario includes component for stripping and stockpiling base of dike. **Associated practices include, but are not limited to:** PS327 Conservation Cover, PS656 Constructed Wetland, PS342 Critical Area Planting, PS378 Ponds, PS382 Fence, PS464 Irrigation Land Levelling, PS500 Obstruction Removal, PS528 Prescribed Grazing, PS587 Structure for Water Control, PS620 Underground Outlet, PS645 Upland Wildlife Management, PS658 Wetland Creation, PS659 Wetland Enhancement, PS657 Wetland Restoration, PS644 Wetland Wildlife Habitat Management.	Cubic Yards of Earthmoving	Cubic Yard	$2.36	$3.54	$3.54	$4.25

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DIVERSION

Practice Code 362

Practice Units: FEET

Definition: A channel generally constructed across the slope with a supporting ridge on the lower side.

Purpose: This practice may be applied to support one or more of the following purposes:

- Break up concentrations of water on long slopes, on undulating land surfaces and on land that is generally considered too flat or irregular for terracing.
- Divert water away from farmsteads, agricultural waste systems, and other improvements.
- Collect or direct water for storage, water-spreading, or water-harvesting systems.
- Protect terrace systems by diverting water from the top terrace where topography, land use, or land ownership prevents terracing the land above.
- Intercept surface and shallow subsurface flow.
- Reduce runoff damages from upland runoff.
- Reduce erosion and runoff on urban or developing areas and at construction or mining sites.
- Divert water away from active gullies or critically eroding areas.
- Supplement water management on conservation cropping or stripcropping systems.

Conditions Where Practice Applies: This practice applies to all land uses where surface runoff water control and management are needed, and where soils and topography are such that the diversion can be constructed, and a suitable outlet is available or can be provided.

Limitations:

Maintenance: Practice will be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
362-1	Small, <2 CY/FT	**Scenario Description:** An earthen channel constructed across long slopes with supporting ridge on lower side, to divert runoff away from farmsteads, agricultural waste systems, gullies, critical erosion areas, construction areas or other sensitive areas. Outlet may be waterway, underground outlet, or another suitable outlet. Scenario is for diversions requiring less than 2 CY of excavation per foot of diversion. Channel may be level or gradient and ridge may be vegetated or farmed. The quantity of excavation and fill is balanced. **After Practice Description:** Scenario assumes a typical installation of a diversion 1000 feet long installed using a dozer. Diversion is 2.5' tall with 4' wide top width and slopes 3:1. Field system meets 'T' or 'clean' storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultural waste. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Underground Outlet (620), Mulching (484), and Subsurface Drainage (606).	Length of Diversion	Foot	$1.69	$2.53	$2.53	$3.04
362-2	Medium, 2 - 2.9 CY/FT	**Scenario Description:** An earthen channel constructed across long slopes with supporting ridge on lower side, to divert runoff away from farmsteads, agricultural waste systems, gullies, critical erosion areas, construction areas or other sensitive areas. Outlet may be waterway, underground outlet, or another suitable outlet. Scenario is for diversions requiring 2 CY to 2.9 CY of excavation per foot of diversion. Channel may be level or gradient and ridge may be vegetated or farmed. The quantity of excavation and fill is balanced. **After Practice Description:** Scenario assumes a typical installation of a diversion 1000 feet long installed using a dozer. Diversion is 4' tall with 4' wide top width and slopes 3:1. Field system meets 'T' or 'clean' storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultural waste. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Underground Outlet (620), Mulching (484), and Subsurface Drainage (606).	Length of Diversion	Foot	$3.62	$5.43	$5.43	$6.52

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
362-3	Large, >=3 CY/FT	**Scenario Description:** An earthen channel constructed across long slopes with supporting ridge on lower side, to divert runoff away from farmsteads, agricultural waste systems, gullies, critical erosion areas, construction areas or other sensitive areas. Outlet may be waterway, underground outlet, or another suitable outlet. Scenario is for diversions requiring greater than or equal to 3 CY of excavation per foot of diversion. Channel may be level or gradient and ridge may be vegetated or farmed. The quantity of excavation and fill is balanced. **After Practice Description:** Scenario assumes a typical installation of a diversion 1000 feet long installed using a dozer. Diversion is 5' tall with 4' wide top width and slopes 3:1. Field system meets 'T' or 'clean' storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultural waste. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Underground Outlet (620), Mulching (484), and Subsurface Drainage (606).	Length of Diversion	Foot	$4.91	$7.37	$7.37	$8.84
362-6	Concrete Curb	**Scenario Description:** A reinforced concrete (RC) curb constructed across the slope to divert runoff away from farmsteads, gullies, critical erosion areas, construction areas, agricultural waste system, other sensitive areas, or to a waste storage facility. Outlet may be a waterway, underground outlet, or other suitable outlet. Typical 1.0 ft. high, 6-inch-thick RC curb diversion is approximately 50 feet long with a 2.0 ft. wide footing and requires approximately 0.056 CY of RC per linear ft. The curb will be placed on 6' of compacted sand. Concrete diversion is necessary due to limited footprint availability. **After Practice Description:** The 1.0 ft. high, 6-inch-thick RC curb diversion is approximately 50 feet long. 'Clean' storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultural waste. Polluted water is diverted to a waste storage facility for proper storage. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Underground Outlet (620), Mulching (484), and Waste Storage Facility (313).	Length of concrete diversion	Foot	$16.46	$24.70	$24.70	$29.64

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DRAINAGE WATER MANAGEMENT

Practice Code 554

Practice Units: ACRE

Definition: The process of managing the drainage volume and water table elevation by regulating the flow from a surface or subsurface agricultural drainage system.

Purpose: The purpose of this practice is to—

- Reduce nutrient, pathogen, and pesticide loading from drainage systems into downstream receiving waters.
- Improve productivity, health, and vigor of plants.
- Reduce oxidation of organic matter in soils.

Conditions Where Practice Applies: This practice is applicable to agricultural lands with surface or subsurface agricultural drainage systems that can be adapted, or are partially adapted, to allow management of drainage volume and water table by changing the elevation of water level at the outlet(s).

This practice applies where a high natural water table exists or has existed, and the topography is relatively smooth, uniform, and flat to very gently sloping.

The practice applies to saline or sodic soil conditions, but special considerations are required. See Qadir and Oster 2003.

Limitations: A Drainage Water Management Plan, code 130, is required prior to installation of conservation practice standard completing the design for 554 Drainage Water Management.

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
554-1	>10 Acres per Structure	**Scenario Description:** This scenario describes the management of a drainage water system in a row crop field with subsurface drainage system already installed or planned to be installed with control structures, or a surface water management system with berms or levees around the field and control structures. Drainage conditions consist of gentle slopes with few variations in drainage characteristics and surface slopes. Subsurface drainage pattern consists of fewer secondary main lines. Implementation of DWM results in improved water quality by reducing nutrient losses from the soil through ground or surface water outside of the growing season. Management of the water table results in more ground water available for crops during the growing season while lowering the water table prior to crop planting and crop harvest to avoid causing compaction. **After Practice Description:** Typical systems consist of a 75-acre field with existing drainage tile lines and 5 installed water control structures. The operator walks the field in order to adjust water control structures (riser boards). While on site the date and adjustment information is recorded/logged. The number of yearly adjustments is based on 6 trips to field 5 miles from headquarters. The field time to make and record each adjustment is 0.5 hours per structure (including travel time). The typical field will contain 5 water control structures. Scenario includes the cost of participant attending a workshop to gain knowledge about implementing the practice. Resource Concern: Water Quality - Excess Nutrients in surface and ground waters. Insufficient Water - Insufficient Moisture Management. **Associated Practices:** 329 Residue Management - No Till/Strip Till; 606-Subsurface Drain; 607-Surface Drain, Field Ditch; 608-Surface Drain, Main or Lateral; 587-Structure for Water Control; 590-Nutrient Management.	Acres of Managed Drainage	Acre	$4.57	$5.49	$4.57	$5.49

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
554-2	>10 acres per Structure with Training	**Scenario Description:** This scenario describes the management of a drainage water system in a row crop field with subsurface drainage system already installed or planned to be installed with control structures, or a surface water management system with berms or levees around the field and control structures. Drainage conditions consist of gentle slopes with few variations in drainage characteristics and surface slopes. Subsurface drainage pattern consists of fewer secondary main lines. Implementation of DWM results in improved water quality by reducing nutrient losses from the soil through ground or surface water outside of the growing season. Management of the water table results in more ground water available for crops during the growing season while lowering the water table prior to crop planting and crop harvest to avoid causing compaction. **After Practice Description:** Typical systems consist of a 75-acre field with existing drainage tile lines and 5 installed water control structures. The operator walks the field in order to adjust water control structures (riser boards). While on site the date and adjustment information is recorded/logged. The number of yearly adjustments is based on 6 trips to field 5 miles from headquarters. The field time to make and record each adjustment is 0.5 hours per structure (including travel time). The typical field will contain 5 water control structures. Scenario includes the cost of participant attending a workshop to gain knowledge about implementing the practice. Resource Concern: Water Quality - Excess Nutrients in surface and ground waters. Insufficient Water - Insufficient Moisture Management. **Associated Practices:** 329: Residue Management - No Till/Strip Till; 606-Subsurface Drain; 607-Surface Drain, Field Ditch; 608-Surface Drain, Main or Lateral; 587-Structure for Water Control; 590-Nutrient Management.	Acres of Managed Drainage	Acre	$5.57	$6.69	$5.57	$6.69

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
554-3	<=10 Acres per Structure	**Scenario Description:** This scenario describes the management of a drainage water system in a row crop field with subsurface drainage system already installed or planned to be installed with control structures, or a surface water management system with berms or levees around the field and control structures. Drainage conditions consist of gentle to moderately slopes with many variations in drainage characteristics and surface slopes. Subsurface drainage pattern consists of many secondary main lines due to changes in drainage patterns. Implementation of DWM results in improved water quality by reducing nutrient losses from the soil through ground or surface water outside of the growing season. Management of the water table results in more ground water available for crops during the growing season while lowering the water table prior to crop planting and crop harvest to avoid causing compaction. **After Practice Description:** Typical systems consist of a 50-acre field with existing drainage tile lines and 5 installed water control structures. The operator walks the field in order to adjust water control structures (riser boards). While on site the date and adjustment information is recorded/logged. The number of yearly adjustments is based on 6 trips to field 5 miles from headquarters. The field time to make and record each adjustment is 0.5 hours per structure (including travel time). The typical field will contain 5 water control structures. Resource Concern: Water Quality - Excess Nutrients in surface and ground waters. Insufficient Water - Insufficient Moisture Management. **Associated Practices:** 329: Residue Management - No Till/Strip Till; 606-Subsurface Drain; 607-Surface Drain, Field Ditch; 608-Surface Drain, Main or Lateral; 587-Structure for Water Control; 590-Nutrient Management.	Acres of Managed Drainage	Acre	$6.86	$8.23	$6.86	$8.23

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
554-4	<=10 acres per Structure with Training	**Scenario Description:** This scenario describes the management of a drainage water system in a row crop field with subsurface drainage system already installed or planned to be installed with control structures, or a surface water management system with berms or levees around the field and control structures. Drainage conditions consist of gentle to moderately slopes with many variations in drainage characteristics and surface slopes. Subsurface drainage pattern consists of many secondary main lines due to changes in drainage patterns. Implementation of DWM results in improved water quality by reducing nutrient losses from the soil through ground or surface water outside of the growing season. Management of the water table results in more ground water available for crops during the growing season while lowering the water table prior to crop planting and crop harvest to avoid causing compaction. **After Practice Description:** Typical systems consist of a 50-acre field with existing drainage tile lines and 5 installed water control structures. The operator walks the field in order to adjust water control structures (riser boards). While on site the date and adjustment information is recorded/logged. The number of yearly adjustments is based on 6 trips to field 5 miles from headquarters. The field time to make and record each adjustment is 0.5 hours per structure (including travel time). The typical field will contain 5 water control structures. Resource Concern: Water Quality - Excess Nutrients in surface and ground waters. Insufficient Water - Insufficient Moisture Management. **Associated Practices:** 329: Residue Management - No Till/Strip Till; 606-Subsurface Drain; 607-Surface Drain, Field Ditch; 608-Surface Drain, Main or Lateral; 587-Structure for Water Control; 590-Nutrient Management.	Acres of Managed Drainage	Acre	$8.36	$10.03	$8.36	$10.03

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DRAINAGE WATER MANAGEMENT PLAN - WRITTEN

Practice Code 130

Practice Units: NUMBER

Definition: The objective of a Drainage Water Management Plan (DWMP) is to manage field water table elevations and the timing of water discharges from subsurface or surface agriculture drainage systems.

Purpose: To improve water quality, improve the soil environment for vegetative growth, reduce the rate of oxidation of organic soils, prevent wind erosion, and enable seasonal shallow flooding or surface watercourse flows for fish and wildlife habitat.

Conditions Where Practice Applies: Provide a producer a framework for the implementation of DWMP on existing artificially drained land.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
130-9	DWMP - Tile Map Available	**Scenario Description:** A Drainage Water Management Plan (DWMP) will be developed on a relatively flat crop field with a patterned drainage system, where a map of the tile system is available. The DWMP will document soil, topographic, and drainage system maps of the site, and identify the number and location of water control structures that are needed to implement drainage water management according to Field Office Technical Guide standards. The DWMP will also provide guidelines for management of the water control structures to achieve desired resource outcomes. **After Practice Description:** A certified Technical Service Provider (TSP) develops the 'Drainage Water Management' conservation activity plan (CAP). The DWMP documents soil, topographic, and drainage system maps of the site, and identifies the number and location of water control structures that are needed to implement drainage water management according to Field Office Technical Guide standards. The DWMP also provides guidelines for management of the water control structures to achieve desired resource outcomes. The plan is ready for implementation with structural measures and management once the structures are installed. No actual benefits to resource concerns are achieved until the practices in the DWMP are implemented.	Number	Number	$2,069.70	$2,483.64	N/A	N/A
130-10	DWMP - No Tile Map Available	**Scenario Description:** A Drainage Water Management Plan (DWMP) will be developed on a relatively flat crop field with a patterned drainage system, where no map of the tile system is available. The DWMP will document soil, topographic, and drainage system maps of the site, and identify the number and location of water control structures that are needed to implement drainage water management according to Field Office Technical Guide standards. The DWMP will also provide guidelines for management of the water control structures to achieve desired resource outcomes. **After Practice Description:** A certified Technical Service Provider (TSP) develops the 'Drainage Water Management' conservation activity plan (CAP). The DWMP documents soil, topographic, and drainage system maps of the site, and identifies the number and location of water control structures that are needed to implement drainage water management according to Field Office Technical Guide standards. The DWMP also provides guidelines for management of the water control structures to achieve desired resource outcomes. The plan is ready for implementation with structural measures and management once the structures are installed. No actual benefits to resource concerns are achieved until the practices in the DWMP are implemented.	Number	Number	$2,881.14	$3,457.37	N/A	N/A

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EARLY SUCCESSIONAL HABITAT DEVELOPMENT / MANAGEMENT

Practice Code 647

Practice Units: ACRE

Definition: Management for early plant succession to benefit desired wildlife or natural communities.

Purpose: To increase plant community species and structural diversity, provide wildlife habitat for those species that use early successional stage vegetative habitat and provide habitat for declining species.

Conditions Where Practice Applies: On all lands that are suitable for the kinds of wildlife and plant species that are desired.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
647-1	Mowing	**Scenario Description:** This scenario address inadequate habitat for fish and wildlife where setting back succession by mowing incoming woody species will improve habitat for the target species. Mowing can be used to increase structural diversity by creating areas of shorter vegetation preferred by some species or certain life stages of species. This scenario can be used nationwide. The typical setting for this scenario is at the edge of crop fields, in pastures, at the edge of woodlands or brushy areas, and in odd areas such as pivot corners. Where the management of woody plants is required to create or maintain early successional habitat conservation practice 314 brush management should be used. Where chemical control of weeds, including invasives, is required to reduce competition for the desired plant community conservation practice 315 herbaceous weed treatment should be used. Where the seedbank is inadequate for natural regeneration and seeding is required use conservation practice 327 Conservation Cover. Where the need is to create early successional habitat within or at the edge of woodland or forest use conservation practice 645 Upland Wildlife Habitat Management (edgefeathering). **After Practice Description:** Early successional habitat maintained. Mowing has provided more sun light for forb establishment. The heterogeneity of the habitat structure has been increased.	Width and length of treated area	Acre	$148.85	$178.61	$148.85	$178.61

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
647-2	Disking	**Scenario Description:** This practice addresses inadequate wildlife habitat for species requiring early successional habitat. This scenario provides early successional habitat by setting back succession and manipulating species composition by disking vegetation and exposing bare ground. The typical setting for this scenario is at the edge of crop fields, in pastures, and in odd areas such as pivot corners. This scenario is applicable nationwide. Where the management of woody plants is required to create or maintain early successional habitat conservation practice 314 brush management should be used. Where chemical control of weeds, including invasives, is required to reduce competition for the desired plant community conservation practice 315 herbaceous weed treatment should be used. Where the seedbank is inadequate for natural regeneration and seeding is required, use conservation practice 327 Conservation Cover. Where the need is to create early successional habitat within or at the edge of woodland or forest use conservation practice 645 Upland Wildlife Habitat Management (edgefeathering). **After Practice Description:** The application of this scenario improves wildlife habitat for species requiring early successional plant communities by reducing competition and creating bare ground for the establishment of early successional plants. Additionally, brood rearing habitat is improved both by the resultant food resources and the increased openness of the plant community that allows chicks to negotiate the terrain and exploit those food resources.	Width and length of treated area	Acre	$71.95	$86.34	$71.95	$86.34

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
647-3	Mowing and Disking	**Scenario Description:** This practice addresses inadequate wildlife habitat for species requiring early successional habitat. This scenario provides early successional habitat by setting back succession and manipulating species composition by mowing dense vegetation and then a light disking to expose bare ground. All mowed areas are also disked. The typical setting for this scenario is at the edge of crop fields, in pastures, idle land and in odd areas such as pivot corners. Where the management of woody plants is required to create or maintain early successional habitat conservation practice 314 brush management should be used. Where chemical control of weeds, including invasives, is required to reduce competition for the desired plant community conservation practice 315 herbaceous weed treatment should be used. Where the seedbank is inadequate for natural regeneration and seeding is required, use conservation practice 327 Conservation Cover. Where the need is to create early successional habitat within or at the edge of woodland or forest use conservation practice 645 Upland Wildlife Habitat Management (edgefeathering). **After Practice Description:** The application of this scenario improves wildlife habitat for species requiring early successional plant communities by reducing competition and creating bare ground for the establishment of early successional plants. Additionally, brood rearing habitat is improved both by the resultant food resources and the increased openness of the plant community that allows chicks to negotiate the terrain and exploit those food resources.	Width and length of treated area	Acre	$156.64	$187.97	$156.64	$187.97

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
647-4	Mowing and Heavy Disking	**Scenario Description:** This practice addresses inadequate wildlife habitat for species requiring early successional habitat. This scenario provides early successional habitat by setting back succession and manipulating species composition by mowing dense vegetation and then a heavy disking (multiple passes) to expose bare ground. All mowed areas are also disked. The typical setting for this scenario is at the edge of crop fields, in pastures, idle land and in odd areas such as pivot corners. This scenario is applicable nationwide. Where the management of woody plants is required to create or maintain early successional habitat conservation practice 314 brush management should be used. Where chemical control of weeds, including invasives, is required to reduce competition for the desired plant community conservation practice 315 herbaceous weed treatment should be used. Where the seedbank is inadequate for natural regeneration and seeding is required 327 Conservation Cover. Where the need is to create early successional habitat within or at the edge of woodland or forest use conservation practice 645 Upland Wildlife Habitat Management (edgefeathering). **After Practice Description:** The application of this scenario improves wildlife habitat for species requiring early successional plant communities by reducing competition and creating bare ground for the establishment of early successional plants. Additionally, brood rearing habitat is improved both by the resultant food resources and the increased openness of the plant community that allows chicks to negotiate the terrain and exploit those food resources.	Width and length of treated area	Acre	$164.43	$197.32	$164.43	$197.32
647-17	Strip Spraying	**Scenario Description**: Inadequate wildlife habitat for a target species is improved by altering plant community succession through strip spraying. Strip spraying can be used to increase structural diversity by creating areas of shorter vegetation preferred by some wildlife species or specific life stages of wildlife species as well as through management of incoming woody plant species. The typical setting for this scenario is at the edge of crop fields, in pastures, in odd areas such as pivot corners, or other areas being managed for wildlife habitat. **After Practice Description:** A more desirable, heterogeneous plant community (composition and structure) is restored. Strip spraying has created alternating bands of early and later (untreated) successional habitat. The heterogeneity of the habitat structure has been increased.	Width and length of treated area	Acre	$43.43	$52.12	$43.43	$52.12

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EDGE OF FIELD WATER QUALITY MONITORING – DATA COLLECTION & EVALUATION

Practice Code 201

Practice Units: ACRE

Definition: Water quality monitoring and evaluation under this conservation activity standard are the actions and activities, using acceptable tools and protocols, by which a producer will measure the effectiveness of conservation practices and systems. Evaluation of conservation practice effectiveness through edge-of-field monitoring will lead to a better understanding of constituent loading and will assist NRCS and participants in adapting or validating the application of conservationmeasures.

Purpose: Evaluate the effectiveness of a practice or system of practices in reducing concentrations and/or loads of targeted constituents.
Use evaluation techniques to acquire insight about existing land management and where applicable, institute change to achieve a future desired condition.
Collect site specific edge-of-field water quality data to calibrate, validate, and verify predictive models.

Conditions Where Practice Applies: This conservation activity applies to all land uses where conservation practices are or will be addressing surface and subsurface drainage water quality, and there is a need to determine the effects and performance of applied conservation practices. The pollutant(s) to be measured at the edge-of- field must be tied to a water quality constituent of concern for the associated receiving stream or water body. This ties the resource concern back to the planning process and promotes a systems approach to conservation.

Limitations: This practice will only be eligible in Mississippi River Basin Initiative watersheds, and National Water Quality Initiative watersheds.

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
201-56	Data Collect Surface Year 1-QAPP	**Scenario Description:** This practice scenario provides for the design and use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and one treatment site with an average of 20 samples per year per station, with each sample analyzed for 6 separate parameters (2 sites x 20 samples x 6 parameters = 240 total water quality tests). The scenario requires the creation of a survey to site a monitoring station, preparation of monitoring plan and a quality assurance project plan to detail how data will be collected, handled and analyzed, provides for the data collection, analysis, semiannual report, and annual report. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP need to be prepared prior to installation under Edge-of-Field Water Quality Monitoring - System Installation (202). THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY. **After Practice Description:** This practice scenario after installation of the WQ monitoring stations, provides for the data collection, analysis, semiannual report, and annual report for one control and one treatment site. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP have been prepared prior to installation under Edge-of-Field Water Quality Monitoring - System Installation (202). The operator will be able to collect field level water quality data of sufficient quality to measure loss of nutrients as listed in 201.	Measuring Sites	Each	N/A	N/A	$17,043.98	$20,452.77
201-57	Data Collect Surface Year 1 - NO QAPP	**Scenario Description:** This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and one treatment site. The scenario requires the collection and analysis of edge-of-field water quality data with an average sample collection of 20 per year for surface systems. The data will be transferred through semi-annual submittal and annual report which include some preliminary annual analysis. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP will be not prepared as this is for an existing monitoring system that has been accepted as meeting both Activity 201 and 202. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY. **After Practice Description:** This practice scenario after installation of the WQ monitoring stations, provides for the data collection, analysis, semiannual submittal, and annual report for one control and one treatment site. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP have been prepared as part of an existing monitoring system installation where the QAPP and monitoring plan meets Activity 201 requirements and no major changes are needed to meet Activity 202 requirements. The operator will be able to collect field level water quality data of sufficient quality to measure loss of nutrients as listed in 201.	Measuring Site	Each	N/A	N/A	$11,511.98	$13,814.37

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
201-59	Data Collect Surface Last Year	**Scenario Description:** This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and one treatment site with an average of 20 samples per year per station, with each sample analyzed for 6 separate parameters (2 sites x 20 samples x 6 parameters = 240 total water quality tests). The scenario requires the collection and analysis of edge-of-field water quality data along with a comprehensive report to statistically prove relationship between select conservation practices and water quality. The data will be transferred through semi-annual submittal and annual report and a comprehensive report of practice effectiveness. This scenario will be used in the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY. **After Practice Description:** This practice scenario after installation of the WQ monitoring stations, provides for the data collection, analysis, semiannual submittal, and annual report for one control and one treatment site. The operator will be able to collect field level water quality data of sufficient quality to measure loss of nutrients as listed in 201 to provide a comprehensive report of statistical testing of data collected to complete monitoring period.	Measuring Site	Each	N/A	N/A	$14,530.28	$17,436.33
201-60	Data Collect Tile Year 1-QAPP	**Scenario Description:** This practice scenario provides for the design and use of an edge-of-field WQ monitoring station(s) for tile and subsurface drainage run-off for one control and one treatment site with an average of 40 samples per year per station, with each sample analyzed for 6 separate parameters (2 sites x 40 samples x 6 parameters = 480 total water quality tests). A subsurface system also requires the addition of a surface sampling system at the same outlet to capture overland flow with 20 samples per year, with each sample analyzed for 6 separate parameters (2 sites x 20 samples x 6 parameters = 240 total water quality tests). Without the surface system then not all runoff is captured for calculating a true event mean concentration as per the 201 Standard. The scenario requires the creation of a survey to site a monitoring station, preparation of monitoring plan and a quality assurance project plan to detail how data will be collected, handled and analyzed, provides for the data collection, analysis, semiannual report, and annual report. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP need to be prepared prior to installation under Edge-of-Field Water Quality Monitoring - System Installation (202). THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY. **After Practice Description:** This practice scenario after installation of the WQ monitoring stations, provides for the data collection, analysis, semiannual report, and annual report for one control and one treatment site. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP have been prepared prior to installation under Edge-of-Field Water Quality Monitoring - System Installation (202). The operator will be able to collect field level water quality data of sufficient quality to measure loss of nutrients as listed in 201.	Measuring Site	Each	N/A	N/A	$32,450.61	$38,940.73

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
201-61	Data Collect Tile Year 1 plus - NO QAPP	**Scenario Description:** This practice scenario provides for the design and use of an edge-of-field WQ monitoring station(s) for tile and subsurface drainage run-off for one control and one treatment site with an average of 40 samples per year per station, with each sample analyzed for 6 separate parameters (2 sites x 40 samples x 6 parameters = 480 total water quality tests). A subsurface system also requires the addition of a surface sampling system at the same outlet to capture overland flow with 20 samples per year, with each sample analyzed for 6 separate parameters (2 sites x 20 samples x 6 parameters = 240 total water quality tests). Without the surface system then not all runoff is captured for calculating a true event mean concentration as per the 201 Standard. The data will be transferred through semi-annual submittal and annual reports, which include some preliminary annual analysis. This scenario will normally be used in year 1 to next to the last year of monitoring of the contract when a monitoring plan and QAPP will be not prepared as this is for an existing monitoring system be accepted as meeting both Activity 201 and 202. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY. **After Practice Description:** This practice scenario after installation of the WQ monitoring stations, provides for the data collection, analysis, semiannual submittal, and annual report for one control and one treatment site. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP have been prepared as part of an existing monitoring system installation where the QAPP and monitoring plan meets Activity 201 requirements and no major changes are needed to meet Activity 202 requirements. The operator will be able to collect field level water quality data of sufficient quality to measure loss of nutrients as listed in 201.	Measuring Site	Each	N/A	N/A	$27,143.91	$32,572.69

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
201-63	Data Collect Tile Last Year	**Scenario Description:** This practice scenario provides for the design and use of an edge-of-field WQ monitoring station(s) for tile and subsurface drainage run-off for one control and one treatment site with an average of 40 samples per year per station, with each sample analyzed for 6 separate parameters (2 sites x 40 samples x 6 parameters = 480 total water quality tests). A subsurface system also requires the addition of a surface sampling system at the same outlet to capture overland flow with 20 samples per year, with each sample analyzed for 6 separate parameters (2 sites x 20 samples x 6 parameters = 240 total water quality tests). Without the surface system then not all runoff is captured for calculating a true event mean concentration as per the 201 Standard. The scenario requires the collection and analysis of edge-of-field water quality data along with a comprehensive report to statistically prove relationship between select conservation practices and water quality. The data will be transferred through semi-annual submittal and annual report and a comprehensive report of practice effectiveness. This scenario will be used in the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY. **After Practice Description:** This practice scenario after installation of the WQ monitoring stations, provides for the data collection, analysis, semiannual submittal, and annual report for one control and one treatment site. The operator will be able to collect field level water quality data of sufficient quality to measure loss of nutrients as listed in 201 to provide a comprehensive report of statistical testing of data collected during to complete monitoring period.	Measuring site	Each	N/A	N/A	$29,936.91	$35,924.29

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
201-64	Data Collect Surface Year 1-QAPP with two treatment Sites	**Scenario Description:** This practice scenario provides for the design and use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and two treatment sites with an average of 20 samples per year per station, with each sample analyzed for 6 separate parameters (3 sites x 20 samples x 6 parameters = 360 total water quality tests). The scenario requires the creation of a survey to site a monitoring station, preparation of monitoring plan and a quality assurance project plan to detail how data will be collected, handled and analyzed, provides for the data collection, analysis, semiannual report, and annual report. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP need to be prepared prior to installation under Edge-of-Field Water Quality Monitoring - System Installation (202). THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY. **After Practice Description:** This practice scenario after installation of the WQ monitoring stations, provides for the data collection, analysis, semiannual report, and annual report for one control and one treatment site. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP have been prepared prior to installation under Edge-of-Field Water Quality Monitoring - System Installation (202). The operator will be able to collect field level water quality data of sufficient quality to measure loss of nutrients as listed in 201.	Measuring Sites	Each	N/A	N/A	$23,277.63	$27,933.16
201-65	Data Collect Surface Year 1+ less QAPP (pre-install information) with two treatment sites	**Scenario Description:** This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and two treatment sites. The scenario requires the collection and analysis of edge-of-field water quality data with an average sample collection of 20 per year for each surface system, with each sample analyzed for 6 separate parameters (3 sites x 20 samples x 6 parameters = 360 total water quality tests). The data will be transferred through semi-annual submittal and annual report, which include some preliminary annual analysis. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP will not be prepared as this is for an existing monitoring system be accepted as meeting both Activity 201 and 202. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY. **After Practice Description:** This practice scenario after installation of the WQ monitoring stations, provides for the data collection, analysis, semi-annual submittal, and annual report for one control and two treatment sites. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP have been prepared as part of an existing monitoring system installation where the QAPP and monitoring plan meets Activity 201 requirements and no major changes are needed to meet Activity 202 requirements. The operator will be able to collect field level water quality data of sufficient quality to measure loss of nutrients as listed in 201.	Measuring site	Each	N/A	N/A	$16,714.08	$20,056.90

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
201-67	Data Collect Surface Last Year with two treatment sites	**Scenario Description:** This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and two treatment sites with an average of 20 samples per year per station, with each sample analyzed for 6 separate parameters (3 sites x 20 samples x 6 parameters = 360 total water quality tests). The scenario requires the collection and analysis of edge-of-field water quality data along with a comprehensive report to statistically prove relationship between select conservation practices and water quality. The data will be transferred through semi-annual submittal and annual report and a comprehensive report of practice effectiveness. This scenario will be used in the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY. **After Practice Description:** This practice scenario after installation of the WQ monitoring stations, provides for the data collection, analysis, semiannual submittal, and annual report for one control and two treatment sites. The operator will be able to collect field level water quality data of sufficient quality to measure loss of nutrients as listed in 201 to provide a comprehensive report of statistical testing of data collected during to complete monitoring period.	Measuring site	Each	N/A	N/A	$20,903.58	$25,084.30

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
201-69	Data Collect Tile Year 1+ less QAPP (pre-install information) with two treatment sites	**Scenario Description:** This practice scenario provides for the design and use of an edge-of-field WQ monitoring station(s) for tile and subsurface drainage run-off for one control and two treatment sites with an average of 40 samples per year per station, with each sample analyzed for 6 separate parameters (3 sites x 40 samples x 6 parameters = 720 total water quality tests). A subsurface system also requires the addition of a surface sampling system at the same outlet to capture overland flow with 20 samples per year, with each sample analyzed for 6 separate parameters (3 sites x 20 samples x 6 parameters = 360 total water quality tests). Without the surface system then not all runoff is captured for calculating a true event mean concentration as per the 201 Standard. The data will be transferred through semi-annual submittal and annual reports, which include some preliminary annual analysis. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP will not be prepared as this is for an existing monitoring system be accepted as meeting both Activity 201 and 202. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY. **After Practice Description:** This practice scenario after installation of the WQ monitoring stations, provides for the data collection, analysis, semiannual submittal, and annual report for one control and two treatment sites. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP have been prepared as part of an existing monitoring system installation where the QAPP and monitoring plan meets Activity 201 requirements and no major changes are needed to meet Activity 202 requirements. The operator will be able to collect field level water quality data of sufficient quality to measure loss of nutrients as listed in 201.	Measuring site	Each	N/A	N/A	$38,337.65	$46,005.17

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
201-71	Data Collect Tile Last Year with two treatment sites	**Scenario Description:** This practice scenario provides for the design and use of an edge-of-field WQ monitoring station(s) for tile and subsurface drainage run-off for one control and two treatment sites with an average of 40 samples per year per station with each sample analyzed for 6 separate parameters (3 sites x 40 samples x 6 parameters = 720 total water quality tests). A subsurface system also requires the addition of a surface sampling system at the same outlet to capture overland flow with 20 samples per year with each sample analyzed for 6 separate parameters (3 sites x 20 samples x 6 parameters = 360 total water quality tests). Without the surface system then not all runoff is captured for calculating a true event mean concentration as per the 201 Standard. The scenario requires the collection and analysis of edge-of-field water quality data along with a comprehensive report to statistically prove relationship between select conservation practices and water quality. The data will be transferred through semi-annual submittal and annual report and a comprehensive report of practice effectiveness. This scenario will be used in the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY. **After Practice Description:** This practice scenario after installation of the WQ monitoring stations, provides for the data collection, analysis, semiannual submittal, and annual report for one control and two treatment sites. The operator will be able to collect field level water quality data of sufficient quality to measure loss of nutrients as listed in 201 to provide a comprehensive report of statistical testing of data collected during to complete monitoring period.	Measuring site	Each	N/A	N/A	$42,527.15	$51,032.57

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EDGE OF FIELD WATER QUALITY MONITORING – SYSTEM INSTALLATION

Practice Code 202

Practice Units: NUMBER

Definition: This conservation activity standard addresses the system installation associated with edge-of-field water quality monitoring.

Purpose: Provide criteria for the installation of water quality monitoring system necessary to collect data for:

- Evaluating conservation practice effectiveness
- Field scale model validation
- On-farm adaptive management

Conditions Where Practice Applies: This conservation activity applies to all land uses where conservation practices are or will be addressing surface and subsurface drainage water quality, and there is a need to determine the effects and performance of applied conservation practices. The pollutant(s) to be measured at the edge-of- field must be tied to a water quality constituent of concern for the associated receiving stream or water body. This ties the resource concern back to the planning process and promotes a systems approach to conservation.

Limitations: This practice will only be eligible in Mississippi River Basin Initiative watersheds, and National Water Quality Initiative watersheds.

Maintenance: Practice must be maintained for a lifespan of 10 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
202-39	System Installation-Surface Cold Climate	**Scenario Description:** This edge-of-field water quality monitoring system is applicable to a single control or treatment site that has a field defined with surface runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The component monitoring equipment are associated with a typical system for northern latitudes where winter time heating is required for sampling. It will allow for installation of automated sampling data collection system with protective housing to reduce potential for vandalism, battery backup for operation during periods when electricity is down, or solar panels are not creating an electrical current, a calf hut or other structure with heat is required over the flume to allow sampling under northern latitude winter conditions, and a berm or other directional flow structure to guide the runoff to a sampling flume. **After Practice Description:** The agricultural operation after installing the monitoring equipment will be receiving feedback in the form of edge- of-field runoff water quality samples. The samples will allow the operator to understand the relationship between rain/irrigation, practice choice, and nutrient inputs effecting nutrient and sediment loss for the field. Thus, providing an opportunity to make adaptive management changes to the agricultural operation to reduce sediment and nutrient loss and/or profitability.	System installed	Each	N/A	N/A	$11,662.11	$13,994.54
202-41	System Installation-Tile Cold Climate	**Scenario Description:** This edge-of-field water quality monitoring system is applicable to a single control or treatment site that has a field defined with tile or other subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The component monitoring equipment are associated with a typical system for northern latitudes where winter time heating is required for sampling. It will allow for installation of automated sampling data collection system for a subsurface collection and separate surface automated sample collection system with protective housing to reduce potential for vandalism, battery backup for operation during periods when electricity is down or solar panels are not creating an electrical current, an area velocity sensor for pipe flow and estimation of submerged flow, a calf hut or other structure with heat is required over the flume to allow sampling under northern latitude winter conditions and a berm or other directional flow structure to guide the runoff to a sampling flume. **After Practice Description:** The agricultural operation after installing the monitoring equipment will be receiving feedback in the form of edge- of-field runoff water quality samples. The samples will allow the operator to understand the relationship between rain/irrigation, practice choice, and nutrient inputs effecting nutrient and sediment loss for the field. Thus, providing an opportunity to make adaptive management changes to the agricultural operation to reduce sediment and nutrient loss and/or profitability.	System installed	Each	N/A	N/A	$17,215.16	$20,658.19

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
202-43	System Installation-Above and Below cold climate	**Scenario Description:** This edge-of-field water quality monitoring system is applicable where a conservation practice has a pre- and post-treatment area in the same field drainage with surface or subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The component monitoring equipment are associated with a typical system for northern latitudes where winter time heating is required for sampling. It will allow for installation of automated sampling data collection system with protective housing to reduce potential for vandalism, battery backup for operation during periods when electricity is down, or solar panels are not creating an electrical current, a calf hut or other structure with heat is required over the flume to allow sampling under northern latitude winter conditions, and a berm or other directional flow structure to guide the runoff to a sampling flume. The actual installation will different on the subsurface flow by allowing a smaller pre-calibrated flume with the addition of a velocity sensor meter as in the tile alternative. **After Practice Description:** The agricultural operation after installing the monitoring equipment will be receiving feedback in the form of edge- of-field runoff water quality samples. The samples will allow the operator to understand the relationship between rain/irrigation, practice choice, and nutrient inputs effecting nutrient and sediment loss for the field. Thus, providing an opportunity to make adaptive management changes to the agricultural operation to reduce sediment and nutrient loss and/or profitability.	System installed	Each	N/A	N/A	$18,638.96	$22,366.75
202-44	System Installation-Retrofit 1	**Scenario Description:** This edge-of-field water quality monitoring system is to retrofit an existing system that is being used in associated with the 799-interim practice or comparable system. The retrofit is applicable to a single control or treatment site that has a field defined with surface or subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The data represents the installation of an automated and manual backup rain gauge and back-up/solar power supply be added to existing system. **After Practice Description:** The agricultural operation after installing the monitoring equipment will be receiving feedback in the form of edge- of-field runoff water quality samples. The samples will allow the operator to understand the relationship between rain/irrigation, practice choice, and nutrient inputs effecting nutrient and sediment loss for the field. Thus, providing an opportunity to make adaptive management changes to the agricultural operation to reduce sediment and nutrient loss and/or profitability.	System installed	Each	N/A	N/A	$1,744.81	$2,093.77

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
202-45	System Installation-Retrofit 2	**Scenario Description:** This edge-of-field water quality monitoring system is to retrofit an existing system that is being used in associated with the 799 interim practice or comparable system. The retrofit is applicable to a single control or treatment site that has a field defined with surface or subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The data represents the installation of an automated and manual backup rain gauge, back-up/solar power supply, communications device, and depth (stage) sensor to be added to existing system. **After Practice Description:** The agricultural operation after installing the monitoring equipment will be receiving feedback in the form of edge- of-field runoff water quality samples. The samples will allow the operator to understand the relationship between rain/irrigation, practice choice, and nutrient inputs effecting nutrient and sediment loss for the field. Thus, providing an opportunity to make adaptive management changes to the agricultural operation to reduce sediment and nutrient loss and/or profitability.	System installed	Each	N/A	N/A	$5,462.26	$6,554.71
202-46	System Installation-Retrofit 3	**Scenario Description:** This edge-of-field water quality monitoring system is to retrofit an existing system that is being used in associated with the 799-interim practice or comparable system. The retrofit is applicable to a single control or treatment site that has a field defined with surface or subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The data represents the installation of an automated and manual backup rain gauge, back-up/solar power supply, communications device, pre-calibrated flow control structure, and depth (stage) sensor to be added to existing system. . **After Practice Description:** The agricultural operation after installing the monitoring equipment will be receiving feedback in the form of edge- of-field runoff water quality samples. The samples will allow the operator to understand the relationship between rain/irrigation, practice choice, and nutrient inputs effecting nutrient and sediment loss for the field. Thus, providing an opportunity to make adaptive management changes to the agricultural operation to reduce sediment and nutrient loss and/or profitability.	System installed	Each	N/A	N/A	$6,659.56	$7,991.47

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
202-47	System Installation-Retrofit Above and Below 1	**Scenario Description:** This edge-of-field water quality monitoring system is to retrofit an existing above and below monitoring designed system that is being used in associated with the 799-interim practice or comparable system. The retrofit is applicable to an above and below system that has a field defined with surface or subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The data represents the installation of an automated and manual backup rain gauge and two back-up/solar power supplies be added to existing paired system. **After Practice Description:** The agricultural operation after installing the monitoring equipment will be receiving feedback in the form of edge- of-field runoff water quality samples. The samples will allow the operator to understand the relationship between rain/irrigation, practice choice, and nutrient inputs effecting nutrient and sediment loss for the field. Thus, providing an opportunity to make adaptive management changes to the agricultural operation to reduce sediment and nutrient loss and/or profitability.	System installed	Each	N/A	N/A	$2,332.57	$2,799.08
202-48	System Installation-Retrofit Above 2	**Scenario Description:** This edge-of-field water quality monitoring system is to retrofit an existing above and below monitoring designed system that is being used in associated with the 799-interim practice or comparable system. The retrofit is applicable to an above and below system that has a field defined with surface or subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The data represents the installation of an automated and manual backup rain gauge, two back-up/solar power supplies, two communications devices, and two depth (stage) sensors to be added to existing paired system. **After Practice Description:** The agricultural operation after installing the monitoring equipment will be receiving feedback in the form of edge- of-field runoff water quality samples. The samples will allow the operator to understand the relationship between rain/irrigation, practice choice, and nutrient inputs effecting nutrient and sediment loss for the field. Thus, providing an opportunity to make adaptive management changes to the agricultural operation to reduce sediment and nutrient loss and/or profitability.	System installed	Each	N/A	N/A	$9,654.36	$11,585.24

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
202-49	System Installation-Retrofit Above 3	**Scenario Description:** This edge-of-field water quality monitoring system is to retrofit an existing above and below monitoring designed system that is being used in associated with the 799-interim practice or comparable system. The retrofit is applicable to an above and below system that has a field defined with surface or subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The data represents the installation of an automated and manual backup rain gauge, two back-up/solar power supplies, two communications devices, two pre-calibrated flumes, and two depth (stage) sensors to be added to existing paired system. **After Practice Description:** The agricultural operation after installing the monitoring equipment will be receiving feedback in the form of edge-of-field runoff water quality samples. The samples will allow the operator to understand the relationship between rain/irrigation, practice choice, and nutrient inputs effecting nutrient and sediment loss for the field. Thus, providing an opportunity to make adaptive management changes to the agricultural operation to reduce sediment and nutrient loss and/or profitability.	System installed	Each	N/A	N/A	$11,683.08	$14,019.70

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EMERGENCY ANIMAL MORTALITY MANAGEMENT

Practice Code 368

Practice Units: NUMBER

Definition: A means or method for the management of animal carcasses from catastrophic mortality events.

Purpose: This practice may be applied to achieve one or more of the following purposes:

- reduce impacts to surface water and groundwater resources
- reduce the impact of odors
- decrease the spread of pathogens

Conditions Where Practice Applies: This standard applies to animal operations where a catastrophic event would result in the need to manage animal carcasses.

Limitations: State Office Programs and Engineering staff will be notified before planning or implementation of the 368 - Emergency Animal Mortality Management Practice.

For applications involving animal waste management application follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
368-5	In-House Composting	**Scenario Description:** This scenario consists the emergency disposal of poultry mortality by composting in a static windrow. The cause of mortality is an event not related to disease. Additional carbon based bulking material is added to facilitate aeration and provide a proper C:N ratio. The windrow is turned at least once to go into another heat cycle prior to land application. Access is infrequent. This option may not be desirable for sites with limited area, karst topography, and not isolated from of public view. The purpose of the practice is to address resource concerns related to water quality degradation due to excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Air quality impacts due to odors will also be addressed. **After Practice Description:** Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. An overall plan covers normal and catastrophic mortality events. The typical scenario number of birds to be disposed of is 20,000, 4-pound birds which can be composted in-house. Composting requires 1.5 pounds of carbon per pound of bird. There is 0.5 pounds of litter per bird already on site. Wood chips (45 pcf) will be used as the additional carbon source. The composting windrow construction operation consists of 2 pieces of equipment and 2 additional laborers: 1) stockpiling birds and litter in center of house; 2) construct 2 windrow bases using carbon material; 3) place carcass/litter mix on bases; 4) cover with carbon material; 5) cap windrows with any remaining litter; 6) after first heat cycle remove windrow from house and reconstruct outside house for finishing. Site to be located out of drainage areas, off-site water diverted and any runoff to spread out into a grassed area. **Potential Associated Practices:** Pond Sealing or Lining, Compacted Soil Treatment (520), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Diversion (362).	Number of 1000 lbs. Animal Units	Animal Unit	$49.56	$74.34	$74.34	$89.21

ID	Scenario Name	Scenario Description & <u>After Practice Description</u>	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
368-6	Burial	**Scenario Description:** This scenario consists of the on-site burial of animal mortalities resulting from catastrophic events not related to disease. An earthen pit is excavated to contain the mortalities, and earth cover is placed over the mortalities to provide protection from predators to minimize pathogen survival or spreading. The purpose of the practice is to address resource concerns related to water quality degradation due to excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Air quality impacts due to odors will also be addressed. **After Practice Description:** Catastrophic Animal mortalities resulting from causes not related to disease are being disposed in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, and protection from predators to minimize pathogen survival or spreading. An overall plan covers the burial of animals as a result of catastrophic mortality events. This typical scenario was developed based on the disposal of 25 head of mature cattle located near the area where the cattle have been found. The scenario includes equipment time and labor to recover and transport carcasses to the burial location. The scenario also includes a burial trench 4' deep plus 3' additional cover over carcasses. Construct a 6' x 60' (surface dimensions) burial site with appropriate cover. Site can handle mortality for 25 mature beef cattle. On site soils can be re- compacted to meet required imperviousness. Include 3' overfill or mounding excavated material to provide for settlement of the burial site and divert or minimize offsite runoff. Site to be located out of drainage areas, off-site water diverted and any runoff to spread out into a grassed area. **Potential Associated Practices:** Pond Sealing or Lining, Compacted Soil Treatment (520), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), and Diversion (362).	Number of 1000 lbs. Animal Units	Animal Unit	$48.46	$72.69	$72.69	$87.23

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FARMSTEAD ENERGY IMPROVEMENT

Practice Code 374

Practice Units: NUMBER

Definition: Development and implementation of improvements to improve the energy efficiency of on-farm energy use.

Purpose: This practice may be applied as part of a conservation management system to reduce energy use.

Conditions Where Practice Applies: The practice applies to non-residential structures and energy using systems where reducing energy use is the identified goal.

Limitations: Contracts that include Agricultural Energy Management Plans or audits as required for 374 – Farmstead Energy Improvement shall have energy plans or audits sent to the Area Engineer who will forward a copy to the State Office Environmental Engineer (Mark Garrison) for administrative review before certification of plans or installation of practices outlined in plans or audits. Plans must meet the technical requirements of ASABE S612 - Performing On-farm Energy Audits and/or CAP 128 criteria. The Farm Energy Improvement Practices Implementation and Certification Record worksheet will be completed and signed by the participant prior to practice certification for payment.

Energy Initiative – Conservation Practice 374 Farmstead Energy Improvement - The Conservation Practice Decommissioning job sheet must be completed to document the destruction (scrapping, etc.) of the less efficient item (examples include motors, grain dryers, etc.).

Financial Assistance for Farmstead Energy Improvement, For the following scenario, Grain Dryer, the rated capacity of the dryer will be based on 10 points moisture removal from corn. Using the manufacturer's chart for a full-heat drying rate and a 10-point moisture drop, if all 10 pts occurs in dryer use full rate, otherwise apply a 0.75 correction factor. Financial Assistance for Farmstead Energy Improvement, payment scenario ID 21 Grain Dryer is eligible to treat the existing resource concern, including up to a 25% expansion of the existing extent of the resource concern. For Fiscal Year 2018 and after, there is a $50,000 cap for financial assistance on grain dryers.

The Farm Energy Improvement Practices Implementation and Certification Record worksheet will be completed and signed by the participant prior to practice certification for payment.

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-1	Ventilation - Exhaust	**Scenario Description:** Replacement of an exhaust fan with a more efficient exhaust fan. Payment includes fan, controls, wiring, associated appurtenances and labor to install. **After Practice Description:** High-efficiency ventilation system which reduces energy use. The new ventilation equipment will provide suitable air quality and reduce overall power requirements (kW) compared to the existing ventilation system as evidenced in an energy audit. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Each	Each	N/A	N/A	$1,081.07	$1,297.28
374-2	Ventilation - Horizontal Air Flow/Stir Fan	**Scenario Description:** A system of fans are installed where none exist to create a horizontal air circulation pattern and remove air stratification. The new system promotes efficient heat and moisture distribution. Payment includes fan controls, wiring, associated appurtenances and labor to install. **After Practice Description:** High-efficiency air circulation system which reduces energy use. In a typical 10,000 square foot greenhouse, 10 HAF fans are needed. The new equipment will provide suitable air quality and reduce overall power requirements (kW) compared to the existing system as evidenced in an energy audit. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Each	Each	N/A	N/A	$167.47	$200.97

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-3	Ventilation - Cool Cell, Evaporative Cooling System	**Scenario Description:** A cool cell evaporative cooling system is installed in a livestock barn to reduce total ventilation requirements in hot weather. Scenario is applicable where there is an existing, inefficient cooling system/ventilation system in place that will be replaced by the cool cell. Payment includes all materials and labor to install the evaporative cooling system. **After Practice Description:** A cool cell evaporative cooling system reduces energy use by allowing lower ventilation rates that will result in net energy savings. The new equipment will provide suitable air quality and reduce overall power requirements (kW) compared to the existing system as evidenced in an energy audit. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Square Foot	Square Foot	N/A	N/A	$14.90	$17.88
374-4	Refrigeration - Plate Cooler	**Scenario Description:** The installation of all stainless-steel dual pass plate cooler, type 316 stainless steel. Payment includes plate cooler and labor to install. **After Practice Description:** High-efficiency milk cooling system which reduces energy use. The new milk cooling equipment will pre-cool the milk and reduce overall power requirements (kW) compared to the existing milk cooling system (where most of the cooling was accomplished in the bulk tank) as evidenced in an energy audit. **Associated practices/activities may include:** 122- AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374- Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Each	Each	N/A	N/A	$3,182.76	$3,819.31

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-5	Refrigeration - Scroll Compressor	**Scenario Description:** Install a new comparably sized scroll compressor, associated controls, wiring, and materials to retrofit an existing refrigeration system. A new condenser is not included in this typical scenario. Payment includes compressor, controls, wiring, appurtenances and labor to install. **After Practice Description:** A more efficient scroll compressor, which will reduce energy use, is evidenced by the energy audit. A comparably sized scroll compressor provides refrigeration capacity at a higher efficiency than a reciprocating compressor. Newer scroll compressor systems typically reduce electricity use by 15 to 25 percent compared to reciprocating compressors. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non- renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Horsepower	Horsepower	N/A	N/A	$437.10	$524.53

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-6	Refrigeration - Compressor Heat Recovery System	**Scenario Description:** Install a new comparably sized compressor heat recovery unit. The unit includes insulated storage tanks with heat exchangers added to a refrigeration system. The system utilizes the heat extracted from the fluid (e.g. milk) that passes through the hot gas refrigerant line from the refrigeration system's compressors, to pre-heat water to approximately 110 degrees F before it enters a conventional water heater. Energy savings comes from the reduced heating required in a water heater. Low ambient controls and/or condenser variable speed drives are part of the installation. The actual number of heat recovery units and their location will depend on the operating hours of the compressor and the configuration of the existing system. Payment includes all materials and appurtenances and labor to install. **After Practice Description:** A more efficient compressor heat recovery system is installed, which will reduce energy use, is evidenced by the energy audit. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Each	Each	N/A	N/A	$3,411.29	$4,093.54
374-7	Controller - Variable Speed Drive for <=1 HP Motor	**Scenario Description:** Installation of a variable speed drive (VSD) for a =1 horsepower electric motor typically used in small dairy operations. Payment includes appurtenances, such as hook-ups, control panels, wiring, control blocks, filters, switches, pads, etc. and labor to install. Payment does not include the cost of the motor. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of a VSD to control electric motors. After the VSD is applied, the motor speed can be adjusted to reduce power requirements and better match varied flow or pressure requirements. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Horsepower	Horsepower	N/A	N/A	$603.71	$724.45

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-8	Controller - Variable Speed Drive for >1 to <10 HP Motor	**Scenario Description:** Installation of a variable speed drive (VSD) for a >1 to <10 horsepower electric motor. Payment includes appurtenances, such as hook-ups, control panels, wiring, control blocks, filters, switches, pads, etc. and labor to install. Payment does not include the cost of the motor. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of a VSD to control electric motors. After the VSD is applied, the motor speed can be adjusted to reduce power requirements and better match varied flow or pressure requirements. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Horsepower	Horsepower	N/A	N/A	$214.16	$257.00
374-9	Controller - Variable Speed Drive for 10 to <50 HP Motor	**Scenario Description:** Installation of a variable speed drive (VSD) for a >10 to <50 horsepower electric motor typically used in small dairy operations. Payment includes appurtenances, such as hook-ups, control panels, wiring, control blocks, filters, switches, pads, etc. and labor to install. Payment does not include the cost of the motor. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of a VSD to control electric motors. After the VSD is applied, the motor speed can be adjusted to reduce power requirements and better match varied flow or pressure requirements. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Horsepower	Horsepower	N/A	N/A	$141.08	$169.30

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-10	Controller - Variable Speed Drive for >= 50 HP Motor	**Scenario Description:** Installation of a variable speed drive (VSD) for a >= 50 horsepower electric motor used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment involved with agricultural production. Payment includes appurtenances, such as hook-ups, control panels, wiring, control blocks, filters, switches, pads, etc. and labor to install. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of a VSD to control electric motors. After the VSD is applied, the motor speed can be adjusted to reduce power requirements and better match varied flow or pressure requirements. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Horsepower	Horsepower	N/A	N/A	$73.23	$87.87
374-11	Controller - Multi-Function, Single Environmental Condition	**Scenario Description:** The typical scenario consists of a multiple function automatic control system to manage a single environmental condition installed on an existing manually controlled agricultural building control system. Environmental conditions are defined by the following: lighting, temperature, humidity and/or air quality. The controller will control a combination of the following devices to achieve single or multiple environmental condition control: fans, lights, curtains, dampers, heaters, sprinklers (cooling), etc. Typical components may include any of the following: wiring, sensors, data logger, logic controller, communication link, software, switches, and relay. Payment includes materials and appurtenances and labor to install. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of an automatic controller that helps regulates the energy consumption of the existing system. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Each system	Each	N/A	N/A	$1,232.92	$1,479.50

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-12	Controller - Multi-Function, Multiple Environmental Condition	**Scenario Description:** The typical scenario consists of a multiple function automatic control system to manage multiple environmental conditions installed on an existing manually controlled agricultural building control system. Environmental conditions are defined by the following: lighting, temperature, humidity and/or air quality. The controller will control a combination of the following devices to achieve single or multiple environmental condition control: fans, lights, curtains, dampers, heaters, sprinklers (cooling), etc. Typical components may include any of the following: wiring, sensors, data logger, logic controller, communication link, software, switches, and relay. Payment includes materials and appurtenances and labor to install. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of an automatic controller that helps regulates the energy consumption of the existing system. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Each system	Each	N/A	N/A	$2,817.52	$3,381.03

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-13	Motor - <= 1 HP Electric Motor Upgrade	**Scenario Description:** Replacement of an existing electric motor with an upgraded electric motor typically used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment involved with agricultural production. The upgraded electric motor will be the same size as the existing less efficient motor it is replacing. This scenario is for motors <=1 horsepower. Payment includes motor, appurtenances and labor to install. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of a NEMA premium efficiency motor. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Horsepower	Horsepower	N/A	N/A	$431.41	$517.69
374-14	Motor - > 1 to <10 HP Electric Motor Upgrade	**Scenario Description:** Replacement of an existing electric motor with an upgraded electric motor typically used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment involved with agricultural production. The upgraded electric motor will be the same size as the existing less efficient motor it is replacing. This scenario is for motors ranging from >1 horsepower to <10 horsepower. Payment includes motor, appurtenances and labor to install. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of a NEMA premium efficiency motor. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Horsepower	Horsepower	N/A	N/A	$107.88	$129.45

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-15	Motor - 10 - <50 HP Electric Motor Upgrade	**Scenario Description:** Replacement of an existing electric motor with an upgraded electric motor typically used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment involved with agricultural production. The upgraded electric motor will be the same size as the existing less efficient motor it is replacing. This scenario is for motors ranging from 10 horsepower to <50 horsepower. Payment includes motor, appurtenances and labor to install. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of a NEMA premium efficiency motor **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Horsepower	Horsepower	N/A	N/A	$84.96	$101.95
374-16	Motor - >= 50 HP Electric Motor Upgrade	**Scenario Description:** Replacement of an existing electric motor with an upgraded electric motor typically used to drive a ventilation fan, irrigation pumps, vacuum pump, or similar equipment involved with agricultural production. The upgraded electric motor will be the same size as the existing less efficient motor it is replacing. This scenario is for motors of 50 horsepower or greater. Payment includes motor, appurtenances and labor to install. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of a NEMA premium efficiency motor. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Horsepower	Horsepower	N/A	N/A	$65.89	$79.07

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-17	Motor - Variable Speed Electric (Split Phase)	**Scenario Description:** Installation of a multi speed electric motor typically used to drive a ventilation fan in a livestock production house. Payment includes motor and labor to install. Control panel is not included. Refer to associated control panel scenarios as needed. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of a multi speed electric motor. After the motor is installed, the motor speed can be adjusted to reduce power requirements and better match varied flow or pressure requirements. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Horsepower	Horsepower	N/A	N/A	$186.60	$223.93

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-18	Heating - Radiant Systems	**Scenario Description:** Replace 'pancake' Brood Heaters in a poultry house with Radiant Tube Heaters, or similar. Replacement will require the materials and labor to remove existing heating system, re-plumb gas lines, cables and winch system to retrofit new radiant tube heaters, and miscellaneous items to complete the installation. Alternate acceptable radiant heating systems can include radiant brooders and quad radiant systems as indicated in the energy audit. Payment includes materials and labor to install the new system. **After Practice Description:** Energy use is reduced through installation of a more efficient heater. Radiant tube heaters primarily warm objects within a direct line of sight (similar to the sun or an open fire). Air temperature is of relatively little importance for a radiant heating system to be effective. As a result, radiant systems are typically installed 5' or more above the floor level. This height extends the distribution of the radiant heat over a larger area than is possible with pancake style heaters. A roughly 16' diameter radiant heat zone heats over twice that of a conventional pancake brooder. The typical scenario consists of the replacement of 28 brood heaters with 6 radiant tube heaters **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Rated Heat Output	1,000 BTU/Hour	N/A	N/A	$9.28	$11.13

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-19	Heating - Building	**Scenario Description:** Replace existing low efficiency heaters with new high efficiency heaters. High-efficiency heating systems include any heating unit with efficiency rating of 80%+ for fuel oil and 90%+ for natural gas and propane. Applications may be air heating/building environment and hydronic (boiler) heating for agricultural operations, including under bench, or root zone heating. An alternative to heater replacement might be the addition of climate control system and electronic temperature controls with +/- 1-degree F differential, to reduce the annual run time. Payment includes heater and labor to install. **After Practice Description:** Higher efficiency heaters reduce energy consumption, energy costs, and GHG emissions. These replacement systems can be fueled by natural gas, propane, or fuel oil. **Associated practices/activities:** 122-AgEMP - HQ 670-Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non- renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Rated Heat Output	1,000 BTU/Hour	N/A	N/A	$12.00	$14.40
374-20	Heating - Attic Heat Recovery Vents	**Scenario Description:** Install actuated inlets or automatic latching gravity inlets that draw warmer, drier air from the attic to assist with moisture and heat control when ventilation fans are being operated in poultry houses and swine barns. In certain situations, it may be necessary to also upgrade the ventilation system in addition to the vent upgrades. Other systems to transfer heat, as detailed in ASABE S612-compliant energy audit may also be used. Payment includes materials and labor to install. **After Practice Description:** Attic vents or inlets allow dry warm air from the attic to circulate throughout the building in a 40' x 500' poultry house. By using pre-warmed air from the attic less energy is needed for heating 122-AgEMP - HQ 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Each inlet	Each	N/A	N/A	$144.14	$172.96

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-21	Grain Dryer	**Scenario Description:** A more efficient replacement continuous dryer rated for the present dryer bushel/per hour capacity to treat existing energy concerns. Grain dryer rated capacity for the removal of 10 points moisture from corn per ASABE S248. The operation includes a microcomputer-based control system that adjusts the amount of time the crop remains in the dryer in order to achieve a consistent and accurate moisture content in the dried product. Alternate types of replacement dryers which reduce energy use are acceptable as defined by the energy audit. The upgraded grain dryer will be the same size as the existing less efficient grain dryer it is replacing. Payment includes materials and labor needed for the installation. **After Practice Description:** Energy use is reduced through installation of a more efficient continuous dryer that uses a microcomputer-based controller to reduce over drying and total time of operation. The typical operation requires a rated capacity of 860 bushels per hour. **Associated practices/activities may include:** 122-AgEMP - HQ, 670- Lighting System Improvement, 672- Building Envelope Improvement, and other activities within 374-Farmstead Energy Improvement. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612.	Rated capacity of the dryer for 10 point moisture drop	Bushel per Hour	N/A	N/A	$107.55	$129.06

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
374-67	Controller - Single Function	**Scenario Description:** The typical scenario consists of a single function controller with built in sensors for automatic on-off control that can be powered by a typical 120V electrical outlet. Controller does not typically include any communication link, data logging or wi-fi capabilities. The controller is typically installed on an existing manually controlled agricultural system including, but not limited to, building ventilation systems. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of an automatic controller that helps regulate the energy consumption of the existing system. **Associated practices/activities may include:** 128-AgEMP, 670 - Lighting System Improvement, 672 - Building envelope Improvement, and other activities within 374 - Farmstead Energy Improvement. The new controller is connected to the existing system and controls when the equipment is on or off. The resource concern of Inefficient Energy Use - Equipment and Facilities will be addressed with this practice by operating the equipment only when needed and therefore saving energy.	Each controller	Each	N/A	N/A	$137.26	$164.71
374-79	Ventilation - Heat Recovery System	**Scenario Description:** Heat recovery system to recover thermal energy from contaminated and dirty exhaust air in poultry barns. Includes all the automation, controls, and monitoring equipment resulting in a self-sufficient operating unit/system. Each system is designed to operate 4,000 square feet of poultry production space and provides 4,000 cfm of ventilation. **After Practice Description:** Exhaust heat is recovered and reused thereby reducing heating energy costs for the production facility. **Associated practices:** 128 Ag Energy Management Plan.	Each unit	Each	N/A	N/A	$7,500.00	$9,000.00

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FEED MANAGEMENT

Practice Code 592

Practice Units: ANIMAL UNITS

Definition: Managing the quantity of available nutrients fed to livestock and poultry for their intended purpose.

Purpose:

- Supply the quantity of available nutrients required by livestock and poultry for maintenance, production, performance, and reproduction; while reducing the quantity of nutrients, especially nitrogen and phosphorus, excreted in manure.
- Improve net farm income by feeding nutrients more efficiently.

Conditions Where Practice Applies: Livestock and poultry operations seeking to enhance nutrient efficiencies. Confined livestock and poultry operations with a whole farm nutrient imbalance, with more nutrients imported to the farm than are exported and/or utilized by cropping programs. Confined livestock and poultry operations that have a significant buildup of nutrients in the soil due to land application of manure. Confined livestock and poultry operations that land apply manure and do not have a land base large enough to allow nutrients to be applied at rates recommended by soil test and utilized by crops in the rotation.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
592-3	Livestock	**Scenario Description:** This example is feed ration management on a swine finishing operation that does not have access to enough acres to spread all of the nutrients in the manure, at agronomic rates. The resource concerns are water quality, and excessive manure nutrients, particularly nitrogen and phosphorus. The goal of the practice is to reduce these excess nutrients to a point where they can be fully utilized at agronomic rates on the existing land base, thereby reducing or eliminating water quality degradation concerns. **After Practice Description:** This scenario's operation currently houses 2800 finishing hogs with an average weight of 154 pounds, or 430 animal units ((2800 hogs * 154 lbs./hog/1000 lbs./AU154)) = 430 AU). The farm typically grows out 2.5 turns per year. A baseline analysis of manure and feed will be completed to determine the current nutrient inputs and outputs. The producer will reduce feed protein and phosphorus levels to that of NRC recommendations for animals of this type and at this stage of production. Producer will consider alternative feedstuffs, phase feeding, split-sex feeding and other scenarios to achieve the objective. Proper feed management removes excess nutrients from the manure, making the manure easier for the producer to properly manage within his/her land constraints. The improved manure management prevents surface and groundwater degradation from excess nitrogen and phosphorus. **Associated Practices:** Nutrient management (590)	Number of 1000 pound animal units	Animal Unit	$0.90	$1.35	$1.35	$1.62
592-4	Poultry/Layer Operation	**Scenario Description:** This example is feed ration management on a poultry or layer operation that does not have access to enough acres to spread all of the nutrients in the manure, at agronomic rates. The resource concerns are water quality, and excessive manure nutrients, particularly nitrogen and phosphorus. The goal of the practice is to reduce these excess nutrients to a point where they can be fully utilized at agronomic rates on the existing land base, thereby reducing or eliminating water quality degradation concerns. **After Practice Description:** This scenario's operation currently houses 15,000 broilers with an average weight of 5 pounds, or 75 animal units ((15,000 broilers * 5lbs/chicken/1000 lbs./) = 75 AU). A baseline analysis of manure and feed will be completed to determine the current nutrient inputs and outputs. The producer will reduce feed protein and phosphorus levels to that of NRC recommendations for animals of this type and at this stage of production. Producer will consider alternative feedstuffs, phase feeding, split-sex feeding and other scenarios to achieve the objective. Proper feed management removes excess nutrients from the manure, making the manure easier for the producer to properly manage within his/her land constraints. The improved manure management prevents surface and groundwater degradation from excess nitrogen and phosphorus. **Associated Practices:** Nutrient management (590)	Number of 1000 pound animal units	Animal Unit	$11.05	$16.58	$16.58	$19.89

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative- HU
592-19	Animal Group	**Scenario Description:** Feed ration management on an animal operation that does not have access to enough acres to spread all of its manure nutrients at an agronomic rate. The resource concerns are water quality degradation, excessive manure nutrients, particularly nitrogen and phosphorus. The goal of the practice is to reduce the amount of nutrients in the raw manure so that it is easier for farmers to apply the manure at agronomic rates, thereby reducing or eliminating water quality degradation concerns. **After Practice Description:** The scenario assumes that a specific group of animals is being evaluated. A baseline analysis of 4 samples each with 4 quarterly reports of manure, and feed will be completed to determine the current inputs and outputs. The producer will reduce feed protein and phosphorus levels to that of NRC recommendations for a group of animals of this type and at this stage of production. The producer will explore alternative feedstuffs and alternative feeding strategies to bring manure nitrogen and/or phosphorus levels down without hurting production of the animals or profitability of the operation. Alternative feeding strategies can include such things as grouping animals by similar age, sex, or stage of production, feeding based on individual rolling average production, or local feedstuffs. **Associated practices**: Nutrient Management (590), Prescribed Grazing (528), Forage Harvest Management (511).	Group	Each	$1,750.32	$2,625.48	$2,625.48	$3,150.58
592-35	Feed Additive	**Scenario Description**: Feed ration management on an animal operation by inclusion of a feed additive. The resource concerns may be water quality degradation (pathogens, soluble nutrients), air quality (odors, greenhouse gas). The goal of the practice is to add an approved feed additive that has been proven to reduce pathogens, or tie up soluble nutrients, or improve air quality by reducing odors, ammonia, or greenhouse gases to the animal diet. For this scenario, zeolite will be added to beef and dairy rations to reduce ammonia emissions. **After Practice Description:** The scenario assumes that a specific group of animals is being evaluated for a resource concern, and that a proven feed additive can have an effect on that concern. For this particular scenario, a zeolite is added to a beef or dairy ration at a rate of 2% of the daily ration. The zeolite will absorb ammonia and other compounds, resulting in lower nitrogen excretion and thus lower ammonia emissions from the manure and result in improved air quality. Assume that one hour of general labor will be needed per year per animal unit to load/unload zeolite into feed mixing equipment. Assume that the zeolite is added based on a 2% inclusion rate of the dry matter ration of 25 pounds/day/animal unit or the amount of zeolite needed is 0.5 pounds/day/animal unit or about 0.1 tons/year/animal unit. **Associated practices:** Nutrient Management (590).	Per Animal unit, per year	Animal Unit	$28.98	$43.48	$43.48	$52.17

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FEED MANAGEMENT PLAN - WRITTEN

Practice Code 108

Practice Units: NUMBER

Definition: The CAP 108 is a Feed Management Plan that is a farm specific plan developed for a client to address manipulation and control of the quantity and quality of available nutrients, feedstuffs, and/or additives fed to livestock and poultry.

Purpose: To document the landowner's and/or operator's plan to manage feedstuffs and/or additives by combining conservation practices and management activities into a conservation system that, when implemented, will achieve the goal of the producer and treat identified resource concerns.

Conditions Where Practice Applies: Livestock and poultry operations seeking to enhance feed efficiencies.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
108-37	Feed Management Plan	**Scenario Description:** The owner/operator of an Animal Feeding Operation (AFO) has not received a written Feed Management Plan (FeedMP) that addresses all resource concerns present on the facility. Various levels of management and conservation implementation has occurred in the operation. Little documentation of the methods of feed management used and practices installed exists, and the producer is not likely to develop a complete forage inventory or nutrient analysis. The producer may or may not have a conservation plan or a nutrient management plan. Nutrient management related resource concerns on the operation remain to be addressed through the development of a complete FeedMP including management and conservation practices for proper quantity and quality of available nutrients, feedstuffs, and/or additives fed to livestock or poultry that may be present on the operation. Present operation and feed methodology poses risk of feeding excessive amounts of nutrients in animal manure which result in negative impacts to water quality and odor resource concerns. Negative water and air quality impacts as well as farmstead safety and security issues may remain on the AFO, and inadequate recordkeeping nutrient, inspection and monitoring of the existing operation may need further improvement. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Feed Management' (FM) conservation activity plan (CAP). The CAP criteria requires the plan to meet quality criteria for applicable natural resource concerns and provides for opportunities to identify and implement conservation practices related to management of feed, forages, or delivery of supplements to maximize efficient feeding operations and livestock growth. The CAP plan may serve as the basis for implementation of the primary conservation practice 592-Feed Management. If applicable, the FM CAP may also be developed to complement Comprehensive Nutrient Management Plans (CNMP) or to help meet requirements of NRCS practice standard 590 - Nutrient Management. As addressed in the CAP planning criteria, the plan may include recommendations for addressing associated natural resource concerns with other conservation practices. The FM CAP meets the basic quality criteria for the 108 plan as cited in the NRCS Field Office Technical Guide.	Number	Each	$1,365.12	$1,638.14	N/A	N/A

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FENCE

Practice Code 382

Practice Units: FEET

Definition: A constructed barrier to contain animals or people.

Purpose: This practice facilitates the accomplishment of conservation objectives by providing a means to control movement of animals and people, including vehicles

Conditions Where Practice Applies: On any area where management of animal or human movement is needed.

Limitations: Fence (382) is ineligible if the primary purpose is to separate ownership or exclude livestock from transportation networks or residential, commercial, or industrial areas, or to exclude deer, hogs, or other wild animals from cropland.

-- EQIP Financial Assistance is eligible for Fence in the following situations:

On expired or expiring Conservation Reserve Program (CRP) land to establish a grazing operation; however, the practice may not be installed until the CRP contract has expired. Where the EQIP contract includes supporting practices that promote a change in production systems, the program contract must contain the appropriate Management practice to ensure that environmental benefits will be achieved.

On land to protect, restore, develop, or enhance habitat for wildlife or to exclude livestock from an environmentally sensitive area, such as a riparian area forestland or wetland.

On Pastureland where the participant is implementing (Conservation Practice Standard CPS 528) Prescribed Grazing to address an identified resource concern and fence is a necessary supporting practice. For perimeter and property line fences, the sections the applicant is responsible for maintaining are eligible for EQIP financial assistance.

When the conversion of Cropland to Pasture with the implementation of CPS 528 Prescribed Grazing, fence needed to support this system is eligible for EQIP financial assistance. For perimeter and property line fences, the sections the applicant is responsible for maintaining are eligible for EQIP financial assistance. Where the EQIP contract includes supporting practices that promote a change in production systems, the program contract must contain the appropriate Management practice to ensure that environmental benefits will be achieved.

Maintenance: Practice will be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
382-2	Permanent Barbed Wire Multi Strand	**Scenario Description:** Scenario is for the establishment of permanent multi strand barbed wire fence for livestock. **After Practice Description:** Installation of fence will allow for implementation of grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Fence includes posts, wire, fasteners, gates, brace posts, etc. Fence will be installed with wildlife friendly considerations. **Associated Practices:** Prescribed Grazing, Pipeline, Water Well, Spring Development, Heavy Use Area, Pumping Plant, Watering Facility, Forage and Biomass Planting, Critical Area Planting, Access Control	Length of Fence	Foot	$1.08	$1.62	$1.62	$1.95
382-3	Permanent High Tensile Electric 2-3 Strand	**Scenario Description:** Scenario is for the installation of a permanent high tensile electric fence of either 2 or 3 strands. Fence will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Constructed using fencing materials rather than a pre-manufactured gate. **After Practice Description:** Installation of fence will allow for implementation of a rotational grazing plan that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. This scenario consists of installing a permanent high tensile electric fence with 2-3 wires with wooden post of 50' centers, battens between the post, single H brace assembles, energizer, and all appurtenances. **Associated Practices:** Prescribed Grazing, Pipeline, Water Well, Spring Development, Heavy Use Area, Pumping Plant, Watering Facility, Forage and Biomass Planting, Critical Area Planting, Access Control	Length of Fence	Foot	$0.78	$1.17	$1.17	$1.41

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
382-4	Permanent High Tensile Electric Single Strand	**Scenario Description:** Scenario is for the installation of a permanent high tensile electric single strand fence. Installation of fence will allow for implementation of a grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. **After Practice Description:** Installation of fence will allow for implementation of grazing management that allows for an adequate rest and recovery period, protection of sensitive area, improved water quality, reduction of noxious and invasive weeds. Fence includes posts, wire, fasteners, gates, fence charger, etc. Fence will be installed with wildlife friendly considerations. **Associated Practices:** Prescribed Grazing, Pipeline, Water Well, Spring Development, Heavy Use Area, Pumping Plant, Watering Facility, Forage and Biomass Planting, Critical Area Planting, Access Control	Length of Fence	Foot	$0.53	$0.80	$0.80	$0.96
382-5	Permanent High Tensile, Minimum 4 Strand, Double H bracing	**Scenario Description:** Establishment of permanent electric or non-electric high tensile fence for livestock. Fence is designed using minimum of 4 strands and double H bracing. **After Practice Description:** This scenario consists of installing a permanent high tensile fence with a minimum of 4 wires with wooden posts, double H brace assembles as called for by site conditions, and all appurtenances. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** Prescribed Grazing, Pipeline, Water Well, Spring Development, Heavy Use Area, Pumping Plant, Watering Facility, Forage and Biomass Planting, Critical Area Planting, Access Control.	Length of Fence	Foot	$1.20	$1.81	$1.81	$2.17

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
382-6	Permanent High Tensile, Minimum 4 Strand, Single H brace	**Scenario Description:** Establishment of permanent electric or non-electric high tensile fence for livestock. Fence is designed using minimum of 4 strands and single H bracing. Also used for small ruminant High Tensile electrified woven wire fence product. **After Practice Description:** Typical size for this scenario is 1320 feet. This scenario consists of installing a permanent high tensile fence with a minimum of 4 wires with wooden posts, single H brace assembles, and all appurtenances. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** Prescribed Grazing, Pipeline, Water Well, Spring Development, Heavy Use Area, Pumping Plant, Watering Facility, Forage and Biomass Planting, Critical Area.	Length of Fence	Foot	$0.96	$1.44	$1.44	$1.73
382-7	Permanent Woven Wire	**Scenario Description:** Establishment of woven wire fence for livestock. **After Practice Description:** Typical size for this scenario is 1320 feet. This scenario consists of installing a permanent woven wire fence with wooden posts of 20' centers and single H brace assemblies. Also includes one strand barbed top wire, and all appurtenances. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** Prescribed Grazing, Pipeline, Water Well, Spring Development, Heavy Use Area, Pumping Plant, Watering Facility, Forage and Biomass Planting, Critical	Length of Fence	Foot	$1.25	$1.88	$1.88	$2.25
382-8	Temporary/ Portable Fence	**Scenario Description:** Establishment of temporary or portable fence for livestock to facilitate a more intensive grazing system such as stockpiling or strip grazing. **After Practice Description:** Consists of installing a single strand polywire/polytape fence with step in/fiberglass posts on 50' centers, solar energizer, and all appurtenances. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** Prescribed Grazing, Pipeline, Water Well, Spring Development, Heavy Use Area, Pumping Plant, Watering Facility, Forage and Biomass Planting, Critical Area Planting, Access Control	Length of Fence	Foot	$0.23	$0.34	$0.34	$0.41

ID	Scenario Name	Scenario Description & <u>After Practice Description</u>	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
382-9	Safety	**Scenario Description:** A barrier (fence) implemented on an NRCS constructed waste storage system according to engineering design to exclude human access. Permanently installed fence built to (1) keep humans away from waste ponds & lagoons, or (2) to protect sensitive areas (riparian areas, wetlands, springs, etc.) from heavy livestock pressure. Heavy grade fence materials and close post spacing required. **After Practice Description:** Humans and livestock are excluded from the waste storage pond for safety purposes by installing a fence around a waste holding pond. The fence would typically be 100 wide x 175 long with one gate and installed by a fencing contractor. Woven wire fence with one strand of barb wire on top with a gate. Improved livestock control and access to water or other sensitive areas will promote safety for livestock/humans improve health, vigor of sensitive species, limiting soil erosion, and condition.	Length of Fence	Foot	$2.61	$3.91	$3.91	$4.70
382-10	Temporary - Portable for Small Livestock	**Scenario Description:** Establishment of temporary or portable fence for small livestock to facilitate a more intensive grazing system such as stockpiling or strip grazing. **After Practice Description:** Consists of installing a prefabricated fence that has 10 horizontal twines; is 42 in. tall installed, and has plastic vertical struts every 12”, solar energizer, and all appurtenances. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** Prescribed Grazing, Pipeline, Water Well, Spring Development, Heavy Use Area, Pumping Plant, Watering Facility, Forage and Biomass Planting, Critical Area Planting, Access Control	Length of fence	Foot	$0.96	$1.44	$1.44	$1.72

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FIELD BORDER

Practice Code 386

Practice Units: ACRE

Definition: A strip of permanent vegetation established at the edge or around the perimeter of a field.

Purpose:

- Reduce erosion from wind and water and reduce excessive sediment to surface waters (soil erosion).
- Reduce sedimentation offsite and protect water quality and nutrients in surface and ground waters (water quality degradation).
- Provide food and cover for wildlife and pollinators or other beneficial organisms (inadequate habitat for fish and wildlife).
- Reduce greenhouse gases and increase carbon storage (air quality impact). Reduce emissions of particulate matter (air quality impact)

Conditions Where Practice Applies: Around the inside perimeter of fields. Its use can support or connect other buffer practices within and between fields. This practice applies to cropland and pasture fields

Limitations:

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
386-14	Field Border, Native Species, Forgone Income	**Scenario Description:** A strip of permanent vegetation established at the edge or around the perimeter of an agricultural field. Practice includes seedbed prep and planting of native species. The area of the field border is taken out of production. **After Practice Description:** The 386 Implementation Requirements have been developed and applied for the site. This practice when applied around a field may support and connect other buffer practices within and between fields. Native grasses, legumes and forbs will be established in the field borders to the extent needed to meet the resource needs and producer objectives. Minimum field border widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Native species shall be selected that do not function as a host for diseases of a field crop and have physical characteristics necessary to control wind and water erosion to tolerable levels on the field border area.	Number of acres	Acre	$411.16	$428.35	$411.16	$428.35
386-15	Field Border, Introduced Species, Forgone Income	**Scenario Description:** A strip of permanent vegetation established at the edge or around the perimeter of an agricultural field. Practice includes seedbed prep and planting of introduced species. The area of the field border is taken out of production. **After Practice Description:** The 386 Implementation Requirements have been developed and applied for the site. This practice when applied around a field may support and connect other buffer practices within and between fields. Introduced grasses and legumes will be established for the field border to the extent needed to meet the resource needs and producer objectives. Minimum field border widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Introduced species of grasses, legumes, forbs or shrubs shall be selected that are adapted to site, will not function as a host for diseases of a field crop and have physical characteristics necessary to control wind and water erosion to tolerable levels on the field border area.	Number of acres	Acre	$326.79	$339.10	$326.79	$339.10

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
386-16	Field Border, Pollinator, Forgone Income	**Scenario Description:** A strip of permanent vegetation established at the edge or around the perimeter of an agricultural field. Practice includes seedbed prep and planting of pollinator friendly herbaceous species. The area of the field border is taken out of production. **After Practice Description:** The 386 Implementation Requirements have been developed and applied for the site. This practice when applied around a field may support and connect other buffer practices within and between fields. Pollinator herbaceous plantings will provide species which flower throughout the growing season. This provides a source of nectar for adult pollinators and a diversity of herbaceous material for immature pollinator life stages and for nesting. Minimum field border widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Species selected shall meet the pollinator habitat requirements of the state and be adapted to site; not function as a host for diseases of a field crop and; have physical characteristics necessary to control wind and water erosion to tolerable levels on the field border area.	Number of acres	Acre	$1,023.66	$1,163.35	$1,023.66	$1,163.35

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FILTER STRIP

Practice Code 393

Practice Units: ACRE

Definition: A strip or area of herbaceous vegetation that removes contaminants from overland flow.

Purpose:

- Reduce suspended solids and associated contaminants in runoff and excessive sediment in surface waters.
- Reduce dissolved contaminant loadings in runoff.
- Reduce suspended solids and associated contaminants in irrigation tailwater and excessive sediment in surface waters

Conditions Where Practice Applies: Filter strips are established where environmentally sensitive areas need to be protected from sediment, other suspended solids, and dissolved contaminants in runoff.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
393-14	Filter Strip, Introduced species, Forgone Income	**Scenario Description:** A strip or area of herbaceous vegetation that removes contaminants from overland flow. Practice includes seedbed prep and planting of introduced species. The area of the filter strip is taken out of production. **After Practice Description:** The 393 Implementation Requirements are developed for the site and applied. The planned filter strip will be established and maintained per the practice plan that will meet the criteria for the planned purpose(s). The vegetation will consist of introduced species. The filter strip will have adequate width to filter the planned pollutants. The practice includes seedbed preparation, seeding, and seed. Species selected shall be able to withstand partial burial by sediment and tolerant of herbicides used on contribution area while protecting environmentally-sensitive areas. The area of the filter strip is taken out of production.	Number of acres	Acre	$448.93	$473.67	$448.93	$473.67
393-15	Filter Strip, Native species, Forgone Income	**Scenario Description:** A strip or area of herbaceous vegetation that removes contaminants from overland flow. Practice includes seedbed prep and planting of native species. The area of the filter strip is taken out of production. **After Practice Description:** The 393 Implementation Requirements are developed for the site and applied. The planned filter strip will be established and maintained per the practice plan that will meet the criteria for the planned purpose(s). The vegetation will consist of native species. The filter strip will have adequate width to filter the planned pollutants. The practice includes seedbed preparation, seeding, and seed. Species selected shall be able to withstand partial burial by sediment and tolerant of herbicides used on the contribution area while protecting environmentally-sensitive areas. The area of the filter strip is taken out of production.	Number of acres	Acre	$450.51	$475.57	$450.51	$475.57

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FIREBREAK

Practice Code 394

Practice Units: FEET

Definition: A permanent or temporary strip of bare or vegetated land planned to retard fire.

Purpose:

- Reduce the spread of wildfire.
- Contain prescribed burns.

Conditions Where Practice Applies: This practice applies on all land uses where protection from wildfire is needed or prescribed burning is applied.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
394-1	Constructed - Light Equipment	**Scenario Description:** Installation of a bare-ground firebreak of a minimum width of 15' around a 20-acre field/farm using farm equipment (2 passes). Generally, water control devices such as water bars are not needed due either to the lack of steep terrain or the temporary nature of the firebreak. Resource concerns include Wildfire hazard from excessive biomass accumulation, Undesirable plant productivity and health, Inadequate plant structure and composition, and Habitat degradation. **After Practice Description:** The property is adequately protected from wildfire or can be safely prescribe burned.	Length of firebreak	Foot	$0.04	$0.05	$0.04	$0.05
394-4	Vegetated permanent firebreak	**Scenario Description:** Establishing a 20-foot-wide strip of permanent vegetation that will serve as a green firebreak. Scenario includes clearing the site, preparing the seedbed, seeding (typically cool season grasses and/or legumes), and applying needed soil amendments. Clearing will be achieved using chemical and/or mechanical means. Seedbed preparation and vegetation establishment will be accomplished with farm equipment. Soil amendments will be applied according to local FOTG guidance. This scenario does not include follow-up maintenance operations such as weed control. mowing, etc. Resource concerns include Wildfire hazard from excessive biomass accumulation, Soil erosion, and Excessive sediment in surface waters. **After Practice Description:** The property is adequately protected from wildfire or can be safely prescribe burned. Wildlife habitat will also be enhanced and the potential for erosion from the firebreak is minimized.	Length of firebreak	Foot	$0.11	$0.14	$0.11	$0.14
394-6	Constructed - Handline	**Scenario Description:** Installation of a bare-ground firebreak of a minimum width of 5' around a 20-acre woodland burn unit with the dominant fuel being hardwood leaf litter. Generally, water control devices such as water bars are not needed due either to the lack of steep terrain or the temporary nature of the firebreak. The firebreak will be installed with hand tools such as broom rakes and/or leaf blowers. Resource concerns include Wildfire hazard from excessive biomass accumulation, Undesirable plant productivity and health, Inadequate plant structure and composition, and Habitat degradation. **After Practice Description:** The property can be safely prescribe burned and the potential for excessive erosion from the firebreak is minimized.	Length of firebreak	Foot	$0.08	$0.09	$0.08	$0.09

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FISH AND WILDLIFE HABITAT PLAN - WRITTEN

Practice Code 142

Practice Units: NUMBER

Definition: A fish and wildlife habitat plan is a site-specific plan developed for a client who is ready to plan and implement decisions with consideration for fish and wildlife habitat and other biological resources.

A Fish and Wildlife Habitat Plan will:

Meets Natural Resource Conservation Service (NRCS) quality criteria for fish and wildlife habitat and other identified resource concerns;

Complies with federal, state, tribal and local laws, regulations and permit requirements;

Addresses the client's objectives.

Purpose: A fish and wildlife activity conservation plan will address NRCS quality criteria for fish and wildlife and soil erosion, water quality, or other identified resource concerns. The plan will comply with Federal, State, Tribal, and local laws, regulations, and permit requirements. The plan will satisfy the participant's objectives in regard to fish and wildlife resources.

Conditions Where Practice Applies: On lands where a Fish and Wildlife Habitat Plan is needed and feasible.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
142-19	Fish & Wildlife Habitat Management CAP (2 Land Uses)	**Scenario Description:** Various on-farm land uses. Natural Resource Concern: Fish and Wildlife, and other applicable resource concerns on an agricultural operation. CAP addresses fish and wildlife habitat management relative to two land uses on the agricultural operation of which each land use is at least 20 acres in size. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Fish and Wildlife Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for the primary fish/wildlife habitat resource concern and other applicable resource concerns and provides for opportunities to improve, restore, or enhance habitat that supports native and/or managed species. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 142 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$2,648.58	$3,178.30	N/A	N/A
142-35	Fish & Wildlife Habitat Management CAP (Three Land Uses)	**Scenario Description:** Various on-farm land uses. Natural Resource Concern: Fish and Wildlife, and other applicable resource concerns on an agricultural operation. CAP addresses fish and wildlife habitat management relative to two or more land uses on the agricultural operation of which at least three of the land uses are at least 20 acres in size. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Fish and Wildlife Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for the primary fish/wildlife habitat resource concern and other applicable resource concerns and provides for opportunities to improve, restore, or enhance habitat that supports native and/or managed species. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 142 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$3,130.14	$3,756.17	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
142-51	Fish & Wildlife Habitat Management CAP (1 Land Use)	**Scenario Description:** Various on-farm land uses. Natural Resource Concern: Fish and Wildlife, and other applicable resource concerns on an agricultural operation. CAP addresses fish and wildlife habitat management relative to only one land use on the agricultural operation. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Fish and Wildlife Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for the primary fish/wildlife habitat resource concern and other applicable resource concerns and provides for opportunities to improve, restore, or enhance habitat that supports native and/or managed species. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 142 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$2,167.02	$2,600.42	N/A	N/A

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FORAGE AND BIOMASS PLANTING

Practice Code 512

Practice Units: ACRE

Definition: Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production.

Purpose:

- Improve or maintain livestock nutrition and/or health.
- Provide or increase forage supply during periods of low forage production.
- Reduce soil erosion.
- Improve soil and water quality.

Conditions Where Practice Applies: All lands suitable to the establishment of annual, biennial and/or perennial species for forage or biomass production. This practice does not apply to the establishment of annually planted and harvested food, fiber, or oilseed crops.

Limitations: Hay planting on cropland is only eligible for EQIP financial assistance when increasing the acres of hay in the rotation.

Maintenance: Practice must be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
512-1	Interseeding Legumes and/or forbs	**Scenario Description:** Interseed legumes and/or forbs into an existing grass stand for the purpose of increasing plant diversity, soil quality and fertility, and plant health and enhancing the quality of forage. Scenario is appropriate for conventional production. Payment includes seed, seeding and fertility for interseeding establishment. **After Practice Description:** A more diverse grass stand provides improved forage quality and availability, and improved soil condition. Payment scenario is based on red and ladino clover interseeded into a 20-acre cool season grass stand. Inputs are based on medium to low existing fertility.	Acres of Forage and Biomass Planting	Acre	$111.13	$133.35	$111.13	$133.35
512-2	Interseed Legumes and/or forbs Organic	**Scenario Description:** Interseed legumes and/or forbs into an existing grass stand for the purpose of increasing plant diversity, soil quality and fertility, and plant health and enhancing the quality of forage. Scenario is appropriate for organic production. Payment includes seed, seeding and fertility for interseeding establishment. **After Practice Description:** A more diverse grass stand provides improved forage quality and availability, and improved soil condition. Payment scenario is based on red and ladino clover interseeded into a 20-acre cool season grass stand. Inputs are based on medium to low existing fertility.	Acres of Forage and Biomass Planting	Acre	$126.21	$151.45	$126.21	$151.45
512-3	Introduced Grass Establishment or Renovation	**Scenario Description:** Establishing a new stand or renovating a poor stand to introduced grass, or grass with legumes and/or forbs to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Scenario is appropriate for conventional production. Payment includes site preparation, seed, seeding fertilizer, lime, and foregone income for loss of production during establishment/renovation **After Practice Description:** Establish introduced grass and legume mix stand to improve livestock nutrition through improved forage quality and availability, and improved soil condition. Payment scenario is based on converting an existing poor condition sod to introduced grass/legume/forb mix using mechanical or chemical activities.	Acres of Forage and Biomass Planting	Acre	$170.05	$195.07	$170.05	$195.07

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
512-4	Introduced Grass Establishment or Renovation Organic	**Scenario Description:** Establishing a new stand or renovating a poor stand to introduced grass, or grass with legumes and/or forbs to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Scenario is appropriate for organic production. Payment includes site preparation, seed, seeding fertilizer, lime, and foregone income for loss of production during establishment/renovation **After Practice Description:** Establish introduced grass and legume mix stand to improve livestock nutrition through improved forage quality and availability, and improved soil condition. Payment scenario is based on converting an existing poor condition sod to introduced grass/legume/forb mix using mechanical or chemical activities.	Acres of Forage and Biomass Planting	Acre	$196.39	$225.32	$196.39	$225.32
512-7	Native Grass Establishment or Renovation - with fertility	**Scenario Description:** Establishing a new stand or renovating a poor stand to native grass, or grass with legumes and/or forbs to improve or maintain livestock/wildlife nutrition and health, extend the length of the grazing season, and provide soil cover to reduce erosion. Scenario is appropriate for conventional production on sites where fertilizer is needed for establishment. Payment includes site preparation, seed, seeding, fertilizer, lime and foregone income for loss of production during establishment/renovation **After Practice Description:** Establish native grass and legume and/or forbs mix stand to improve livestock nutrition through improved forage quality and availability, and improved soil condition. Payment scenario is based on converting an existing poor condition sod to native grass/legume/forb mix using mechanical or chemical activities.	Acres of Forage and Biomass Planting	Acre	$291.38	$331.66	$291.38	$331.66

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
512-9	Pasture Renovation Utilizing Interim Seeding	**Scenario Description:** Renovation of an existing pasture where an interim stand is established for one year prior to the perennial stand being established. Scenario is appropriate for renovating an existing stand of endophyte infected fescue using the spray - smother - spray technique (spray existing grass before heading in early spring, plant a smother crop, spray smother crop in the fall, plant new grass stand into the stubble). Scenario is also appropriate for situations where any interim species is established and then the perennial is seeded after. Payment includes chemical operations, interim crop establishment and termination, and seeding of new renovated grass stand, including fertilizer and lime needed for a successful establishment. **After Practice Description:** Stand is renovated without the loss of production. Annual grass planted as a smother crop would be grazed, extending the grazing season. Stand is renovated to a non-endophyte introduced grass/legume stand using the spray-smother-spray technique.	Acres of Forage and Biomass Planting	Acre	$223.53	$259.24	$223.53	$259.24
512-10	Introduced Perennial & Native Grass Mix, foregone income	**Scenario Description:** Establish or reseed adapted introduced grasses and at least one native species 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 grasses for pasture, hay land, and wildlife openings. Native grass species which have a significantly greater cost than introduced species comprise one third of the grass mixture. This practice may be utilized for organic or regular production. This scenario assumes seed, equipment and labor for seed bed prep, tillage, seeding. The land being seeded was previously cropland with a typical rotation of corn and soybeans. **After Practice Description:** Suitable species are established to improve forage quality and quantity and reduce soil erosion on cropland, hay land, pasture, and/or biomass production.	Acres of Forage and Biomass Planting	Acre	$381.36	$392.58	$381.36	$392.58

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FORAGE HARVEST MANAGEMENT

Practice 511

Practice Units: ACRE

Definition: The timely cutting and removal of forages from the field as hay, green-chop or ensilage.

Purpose:

- Optimize yield and quality of forage at the desired levels
- Promote vigorous plant re-growth
- Maintain stand life
- Manage for the desired species composition
- Use forage plant biomass as a soil nutrient uptake tool
- Control insects, diseases and weeds
- Maintain and/or improve wildlife habitat

Conditions Where Practice Applies: This practice applies to all land uses where machine harvested forage crops are grown.

This practice also applies to the harvesting of perennial native forages, such as switch grass, for alternative uses, such as biomass production.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
511-1	Improved Forage Quality	**Scenario Description:** Improved cultural practices and recordkeeping result in better forage quality and better livestock performance. **After Practice Description:** Forage cutting heights are raised to leave at least 3-4" stubble height for cool season grasses and 6-8" (use a boot on the mower) for warm season grasses. Increased residual forage results in much faster plant regrowth. Forage quality tests are submitted to an accredited lab for analysis. Records of forage quality components, cutting heights, moisture content, and harvest schedule are regularly kept to track increased forage quality and improved livestock performance.	Improved Relative Feed Value	Acre	$2.94	$4.42	$4.42	$5.30
511-3	Perennial Crops - Delayed Mowing	**Scenario Description:** In perennial forage crops, delaying the harvest of the first cutting to promote the reproduction of ground nesting birds. The delayed harvest results in a decrease in overall forage quality (33% reduction assumed), making the forage crop less palatable and lower in relative feed value. The selected fields should be large enough to promote ground nesting birds. After young have fledged the field will be harvested for dry forages. **After Practice Description:** Perennial crops are harvested with a delayed mowing; forage quality is compromised, however, the survival of ground nesting birds is promoted.	Increased grassland bird populations	Acre	$3.89	$5.37	$5.37	$6.25

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FOREST MANAGEMENT PLAN - WRITTEN

Practice Code 106

Practice Units: NUMBER

Definition: A forest management plan is a site-specific plan developed for a client, which addresses one or more resource concerns on land where forestry-related conservation activities or practices will be planned and applied. These criteria were developed to implement Section 1240 (A) of the Food, Conservation and Energy Act of 2008, which allows for the development of forest management plans as one of the purposes of the Environmental Quality Incentives Program (EQIP). The forest management plan will:

Meet Natural Resources Conservation Service (NRCS) quality criteria for the identified resource concern(s).

Comply with federal, state, tribal, and local laws, regulations, and permit requirements.

Meet the client'sobjectives.

Purpose: Conservation plan to include the planned practice(s), the amounts to be applied, the schedule for implementation, and the appropriate site-specific specifications and/or job sheet for each practice.

Conditions Where Practice Applies: On lands in Iowa that will benefit from the development and implementation of a Forest Management Plan.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
106-38	FMP Less Than or Equal to 20 acres	**Scenario Description:** Non-Industrial Private Forest Land typically unmanaged or limited management activities. Typical site is approximately 1 to 20 acres in size and consists of existing uneven-aged mixed species stands of harvestable trees. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition; on Forest Land. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Forest Management Plan' Conservation Activity Plan (CAP). The CAP criteria requires the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Forest Management CAP is not considered a Forest Harvest Plan but should complement the needs for harvest if desired by the land user. Additional CAP plan criteria is detailed in the Field Office Technical Guide.	Number	Number	$1,059.63	$1,271.56	N/A	N/A
106-39	FMP 21 to 100 acres	**Scenario Description:** Non-Industrial Private Forest Land typically unmanaged or limited management activities. Typical site is approximately 21 to 100 acres in size and consists of existing uneven-aged mixed species stands of harvestable trees. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition; on Forest Land. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Forest Management Plan' Conservation Activity Plan (CAP). The CAP criteria requires the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Forest Management CAP is not considered a Forest Harvest Plan but should complement the needs for harvest if desired by the land user. Additional CAP plan criteria is detailed in the Field Office Technical Guide.	Number	Number	$1,338.48	$1,606.18	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
106-40	FMP 101 to 250 acres	**Scenario Description:** Non-Industrial Private Forest Land typically unmanaged or limited management activities. Typical site is approximately 101 to 250 acres in size and consists of existing uneven-aged mixed species stands of harvestable trees. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition; on Forest Land. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Forest Management Plan' Conservation Activity Plan (CAP). The CAP criteria requires the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Forest Management CAP is not considered a Forest Harvest Plan but should complement the needs for harvest if desired by the land user. Additional CAP plan criteria is detailed in the Field Office Technical Guide.	Number	Number	$2,398.11	$2,877.73	N/A	N/A
106-41	FMP Greater Than 1000 acres	**Scenario Description:** Non-Industrial Private Forest Land typically unmanaged or limited management activities. Typical site is approximately 1001 acres or greater in size and consists of existing uneven-aged mixed species stands of harvestable trees. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition; on Forest Land. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Forest Management Plan' Conservation Activity Plan (CAP). The CAP criteria requires the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Forest Management CAP is not considered a Forest Harvest Plan but should complement the needs for harvest if desired by the land user. Additional CAP plan criteria is detailed in the Field Office Technical Guide.	Number	Number	$5,019.30	$6,023.16	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
106-42	FMP 251 to 500 acres	**Scenario Description:** Non-Industrial Private Forest Land typically unmanaged or limited management activities. Typical site is approximately 251 to 500 acres in size and consists of existing uneven-aged mixed species stands of harvestable trees. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition; on Forest Land. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Forest Management Plan' Conservation Activity Plan (CAP). The CAP criteria requires the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Forest Management CAP is not considered a Forest Harvest Plan but should complement the needs for harvest if desired by the land user. Additional CAP plan criteria is detailed in the Field Office Technical Guide.	Number	Number	$3,457.74	$4,149.29	N/A	N/A
106-43	FMP 501 to 1000 acres	**Scenario Description:** Non-Industrial Private Forest Land typically unmanaged or limited management activities. Typical site is approximately 501 to 1000 acres in size and consists of existing uneven-aged mixed species stands of harvestable trees. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition; on Forest Land. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Forest Management Plan' Conservation Activity Plan (CAP). The CAP criteria requires the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Forest Management CAP is not considered a Forest Harvest Plan but should complement the needs for harvest if desired by the land user. Additional CAP plan criteria is detailed in the Field Office Technical Guide.	Number	Number	$4,015.44	$4,818.53	N/A	N/A

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FOREST STAND IMPROVEMENT

Practice Code 666

Practice Units: ACRE

Definition: To manipulate species composition and stocking by cutting or killing selected trees and understory vegetation.

Purpose:

- Increase the quantity and quality of forest products by manipulating stand density and structure.
- To facilitate forest, stand regeneration.
- To improve understory aesthetics, wildlife habitat, or recreation.

Conditions Where Practice Applies: On forest land where competing vegetation hinders development and stocking of preferred species.

Limitations: A Woodland Stewardship Plan written by the District Forester is required documentation. A copy must be kept in the contract file.

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
666-1	Forest Stand Improvement, Light	**Scenario Description:** All materials and labor required to manipulate species composition, stand structure and stocking on forestland. Light forest stand improvement will: Reduce basal area by 20 - 29 square feet per acre (or) Cut and/or kill 100 - 199 trees per acre (or) Release 10 - 20 crop trees per acre and/or kill any vines growing on crop trees by an approved method such as 'cut stump' with herbicide to prevent resprouting. Use a current and approved Forest Management Plan for estimated basal area to be removed, number of trees needing to be cut and/or killed, crop trees needing to be released, and/or vines needing killed. **After Practice Description:** After adjusting the stocking to an acceptable level, stand growth, condition, and overall quality is improved. In addition, wildlife habitat is improved with the resulting increase of sunlight reaching the forest floor.	Area Treated	Acre	$83.18	$99.82	$83.18	$99.82
666-2	Forest Stand Improvement, Medium	**Scenario Description:** All materials and labor required to manipulate species composition, stand structure and stocking on forestland. Medium forest stand improvement will: Reduce basal area by 30-40 square feet per acre (or) Cut and/or kill 200 - 400 trees per acre (or) Release 21 - 40 crop trees per acre and kill any vines growing on crop trees by an approved method such as 'cut stump' with herbicide to prevent resprouting. Use a current and approved Forest Management Plan for estimated basal area to be removed, number of trees needing to be cut and/or killed, crop trees needing to be released, and/or vines needing killed. **After Practice Description:** After adjusting the stocking to an acceptable level, stand growth, condition, and overall quality is improved. In addition, wildlife habitat is improved with the resulting increase of sunlight reaching the forest floor.	Area Treated	Acre	$101.67	$122.01	$101.67	$122.01

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
666-3	Forest Stand Improvement, Heavy	**Scenario Description:** All materials and labor required to manipulate species composition, stand structure and stocking on forestland. Heavy forest stand improvement will: Reduce basal area by 41 or more square feet per acre (or) Cut and/or kill over 400 trees per acre (or) Release 41 or more crop trees per acre and kill any vines growing on crop trees by an approved method such as 'cut stump' with herbicide to prevent resprouting. Use a current and approved Forest Management Plan for estimated basal area to be removed, number of trees needing to be cut and/or killed, crop trees needing to be released, and/or vines needing killed. **After Practice Description:** After adjusting the stocking to an acceptable level, stand growth, condition, and overall quality is improved. In addition, wildlife habitat is improved with the resulting increase of sunlight reaching the forest floor.	Area Treated	Acre	$128.05	$153.66	$128.05	$153.66
666-4	Temporary Forest Openings, patch clearcuts	**Scenario Description:** Creating 2 one-acre patches in over-mature and/or degraded stands using hand tools such as chainsaws. Resource concerns include: Undesirable plant productivity and health, Inadequate structure and composition, and habitat degradation. **After Practice Description:** A new, young stand of desirable species is established in addition, early successional wildlife habitat as well as forest type diversity are created.	Area treated	Acre	$206.13	$247.35	$206.13	$247.35

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FOREST TRAILS AND LANDINGS

Practice Code 655

Practice Units: ACRE

Definition: A temporary or infrequently used route, path, or cleared area.

Purpose:

- Provide routes for temporary or infrequent travel by people or equipment for management activities.
- Provide periodic access for removal and collection of forest products.

Conditions Where Practice Applies: Trails and landings, including skid trails, are applicable on forest land.

Limitations:

Maintenance: Practice will be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
655-1	Water Bar Installation	**Scenario Description:** Rehabilitation of existing forest access trails and landings by addressing erosion and sedimentation through the installation of water bars and light shaping/grading between water bars. Typically, the trail is a single lane, existing 12-foot wide seasonal or temporary trail on a moderate slope (10%) on forestland requiring sustained erosion control measures applied by using traditional logging equipment such as a log skidder or dozer. The purpose is to hydrologically disconnect existing trail/landing system from the streams and natural drainages. This scenario applies to only those segments of the trail system that have resource concerns requiring rehabilitation. A typical water bar installed in this scenario is on a 75 to 80 foot spacing with a depth of about 1 foot. Some hand work (chainsaw) will be needed to allow the use of the equipment without causing damage to residual trees. The work will be supervised. No mobilization is required, as equipment and personnel are already on site. Other practices such as Stream Crossing, and Critical Area Planting, Access Road and Structure for Water Control can be adjacent/appurtenant but not part of this practice scenario. Resource concerns include: Excessive sedimentation in surface waters, Concentrated flow erosion, Sheet and rill erosion, and Degradation of wildlife species. **After Practice Description:** Trails and landings provide access and do not adversely affect the resources concerns.	Number of water bars	Each	$47.59	$57.11	$47.59	$57.11
655-2	Shaping and Grading	**Scenario Description**: Rehabilitation of existing forest access trails and landings by addressing rutting, erosion, and sedimentation through shaping and grading and installing other widely spaced mitigating practices such as broad-based drainage dips, water bars, and water turnouts. Typically, the trail is a single lane, existing 12-foot wide seasonal or temporary trail on a relatively flat slopes (2%) on forestland requiring sustained erosion control measures applied by using traditional logging equipment such as a log skidder or dozer. The purpose is to hydrologically disconnect the existing trail/landing system from streams and natural drainages and to establish a vegetative cover. Some hand work (chainsaw) will be needed to allow the use of the equipment. The work will be supervised. Other practices such as Stream Crossing, and Critical Area Planting. Access Road and Structure for Water Control can be adjacent/appurtenant but not part of the practice scenario. Treatments are for long-term reduction of sediment, restore fish habitat, create fire access and to move routes off unstable slopes. Resource concerns include: Excessive sediment in surface waters, Concentrated and Sheet & rill flow erosion, Soil compaction, and Habitat degradation. **After Practice Description:** A trail system is installed that provides access to the forested tract and does not cause excessive erosion or water quality concerns.	Length of trail treated	Foot	$0.38	$0.46	$0.38	$0.46

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
655-3	Shaping and Grading with Vegetation Establishment	**Scenario Description:** Rehabilitation of existing forest access trails and landings by addressing rutting, erosion, and sedimentation through shaping and grading and installing other widely spaced mitigating practices such as broad-based drainage dips, water bars, and water turnouts. It also includes seedbed preparation, seeding and soil amendments determined to be needed. Typically, the trail is a single lane, existing 12-foot wide seasonal or temporary trail on a relatively flat slope (2%) on forestland requiring sustained erosion control measures applied by using traditional logging equipment such as a log skidder or dozer. The purpose is to hydrologically disconnect the existing trail/landing system from streams and natural drainages and to establish a vegetative cover. Some hand work (chainsaw) will be needed to allow the use of the equipment. The work will be supervised. Other practices such as Stream Crossing, and Critical Area Planting. Access Road and Structure for Water Control can be adjacent/appurtenant but not part of the practice scenario. Treatments are for long-term reduction of sediment, restore fish habitat, create fire access and to move routes off unstable slopes. Resource concerns include: Excessive sediment in surface waters, Concentrated and Sheet & rill flow erosion, Soil compaction, and Habitat degradation. **After Practice Description:** A trail system is installed that provides access to the forested tract and does not cause excessive erosion or water quality concerns.	Length of trail treated	Foot	$0.54	$0.65	$0.54	$0.65
655-62	Log Landing Shaping and Grading with Vegetation Establishment	**Scenario Description:** Rehabilitation of existing log landings by addressing rutting, erosion, and sedimentation through shaping and grading and establishing vegetative cover, including seedbed preparation, seeding and soil amendments determined to be needed. Typically, the landing is 0.5 acres on a relatively flat slope (<2%) on forestland requiring sustained erosion control measures applied by using traditional logging equipment such as a log skidder or dozer. The purpose is to hydrologically disconnect the existing trail/landing system from streams and natural drainages and to establish a vegetative cover. Some hand work (chainsaw) will be needed to allow the use of the equipment. The work will be supervised. Other practices such as Stream Crossing, and Critical Area Planting. Access Road and Structure for Water Control can be adjacent/appurtenant but not part of the practice scenario. Treatments are for long-term reduction of sediment, restore fish habitat, create fire access and to move routes off unstable slopes. Resource concerns include: Excessive sediment in surface waters, Concentrated and Sheet & rill flow erosion, Soil compaction, and Habitat degradation. **After Practice Description:** The log landings are shaped/graded and established to permanent cover and do not cause excessive erosion or water quality concerns.	Size of landing treated	Acre	$1,269.98	$1,523.98	$1,269.98	$1,523.98

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GRADE STABILIZATION STRUCTURE

Practice Code 410

Practice Units: NUMBER

Definition: A structure used to control the grade in natural or constructed channels.

Purpose: To stabilize grade, reduce gully erosion, or improve water quality.

Conditions Where Practice Applies: This practice applies where channels require a structure to stabilize the grade or to control gully erosion.

Limitations: All costs are represented in the payment schedule rate. Seeding, if needed, may be contracted by using Critical Area Planting – Practice Code 342.

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
410-1	Embankment 4in-6in Pipe	**Scenario Description:** An earthen embankment dam with a principal spillway pipe (PVC or Steel) of 6 inches or less with anti-seep collars. To stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a typical amount of earthfill of 5,000 cubic yards (including core trench backfill), and 100 feet of pipe 6" PVC pipe with a canopy inlet. A small, non-lined plunge pool protects the outlet channel. Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion-concentrated flow erosion and water quality degradation. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as**: Fence (382), Grassed Waterway (412), will use the corresponding Standard(s) as appropriate.	Cubic Yards of Earthfill	Cubic Yard	$2.08	$3.12	$3.12	$3.75
410-2	Embankment 8in-12in Pipe	**Scenario Description**: An earthen embankment dam with a principal spillway pipe (PVC or Steel) of 8" to 12" with anti-seep collars. To stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a typical amount of earthfill of 8000 cubic yards (including core trench backfill), and 100 feet of pipe 10" PVC pipe with a canopy inlet. A small, non-lined plunge pool protects the outlet channel. Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion-concentrated flow erosion and water quality degradation. **After Practice Description**: Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Fence (382), Grassed Waterway (412) will use the corresponding Standard(s) as appropriate.	Cubic Yards of Earthfill	Cubic Yard	$2.19	$3.28	$3.28	$3.94

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
410-3	Embankment >12in	**Scenario Description:** An earthen embankment dam with a principle spillway pipe greater than 12 inches with anti-seep collars or sand diaphragm. Installed to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a typical amount of earthfill of 11,000 cubic yards (including core trench backfill), 120 feet of 18" Steel pipe with a canopy inlet, and 16 cubic yard sand diaphragm with outlet. Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion-concentrated flow erosion and water quality degradation. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Fence (382), Grassed Waterway (412) will use the corresponding Standard(s) as appropriate.	Cubic Yards of Earthfill	Cubic Yard	$2.27	$3.41	$3.41	$4.09
410-4	Embankment Tile Conduit	**Scenario Description:** An earthen embankment dam with a 6" HDPE corrugated plastic tubing principal spillway conduit. To stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a typical amount of earthfill of 3100 cubic yards (including core trench backfill), and 80 feet of 6" CPT with a plastic inlet. A small, non- lined plunge pool protects the outlet channel. Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion- concentrated flow erosion and water quality degradation. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Fence (382), Grassed Waterway (412), Water and Sediment Control Basin (638) will use the corresponding Standard(s) as appropriate.	Cubic Yards of Earthfill	Cubic Yard	$1.60	$2.39	$2.39	$2.87

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
410-6	Pipe Drop, Smooth Steel or CMP, <1000 CY Earthfill	**Scenario Description:** A full flow pipe drop (i.e.: riser and barrel) grade stabilization structure designed and constructed with a sand diaphragm. This is typically an earthen dry dam structure with no permanent storage (water or sediment), however some structures may have some permanent pool / storage but do not have 35 years of sediment life. Payment rate is based upon the riser weir length (Diameter x 3.14) in feet times the length of the pipe barrel in (feet). Installed to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a smooth steel or corrugated metal pipe drop structure with a 36", 12' tall riser and a 100' long 24" barrel (Riser Weir length x Barrel Length = 3ft x3.14 x 100ft = 942). Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion-concentrated flow erosion and water quality degradation. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), and Irrigation Canal or Lateral (320) will use the corresponding Standard(s) as appropriate.	Riser Weir Length x Barrel Length	Square Foot	$6.65	$9.97	$9.97	$11.96
410-7	Full Flow Straight Pipe	**Scenario Description:** A full flow straight pipe grade stabilization structure. This is typically an earthen dry dam structure with no permanent storage (water or sediment), however some structures may have some permanent pool / storage but do not have 35 years of sediment life. Payment rate is based upon the diameter of the pipe in inches times the length of the pipe in feet. Installed to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a PVC or corrugated metal pipe, 12" in diameter, 60' long. (diameter x pipe length = 12in x 60ft = 720). Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion-concentrated flow erosion and water quality degradation. **After Practice Description**: Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as**: Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), and Irrigation Canal or Lateral (320) will use the corresponding Standard(s) as appropriate.	Pipe diameter x pipe length	Diameter Inch Foot	$2.78	$4.17	$4.17	$5.01

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
410-8	Open Flow Drop Spillway	**Scenario Description:** A Straight or semicircular drop structure composed of metal or reinforced concrete used to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a semicircular steel toe wall structure with a drop of 3 ft. and weir length of 30 ft. (90 square feet). The unit of payment measurement is defined as weir length times drop in 'feet'. The drop (feet) is defined as the structure inlet crest elevation minus the control outlet elevation (i.e.: outlet apron elevation). Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion-concentrated flow erosion and water quality degradation. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620) will use the corresponding Standard(s) as appropriate.	Feet of Weir length times Drop Height	Square Foot	$80.60	$120.91	$120.91	$145.09
410-9	Rock Rip Rap Chute	**Scenario Description:** A full flow chute structure with rip rap, geotextile fabric, and earthfill/earthmoving. To stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon typical chute designed to handle 90 cfs (20' BW, 5:1 Chute Slope, 5' Drop, 18" rock thickness). Amount of rock required is 86 CY (129 tons). Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Cost data is applicable to organic and convention agricultural production systems. **After Practice Description**: Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620) will use the corresponding Standard(s) as appropriate.	Cubic Yards of rip rap installed	Cubic Yard	$37.16	$55.75	$55.75	$66.90

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
410-10	Grouted Rock Rip Rap Chute	**Scenario Description:** A full flow chute structure with grouted rip rap, geotextile fabric, and earthfill/earthmoving. To stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon typical amount of rock of 46 cubic yards of grouted rip rap. Typical Chute has 10' BW, 6' Drop, with 3" of Grout, 70 CFS capacity. Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Cost data is applicable to organic and convention agricultural production systems. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620) will use the corresponding Standard(s) as appropriate.	Cubic Yards of rip rap installed	Cubic Yard	$55.56	$83.33	$83.33	$100.00
410-11	Gabion Chute	**Scenario Description:** A full flow chute structure with rock filled gabion baskets, geotextile fabric, and earthfill/earthmoving. To stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon typical chute with 12' BW, 4:1 chute slope, 6' drop to handle design flow of 100 cfs. 25 CY of gabion baskets. Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Cost data is applicable to organic and convention agricultural production systems. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620) will use the corresponding Standard(s) as appropriate.	Cubic Yards of gabion baskets	Cubic Yard	$146.52	$219.78	$219.78	$263.73

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
410-12	Geotextile Reinforced Vegetated Outlet	**Scenario Description:** A full flow chute structure with geotextile fabric, erosion control blanket, riprap outlet and earthfill/earthmoving. To stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon typical chute designed to handle 50 cfs (16' BW, 6:1 Chute Slope, 6' Drop). Amount of geotextile required is 1050 SF. Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Cost data is applicable to organic and convention agricultural production systems. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620) will use the corresponding Standard(s) as appropriate.	Square Ft of Geotextile lined area	Square Foot	$1.28	$1.92	$1.92	$2.30

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
410-13	Open Flow Drop Spillway-High overfall or sheet pile	**Scenario Description:** A straight drop structure used to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a sheet pile structure with a weir length of 35', Weir notch height of 2' and drop of 4' with a total capacity of 335 cfs. The unit of payment measurement is defined as weir length times drop in 'feet'. The drop (feet) is defined as the structure inlet crest elevation minus the control outlet elevation (i.e.: outlet apron elevation). Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion-concentrated flow erosion and water quality degradation. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620) will use the corresponding Standard(s) as appropriate.	Feet of Weir length times Drop Height	Square Foot	$126.75	$190.13	$190.13	$228.16

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
410-15	Concrete Drop Structure	**Scenario Description:** A Straight or Box Drop structure composed of reinforced concrete used to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a concrete box drop structure with a drop of 4ft and weir length of 16ft. The unit of payment measurement is cubic yards of concrete placed. Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion-concentrated flow erosion and water quality degradation. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620) will use the corresponding Standard(s) as appropriate.	Cubic Yard of Concrete	Cubic Yard	$447.37	$671.06	$671.06	$805.27

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
410-16	Concrete Block Chute	**Scenario Description:** A full flow chute structure with concrete blocks, geotextile fabric, and earthfill/earthmoving. To stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon typical chute designed to handle 65 cfs (10' BW, 5' Drop). 518 Concrete blocks required. Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Cost data is applicable to organic and convention agricultural production systems. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), Subsurface Drain (606), and Underground Outlet (620) will use the corresponding Standard(s) as appropriate.	Square feet of concrete block lined area	Square Foot	$5.10	$7.65	$7.65	$9.18

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
410-33	Pipe Drop, Smooth Steel or CMP, >1000 CY Earthfill	**Scenario Description:** A full flow pipe drop (i.e.: riser and barrel) grade stabilization structure designed and constructed with a sand diaphragm. This is typically an earthen dry dam structure with no permanent storage (water or sediment), however some structures may have some permanent pool / storage but do not have 35 years of sediment life. Payment rate is based upon the riser weir length (Diameter x 3.14) in feet times the length of the pipe barrel in (feet). Installed to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advancing of gullies, and to enhance environmental quality and reduce pollution hazards. Applied in areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Cost estimate is based upon a smooth steel or corrugated metal pipe drop structure with 2500 CY of earthfill, a 36', 12' tall riser and a 100' long 24' barrel (Riser Weir length x Barrel Length = 3ft x 3.14 x 100ft = 942). Disturbed areas and earthfill surfaces are protected with permanent vegetative cover. Addresses resource concerns such as soil erosion-concentrated flow erosion and water quality degradation. **After Practice Description:** Area is stabilized. The advancement and/or formation of gullies is stopped, soil from gullies no longer leaves the farm, useable farm area is increased, sedimentation and other pollution hazards are decreased, and water quality downstream is protected. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as;** Pond (378), Dam (402), Fence (382), Channel Bed Stabilization (584), Dike (356), Grassed Waterway (412), Structure for Water Control (587), and Irrigation Canal or Lateral (320) will use the corresponding Standard(s) as appropriate.	Riser Weir Length x Barrel Length	Square Foot	$11.92	$17.88	$17.88	$21.46

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GRASSED WATERWAY

Practice Code 412

Practice Units: ACRE

Definition: A shaped or graded channel that is established with suitable vegetation to convey surface water at a nonerosive velocity using a broad and shallow cross section to a stable outlet.

Purpose:

- To convey runoff from terraces, diversions, or other water concentrations without causing erosion or flooding.
- To prevent gully formation.
- To protect/improve water quality

Conditions Where Practice Applies: This practice is applied in areas where added water conveyance capacity and vegetative protection are needed to prevent erosion and improve runoff water quality resulting from concentrated surface flow. This practice is not applicable where its construction would destroy important woody wildlife cover or wetlands and the present watercourse is not seriously eroding.

Limitations: Payment Scenario includes the cost for seeding and fertilizer, but not subsurface drain. Subsurface Drain – 606 if needed, must be added separately to the contract. When a Grassed Waterway Summer Construction Scenario is included in the contract, construction must occur between June 15 and October 15 of the scheduled year. The Payment Scenario for summer construction is only available on land in row crop and requires a temporary cover or cover crop. No crop is allowed to be harvested. Haying or grazing of the cover crop after October 15th is allowed. No payments can be made for any items associated with the summer construction initiative until all associated practices are installed.

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
412-1	<35-foot top width	**Scenario Description:** Typical practice is 1 acre, 30' top width, 8:1 side slopes, 1.25' depth, 55% excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. **After Practice Description:** Installed grassed waterway is 1 acre, 30' top width, 8:1 side slopes, 1.25' depth. The practice is installed using a dozer. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$1,280.67	$2,002.31	$1,921.00	$2,386.51
412-2	35-55-foot top width	**Scenario Description:** Typical practice is 1 acre, 45' top width, 10:1 side slopes, 1.5' depth, 50% excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. **After Practice Description:** Installed grassed waterway is 1 acre, 45' top width, 10:1 side slopes, 1.5' depth. The practice is installed using a dozer. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$1,365.08	$2,128.93	$2,047.62	$2,538.45

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
412-3	>55-foot top width	**Scenario Description:** Typical practice is 1 acre, 60' top width, 10:1 side slopes, 2.0' depth, 50% excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. **After Practice Description:** Installed grassed waterway is 1 acre, 60' top width, 10:1 side slopes, 2.0' depth. The practice is installed using a dozer. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$1,692.94	$2,620.72	$2,539.41	$3,128.60
412-4	<35-foot top width with checks	**Scenario Description:** Typical practice is 1 acre, 30' top width, 8:1 side slopes, 1.5' depth, half excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. Stone checks are installed every 100 feet along the length of the waterway perpendicular to waterflow and are 2/3 the waterway top width to reduce maintenance and provide temporary protection until vegetation is established. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. **After Practice Description:** Installed grassed waterway is 1 acre, 30' top width, 8:1 side slopes, 1.5' depth. Checks are installed every 100 feet along the length of the waterway. The practice is installed using a dozer. Stone checks are installed with small backhoe and labor. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$2,012.45	$3,099.98	$3,018.67	$3,703.71

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
412-5	35-55-foot top width with checks	**Scenario Description:** Typical practice is 1 acre, 45' top width, 10:1 side slopes, 1.5' depth, half excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. Stone checks are installed every 100 feet along the length of the waterway perpendicular to waterflow and are 2/3 the waterway top width to reduce maintenance and provide temporary protection until vegetation is established. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. **After Practice Description:** Installed grassed waterway is 1 acre, 45' top width, 10:1 side slopes, 1.5' depth. Checks are installed every 100 feet along the length of the waterway. The practice is installed using a dozer. Stone checks are installed with small backhoe and labor. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed Establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$2,195.16	$3,374.04	$3,292.74	$4,032.59

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
412-6	>55-foot top width with checks	**Scenario Description:** Typical practice is 1 acre, 60' top width, 10:1 side slopes, 2.0' depth, half excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. Stone checks are installed every 100 feet along the length of the waterway perpendicular to waterflow and are 2/3 the waterway top width to reduce maintenance and provide temporary protection until vegetation is established. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. **After Practice Description:** Installed grassed waterway is 1 acre, 60' top width, 10:1 side slopes, 2.0' depth. Checks are installed every 100 feet along the length of the waterway. The practice is installed using a dozer. Stone checks are installed with small backhoe and labor. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$2,474.48	$3,793.03	$3,711.72	$4,535.37
412-7	<35-foot top width, crop season construction	**Scenario Description:** Typical practice is 1 acre, 30' top width, 8:1 side slopes, 1.25' depth, 55% excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. Foregone income reflects entire construction area to account for crop loss while constructing during the growing season. **After Practice Description:** Installed grassed waterway is 1 acre, 30' top width, 8:1 side slopes, 1.25' depth. The practice is installed using a dozer. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$1,914.86	$2,799.11	$2,555.19	$3,183.31

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
412-8	<35-foot top width with checks, crop season construction	**Scenario Description:** Typical practice is 1 acre, 30' top width, 8:1 side slopes, 1.5' depth, half excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. Stone checks are installed every 100 feet along the length of the waterway perpendicular to waterflow and are 2/3 the waterway top width to reduce maintenance and provide temporary protection until vegetation is established. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. Foregone income reflects entire construction area to account for crop loss while constructing during the growing season. **After Practice Description:** Installed grassed waterway is 1 acre, 30' top width, 8:1 side slopes, 1.5' depth. Checks are installed every 100 feet along the length of the waterway. The practice is installed using a dozer. Stone checks are installed with small backhoe and labor. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/ protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$2,646.63	$3,896.78	$3,652.86	$4,500.51
412-9	35-55-foot top width, crop season construction	**Scenario Description:** Typical practice is 1 acre, 45' top width, 10:1 side slopes, 1.5' depth, 50% excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. Foregone income reflects entire construction area to account for crop loss while constructing during the growing season. **After Practice Description:** Installed grassed waterway is 1 acre, 45' top width, 10:1 side slopes, 1.5' depth. The practice is installed using a dozer. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$1,999.27	$2,925.73	$2,681.81	$3,335.25

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
412-10	35-55-foot top width with checks, crop season construction	**Scenario Description:** Typical practice is 1 acre, 45' top width, 10:1 side slopes, 1.5' depth, half excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. Stone checks are installed every 100 feet along the length of the waterway perpendicular to waterflow and are 2/3 the waterway top width to reduce maintenance and provide temporary protection until vegetation is established. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. Foregone income reflects entire construction area to account for crop loss while constructing during the growing season. **After Practice Description:** Installed grassed waterway is 1 acre, 45' top width, 10:1 side slopes, 1.5' depth. Checks are installed every 100 feet along the length of the waterway. The practice is installed using a dozer. Stone checks are installed with small backhoe and labor. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/ protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$2,829.35	$4,170.84	$3,926.92	$4,829.39

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
412-11	>55-foot top width, crop season construction	**Scenario Description:** Typical practice is 1 acre, 60' top width, 10:1 side slopes, 2.0' depth, 50% excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. **After Practice Description:** Installed grassed waterway is 1 acre, 60' top width, 10:1 side slopes, 2.0' depth. The practice is installed using a dozer. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$2,327.13	$3,417.52	$3,173.60	$3,925.40
412-12	>55-foot top width with checks, crop season construction	**Scenario Description:** Typical practice is 1 acre, 60' top width, 10:1 side slopes, 2.0' depth, half excavation. A grass waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. Stone checks are installed every 100 feet along the length of the waterway perpendicular to waterflow and are 2/3 the waterway top width to reduce maintenance and provide temporary protection until vegetation is established. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Seeding area is 20% greater than waterway area to account for disturbed areas. Costs include excavation and associated work to construct the overall shape and grade of the waterway. **After Practice Description:** Installed grassed waterway is 1 acre, 60' top width, 10:1 side slopes, 2.0' depth. Checks are installed every 100 feet along the length of the waterway. The practice is installed using a dozer. Stone checks are installed with small backhoe and labor. Waterway area is fertilized and seeded for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/ protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).	Acre of Waterway	Acre	$3,108.67	$4,589.83	$4,345.91	$5,332.17

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GRAZING MANAGEMENT PLAN - WRITTEN

Practice Code 110

Practice Units: NUMBER

Definition: A grazing management plan is a site-specific conservation plan developed for a client, which addresses one or more resource concerns on land where grazing related activities or practices will be planned and applied.

The Grazing Management Plan will:

- Meet NRCS quality criteria for soil erosion control, water quality, fish and wildlife, rangeland/pasture/grazed woodland health and productivity, and other identified resource concerns.
- Will be developed following the principle provided in Chapter 11 of the National Range and Pasture Handbook.
- Comply with federal, state, tribal, and local laws, regulations, and permit requirements.
- Meet the client'sobjectives.

Purpose: Conservation plan to address the resource needs for the "Grazing Management Plan". The record of decisions shall include the planned practice, schedule for implementation, and site-specific specifications to apply the conservation practice. The site-specific specifications can be on an NRCS Job Sheet available for the conservation practice or in a narrative form for the non-engineering type practices. Planned engineering type practices shall include the conservation practice, schedule of implementation, and identified on the plan map.

Conditions Where Practice Applies: On lands in Iowa that will benefit from the development and implementation of a Grazing Management Plan.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
110-1	Grazing Management Plan Less Than or Equal to 100 acres	**Scenario Description:** Small agricultural operation with less than 100 acres grazed land. Natural Resource Concern: Soil erosion, water quality, fish and wildlife, plant condition, and all other appropriate resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Grazing Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to implement essential conservation practices: Brush Management, Fencing, Firebreak, Forage Harvest Management, Grazing Land Mechanical Treatment, Herbaceous Weed Control, Nutrient Management, Forage and Biomass Planting, Prescribed Grazing, Range Planting, Access Control, and Watering Facilities. As addressed in the CAP criteria, the plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 110 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$1,737.90	$2,085.48	N/A	N/A
110-2	Grazing Management Plan 101 to 500 acres	**Scenario Description:** Small agricultural operation with 101 to 500 acres grazed land. Natural Resource Concern: Soil erosion, water quality, fish and wildlife, plant condition, and all other appropriate resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Grazing Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to implement essential conservation practices: Brush Management, Fencing, Firebreak, Forage Harvest Management, Grazing Land Mechanical Treatment, Herbaceous Weed Control, Nutrient Management, Forage and Biomass Planting, Prescribed Grazing, Range Planting, Access Control, and Watering Facilities. As addressed in the CAP criteria, the plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 110 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$2,317.20	$2,780.64	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
110-3	Grazing Management Plan 1501 to 5000 acres	**Scenario Description:** Small agricultural operation with 1501 to 5000 acres grazed land. Natural Resource Concern: Soil erosion, water quality, fish and wildlife, plant condition, and all other appropriate resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Grazing Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to implement essential conservation practices: Brush Management, Fencing, Firebreak, Forage Harvest Management, Grazing Land Mechanical Treatment, Herbaceous Weed Control, Nutrient Management, Forage and Biomass Planting, Prescribed Grazing, Range Planting, Access Control, and Watering Facilities. As addressed in the CAP criteria, the plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 110 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$3,475.80	$4,170.96	N/A	N/A
110-5	Grazing Management Plan Greater Than 5000 acres	**Scenario Description:** Small agricultural operation with more than 5000 acres grazed land. Natural Resource Concern: Soil erosion, water quality, fish and wildlife, plant condition, and all other appropriate resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Grazing Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to implement essential conservation practices: Brush Management, Fencing, Firebreak, Forage Harvest Management, Grazing Land Mechanical Treatment, Herbaceous Weed Control, Nutrient Management, Forage and Biomass Planting, Prescribed Grazing, Range Planting, Access Control, and Watering Facilities. As addressed in the CAP criteria, the plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 110 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$4,055.10	$4,866.12	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
110-66	Grazing Management Plan 501 to 1500 acres	**Scenario Description:** Small agricultural operation with 501 to 1500 acres grazed land. Natural Resource Concern: Soil erosion, water quality, fish and wildlife, plant condition, and all other appropriate resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Grazing Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to implement essential conservation practices: Brush Management, Fencing, Firebreak, Forage Harvest Management, Grazing Land Mechanical Treatment, Herbaceous Weed Control, Nutrient Management, Forage and Biomass Planting, Prescribed Grazing, Range Planting, Access Control, and Watering Facilities. As addressed in the CAP criteria, the plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 110 plan as cited in the NRCS Field Office Technical Guide.	Number of plans	Number	$2,896.50	$3,475.80	N/A	N/A

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GROUNDWATER TESTING

Practice Code 355

Practice Units: NUMBER

Definition: Testing the physical, biological, and chemical quality of groundwater from a water well or spring.

Purpose: This practice is applied to determine the quality of a groundwater supply with respect to its intended use.

Conditions Where Practice Applies: This standard applies to groundwater from a production well or spring used for agricultural or wildlife purposes.

This practice does not apply to groundwater for human consumption, nor wells for monitoring groundwater hydrology or contamination associated with animal waste storage or treatment installations.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
355-1	Basic Water Test	**Scenario Description:** Typical scenario includes the professional testing for nitrates, nitrites, and coliform to confirm well water meets basic water quality standards for consumption by livestock or use in irrigation. Water samples are sent to an EPA or state certified laboratory for testing. This scenario is recommended when water quality is suspected to be acceptable. **After Practice Description:** Water quality results are known.	No.	Each	$29.70	$44.55	$44.55	$53.46
355-2	Specialty Water Test	**Scenario Description:** Typical scenario includes the professional testing for pesticides, heavy metals, VOC's or other less common substances, in addition to the basic water test items. Tests are intended to confirm well water meets water quality standards for consumption by livestock or use in irrigation. Water samples are sent to an EPA or state certified laboratory for testing. This scenario is recommended when water quality is suspected to be degraded due to a specialized substance. **After Practice Description:** Water quality results are known.	No.	Each	$120.70	$181.05	$181.05	$217.26
355-3	Full Spectrum Test	**Scenario Description:** Typical scenario includes the professional comprehensive testing for all less common substances, to include: pesticides, heavy metals, VOC's or other less common substances, in addition to the basic water test items. Tests are intended to confirm well water meets water quality standards for consumption by livestock or use in irrigation. Water samples are sent to an EPA or state certified laboratory for testing. This scenario is recommended when water quality is known to be degraded due to a specialized substance, but thorough analysis is warranted. **After Practice Description:** Water quality results are known.	No.	Each	$146.58	$219.88	$219.88	$263.85

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HEAVY USE AREA PROTECTION

Practice Code 561

Practice Units: SQ. FT.

Definition: Used to stabilize a ground surface that is frequently and intensively used by people, animals, or vehicles

Purpose:

- To provide a stable, non-eroding surface for areas frequently used by animals, people or vehicles
- To protect or improve water quality

Conditions Where Practice Applies: This practice applies to all land uses where a frequently or intensively used area requires treatment to address one or more resource concerns.

Limitations: Follow the guidance contained in the document "Conservation Practice Guidance for Winter Feeding Stations" located on Section IV in the IA eFOTG for applications involving winter feeding stations. For other applications involving animal waste management application follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP).

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
561-1	Concrete HUA	**Scenario Description:** Installation of a concrete heavy use pad to provide a stable, non-eroding surface for areas frequently used by livestock, people or vehicles. **After Practice Description:** The stabilization of areas frequently and intensively used by livestock by installing a concrete surface to reduce soil erosion, improve water quality, air quality, and livestock health. Typical size is 3,900 square feet. The base consists of 4" of gravel. The concrete is a reinforced slab on grade with a thickness of 5". Payment incorporates site preparation through grading and shaping, concrete pad and gravel. Cost data is applicable to organic and conventional agricultural production systems.	Area of reinforced concrete	Square Foot	$2.80	$4.20	$4.20	$5.03
561-2	Geocell and Gravel HUA	**Scenario Description:** Installation of a geocell and gravel heavy use pad to provide a stable, non-eroding surface for areas frequently used by livestock, people or vehicles. **After Practice Description:** The stabilization of an area frequently and intensively used by people, animals or vehicles by installing a gravel surface with geocells to reduce soil erosion and improve livestock health. Typical size is 3900 square feet. 4" of gravel is placed into a 4" geocell 'matting material' and surfaced with a 3" layer of fines. Payment incorporates site preparation through grading and shaping, gravel (7" depth total with gravel and fines) and geoweb 'matting material'. An additional 8 hours of general labor is added to put the geocells in place. Cost data is applicable to organic and conventional agricultural production systems.	Area of rock-gravel GeoCell GeoTex	Square Foot	$1.61	$2.41	$2.41	$2.89

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
561-3	Fly Ash on Geotextile	**Scenario Description:** The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with Fly Ash on a geotextile fabric foundation to provide a stable, non- eroding surface. Installation includes all materials, equipment, and labor to install this practice. The stabilized area will address the resource concerns of soil erosion and water quality degradation. **After Practice Description:** The stabilized area is surfaced with approximately 630 square feet of Fly Ash on approximately 70 square yards of geotextile fabric foundation material for surfacing areas around facilities that are frequently and intensively used by people, animals or vehicles and will address soil erosion and water quality degradation. All needed roads must use Access Road (560). Any needed treatment of stream crossings must use Stream Crossing (578). Any needed vegetation of disturbed areas must use Critical Area Planting (342). Provisions to collect, store, utilize, and or treat contaminated runoff must use Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).	Area of Fly Ash	Square Foot	$0.89	$1.34	$1.34	$1.61
561-4	Bituminous Concrete Pavement	**Scenario Description:** The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with bituminous concrete pavement on aggregate gravel foundation to provide a stable, non-eroding surface. Installation includes all materials, equipment, and labor to install this practice. The stabilized area will address the resource concerns of soil erosion and water quality degradation. **After Practice Description:** The stabilized area is surfaced with approximately 630 square feet of bituminous concrete pavement on 8 cubic yards of aggregate gravel 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).	Area of Bituminous Pavement	Square Foot	$1.47	$2.20	$2.20	$2.64

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
561-5	Winter Feeding station with gravel	**Scenario Description:** Installation of a concrete (slab on grade over gravel) pad with reinforced concrete curbing, surrounded by gravel on three sides, to provide a stable, non-eroding surface, and allow for collection of manure, for areas frequently used by livestock. **After Practice Description:** The stabilization of areas frequently and intensively used by pastured livestock during winter feeding. A concrete (slab on grade over gravel) pad with reinforced concrete curbing, surrounded by gravel on three sides, to provide a stable, non-eroding surface, and allow for collection of manure, will be installed to reduce soil erosion, improve water quality, air quality, and livestock health. Typical total size is 4,324 square feet. There is 2,624 square feet of reinforced slab on grade concrete, which is 5" thick. This concrete is placed over a 3" base of gravel. The 32'x 58' feeding area has formed concrete roll curbs to allow for capturing of animal waste. The 24' x 32' stacking area has 4' reinforced concrete walls to store captured animal waste. Approximately 1,700 square feet of gravel 8" thick placed over light geotextile fabric surrounds three sides of the concrete pad. Payment incorporates site preparation through grading and shaping, concrete pad and curbing and gravel. Cost data is applicable to organic and conventional agricultural production systems.	Area of concrete and gravel	Square Foot	$3.37	$5.05	$5.05	$6.06
561-6	Winter Feeding Station	**Scenario Description:** Installation of a concrete (slab on grade over gravel) pad with reinforced concrete curbing to provide a stable, non-eroding surface, and allow for collection of manure, for areas frequently used by livestock. **After Practice Description:** The stabilization of areas frequently and intensively used by pastured livestock during winter feeding. A concrete (slab on grade over gravel) pad with reinforced concrete curbing to provide a stable, non-eroding surface, and allow for collection of manure, will be installed to reduce soil erosion, improve water quality, air quality, and livestock health. Typical total size is 2,624 square feet. There is 2,624 square feet of reinforced slab on grade concrete, which is 5" thick. This concrete is placed over a 3" base of gravel. The 32'x 58' feeding area has formed concrete roll curbs to allow for capturing of animal waste. The 24' x 32' stacking area has 4' reinforced concrete walls to store captured animal waste. Payment incorporates site preparation through grading and shaping, concrete pad and curbing. Cost data is applicable to organic and conventional agricultural production systems.	Area of Concrete	Square Foot	$5.31	$7.97	$7.97	$9.56

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
561-7	Gravel with Geotextile, Thick	**Scenario Description:** Installation of a gravel heavy use pad to provide a stable, non-eroding surface for areas frequently used by livestock, people or vehicles. **After Practice Description:** The stabilization of areas frequently and intensively used by livestock by installing a gravel surface to reduce soil erosion, improve water quality, air quality, and livestock health. Typical size is 3,900 square feet. Gravel, 8" deep, is placed over light geotextile fabric and surfaced with a 3" layer of fines. Payment incorporates site preparation through grading and shaping, gravel and layer of fines and light geotextile fabric. Cost data is applicable to organic and conventional agricultural production systems.	Area of gravel	Square Foot	$0.62	$0.92	$0.92	$1.11
561-8	Gravel without Geotextile, Thick	**Scenario Description:** Installation of a gravel heavy use pad to provide a stable, non-eroding surface for areas frequently used by livestock, people or vehicles. **After Practice Description:** The stabilization of areas frequently and intensively used by livestock by installing a gravel surface to reduce soil erosion, improve water quality, air quality, and livestock health. Typical size is 3,900 square feet. Gravel, 8" deep, is surfaced with a 3" layer of fines. Payment incorporates site preparation through grading and shaping, gravel and layer of fines. Cost data is applicable to organic and conventional agricultural production systems.	Area of gravel	Square Foot	$0.54	$0.81	$0.81	$0.98
561-9	Gravel with Geotextile, Regular Thickness	**Scenario Description:** Installation of a gravel heavy use pad to provide a stable, non-eroding surface for areas frequently used by livestock, people or vehicles. **After Practice Description:** The stabilization of areas frequently and intensively used by livestock by installing a gravel surface to reduce soil erosion, improve water quality, air quality, and livestock health. Typical size is 3,900 square feet. Gravel, 5" deep, is placed over light geotextile fabric and surfaced with a 2" layer of fines. Payment incorporates site preparation through grading and shaping, gravel and layer of fines and light geotextile fabric. Cost data is applicable to organic and conventional agricultural production systems.	Area of gravel	Square Foot	$0.47	$0.71	$0.71	$0.85

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
561-10	Gravel without Geotextile, Regular Thickness	**Scenario Description:** Installation of a gravel heavy use pad to provide a stable, non-eroding surface for areas frequently used by livestock, people or vehicles. **After Practice Description:** The stabilization of areas frequently and intensively used by livestock by installing a gravel surface to reduce soil erosion, improve water quality, air quality, and livestock health. Typical size is 3,900 square feet. Gravel, 5" deep, is surfaced with a 2" layer of fines. Payment incorporates site preparation through grading and shaping, gravel and layer of fines. Cost data is applicable to organic and conventional agricultural production systems.	Area of gravel	Square Foot	$0.40	$0.60	$0.60	$0.72

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HEDGEROW PLANTING

Practice Code 422

Practice Units: FEET

Definition: Establishment of dense vegetation in a linear design to achieve a natural resource conservation purpose.

Purpose: Providing at least one of the following conservation functions:

- Habitat, including food, cover, and corridors for terrestrial wildlife.
- To enhance pollen, nectar, and nesting habitat for pollinators.
- Food, cover, and shade for aquatic organisms that live in adjacent streams or watercourses.
- To provide substrate for predaceous and beneficial invertebrates as a component of integrated pest management.
- To intercept airborne particulate matter.
- To reduce chemical drift and odor movement.
- Screens and barriers to noise and dust.
- To increase carbon storage in biomass and soils.
- Living fences.
- Boundary delineation and contour guidelines

Conditions Where Practice Applies: In, across, or around fields.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
422-1	3 row hedgerow, container planting stock	**Scenario Description:** Three rows of bare-root trees, shrubs or a combination of trees and shrubs are planted for wildlife habitat (corridor), pollinator habitat, reduction of particulate matter, chemical drift, or odor movement, and boundary delineation and contour guidelines. This practice is typically applied on cropland. Trees and/or shrubs will be planted into previously established bunch grasses that produce erect stems greater than 3' in height and will persist over winter. This herbaceous component will be established according to the guidelines in 327 Conservation Cover. Payment includes materials, labor and equipment needed to machine plant the stock and foregone income for land removed from crop production where hedgerow is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Food resources in crop fields are made available by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Length of hedgerow	Foot	$2.57	$3.00	$2.57	$3.00
422-2	1 row hedgerow, container trees planting stock	**Scenario Description:** One row of container trees planted for wildlife habitat (corridor), pollinator habitat, reduction of particulate matter, chemical drift, or odor movement, and boundary delineation and contour guidelines. This practice is typically applied on cropland. Trees and/or shrubs will be planted into previously established bunch grasses that produce erect stems greater than 3' in height and will persist over winter. This herbaceous component will be established according to the guidelines in 327 Conservation Cover. Payment includes materials, labor and equipment needed to hand plant the stock and foregone income for land removed from crop production where hedgerow is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Food resources in crop fields are made available by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Length of hedgerow	Foot	$0.78	$0.90	$0.78	$0.90

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
422-3	1 row hedgerow, container shrubs planting stock	**Scenario Description:** One row of container shrubs planted for wildlife habitat (corridor), pollinator habitat, reduction of particulate matter, chemical drift, or odor movement, and boundary delineation and contour guidelines. This practice is typically applied on cropland. Trees and/or shrubs will be planted into previously established bunch grasses that produce erect stems greater than 3' in height and will persist over winter. This herbaceous component will be established according to the guidelines in 327 Conservation Cover. Payment includes materials, labor and equipment needed to hand plant the stock and foregone income for land removed from crop production where hedgerow is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Food resources in crop fields are made available by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Length of hedgerow	Foot	$1.28	$1.51	$1.28	$1.51
422-4	3 row hedgerow, bareroot seedling planting stock	**Scenario Description:** Three rows of bare-root trees, shrubs or a combination of trees and shrubs are planted for wildlife habitat (corridor), pollinator habitat, reduction of particulate matter, chemical drift, or odor movement, and boundary delineation and contour guidelines. This practice is typically applied on cropland. Trees and/or shrubs will be planted into previously established bunch grasses that produce erect stems greater than 3' in height and will persist over winter. This herbaceous component will be established according to the guidelines in 327 Conservation Cover. Payment includes materials, labor and equipment needed to machine plant the stock and foregone income for land removed from crop production where hedgerow is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Food resources in crop fields are made available by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Length of hedgerow	Foot	$1.06	$1.20	$1.06	$1.20

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
422-5	1 row hedgerow, bareroot tree seedling planting stock	**Scenario Description:** One row of bare-root trees planted for wildlife habitat (corridor), pollinator habitat, reduction of particulate matter, chemical drift, or odor movement, and boundary delineation and contour guidelines. This practice is typically applied on cropland. Trees and/or shrubs will be planted into previously established bunch grasses that produce erect stems greater than 3' in height and will persist over winter. This herbaceous component will be established according to the guidelines in 327 Conservation Cover. Payment includes materials, labor and equipment needed to machine plant the stock and foregone income for land removed from crop production where hedgerow is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Food resources in crop fields are made available by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Length of hedgerow	Foot	$0.26	$0.28	$0.26	$0.28
422-6	1 row hedgerow, bareroot shrub seedling planting stock	**Scenario Description:** One row of bare-root shrubs planted for wildlife habitat (corridor), pollinator habitat, reduction of particulate matter, chemical drift, or odor movement, and boundary delineation and contour guidelines. This practice is typically applied on cropland. Trees and/or shrubs will be planted into previously established bunch grasses that produce erect stems greater than 3' in height and will persist over winter. This herbaceous component will be established according to the guidelines in 327 Conservation Cover. Payment includes materials, labor and equipment needed to machine plant the stock and foregone income for land removed from crop production where hedgerow is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Inadequate habitat for fish and wildlife is addressed for needs identified in the resource assessment. Habitat patches are connected by dense hedgerow vegetation. Food resources in crop fields are made available by their proximity to hedgerow cover. Planting may include fruit and mast bearing species, improving food supply, depending on needs being addressed. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Length of hedgerow	Foot	$0.38	$0.42	$0.38	$0.42

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HERBACEOUS WEED TREATMENT

Practice Code 315

Practice Units: ACRE

Definition: The removal or control of herbaceous weeds including invasive, noxious and prohibited plants.

Purpose: To enhance accessibility, quantity, and quality of forage and/or browse, restore or release native or create desired plant communities and wildlife habitats consistent with the ecological site, protect soils and control erosion, and reduce fine-fuels fire hazard and improve air quality.

Conditions Where Practice Applies: On all lands except active cropland where removal, reduction, or manipulation of herbaceous vegetation is desired. This practice does not apply to removal of herbaceous vegetation by prescribed fire (use Prescribed Burning - 338) or removal of herbaceous vegetation to facilitate a land use change (use Land Clearing - 460).

Limitations: Payment is based on the treated acres.

Maintenance: Practice must be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
315-1	Light Spot Treatment	**Scenario Description:** Light spot treatment herbaceous weed control is used on non-cropland acres (including forestland, pasture, and idle areas) where less than 10% canopy coverage across the treatment area is in undesirable herbaceous cover, or a specific area spot treatment is needed such as creating open ground under a wildlife habitat structure. Payment is based on impacted acres only. The practice entails the treatment of weeds using small equipment (such as an ATV with sprayer) to apply chemicals, or using hand tools (such as axes, shovels, hoes, nippers) to remove or cut off herbaceous plants at or below the root collar. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. **After Practice Description:** Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved.	Acres Treated	Acre	$24.25	$29.10	$24.25	$29.10
315-2	Medium Spot Treatments	**Scenario Description:** Medium spot treatment herbaceous species management is used on non-cropland acres (including forestland, pasture, and idle areas) where greater than 10% canopy coverage across the treatment area is in undesirable herbaceous cover, and spot treatment is preferred over blanket treatment to maintain the persistence of desirable broadleaf and legumes within the treatment area. Payment is based on impacted acres only. The practice entails the treatment of weeds using small equipment (such as an ATV with sprayer) to apply chemicals or using applicable mechanical methods such as hand tools (such as axes, shovels, hoes, nippers) to remove or cut off herbaceous plants at or below the root collar, and/or spot mowing. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. **After Practice Description:** Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved.	Acres Treated	Acre	$70.44	$84.53	$70.44	$84.53

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
315-3	Blanket Treatment One Pass	**Scenario Description:** Blanket treatment one pass herbaceous weed control is used on non-cropland acres (including forestland, pasture, and idle areas) where a blanket treatment approach is acceptable, and the non-desirable weeds can be controlled with one treatment. Payment is based on impacted acres only. The practice entails the treatment of weeds using a blanket chemical application or mechanical brush hog operation. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. **After Practice Description:** Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved.	Acres Treated	Acre	$44.82	$53.78	$44.82	$53.78
315-4	Blanket Treatment Multi Pass	**Scenario Description:** Blanket treatment multi pass herbaceous weed control is used on non-cropland acres (including forestland, pasture, and idle areas) where a blanket treatment approach is acceptable and multiple passes or approaches are needed to control the non-desirable weeds. Payment is based on impacted acres only. The practice entails the treatment of weeds using multiple blanket chemical applications or multiple mechanical brush hog operations, or a combination of chemical and mechanical. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. **After Practice Description:** Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved.	Acres Treated	Acre	$97.24	$116.69	$97.24	$116.69

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
315-5	Tree & Shrub Post-planting Weed Control	**Scenario Description:** Treatment takes place in areas where newly planted trees and/or shrubs are experiencing encroachment by grass and weed competition. Chemical treatment is needed to ensure the successful establishment of desirable woody species through the application of appropriate herbicides via directional spray to reduce residual effects on planted trees and/or shrubs. Mowing between rows during the growing season is needed to control residual weed growth. Areas to be treated tend to be small and isolated, resulting in high mobilization costs. Due to desirable species mixed with undesirable, caution is needed during treatment. **After Practice Description:** Desirable vegetation is released from competing vegetation. All undesirable vegetation is removed within 2 feet of desired plants.	Acres treated	Acre	$84.38	$101.26	$84.38	$101.26
315-6	Aquatic Areas Weed Control	**Scenario Description:** Control of aquatic weed infestations, such as phragmites, reeds canary grass, or cattails, in wetland areas using multiple chemical applications. Due to moist soil conditions, herbicide is applied with an ATV and spot sprayer to avoid excessive disturbance to the site. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Payment is based on impacted acres only. **After Practice Description:** Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved.	Acres Treated	Acre	$258.10	$309.72	$258.10	$309.72

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
315-20	Hand and chemical	**Scenario Description:** Using hand tools, such as axes, shovels, hoes, nippers, to remove or cut off herbaceous plants at or below the root collar. Herbicide is applied to control re- growth of target weeds. Typical area is moderate rolling to gentle sloping, moderately deep to deep soils that have herbaceous weed species that are in the early phases of invasions. Typical unit is 10 acres. **After Practice Description:** Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and improved wildlife habitat.	acres planned	Acre	$90.04	$108.05	$90.04	$108.05
315-36	Chemical, Spot	**Scenario Description:** Land unit on which weed control would be beneficial in order to set back the plant community succession, improve the ecological condition, and improve forage conditions for domestic livestock or wildlife. The practice entails the eradication of vegetation by use of weed treatment, either initial or retreatment using hand-carried equipment (such as a backpack and hand-sprayer) to apply chemicals, in order to eliminate noxious weeds, promote forage productivity, and improve ecological condition. **After Practice Description:** Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and improved wildlife habitat.	Acres treated	Acre	$42.42	$50.90	$42.42	$50.90

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HIGH TUNNEL SYSTEM

Practice Code 325

Practice Units: SQ. FT.

Definition: An enclosed polyethylene, polycarbonate, plastic, or fabric covered structure that is used to cover and protect crops from sun, wind, excessive rainfall, or cold, to extend the growing season in an environmentally safe manner.

Purpose: Improve plant health and vigor.

Conditions Where Practice Applies: This practice applies to land capable of producing crops. This practice applies where sun or wind intensity may damage crops, or where an extension of the growing season is needed due to climatic conditions.

Limitations: The following are not eligible for financial assistance but are allowed at the participant's expense: electricity, heating, or ventilation (other than lifting the sides). When the sides are lifted for ventilation, a mesh screen may be used to keep insects out. The participant must purchase a manufacturer's kit and must follow the manufacturer's specifications. Practice is eligible for use with annual and perennial crops. Structure must be at least 6 feet tall and no more than 30 feet wide. The participant is allowed to leave the tunnel cover in place through the winter. It is the participant's responsibility to replace or repair the cover if it is damaged. Plants must be grown in natural ground. Raised beds with structural sides are NOT permitted. Mounding natural soil without structural sides is allowed. If surface water drainage issues causing erosion are present or created, practices must be installed to treat this resource concern. Practice is only eligible on existing cropland.

Maintenance: Practice must be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
325-3	High Tunnel System, Gothic Style	**Scenario Description:** A manufactured frame of tubular steel covered with 4-year 6mil plastic. Costs are based on purchase of manufactured kit and landowner installing the structure. Structure must be installed to manufacturer's specifications. **After Practice Description:** A gothic style seasonal high tunnel (30 x 72 ft.) has been installed and the growing season has been extended for 1-4 months on average. The gothic style is encouraged to hedge against possible failure under snow loads. Plant health and vigor is improved and there is decreased energy use by producing food locally.	Area of tunnel	Square Foot	N/A	N/A	$3.15	$3.78
325-48	High Tunnel System, Quonset Style	**Scenario Description:** A manufactured frame of tubular steel covered with 4-year 6mil plastic. Costs are based on purchase of manufactured kit and landowner installing the structure. Structure must be installed to manufacturer's specifications. **After Practice Description:** A Quonset style seasonal high tunnel (30 x 72 ft.) has been installed and the growing season has been extended for 1-4 months on average. The Quonset style is encouraged to hedge against possible failure under snow loads. Plant health and vigor is improved and there is decreased energy use by producing food locally.	Area of Tunnel	Square Foot	N/A	N/A	$2.70	$3.24

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INTEGRATED PEST MANAGEMENT

Practice 595

Practice Units: ACRE

Definition: A site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies.

Purpose:

- Prevent or mitigate off-site pesticide risks to water quality from leaching, solution runoff and adsorbed runoff losses.
- Prevent or mitigate off-site pesticide risks to soil, water, air, plants, animals and humans from drift and volatilization losses.
- Prevent or mitigate on-site pesticide risks to pollinators and other beneficial species through direct contact.
- Prevent or mitigate cultural, mechanical and biological pest suppression risks to soil, water, air, plants, animals and humans.

Conditions Where Practice Applies: On all lands where pests will be managed.

Limitations: Conservation Practice Standard 595 Integrated Pest Management, is a management practice (One-year lifespan) and may be scheduled for up to 3 consecutive years.

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule: The rate is provided for developing and implementing the components of a 595 Pest Management Plan which could include scouting for insect pests, diseases, and weeds; record keeping, training, installation of weather monitoring, equipment calibration training and spray card coverage pattern assessment -- This Payment is available for up to 3 consecutive years the activities are applied.

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
595-1	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 National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings). **After Practice Description:** 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 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 National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).	Acres of Implementation	Acre	$5.42	$8.13	$8.13	$9.75
595-2	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 National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings). **After Practice Description:** 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 National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).	Acres of Implementation	Acre	$8.13	$12.19	$12.19	$14.63

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
595-3	Advanced IPM 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 National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings). **After Practice Description:** 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 National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).	Acres of Implementation	Acre	$15.49	$23.23	$23.23	$27.88

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
595-4	Basic IPM Fruit/Veg 1RC	**Scenario Description:** A basic IPM plan with LGU-approved pest monitoring techniques and pest thresholds (where available) is applied in Large Scale Small Fruit/Vegetable Crops to address one identified resource concern (e.g. Water Quality - Impacts to Human Drinking Water) with either risk prevention (e.g. planned pesticides no risk to the identified resource concern) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings). **After Practice Description:** After implementing the 595 practice, a basic IPM system has been implemented with Land Grant University approved pest monitoring techniques and pest thresholds (where available) to help meet the minimum criteria for at least one identified resource concern (e.g. Water Quality - Impacts to Human Drinking Water) with either risk prevention (e.g. planned pesticides have no risk to the identified resource concern) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).	Acres of Implementation	Acre	$36.91	$55.37	$55.37	$66.45
595-5	Basic IPM Fruit/Veg >1RC	**Scenario Description:** A basic IPM plan with LGU-approved pest monitoring techniques and pest thresholds (where available) is applied in Large Scale Small Fruit/Vegetable 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 risk to identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings). **After Practice Description:** 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 National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).	Acres of Implementation	Acre	$80.25	$120.38	$120.38	$144.45

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
595-6	Advanced IPM Fruit/Veg 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 Small Fruit/Vegetable 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 National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings). **After Practice Description:** 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 National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).	Acres of Implementation	Acre	$111.07	$166.60	$166.60	$199.92
595-7	Basic IPM Orchard 1RC	**Scenario Description:** A basic IPM plan with LGU-approved pest monitoring techniques and pest thresholds (where available) is applied in Large Scale Orchard/Specialty Crops to address one identified resource concern (e.g. Water Quality - Impacts to Human Drinking Water) with either risk prevention (e.g. planned pesticides have no risk to the identified resource concern) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings). **After Practice Description:** After implementing the 595 practice, a basic IPM system has been implemented with Land Grant University approved pest monitoring techniques and pest thresholds (where available) to help meet the minimum criteria for at least one identified resource concern (e.g. Water Quality - Impacts to Human Drinking Water) with either risk prevention (e.g. planned pesticides have no risk to the identified resource concern) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).	Acres of Implementation	Acre	$89.56	$134.34	$134.34	$161.21

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
595-8	Basic IPM Orchard >1RC	**Scenario Description:** A basic IPM plan with LGU-approved pest monitoring techniques and pest thresholds (where available) is applied in Large Scale Orchard/Specialty Crops to address multiple identified resource concerns (e.g. Water Quality - Impacts to Human Drinking Water and Pollinator Impacts) with either risk prevention (e.g. planned pesticides have no risks to identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings). **After Practice Description:** 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 National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).	Acres of Implementation	Acre	$104.97	$157.46	$157.46	$188.95
595-9	Advanced IPM Orchard All RCs	**Scenario Description:** A comprehensive IPM plan with LGU-approved pest prevention, avoidance and monitoring techniques and pest thresholds (where available) is applied in Large Scale Orchard/Specialty Crops to address all identified resource concerns with either risk prevention (e.g. planned pesticides have no risk to identified resource concerns) or risk mitigation (e.g. planned pesticides have appropriate mitigation planned from National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings). **After Practice Description:** 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 National Agronomy Technical Note 5 for "Intermediate", "High" or "Extra High" WIN-PST Final Hazard Ratings).	Acres of Implementation	Acre	$123.26	$184.90	$184.90	$221.88

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INTEGRATED PEST MANAGEMENT PLAN - WRITTEN

Practice Code 114

Practice Units: NUMBER

Definition: Integrated Pest Management (IPM) is an ecosystem-based strategy that is a sustainable approach to manage pests using a combination of techniques such as chemical tools biological control, habitat manipulation, and modification of cultural practices and use of resistant varieties. Methods of chemical applications are selected in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. The Integrated Pest Management activity plan:

- Meets NRCS quality criteria for soil erosion, water quality, air quality, and plant quality
- Complies with federal, state, tribal, and local laws, regulations and permit requirements
- Addresses operator'sobjectives.

Producers choose to implement an Integrated Pest Management Plan for reasons that include, but are not limited to:

- Managing pests effectively and economically
- Minimizing the risk associated with pest suppression
- Producing qualitycommodities

Purpose: Plan conservation practices and IPM technique to mitigate potential environmental risk not to degrade the soil, water, air, and plant quality as related to suppression tactics being applied to manage the pest.

Integrated Pest Management guidance for individual crops that indicate activities to be undertaken throughout the year based on the crop production cycle.

Conditions Where Practice Applies: On lands in Iowa that will benefit from the development and implementation of an Integrated Pest Management Plan.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
114-14	IPM Management CAP Small-Specialty Less Than 50 Acres	**Scenario Description:** Various on-farm land uses where pests are managed on smaller operations, including organic and specialty crop operations where more complicated pest management evaluations and solutions may be necessary. Current pest control activities cause environmental concerns with water quality and/or erosion. Natural Resource Concern: Water quality and all other appropriate resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Integrated Pest Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to utilize the following strategies: Prevention, Avoidance, Monitoring, and Suppression, which will be implemented through use of Integrated Pest Management and may use one or more conservation practices and/or risk reduction strategies. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 114 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$1,516.88	$1,820.25	N/A	N/A
114-15	IPM Management CAP Medium 51 - 250 Acres	**Scenario Description:** Various on-farm land uses where pests are managed on a moderately-sized farm where IPM is to be applied. Current pest control activities cause environmental concerns with water quality and/or erosion. Natural Resource Concern: Water quality and all other appropriate resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Integrated Pest Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to utilize the following strategies: Prevention, Avoidance, Monitoring, and Suppression, which will be implemented through use of Integrated Pest Management and may use one or more conservation practices and/or risk reduction strategies. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 114 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$1,941.60	$2,329.92	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
114-16	IPM Management CAP Large - Greater Than 250 Acres	**Scenario Description:** Various on-farm land uses where pests are managed on a larger farm where IPM strategies are to be applied. Current pest control activities cause environmental concerns with water quality and/or erosion. Natural Resource Concern: Water quality and all other appropriate resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Integrated Pest Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to utilize the following strategies: Prevention, Avoidance, Monitoring, and Suppression, which will be implemented through use of Integrated Pest Management and may use one or more conservation practices and/or risk reduction strategies. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 114 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$3,033.75	$3,640.50	N/A	N/A

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IRRIGATION LAND LEVELING

Practice Code 464

Practice Units: ACRE

Definition: Reshaping the surface of land to be irrigated, to planned lines and grades.

Purpose: To facilitate the efficient use of water on irrigated land.

Conditions Where Practice Applies: This standard applies to the leveling of land irrigated by surface or subsurface irrigation systems. The leveling is based on a detailed engineering survey, design, and layout. This standard does not apply to Precision Land Forming (462) or Land Smoothing (466).

Limitations: In order for land to be eligible for an irrigation-related practice, that land must have been irrigated in two out of the last five years. This means that irrigation must have been part of managing the cropping system to meet the needs of the plant and to maintain the yields of an irrigated crop. To ensure the practice meets the program purpose, the irrigation practice must be addressing an identified resource concern, such as Soil Erosion – Irrigation Induced or Water Quantity – Inefficient Water Use. To document irrigation history, use the “Irrigation History Documentation.docx”.

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
464-1	Irrigation Land Leveling	**Scenario Description:** Reshaping of the surface of land to be irrigated to planned grades to permit uniform and efficient application of irrigation water to the leveled land. The field is leveled such that it is uniform and drains to a specifically targeted part of the field. Resource Concern: Excess/Insufficient - Inefficient Use of Irrigation Water **After Practice Description:** Cropland will be reshaped to provide uniform distribution of irrigation water in order to promote irrigation efficiencies. **Associated Conservation Practices:** Irrigation Water Management (449)	Acre	Acre	$133.67	$200.50	$200.50	$240.60

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IRRIGATION SYSTEM, MICROIRRIGATION

Practice Code 441

Practice Units: ACRE

Definition: An irrigation system for frequent application of small quantities of water on or below the soil surface: as drops, tiny streams or miniature spray through emitters or applicators placed along a water delivery line.

Purpose: This practice is applied to achieve the following purpose:

- Efficiently and uniformly apply irrigation water and maintain soil moisture for plant growth.
- Prevent contamination of ground and surface water by efficiently and uniformly applying chemicals.
- Establish desired vegetation.

Conditions Where Practice Applies: On sites where soils and topography are suitable for irrigation of crops or other desirable vegetation and an adequate supply of suitable quality water is available for the intended purpose(s).

Microirrigation is suited to virtually all agricultural crops, and residential and commercial landscape systems. Microirrigation is also suited to steep slopes where other methods would cause excessive erosion, and areas where other application devices interfere with cultural operations.

Microirrigation is suited for use in providing irrigation water in limited amounts to establish desired vegetation such as windbreaks, living snow fences, riparian forest buffers, and wildlife plantings.

This practice standard applies to systems that wet only a specific area (e.g., an individual plant or tree) and typically have design discharge rates less than 60 gal/hr at individual application discharge points. Use NRCS Conservation Practice Standard (CPS) (442), Sprinkler System, for systems that uniformly wet the entire field and typically have design discharge rates of 60 gal/hr or greater at individual application discharge points

Limitations: In order for land to be eligible for an irrigation-related practice, that land must have been irrigated in two out of the last five years. This means that irrigation must have been part of managing the cropping system to meet the needs of the plant and to maintain the yields of an irrigated crop. To ensure the practice meets the program purpose, the irrigation practice must be addressing an identified resource concern, such as Soil Erosion – Irrigation Induced or Water Quantity – Inefficient Water Use. To document irrigation history, use the “Irrigation History Documentation.docx”.

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
441-1	Trees and Shrubs Microirrigation System	**Scenario Description:** An irrigation system for trees and shrubs such as in establishing a windbreak. Water delivery to the plants by surface lines and/or subsurface applicators. Spacing of the plants will vary, w/ delivery lines spaced 15'. Area in question is being converted from other means of less efficient irrigation. Payment includes on-ground mainline and drip tape, fittings, and appurtenances. Pump & supply line is not included in this payment and may be offered through associated practices 533 Pumping plant and 430 Irrigation Pipeline, or existing pump & supply lines will be used. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **After Practice Description:** A surface placed micro irrigation system is utilized to provide highly efficient irrigation to the trees. Typical system is for 5 rows of trees each 600 ft. in length for a total irrigated length of 3,000 feet. Water applications are reduced, and runoff eliminated. Offsite water quality is improved, and on-site water use is reduced. Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities. **Associated Practices:** Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430)	Per Foot	Foot	$0.23	$0.35	$0.35	$0.42

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
441-2	Specialty Crop Microirrigation System	**Scenario Description:** An irrigation system for vegetables or other specialty crops typically of small acreage (2 acre). Water delivery to the plants by surface lines and/or subsurface applicators. Spacing of the plants will vary, w/ lateral lines spaced 24". Area in question is being converted from other means of less efficient irrigation. Payment includes on-ground mainline and drip tape, fittings, and appurtenances. Surface placed drip tape will not meet the 441 practice life and will normally need replacement every year. After first installation, drip tape will be replaced as operation and maintenance as required for proper operation of the system. Pump & supply line is not included in this payment and may be offered through associated practices 533 Pumping plant and 430 Irrigation Pipeline, or existing pump & supply lines will be used. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **After Practice Description:** A surface placed micro irrigation system is utilized to provide highly efficient irrigation to a field. Water applications are reduced, and runoff eliminated. Offsite water quality is improved, and on-site water use is reduced. Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities. **Associated Practices:** Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430)	Acres in System	Acre	$1,984.94	$2,977.42	$2,977.42	$3,572.90

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
441-3	Potted Plant or Nursery Microirrigation System	**Scenario Description:** A complete drip irrigation system for potted nursery crops, irrigating a 60' x 200' pad. Water delivery to the plants by surface lines and double spray-pattern stakes. Delivery line spacing is 4' w/ double pots spaced along each delivery line at 3' intervals. Irrigation is for 2010 pots. Area in question is being converted from existing system of overhead irrigation. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Payment includes on-ground mainline and drip tape, fittings, and appurtenances. Pump & supply line is not included in this payment and may be offered through associated practices 533 Pumping plant and 430 Irrigation Pipeline, or existing pump & supply lines will be used. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **After Practice Description:** A surface placed micro irrigation system is utilized to provide highly efficient irrigation to a field. Water applications are reduced, and runoff eliminated. Offsite water quality is improved, and on-site water use is reduced. Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities. **Associated Practices:** Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430)	Sq. Ft	Square Foot	$0.12	$0.18	$0.18	$0.22

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
441-4	Seasonal High Tunnel Microirrigation System	**Scenario Description:** An irrigation system for vegetables or other specialty crops, irrigating inside of a high-tunnel poly-house typically 2,178 sq. ft. in size. Water delivery to the plants by surface lines and/or subsurface applicators. Spacing of the plants will vary, w/ delivery lines spaced 60". Area in question is being converted from other means of less efficient irrigation. Payment includes on-ground mainline and drip tape, fittings, and appurtenances. Pump & supply line is not included in this payment and may be offered through associated practices 533 Pumping plant and 430 Irrigation Pipeline, or existing pump & supply lines will be used. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **After Practice Description:** A micro irrigation system is utilized to provide highly efficient irrigation to crops grown in a high tunnel. Water applications are reduced, and runoff eliminated. Offsite water quality is improved, and on-site water use is reduced. Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities. **Associated Practices:** Pumping Plant (533), Irrigation Water Management (449), Irrigation Pipeline (430)	Each High Tunnel	Each	$120.54	$180.82	$180.82	$216.98

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IRRIGATION PIPELINE

Practice Code 430

Practice Units: FEET

Definition: A pipeline and appurtenances installed to convey water for storage or application, as part of an irrigation water system

Purpose: This practice may be applied as part of a resource management system to achieve one or more of the following purposes:

- Conveyance of water from a source of supply to an irrigation system or storage reservoir.
- Reduce energy use.
- Develop renewable energy systems (i.e., in-pipe hydropower).

Conditions Where Practice Applies: This standard applies to water conveyance and distribution pipelines installed above or below ground.

This standard does not apply to multiple outlet irrigation system components (e.g., surface gated pipes, sprinkler lines, or micro irrigation tubing).

Limitations: In order for land to be eligible for an irrigation-related practice, that land must have been irrigated in two out of the last five years. This means that irrigation must have been part of managing the cropping system to meet the needs of the plant and to maintain the yields of an irrigated crop. To ensure the practice meets the program purpose, the irrigation practice must be addressing an identified resource concern, such as Soil Erosion – Irrigation Induced or Water Quantity – Inefficient Water Use. To document irrigation history, use the “Irrigation History Documentation.docx”.

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
430-1	Microirrigation Pipeline	**Scenario Description:** Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve a micro irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as 10% of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements. Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use. **After Practice Description:** Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use. **Associated Practices:** Irrigation Reservoir (436), Irrigation System, Micro irrigation (441); Sprinkler System (442); Irrigation System, Surface & Subsurface (443), Pumping Plant (533); Irrigation System, Tailwater Recovery (447), Waste Transfer (634)	Ft of pipe	Foot	$1.55	$2.33	$2.33	$2.80
430-2	Pipe System <=8 in Diameter, >50 ft Installation	**Scenario Description:** Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve an irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as 10% of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements. Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use. **After Practice Description:** Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use. **Associated Practices:** Irrigation Reservoir (436), Irrigation System, Micro irrigation (441); Sprinkler System (442); Irrigation System, Surface & Subsurface (443), Pumping Plant (533); Irrigation System, Tailwater Recovery (447), Waste Transfer (634)	Ft of pipe	Foot	$7.19	$10.79	$10.79	$12.95

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
430-3	Pipe System <= 8 in Diameter, <= 50 ft Installation	**Scenario Description:** Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve an irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as 10% of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements. Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use. **After Practice Description:** Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use. **Associated Practices:** Irrigation Reservoir (436), Irrigation System, Micro irrigation (441); Sprinkler System (442); Irrigation System, Surface & Subsurface (443), Pumping Plant (533); Irrigation System, Tailwater Recovery (447), Waste Transfer (634)	Ft of pipe	Foot	$11.37	$17.06	$17.06	$20.47
430-4	Pipe System 10-12 in Diameter, >50 ft Installation	**Scenario Description:** Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve an irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as %10 of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements. Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use. **After Practice Description:** Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use. **Associated Practices:** Irrigation Reservoir (436), Irrigation System, Micro irrigation (441); Sprinkler System (442); Irrigation System, Surface & Subsurface (443), Pumping Plant (533); Irrigation System, Tailwater Recovery (447), Waste Transfer (634)	Ft of pipe	Foot	$9.53	$14.30	$14.30	$17.16

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
430-5	Pipe System 10-12 in Diameter, <= 50ft Installation	**Scenario Description:** Below ground installation of plastic pipeline installed underground between the location of the water pump and the area of irrigation to serve an irrigation system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves, and are included as 10% of pipe material. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements. Resource Concerns: Inefficient Use of Irrigation Water; Inefficient Energy Use. **After Practice Description:** Pipeline installed to convey and/or distribute water to irrigation systems or reservoirs, minimizing non-beneficial water use, reducing soil erosion, and/or reducing energy use. **Associated Practices:** Irrigation Reservoir (436), Irrigation System, Micro irrigation (441); Sprinkler System (442); Irrigation System, Surface & Subsurface (443), Pumping Plant (533); Irrigation System, Tailwater Recovery (447), Waste Transfer (634)	Ft of pipe	Foot	$14.07	$21.11	$21.11	$25.33

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IRRIGATION RESERVOIR

Practice Code 436

Practice Units: ACRE-FEET

Definition: An irrigation water storage structure made by constructing a dam, embankment, pit, or tank.

Purpose: This practice may be applied as part of a resource management system to achieve one or more of the following purposes:

- Store water to provide a reliable irrigation water supply or regulate available irrigation flows.
- Improve water use efficiency on irrigated land.
- Provide storage for tailwater recovery and reuse.
- Provide irrigation runoff retention time to increase breakdown of chemical contaminants.
- Reduce energy use.
- Develop renewable energy systems (i.e., hydropower).

Conditions Where Practice Applies: This practice applies to irrigation water storage structures that meet one or more of the following criteria:

- The existing available water supply is insufficient to meet irrigation requirements during all or part of the irrigation season.
- Water is available for storage from surface runoff, stream flow, irrigation canals, or a subsurface source.
- A suitable site is available for construction of a storage reservoir.

This practice applies to planning and functional design of storage capacity, and inflow/outflow capacity requirements for irrigation storage reservoirs. Plan and locate storage reservoirs to serve as an integral part of an irrigation system. This practice applies to reservoirs created by embankment structures or excavated pits to store diverted surface water, groundwater, or irrigation system tailwater for later use, or reuse. The practice also applies to reservoirs created by embankment structures or excavated pits and tanks constructed of concrete, steel, or other suitable materials used to collect and regulate available irrigation water supplies to accomplish the intended purpose.

Limitations: In order for land to be eligible for an irrigation-related practice, that land must have been irrigated in two out of the last five years. This means that irrigation must have been part of managing the cropping system to meet the needs of the plant and to maintain the yields of an irrigated crop. To ensure the practice meets the program purpose, the irrigation practice must be addressing an identified resource concern, such as Soil Erosion – Irrigation Induced or Water Quantity – Inefficient Water Use. To document irrigation history, use the “Irrigation History Documentation.docx”.

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
436-1	Underground Tank	**Scenario Description:** A 1,500-gallon, HDPE plastic tank, is installed below ground to store water from a reliable source for irrigation of a small area. Resource Concern: Insufficient Water - Inefficient use of irrigation water. **After Practice Description:** A 1500-gallon HDPE tank (dimensions: 111" L X 98" W X 48" H) installed 2 ft. below ground as a means to store water collected from building/surface runoff and/or irrigation tailwater recovery. Scenario describes excavation of pit, placement of tank and backfilling of material over tank including spreading of spoil. **Associated Practices:** Irrigation Pipeline (430); Irrigation System, Micro irrigation (441); Sprinkler System (442); Pumping Plant (533); Irrigation System, Tailwater Recovery (447), Roof Runoff Structure (558)	Volume of Storage Tank	Gallon	$0.68	$1.02	$1.02	$1.23

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IRRIGATION WATER MANAGEMENT

Practice Code 449

Practice Units: ACRE

Definition: The process of determining and controlling the volume, frequency, and application rate of irrigation water.

Purpose:

- Improve irrigation water use efficiency
- Minimize irrigation induced soil erosion
- Decrease degradation of surface and groundwater resources
- Manage salts in the crop root zone
- Manage air, soil, or plant micro-climate
- Reduce energy use

Conditions Where Practice Applies: This practice is applicable to all irrigated lands. An irrigation system adapted for site conditions (soil, slope, crop grown, climate, water quantity and quality, air quality, etc.) must be available and capable of efficiently applying water to meet the intended purpose(s).

Limitations: In order for land to be eligible for an irrigation-related practice, that land must have been irrigated in two out of the last five years. This means that irrigation must have been part of managing the cropping system to meet the needs of the plant and to maintain the yields of an irrigated crop. To ensure the practice meets the program purpose, the irrigation practice must be addressing an identified resource concern, such as Soil Erosion – Irrigation Induced or Water Quantity – Inefficient Water Use. To document irrigation history, use the “Irrigation History Documentation.docx”.

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
449-1	IWM for row crops	**Scenario Description:** Implementation of a water management plan 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). Payment applies to irrigation water management on a row crop operation. 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. **After Practice Description:** Irrigations are scheduled basedon 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. **Associated Practices:** Irrigation System - Micro irrigation (441); Sprinkler System (442); Irrigation System, Surface and Subsurface (443)	Irrigated Area Managed	Acre	$6.06	$9.09	$9.09	$10.91
449-2	IWM for microirrigation systems and specialty crops	**Scenario Description:** Implementation of a water management plan 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). Payment applies to irrigation water management on a specialty crop operation, or an operation utilizing micro irrigation. 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. **After Practice Description:** Irrigations are scheduled basedon 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. **Associated Practices:** Irrigation System - Micro irrigation (441); Sprinkler System (442); Irrigation System, Surface and Subsurface (443)	Irrigated Area Managed	Acre	$30.60	$45.90	$45.90	$55.08

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
449-3	IWM for Seasonal High Tunnels	**Scenario Description:** Implementation of a water management plan 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). Payment applies to irrigation water management in Seasonal High Tunnels. 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. **After Practice Description:** 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, 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. The typical irrigated area is approximately 2,000 sq. ft. under a Seasonal High Tunnel. **Associated Practices:** Irrigation System - Micro irrigation (441); Sprinkler System (442); Irrigation System, Surface and Subsurface (443)	Number of High Tunnels	Each	$229.50	$344.25	$344.25	$413.10

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
449-4	Soil Moisture Sensors	**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 an 80 acre field of irrigated cropland. Producer periodically monitors soil moisture sensors during the growing season. Meters used to read sensors may be portable. 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. **After Practice Description:** 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 management and reduced energy use. **Associated Practices:** Irrigation System - Micro irrigation (441); Sprinkler System (442); Irrigation System, Surface and Subsurface (443)	Number of Measuring Sites	Each	$711.23	$1,066.84	$1,066.84	$1,280.21

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
449-5	Soil Moisture Sensors with Data Recorder	**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. Scenario also includes the labor associated with 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. 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. **After Practice Description:** 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 management and reduced energy use. **Associated Practices:** Irrigation System - Micro irrigation (441); Sprinkler System (442); Irrigation System, Surface and Subsurface (443), Structure for water Control (587), Conservation Crop Rotation (328), and Nutrient Management (590)	Number of Measuring Sites	Each	$989.97	$1,484.96	$1,484.96	$1,781.95

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
449-15	Advanced IWM	**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 equipped with telemetry data. 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. **After Practice Description:** Irrigations are scheduled basedon 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. **Associated Practices:** Irrigation System - Micro irrigation (441); Sprinkler System (442); Irrigation System, Surface and Subsurface (443)	Irrigated Area Managed	Acre	$9.46	$14.19	$14.19	$17.03

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IRRIGATION WATER MANAGEMENT PLAN - WRITTEN

Practice Code 118

Practice Units: NUMBER

Definition: The objective of Irrigation Water Management (IWM) is to control the volume, frequency, and rate of water for efficient irrigation

Purpose: Promote desired crop response, optimize the use of available water supplies, improve water quality, by reducing irrigation sources of surface and ground water contamination, minimize irrigation induced soil erosion, improve soil environment for vegetative growth, manage salts in the root zone, improve air quality, by reducing movement of particulate matter, provide appropriate and safe fertigation and chemigation, and reduce energy consumption.

The objective of an Irrigation Water Management Plan (IWMP) is to provide the producer a guide for the proper management and application of irrigation water resources. The potential benefits of IWM can be effectively determined by interviewing the producer to identify fields, soils, crops, climate, and available water supply; measuring the volumes of water withdrawn or applied; determining irrigation system uniformity, selecting a method to schedule irrigations, and then combining these components to produce an IWMP for the farm.

Conditions Where Practice Applies: This practice is applicable to all irrigated lands. An irrigation system adapted for site conditions (soil, slope, crop grown, climate, water quantity and quality, air quality, etc.) must be available and capable of efficiently applying water to meet the intended purpose(s).

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
118-6	Irrigation Water Management Conservation Activity Plan CAP	**Scenario Description:** Agricultural operations supported with existing irrigation systems. Natural Resource Concern: Water quantity and all other appropriate resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Irrigation Water Management' conservation activity plan to control the volume, frequency, and rate of water for efficient irrigation and to address other resource concerns. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 118 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$2,370.90	$2,845.08	N/A	N/A
118-17	Irrigation Water Management CAP with pump test	**Scenario Description:** Agricultural operations supported with existing irrigation systems. Natural Resource Concern: Water quantity and all other appropriate resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Irrigation Water Management' conservation activity plan to control the volume, frequency, and rate of water for efficient irrigation and to address other resource concerns. Because a pump test was performed, a new pump that operates more efficiently and matches the irrigation system has been analyzed and could possibly be installed such that less water and energy are consumed. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 118 plan as cited in the NRCS Field Office Technical Guide.	Acre	Number	$3,725.70	$4,470.84	N/A	N/A

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LAND CLEARING

Practice Code 460

Practice Units: ACRE

Definition: Removing trees, stumps, and other vegetation from wooded areas to achieve a conservation objective.

Purpose: Facilitate needed land use adjustments and improvements to an existing site in the interest of natural resource conservation.

Conditions Where Practice Applies: This practice applies to wooded areas for the removal of trees, stumps, brush, and other vegetation in order to implement a conservation objective.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 10 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
460-1	Non-Heavy Equipment	**Scenario Description:** Site preparation of a field with a labor crew, chainsaws, chippers or similar equipment removing trees and shrubs to achieve a conservation objective. Typical scenario is approximately 1 acre of trees and shrubs to be cleared. The resource concern is determined by the conservation objective met with the final practice applied to the field. **After Practice Description:** Labor crew uses chainsaws, chippers, or similar equipment to clear trees and prepare the field for a conservation objective, includes on-site disposal as necessary. **Associated practices**, like plantings, other structures, or irrigation/drainage water management practices, would be contracted separately as needed.	Area Cleared	Acre	$356.89	$535.33	$535.33	$642.40
460-2	Heavy Equipment	**Scenario Description:** Site preparation of a field with dozer or equivalent heavy equipment to achieve a conservation objective. Typical scenario is approximately 10 acres of trees and shrubs to be cleared. The resource concern is determined by the conservation objective met with the final practice applied to the field. **After Practice Description:** Crew uses 200 HP dozer to clear trees and prepare field for conservation objective, includes on-site debris disposal as necessary. **Associated practices**, like plantings, other structures, or irrigation/drainage water management practices, would be contracted separately as needed.	Area Cleared	Acre	$494.95	$742.43	$742.43	$890.91

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LIGHTING SYSTEM IMPROVEMENT

Practice Code 670

Practice Units: NUMBER

Definition: Complete replacement or retrofitting of one or more components of an existing agricultural lighting system.

Purpose: This practice may be applied to reduce energy use.

Conditions Where Practice Applies: This practice applies to any agricultural facility with an existing lighting system and a completed lighting assessment that complies with the guidelines for a Type 2 on-farm energy audit for the major activity of lighting per ANSI/ASABE S612.

Limitations: Contracts that include Agricultural Energy Management Plans or audits as required for 670 – Lighting System Improvement shall have energy plans or audits sent to the Area Engineer who will forward a copy to the State Office Environmental Engineer (Mark Garrison) for administrative review before certification of plans or installation of practices outlined in plans or audits. Plans must meet the technical requirements of ASABE S612 - Performing On-farm Energy Audits and/or CAP 128 criteria. The Farm Energy Improvement Practices Implementation and Certification Record worksheet will be completed and signed by the participant prior to practice certification for payment.

Three Payment Scenarios listed below are vague in the Scenario Name and Scenario Description. The table below provides additional guidance for these three Payment Scenario ID's:

Scenario ID	Scenario Name	Guidance
670 – 1	Lighting – Outdoor/High Bay Fixture Conversion	This can be used for outdoor fixture conversion or for indoor high bay applications such as in large machine sheds or free-stall barns.
670 – 3	Lighting- Indoor Fixture Conversion	This can be used for indoor conversion, typically in a one fixture replaced for one new fixture installed situation.
670 – 22	Lighting – Indoor Fixture Conversion, Multiple Fixture Upgrade	The multiple fixture upgrade applies when a single fixture is replaced with multiple new LED fixtures, typically in a livestock house. The scenario is based on a 1 to 5 conversion, however the way it is set up the planned contracts based on the current number of fixtures in the house to be replaced, so the scenario will work for other conversions, such as a 1 to 4 ratio. The payment is based on the number of original fixtures.

Maintenance: Practice must be maintained for a lifespan of 10 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
670-1	Lighting - Outdoor or High Bay Fixture Conversion	**Scenario Description:** Installation of a lighting system consisting of an outdoor/high bay light such as, but not limited to, LED or pulse-start metal halide (PSMH) lamp with a matched ballast. Associated materials for installation of replacement fixtures are included. Appropriate disposal of existing lamps, ballasts and other materials is required. Payment includes lamp, fixtures and labor to install. **After Practice Description:** High-efficiency lighting system which reduces energy use. The new lighting equipment will provide suitable light levels and reduce overall power requirements (KW) compared to the existing lighting system as evidenced by the energy audit. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities:** 122-AgEMP - HQ, 672 Building Envelope Improvement, and 374-Farmstead Energy Improvement.	Each lamp replaced	Each	N/A	N/A	$255.18	$306.22
670-2	Lighting - LED	**Scenario Description:** To install dimmable LEDs to replace incandescent lamps on a one-for-one basis. Light fixtures do not have to be replaced. A typical poultry house has 48 fixtures. LED requirements: minimum 6-Watt, 3700 Kelvin, dimmable, grow-out bulb; industrial grade; suitably protected from dirt accumulation. In high humidity environments or areas subject to wash down, gasketed or weatherproof housings are required to prevent corrosion and premature failure. Payment includes light bulb and labor to install. **After Practice Description:** More efficient lighting is provided by Light-Emitting Diode (LED) lamps in order to reduce energy use as evidenced by the energy audit. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities:** 122-AgEMP - HQ, 672 Building Envelope Improvement, and 374-Farmstead Energy Improvement.	Each lamp replaced	Each	N/A	N/A	$9.47	$11.36

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
670-3	Lighting - Indoor Fixture Conversion	**Scenario Description:** Installation of a lighting system consisting of a four-foot, three-lamp fixture with a single electronic ballast. The high-efficiency lighting system uses high-efficiency LED or T8 or T5 fluorescent lamps. Associated materials for installation of replacement fixtures are included. Appropriate disposal of existing lamps, ballasts and other materials is required. Payment includes lamps, ballast, fixtures and labor to install. **After Practice Description:** High-efficiency lighting system which reduces energy use. The new lighting equipment will provide suitable light levels and reduce overall power requirements (kW) compared to the existing lighting system as evidenced by the energy audit. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities:** may include 122-AgEMP - HQ, 672 Building Envelope Improvement, and 374-Farmstead Energy Improvement.	Each fixture replaced	Each	N/A	N/A	$258.84	$310.61
670-4	Lighting - Outdoor or High Bay Bulb Replacement	**Scenario Description:** Installation of a lighting system consisting of an outdoor/high bay light such as, but not limited to, LED or pulse-start metal halide (PSMH) lamp. Light fixtures do not have to be replaced. Appropriate disposal of existing lamps, ballasts and other materials is required. Payment includes light bulb and labor to install. **After Practice Description:** High-efficiency lighting system which reduces energy use. The new lighting equipment will provide suitable light levels and reduce overall power requirements (kW) compared to the existing lighting system as evidenced by the energy audit. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities:** may include 122-AgEMP - HQ, 672 Building Envelope Improvement, and 374-Farmstead Energy Improvement.	Each lamp replaced	Each	N/A	N/A	$189.46	$227.35

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
670-22	Lighting - Indoor Fixture Conversion, Multiple Fixture Upgrade	**Scenario Description:** Installation of a lighting system consisting of multiple high efficiency LED light fixtures and lamps providing equivalent lighting levels to the fixture being replaced. Associated materials for installation of replacement fixtures are included. Appropriate disposal of existing lamps, ballasts and other materials as required. Payment includes, lamps, fixture, wiring components, and labor to install. Payment is based on each original fixture that is replaced by multiple fixtures of upgraded LEDs. For example, if a building has 20 existing high-pressure sodium light fixtures which are replaced by 100 LED fixtures, the contract item number quantity is 20. **After Practice Description:** High-efficiency lighting system which reduces energy use. The new lighting equipment will provide suitable light levels and reduce overall power requirements (kW) compared to the existing lighting system as evidenced by the energy audit. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated practices/activities:** may include 128-AgEMP, 672 Building Envelope Improvement, and 374-Farmstead Energy Improvement.	Each Original Fixture Replaced	Each	N/A	N/A	$120.21	$144.25

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LINED WATERWAY OR OUTLET

Practice Code 468

Practice Units: FEET

Definition: A waterway or protected outlet section having an erosion-resistant lining of concrete, stone, synthetic turf reinforcement fabrics, or other permanent material.

Purpose: This practice may be applied as part of a resource management system to support one or more of the following purposes:

- Provide safe conveyance of runoff from conservation practices or other flow concentrations without causing erosion or flooding.
- Prevent or stabilize existing gully erosion or scour.
- Protect and improve water quality.

Conditions Where Practice Applies: This practice applies if conditions similar to one or more of the following exist:

- Concentrated runoff, pipe flow, steep grades, wetness, prolonged base flow, seepage, or piping is such that a lining is needed to prevent erosion.
- Use by people or animals precludes vegetation as suitable cover.
- Site restrictions necessitate limited waterway or outlet widths with design velocities that require lining protection.
- Soils are highly erosive or other soil or climatic conditions preclude using vegetation only.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 15 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
468-1	Turf Reinforced Matting	**Scenario Description:** Install 300' long by 15' wide by 1.5' deep trapezoidal or parabolic shaped waterway lined with Turf Reinforced Matting (TRM). 1/2 the channel is excavated. Excess excavation is spoiled in the immediate area. TRM is installed over 100% of the width of the waterway to prevent scour and aid in waterway establishment. Cost include excavation, spoiling of excess material, and furnishing and installing TRM. Lined waterway width is measured from top of bank to top of bank. **After Practice Description:** TRM lined waterway is 300' long by 15' wide by 1.5' deep. The practice is installed using a hydraulic excavator. TRM is installed by laborers. **Associated Practices:** Subsurface Drain (606), Underground Outlet (620), Structure for Water Control (587), and Critical Area Seeding (342).	Square Foot of Waterway	Square Foot	$0.64	$0.96	$0.96	$1.15

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LIVESTOCK PIPELINE

Practice Code 516

Practice Units: FEET

Definition: A pipeline and appurtenances installed to convey water for livestock or wildlife.

Purpose: This practice may be applied as part of a resource management system to achieve one or more of the following purposes: •

- Convey water to points of use for livestock or wildlife.
- Reduce energy use.
- Develop renewable energy systems

Conditions Where Practice Applies: This standard applies to the conveyance of water through a closed conduit, from a source of supply to a watering facility, for use by livestock or wildlife.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
516-1	Above Ground Pipeline	**Scenario Description:** An above ground plastic pipeline is installed to convey water from a source of supply to points of use for livestock in a prescribed grazing system or wildlife for temporary watering locations. **After Practice Description:** An above ground plastic pipeline is installed to convey water from a water source to point of use for temporary watering. Payment incorporates pipe and quick connect coupler and fittings. The pipeline is installed as a facilitating practice for supplying water in a managed grazing system, to reduce soil erosion, improve water quality, improve health and vigor of key forage plant species and improve or maintain animal health. The pipeline is to be protected from UV radiation damage, as well as damage from vehicles, animals, people, and fire. The landowner is responsible for repair or replacement of the pipeline as necessary under O&M during the specified life span of the practice. Cost data is applicable to organic and conventional agricultural production systems. **Associated practices include** Fencing (382), Prescribed Grazing (528), Trails and Walkways (575), Access Control (472), Pumping Plant (533), Water Well (642), Heavy Use Area (561) and Watering Facility (614).	Foot	Foot	$0.64	$0.96	$0.96	$1.15
516-2	Buried Pipeline, < 2in Plastic	**Scenario Description:** Installation of a plastic pipeline, less than 2" diameter, to convey water from a source of supply to points of use for livestock in a prescribed grazing system or for wildlife. Installation is by trenching, or by backhoe across a stream or other locations where installation of the pipeline by trenching is not feasible. **After Practice Description:** A 1-1/2-inch diameter, Schedule 40 PVC plastic pipeline for stock watering, 4165 ft. long is installed for supplying water in a managed grazing system, to reduce soil erosion, improve water quality, improve health and vigor of key forage plant species and improve or maintain animal health. Payment includes couplers and fittings. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated practices include** Fencing (382), Prescribed Grazing (528), Trails and Walkways (575), Access Control (472), Pumping Plant (533), Water Well (642), Heavy Use Area (561) and Watering Facility (614).	Foot	Foot	$1.08	$1.63	$1.63	$1.95

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
516-3	Buried Pipeline, 2in - 3in Plastic	**Scenario Description:** Installation of a 2-3" diameter plastic pipeline to convey water from a source of supply to points of use for livestock in a prescribed grazing system or for wildlife. Installation is by trenching, or by backhoe across a stream or other locations where installation of the pipeline by trenching is not feasible. **After Practice Description:** A 2-1/2-inch diameter, Schedule 40 PVC plastic pipeline for stock watering, 3300 ft. long is installed for supplying water in a managed grazing system, to reduce soil erosion, improve water quality, improve health and vigor of key forage plant species and improve or maintain animal health. Payment includes couplers and fittings. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated practices include** Fencing (382), Prescribed Grazing (528), Trails and Walkways (575), Access Control (472), Pumping Plant (533), Water Well (642), Heavy Use Area (561) and Watering Facility (614).	Foot	Foot	$1.71	$2.57	$2.57	$3.09
516-4	Buried Pipeline, >3in	**Scenario Description:** Installation of a large diameter plastic pipeline to convey livestock water from a spring development to a watering facility to service a prescribed grazing system. **After Practice Description:** A delivery pipe (typically 4" diameter, Schedule 40 PVC Plastic) from a spring development to a watering facility, or from water source to watering facility for gravity flow systems. The pipeline is installed as a facilitating practice for supplying water in a managed grazing system, to reduce soil erosion, improve water quality, improve health and vigor of key forage plant species and improve or maintain animal health. Payment incorporates couplers and fittings. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated practices include** Fencing (382), Prescribed Grazing (528), Trails and Walkways (575), Access Control (472), Pumping Plant (533), Water Well (642), Heavy Use Area (561) and Watering Facility (614).	Foot	Foot	$3.28	$4.92	$4.92	$5.91

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
516-5	Bedded Pipeline	**Scenario Description:** Installation of a gravel-bedded plastic pipeline in locations or conditions where the gravel bedding is necessary component of pipeline installation due to shallow bedrock, excessively rocky or otherwise unfavorable soil conditions so that the pipeline is evenly supported and protected from damage throughout the length of the trench. The purpose of the pipeline installation is to convey water from a water supply source to points of use for livestock in a prescribed grazing system or wildlife. **After Practice Description:** 1600 feet of Schedule 40 PVC plastic pipeline (800' of 1 1/2" diameter, and 800' of 2 1/2" diameter) is installed in gravel bedding in pastureland as part of a livestock water delivery system. The pipeline is installed as a facilitating practice for supplying water in a managed grazing system, to reduce soil erosion, improve water quality, improve health and vigor of key forage plant species and improve or maintain animal health. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated practices include** Fencing (382), Prescribed Grazing (528), Trails and Walkways (575), Access Control (472), Pumping Plant (533), Water Well (642), Heavy Use Area (561) and Watering Facility (614).	Foot	Foot	$2.07	$3.11	$3.11	$3.73
516-6	Cased Pipeline with Boring	**Scenario Description:** Installation of a 2-3" plastic pipeline within an outer casing, bored under a road or other obstruction to convey water from a source of supply to points of use for livestock in a prescribed grazing system or wildlife. **After Practice Description:** The typical installation consists of installing 60 feet of a 2.5-inch, Schedule 40 PVC plastic pipe with a 4-inch outer casing under a roadbed. Pipeline boring includes all pipe under roadbed and labor and equipment involved during installation of pipe. The pipeline is installed as a facilitating practice for supplying water in a managed grazing system, to reduce soil erosion, improve water quality, improve health and vigor of key forage plant species and improve or maintain animal health. Payment incorporates couplers and fittings. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated practices include** Fencing (382), Prescribed Grazing (528), Trails and Walkways (575), Access Control (472), Pumping Plant (533), Water Well (642), Heavy Use Area (561) and Watering Facility (614).	Foot	Foot	$57.36	$86.04	$86.04	$103.24

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MULCHING

Practice Code 484

Practice Units: ACRE

Definition: Applying plant residues, by-products or other suitable materials produced off site, to the land surface.

Purpose: This practice may be used to:

- Conserve soil moisture
- Reduce energy use associated with irrigation
- Provide erosion control
- Facilitate the establishment of vegetative cover
- Improve soil health
- Reduce airborne particulates

Conditions Where Practice Applies: This practice applies to all lands where mulches are needed. This practice may be used alone or in combination with other practices.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
484-2	Erosion Control Blanket, Vegetation Establishment	**Scenario Description:** Installation of erosion control blanket on critical areas with steep slopes, grassed waterways or diversions. Blanket is typically made of coconut coir, wood fiber, or straw and is typically covered on both sides with polypropylene netting. Used to help control erosion and establish vegetative cover on a disturbed site around a newly constructed structural practice and is generally used with critical area planting. **After Practice Description:** The erosion control blanket is placed on concentrated flow areas and secured with ground stables. Soil erosion is minimized, and vegetative cover is established. **Associated Practice:** 342 Critical Area Planting	Area Covered by Mulch	Acre	$4,023.92	$6,035.88	$6,035.88	$7,243.06
484-3	Erosion Control Blanket for Endangered Species, Vegetation Establishment	**Scenario Description:** Installation of erosion control blanket on critical areas with steep slopes, grassed waterways or diversions. Blanket is typically made of straw fiber and is typically covered on both sides with biodegradable netting (Leno woven on top net). Used to help control erosion and establish vegetative cover on a disturbed site around a newly constructed structural practice, while preventing entanglement or entrapment of an endangered snake species. Installation of an ECB with this type of netting is more labor intensive than traditional blankets. This practice is typically used with critical area planting. **After Practice Description:** The erosion control blanket is placed on concentrated flow areas and secured with ground stables. Soil erosion is minimized, and vegetative cover is established. **Associated Practice:** 342 Critical Area Planting	Area Covered by Mulch	Acre	$4,826.55	$7,239.83	$7,239.83	$8,687.79
484-4	Natural Material, Soil Moisture Management	**Scenario Description:** Application of straw mulch or other state approved natural material (such as wood chips, compost, or hay) to conserve soil moisture, reduce erosion, moderate soil temperature and improve soil health. Typically used to provide partial coverage (either in-row or between rows) with tree/shrub plantings, irrigated orchards or vineyards, or annual and perennial specialty crops. Mulches applied around growing plants shall have 100 % ground cover. Thickness of the mulch shall be adequate to prevent evaporation. Payment based on total acres mulched, assuming 3-5 ft. swatch and 10-12 ft. row spacing. **After Practice Description:** Straw or other natural mulch is applied in rows by hand or by mechanized means. Soil moisture is conserved, energy use associated with irrigation is decreased, and soil health is improved.	Area Covered by Mulch	Acre	$183.71	$275.56	$275.56	$330.68

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
484-5	Synthetic Material, Soil Moisture Management	**Scenario Description:** Installation of geotextile, biodegradable plastic, polyethylene plastic, or other state approved synthetic mulch to conserve soil moisture, reduce erosion, and moderate soil temperature. Typically used in-row with tree/shrub plantings, irrigated orchards or vineyards, or annual and perennial specialty crops. Payment based on actual area covered by mulching material. **After Practice Description:** Synthetic mulch is applied in rows with a mulch layer or by other mechanized means. Soil moisture is conserved, and energy use associated with irrigation is decreased.	Area Covered by Mulch	Acre	$850.94	$1,276.41	$1,276.41	$1,531.70
484-6	Tree and Shrub, Individual Treatment, Soil Moisture Management	**Scenario Description:** Weed barrier fabric or other suitable natural or synthetic mulch is installed with a new tree and shrub planting where planting material are not planted in rows, thus requiring each tree or shrub to be treated individually. Typically used to conserve soil moisture, reduce erosion, and moderate soil temperature. Rate is per tree/shrub and assumes 1 square yard of weed barrier fabric and 5 staples/tree. Typical scenario is an installation of 100 native trees and shrubs to enhance wildlife habitat. **After Practice Description:** Weed barrier fabric squares are installed with 5 sod staples each, around individual trees and shrubs. Soil moisture is conserved, and energy use associated with irrigation is decreased improving growth and survival of trees/shrubs.	Number of Trees Mulched	Each	$0.66	$0.99	$0.99	$1.19
484-7	Natural Material, Soil Moisture Management, Seasonal High Tunnel	**Scenario Description:** Application of straw mulch or other state approved natural material (such as wood chips, compost, or hay) to conserve soil moisture, moderate soil temperature and improve soil health within a Season High Tunnel. Typically used to provide 100% coverage (in-row and between rows) to suppress weeds competing with annual and perennial crops crown in the high tunnel. Mulches applied around growing plants shall have 100% ground cover. Thickness of the mulch shall be adequate to prevent evaporation. **After Practice Description:** Straw or other natural mulch is applied in tightly spaced rows by hand. Soil moisture is conserved, energy use associated with irrigation is decreased, and soil health is improved.	Each Seasonal High Tunnel	Each	$16.56	$24.85	$24.85	$29.82

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
484-8	Synthetic Material, Soil Moisture Management, Seasonal High Tunnel	**Scenario Description:** Installation of geotextile, biodegradable plastic, polyethylene plastic, or other state approved synthetic mulch to conserve soil moisture, and moderate soil temperature within a Seasonal High Tunnel. Typically used in row with annual and perennial crops crown in the high tunnel. **After Practice Description:** Synthetic mulch is applied in rows by hand. Soil moisture is conserved, and energy use associated with irrigation is decreased.	Each Seasonal High Tunnel	Each	$37.49	$56.23	$56.23	$67.48
484-60	Natural Material - Full Coverage	**Scenario Description:** Application of straw mulch or other state approved natural material to reduce erosion and facilitate the establishment of vegetative cover. Mulch provides full coverage and is typically used with critical area planting. Assumes 2 tons of straw mulch per acre **After Practice Description:** Implementation Requirements are prepared according to the 484 Mulching Standard and implemented. Straw mulch has been applied to areas needing mulch. Erosion and sedimentation is reduced, water and soil quality is protected, and vegetative cover is established.	Area Covered by Mulch	Acres	$224.01	$336.02	$336.02	$403.23

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NUTRIENT MANAGEMENT

Practice Code 590

Practice Units: ACRE

Definition: Managing the amount (rate), source, placement (method of application), and timing of plant nutrients and soil amendments.

Purpose:
- To budget, supply, and conserve nutrients for plant production.
- To minimize agricultural nonpoint source pollution of surface and groundwater resources.
- To properly utilize manure, municipal and industrial biosolids, and other organic by-products as plant nutrient sources.
- To protect air quality by reducing odors, nitrogen emissions (ammonia, oxides of nitrogen), and the formation of atmospheric particulates.
- To maintain or improve the physical, chemical, and biological condition of soil.

Conditions Where Practice Applies: This practice applies to all lands where plant nutrients and soil amendments are applied.

Limitations: Conservation Practice Standard 590 Nutrient Management, is a management practice (One-year lifespan) and may be scheduled for up to 3 consecutive years on the same land. All categories with enhancements require the following 1) If associated with irrigated land must also apply 449 Irrigation Water Management, 2) If associated with drained land must also apply 554 Drainage Water Management if feasible.

Basic Precision Nutrient Management Scenario, Scenario ID 590-5: For this scenario Soil samples are on 2.5 acres or smaller grids. Apply all recommendations from the Nutrient Management Plan including at least 2 from the list below:

- Apply N in-season – including a split application - according to ISU PM1714 “Nitrogen Fertilizer Recommendations for Corn in Iowa”. Optionally use the Late Spring Nitrate Test to evaluate soil N or ISU PM-2026 “Sensing Nitrogen Stress in Corn” and document how the side-dress rate decision was made.
- Utilize legumes other than soybeans in rotation.
- Utilize fall stalk tests to evaluate Nitrogen management (source, rate, timing, and placement) and document how this information will affect future N management. (Required for adaptive management scenario)
- Apply manure at P based rates when Phosphorus Index (PI) is low or very low
- Use of Site Specific Nutrient Applications using GPS/satellites and variable rate (accutract) nutrient applications.
- Apply N after July 15 on pasture or no N on Pasture.
- When applying >60# N on pasture that has <30% legume, use split application.
- Utilize a slow release N such as a polymer coated urea (ex. ESN)
- Utilize nitrapyrin with fall applied anhydrous ammonia.
- Apply manure with low disturbance method in a disturbance strip less than 6” wide, minimum of 30 inch spacing.

For Scenario ID 590-8 Adaptive Nutrient Management refer to Technical Note 7 for guidance. Following is a hotlink for this Technical Note: https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=34196.wba

Maintenance: Practice must be maintained for a lifespan of 1 year.
Payment Schedule: This Payment is available for the first 3 consecutive years that the activities are applied.

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
590-1	Basic NM (Non-Organic/Organic)	**Scenario Description:** This scenario describes the implementation of a basic nutrient management system on > = 40 acres of cropland or hay land where there is no manure application. Scenario is applicable on non-organic and organic land. The planned NM system will meet the current Nutrient Management (590) CPS. Implementation will result in the proper rate, source, method of placement, and timing of nutrient application. Payment for implementation is to defray the costs of soil testing, analysis, and implementation of the nutrient management plan and recordkeeping. Records demonstrating implementation of the 4 R's of NM will be required. **After Practice Description:** A nutrient management system will be developed to meet the current Nutrient Management (590) CPS, when applicable system will also meet NOP regulations. Development and implementation of a nutrient management plan (NMP) will benefit plant productivity while also reducing potential for off-site degradation. A nutrient management budget will be developed for each field(s) based on soil test analysis and land grant university recommendations or crop removal rates. On planning units typically 40 acres or larger, soil testing is completed according to LGU recommendations. Records will be provided annually of the current soil test, analysis, application rates, forms and rates of nutrients for each field, including crop yields. Nutrient applications will be completed according to the Nutrient Management Plan that minimizes nutrient runoff and leaching or buildup of excess nutrient concentrations.	Acre	Acre	$4.01	$6.02	$6.02	$7.23

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
590-2	Basic NM with Manure Injection or Incorporation	**Scenario Description:** This scenario describes the implementation of a basic nutrient management system on > = 40 acres of cropland or hay land where all applied nutrient sources (nitrogen, phosphorus, and potassium) are either incorporated using tillage at least 3-4 inches deep or injected into the soil at least 3-6 inches deep (Exceptions for incorporation or injection include: established close grown crops such as wheat or perennial crops such as hay or pasture). This scenario is applicable on non-organic and organic land for all nutrient sources (manure, compost, commercial fertilizers, and organic sources of nutrients). Micro-nutrients may be surface applied. The planned NM system will meet the current Nutrient Management (590) CPS. Implementation will result in the proper rate, source, method of placement (incorporation or injection), and timing of nutrient application. Payment for implementation is to defray the costs of soil testing, manure analysis, incorporation or injection of all nutrients, and the implementation of the nutrient management plan and recordkeeping. Records demonstrating implementation of the 4 R's of NM will be required. Scenario is designed to address the Nutrient Management (590) purposes for nitrogen losses via N2O emissions, nitrogen leaching, and nitrogen and phosphorus surface runoff. The basis for nutrient applications will be recommendations based on soil tests; and when applicable, plant tissue, manure, and compost analyses. Soil loss is controlled to the soil loss tolerance criteria or less for the significant soil map unit. **After Practice Description:** A nutrient management system is developed with the producer to meet the current Nutrient Management (590) CPS; and when applicable, the system will also meet NOP regulations. All nutrient sources will be incorporated with tillage at least 3-4 inches deep or injected at least 4-6 inches deep into the soil (Exceptions for incorporation or injection include: established close grown crops such as wheat or perennial crops such as hay or pasture). Implementation of the nutrient management plan (NMP) will benefit plant productivity while also reducing the potential for off- site degradation. A nutrient management budget will be developed for each field based on soil test analysis and land grant university recommendations or crop removal rates. On planning units typically 40 acres or larger, soil testing (and where applicable manure analyses, plant tissue analyses, etc.) is completed according to LGU recommendations. Applications of all phosphorus and nitrogen sources are based on risk assessments (PI - phosphorus index and leaching index). Records will be provided annually documenting current soil tests and other plant or manure analyses, date and rate of applications, form and placement of nutrients for each field, including post-harvest yields. Nutrient applications will be completed according to the NMP that minimizes nutrient runoff, nitrogen leaching, nitrogen emissions, or buildup of excess nutrient concentrations in the soil.	**Acre**	Acre	$16.56	$24.85	$24.85	$29.81

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
590-3	Small Farm NM (Non-Organic/Organic)	**Scenario Description:** Scenario is applicable on non-organic and organic land. Scenario implementation of a basic nutrient management system on small, often diversified farm systems typically between 0.5-10 acres where manure and/or compost may be utilized either alone or in conjunction with commercial fertilizer. The planned NM system will meet the current Nutrient Management (590) CPS. Implementation will result in the proper rate, source, method of placement, and timing of nutrient application. Payment for implementation is to defray the costs of soil testing, manure and/or compost analysis, and implementation of the nutrient management plan and recordkeeping. Records demonstrating implementation of the 4 R's of NM will be required. Scenario is designed to encourage producers to effectively utilize commercial fertilizers, 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 soil, manure, and compost analyses. **After Practice Description:** A nutrient management system will be developed to meet the current Nutrient Management (590), when applicable system will also meet NOP regulations. Development and implementation of a nutrient management plan (NMP) will benefit plant productivity while also reducing potential for off-site degradation. A nutrient management budget will be developed for each field, crop block, or crop rotation within a block/field based on soil test analysis and land grant university recommendations or crop removal rates. Application of nutrients will be completed at the proper rate, timing, and methods, and sources per the NMP. Records will be provided annually of current soil test, analysis, application timing, nutrient source, application method, application rate, and crop yields for each block. Nutrient applications will be completed according to the NMP that minimizes nutrient runoff and leaching or buildup of excess nutrient concentrations.	Acre	Each	$137.32	$205.98	$205.98	$247.17

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
590-4	Basic NM with Manure and/or Compost (Non-Organic/Organic)	**Scenario Description:** This scenario describes the implementation of a basic nutrient management system on > = 40 acres of cropland or hayland where manure and/or compost is utilized either alone or in conjunction with commercial fertilizer. Scenario is applicable on non-organic and organic land. The planned NM system will meet the current Nutrient Management (590) CPS. Implementation will result in the proper rate, source, method of placement, and timing of nutrient application. Payment for implementation is to defray the costs of soil testing, manure and/or compost analysis, and implementation of the nutrient management plan and recordkeeping. Records demonstrating implementation of the 4 R's of NM will be required. Scenario is designed to encourage producers to effectively utilize commercial fertilizers, 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 soil, manure, and compost analyses. **After Practice Description:** A nutrient management system will be developed to meet the current Nutrient Management (590) CPS, when applicable system will also meet NOP regulations. Development and implementation of a nutrient management plan (NMP) will benefit plant productivity while also reducing potential for off-site degradation. A nutrient management budget will be developed for each field(s) based on soil test analysis and land grant university recommendations or crop removal rates. On planning units typically 40 acres or larger, soil testing is completed according to LGU recommendations. Records will be provided annually of the current soil test, analysis, application rate, forms and rates of nutrients for each field, including crop yields. Nutrient applications will be completed according to the Nutrient Management Plan that minimizes nutrient runoff and leaching or buildup of excess nutrient concentrations.	Acre	Acre	$8.57	$12.86	$12.86	$15.43

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
590-5	Basic Precision NM (Non-Organic/Organic)	**Scenario Description:** This scenario takes a conventional cropping system where either no nutrient management or only a basic level of nutrient management is being practiced and improves it to address air quality (reduce emissions for N fertilizer) and/or minimize agricultural nonpoint source pollution of surface and groundwater. The planned NM system will meet the current Nutrient Management (590) CPS general and additional criteria. Precision nutrient management system includes such items as split applications, variable rate applications, nitrification or urease inhibitors, additional nutrient tests including PSNT (pre-side dress nitrogen test), CSNT (corn stalk nitrate test), and PPSN (pre-plant soil nitrate test), chlorophyll meters, and/or spectral analysis may be used to further refine nutrient applications. Payment for implementation is to defray the costs of grid or zone soil testing, additional testing and analysis, equipment, implementation of the NMP and recordkeeping. Typical treatment area is 40 acres. **After Practice Description:** A precision nutrient management system will be developed to meet the current Nutrient Management (590) CPS general and additional criteria, when applicable the system will also meet NOP regulations. Development and implementation of a Nutrient Management Plan (NMP) based on the 4Rs will benefit plant productivity while reducing potential of off-site movement of nutrients, including reducing nitrogen emissions. NMP may include practices such as use of split applications, slow release nutrients, nitrification inhibitors, urease inhibitors, proper timing of application, more appropriate formulations, banding, etc. Additional nutrient tests including PSNT (pre-side dress nitrogen test), CSNT (corn stalk nitrate test), and PPSN (pre-plant soil nitrate test), chlorophyll meters, spectral analysis, etc., may also be used to further refine nutrient applications. Use of a post-harvest soil test or tissue tests 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. Potential for offsite movement of nutrient may be further reduced by identifying variability across the field(s) by using soil survey maps or other simple techniques to establish management zones, along with grid or zone soil testing. Nutrients are applied at rates based on soil test zone analyses. Nitrogen and Phosphorus risk assessment tools are completed, and results included in the nutrient management system specifications as required by current NRCS 590 CPS criteria and any mitigation measures are included in the conservation plan if determined needed by risk assessment results. Soil testing is completed according to LGU recommendations. Analysis are completed at least once every three years for N-P-K, and for N annually. A nutrient budget is developed for each field or management zone annually. Records will be provided annually of the current soil test, analysis, application rates, forms and rates of nutrients for each field, including crop yields.	Acre	Acre	$25.91	$38.87	$38.87	$46.64

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
590-8	Adaptive NM	**Scenario Description:** The practice scenario is for the implementation of nutrient management on a small plot, as detailed in outlined in Agronomy Technical Note 7 - Adaptive Nutrient Management. Scenario includes implementing replicated strip trials on a field plot to evaluate, identify and implement various nutrient use efficiency improvement methods for timing, rate, method of application, or source of nutrients. **After Practice Description:** Installation of this scenario will result in adopting the four R's of nutrient management following the procedures outlined in Agronomy Technical Note 7 - Adaptive Nutrient Management. Implementation involves establishing the replicated plots to evaluate one or more of the 4 R's. The plot will consist of at least 4 replicated plots designed, laid out, managed and evaluated with the assistance of a consultant or extension professional knowledgeable in nutrient management and experimental design and data collection. Results are used to make nutrient application decisions to address water quality degradation issues and nutrient use efficiencies. Yields will be measured and statistically analyzed and summarized following the procedures in Agronomy Technical Note 7. The yields for each plot will be adjusted to the appropriate moisture content.	Each	Each	$1,226.81	$1,840.21	$1,840.21	$2,208.25

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NUTRIENT MANAGEMENT PLAN - WRITTEN

Practice Code 104

Practice Units: NUMBER

Definition: Nutrient management plans are documents of record of how nutrients will be managed for plant production and to address the environmental concerns with the offsite movement of nutrients. These plans are prepared in collaboration with producer and/or landowner and are designed to help the producer with implementation and maintenance activities associated with the plan.

A Nutrient Management conservation activity plan must:

. Meet NRCS quality criteria for soil erosion (sheet, rill, wind, and ephemeral/concentrate flow erosion), water quality and quantity, and other identified resource concerns;

. Be developed in accordance with technical requirements of the NRCS Field Office Technical Guide (FOTG) and policy requirements of General Manual, Title 190, Part 402, Nutrient Management; and guidance contained in the National Agronomy Manual, Subpart 503C.

. Comply with federal, state, tribal, and local laws, regulations and permit requirements; and

. Satisfy the operator'sobjectives.

Purpose: The Nutrient Management Plan shall address the resource concerns identified and the conservation practices needed to comprise a conservation system. Document the planned conservation practices, the site-specific specifications for the practice, the amount to be applied, and schedule of application.

Conditions Where Practice Applies: On lands in Iowa that will benefit from the development and implementation of a Nutrient Management Plan.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
104-32	Nutrient Management CAP Less Than or Equal to 100 Acres (Not part of a CNMP)	**Scenario Description:** Various on-farm land uses where natural or artificial amendments are applied. Natural Resource Concern: Water Quality, Soil Erosion, Water Quantity, and other associated resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Nutrient Management' conservation activity plan consistent with the criteria in CAP 104 and 590 Nutrient Management. The CAP criteria requires the plan to meet quality criteria for the primary Water Quality resource concern and other applicable resource concerns and provides for opportunities to manage nutrients for plant production and address offsite movement of nutrients. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 104 plan as cited in the NRCS Field Office Technical Guide and CPS 590 Nutrient Management.	Number	Number	$1,820.25	$2,184.30	N/A	N/A
104-33	Nutrient Management CAP 101-300 Acres (Not part of a CNMP)	**Scenario Description:** Various on-farm land uses where organic or inorganic amendments are applied. Natural Resource Concern: Water Quality, Soil Erosion, Water Quantity, and other associated resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Nutrient Management' conservation activity plan. The CAP criteria requires the plan to meet Nutrient Management criteria for the primary Water Quality resource concern and other applicable resource concerns and provides for opportunities to manage nutrients for plant production and address offsite movement of nutrients. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic criteria for the 104 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$2,427.00	$2,912.40	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
104-34	Nutrient Management CAP Greater Than 300 Acres (Not part of a CNMP)	**Scenario Description:** Various on-farm land uses where organic or inorganic amendments are applied. Natural Resource Concern: Water Quality, Soil Erosion, Water Quantity, and other associated resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for development of the 'Nutrient Management' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for the primary Water Quality resource concern and other applicable resource concerns and provides for opportunities to manage nutrients for plant production and address offsite movement of nutrients. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic criteria for the 104 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$3,033.75	$3,640.50	N/A	N/A
104-35	Nutrient Management CAP Less Than or Equal to 100 Acres (Element of a CNMP)	**Scenario Description:** Various on-farm land uses where natural or artificial nutrient amendments are applied. Natural Resource Concern: Water Quality, Soil Erosion, Water Quantity, and other associated resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Nutrient Management' conservation activity plan. The CAP criteria requires the plan to meet nutrient criteria for the primary Water Quality resource concern in 590 and other applicable resource concerns and provides for opportunities to manage nutrients for plant production and address offsite movement of nutrients. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic criteria for the 104 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$3,033.75	$3,640.50	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
104-36	Nutrient Management CAP 101-300 Acres (Element of a CNMP)	**Scenario Description:** Various on-farm land uses where organic or inorganic amendments are applied. Natural Resource Concern: Water Quality, Soil Erosion, Water Quantity, and other associated resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Nutrient Management' conservation activity plan. The CAP criteria requires the plan to meet 590 criteria for the primary Water Quality resource concern and other applicable resource concerns and provides for opportunities to manage nutrients for plant production and address offsite movement of nutrients. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 104 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$4,247.25	$5,096.70	N/A	N/A
104-37	Nutrient Management CAP Greater Than 300 Acres (Element of a CNMP)	**Scenario Description:** Various on-farm land uses where organic or inorganic amendments are applied. Natural Resource Concern: Water Quality, Soil Erosion, Water Quantity, and other associated resource concerns. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Nutrient Management' conservation activity plan. The CAP criteria requires the plan to meet 590 criteria for the primary Water Quality resource concern and other applicable resource concerns and provides for opportunities to manage nutrients for plant production and address offsite movement of nutrients. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic criteria for the 104 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$5,157.38	$6,188.85	N/A	N/A

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OBSTRUCTION REMOVAL

Practice Code 500

Practice Units: ACRE

Definition: Removal and disposal of buildings, structures, other works of improvement, vegetation, debris or other materials.

Purpose: To safely remove and dispose of unwanted obstructions in order to apply conservation practices or facilitate the planned land use.

Conditions Where Practice Applies: On any land where existing obstructions interfere with planned land use development, public safety or infrastructure. This standard is not intended for the removal of obstructions from aquatic environments.

Limitations: This practice may be used to provide financial assistance for the removal of feedlot fences and feedlot concrete as part of closing a feedlot associated with the installation of a new (313) Waste Storage Structure or (367) Roofs and Covers.

For applications involving animal waste management application follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice must be maintained for a lifespan of 10 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
500-1	Removal and Disposal of Concrete Slab	**Scenario Description:** Remove and disposal of concrete slabs by saw cutting, demolition, excavation or other means required for removal. Dispose of concrete slabs so that it does not impede subsequent work or cause onsite or offsite damage. Dispose of all concrete slabs by removal to an approved location, or reuse location. Typical disposal is burial on site. Remove and dispose all concrete slabs in order to apply conservation practices or facilitate the planned land use. Concrete slab removal will address the resource concerns of the prevention or hindrance to the installation of conservation practices or present a hazard to their use and enjoyment. **After Practice Description:** The typical area will be a 1000 square foot of impaired land. The removal of concrete slabs will be performed by demolition, excavation or other means required for removal with the use of heavy equipment and hand labor. Dispose of all concrete slabs 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.	Land Area	Square Foot	$0.38	$0.57	$0.57	$0.68
500-2	Removal and Disposal of Fence, Feedlot	**Scenario Description:** Remove and disposal of all existing fences around a livestock feeding/waste facility by demolition, excavation or other means required for removal. Dispose of all fence materials from the site so that it does not impede subsequent work or cause onsite or offsite damage. Dispose of all materials by removal to an approved landfill, wood chipping and land distribution, or recycling center, burial at an approved location or burning. If burning is used, implement appropriate smoke management to protect public health and safety. Fence removal will address the resource concerns of the prevention or hindrance to the installation of conservation practices or present a hazard to their use and enjoyment. **After Practice Description:** The typical feedlot fence will be 800 in linear feet. The removal of the fence will be performed with the use of equipment and hand labor. Dispose of all debris from the fence 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 such as Upland Wildlife Habitat Management (645).	Length of Fence	Foot	$1.70	$2.55	$2.55	$3.06

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
500-26	Removal and Disposal of Rock and or Boulders	**Scenario Description**: Remove and disposal of rock and or boulders by drilling, blasting, demolition, excavation or other means required for removal. Dispose of all rocks and or boulders so that it does not impede subsequent work or cause onsite or offsite damage. Dispose of all rock and or boulders by removal to an approved location, or reuse location. Remove and dispose all rock and or boulders in order to apply conservation practices or facilitate the planned land use. Rocks and or boulders will address the resource concerns of the prevention or hindrance to the installation of conservation practices or present a hazard to their use and enjoyment. **After Practice Description:** The typical area will be less than 1 acre impaired area. The removal of rock and or boulders will be performed by drilling, blasting, demolition, excavation or other means required for removal with the use of heavy equipment and hand labor. Dispose of all rocks and boulders 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.	Volume	Cubic Yard	$15.87	$23.81	$23.81	$28.57

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ON - FARM SECONDARY CONTAINMENT FACILITY

Practice Code 319

PRS Unit of Measurement: NUMBER

Definition: A permanent facility designed to provide secondary containment of oil and petroleum products used on-farm.

Purpose: To minimize the risk of accidental release of stored oil and petroleum products used in agricultural operations to support the following purposes:

- Control accidental release of oil and petroleum products to prevent contamination of groundwater and surface waters.
- Provide measures for a safe, effective and timely manner for clean-up of a spill or leak.

Conditions Where Practice Applies: This practice is applicable to agricultural areas where:

- An oil and petroleum product storage facility will be used for agricultural purposes.
- Spillage of oil and petroleum products would pose a contamination threat to soil, groundwater, or surface water.

On-farm oil products include diesel fuel, gasoline, lube oil, hydraulic oil, adjuvant oil, crop oil, vegetable oil, or animal fat, as identified by U.S. EPA's Oil Spill, Prevention, Control, and Countermeasure (SPCC) regulation (40 CFR 112 Oil Pollution Prevention).

This practice does not apply to the removal of existing oil and petroleum storage tanks.

This standard does not apply to underground storage tanks.

Limitations: Area Engineer/State Office Environmental Engineer shall be contacted before planning and implementation of the 319 - On-Farm Secondary Containment Facility. Design documentation may need to be sent to other State and/or Federal authorities for approval.

Maintenance:

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
319-8	Double Wall Tank	**Scenario Description:** This practice scenario includes the replacement of an existing single wall fuel storage tank with a new double wall tank. The purpose of the practice is to address resource concerns related to water quality degradation due to the excessive release of organics into ground and surface waters or excessive sediment and turbidity in surface waters. **Associated Practices:** Heavy Use Area Protection (561). **After Practice Description:** This scenario is based on the replacement of an existing single wall tank(s) with a new double wall tank(s). Installation of 'used' double wall tank(s) will not be allowed. A 3000-gallon horizontal or vertical antiroll tank (U/L 142-23 Secondary Containment Vessel) double walled which meets EPA regulations will be installed. Payment Schedule is based on the cost difference between a new single wall tank and new double wall tank of the same size. The double wall tank will provide an environmentally safe facility for handling and storage of oil products stored on the farm. Any accidental spills will be contained.	Tank volume	Gallon	$1.05	$1.57	$1.57	$1.89
319-9	Earthen Containment	**Scenario Description:** This practice scenario includes the construction of an earthen containment wall with a flexible membrane liner around an existing storage tank. The containment will not have a roof. The purpose of the practice is to address resource concerns related to water quality degradation due to the excessive release of organics into ground and surface waters or excessive sediment and turbidity in surface waters. **Associated Practices:** Heavy Use Area Protection (561). **After Practice Description:** This scenario is based on containment for a 10,000-gallon tank. The containment will be lined with a flexible membrane liner. The containment volume is designed for 125% of the tank volume (10,000 gallons X 125% = 12,500 gallons). The bottom dimensions of the containment are 40 ft. x 24 ft. The wall is 2.5 feet high with a 2-ft. top width and 2:1 sideslopes. The total volume of earthfill = 114 CY. The flexible liner size = 1,872 SF. Tanks will be moved or raised to install base materials. Hauled in earthfill will be used to construct the dike. The flexible liner will be installed in conformance with the design and specifications. The completed structure will provide an environmentally safe facility for handling and storage of oil products stored on the farm. Any accidental spills will be contained.	Cubic Yard of compacted earthen wall	Cubic Yard	$62.63	$93.94	$93.94	$112.73

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
319-10	Corrugated Metal Wall Containment	**Scenario Description:** This practice scenario includes the installation of a corrugated metal ring containment with a flexible membrane liner around an existing storage tank. The purpose of the practice is to address resource concerns related to water quality degradation due to the excessive release of organics into ground and surface waters or excessive sediment and turbidity in surface waters. **Associated Practices:** Heavy Use Area Protection (561) **After Practice Description:** This scenario is based on containment for a 10,000-gallon tank. The containment will be lined with a flexible membrane liner. The containment volume is designed for 125% of the tank volume (10,000 gallons X 125% = 12,500 gallons). The bottom dimensions of the containment are 26 ft. x 24 ft. The corrugated panel wall is 2.75 feet high. The total area of wall = 275 SF. The flexible liner size = 930 SF. Tanks will be moved or raised to install base materials. The corrugated wall and flexible liner will be installed in conformance with the design and specifications. The completed structure will provide an environmentally safe facility for handling and storage of oil products stored on the farm. Any accidental spills will be contained.	Square Ft of Corrugated Metal Wall	Square Foot	$9.06	$13.59	$13.59	$16.31
319-11	Concrete Containment Wall	**Scenario Description:** This practice scenario includes the installation of a reinforced concrete wall containment with a concrete slab around an existing storage tank. The purpose of the practice is to address resource concerns related to water quality degradation due to the excessive release of organics into ground and surface waters or excessive sediment and turbidity in surface waters. Due to topography, limited site space and/or geological conditions a fabricated structure is needed. Structure will provide an environmentally safe facility for handling and storage of these products. Associated practices may include: Heavy Use Area Protection (561). **After Practice Description:** This scenario is based on containment for a 4,700-gallon tank. The containment volume is designed for 125% of the tank volume (4,700 gallons X 125% = 5,875 gallons). Structure will provide an environmentally safe facility for handling and storage of these products. Typical containment dimensions are 196 sq. ft. bottom x 6" thick slab with 6" thick x 4' tall formed sidewalls. Tanks will be moved or raised to install base materials. The fabricated containment structure will be installed in conformance with the design and specifications. The on-farm oil products stored on the farm have secondary containment of accidental release that controls the excessive release of organics, suspended sediments, and turbidity. Structure will provide an environmentally safe facility for handling and storage of these products.	Volume of concrete in the wall	Cubic Yard	$571.43	$857.14	$857.14	$1,028.57

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
319-12	Modular Block Containment Wall	**Scenario Description:** This practice scenario includes the installation of a modular block concrete wall containment with a flexible membrane liner over a 6" concrete floor. The purpose of the practice is to address resource concerns related to water quality degradation due to the excessive release of organics into ground and surface waters or excessive sediment and turbidity in surface waters. Due to topography, limited site space and/or geological conditions a fabricated structure is needed. Structure will provide an environmentally safe facility for handling and storage of these products. **Associated practices may include:** Heavy Use Area Protection (561). **After Practice Description:** This scenario is based on containment for a 6,000-gallon tank. The containment volume is designed for 125% of the tank volume (6,000 gallons X 125% = 7,500 gallons). Structure will provide an environmentally safe facility for handling and storage of these products. The bottom dimensions of the containment are 26 ft. x 24 ft. The 2 ft. x 2 ft. x 6 ft. modular blocks are stacked 2 high for a wall height of 4 ft. The containment area is 624 sq. ft. The flexible liner size with a 2 ft. overlap and anchored at the top of the modular block is 1224 sq. ft. Tanks will be moved or raised to install base materials. The fabricated containment structure will be installed in conformance with the design and specifications. The on-farm oil products stored on the farm have secondary containment of accidental release that controls the excessive release of organics, suspended sediments, and turbidity. Structure will provide an environmentally safe facility for handling and storage of these products.	Secondary containment area	Square Foot	$14.90	$22.35	$22.35	$26.82

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OPEN CHANNEL

Practice Code 582

Practice Units: FEET

Definition: An open channel is a natural or artificial channel in which water flows with a free surface.

Purpose: Construct, improve, or restore an open channel to convey water required for flood prevention, drainage, wildlife habitat protection or enhancement, or other authorized water management purpose.

Conditions Where Practice Applies: This standard applies to the construction of open channels or modifications of existing streams or ditches with drainage areas exceeding one (1) mi^2 (1.6 km^2). This standard does not apply to Natural Resources Conservation Service (NRCS) Conservation Practice Standards (CPSs) Codes 362, Diversions; 412, Grassed Waterways; 388, Irrigation Field Ditches; 607, Surface Drain, Field Ditch; or 320, Irrigation Canal or Lateral.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 15 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
582-1	Two stage ditch	**Scenario Description:** This scenario is the improvement of a channel in which water flows with a free surface. The practice is used for the restoration of a natural or artificial channel to improve nutrient (phosphorus and nitrate) reduction and ecological function by creating a floodplain bench. Installation conditions are normal which means the location is easily accessible from a main road, soils are without large rock or difficult clay to excavate, and/or other aspects are average compared to excavation work in the area. **After Practice Description:** An earthen floodplain bench is excavated above low channel flow to create floodplain flow area and to stabilize the bottom and side slopes. Nutrients are reduced in the water through bench saturation. Erosion is no longer a resource concern. Typical construction dimensions are similar to Fig. 10-9 in Stream Restoration Design handbook with 10 ft. wide bench excavated on either side of 6 ft. deep ditch. Total excavation = 5' x 10' X 2 sides = 100 cubic feet per foot. Cool season grasses are established on the bench and slope areas using 342 Critical Area Planting. Need for mulching (straw or erosion control blanket) would be accomplished through 484-Mulching as necessary. **Associated Practices:** 356-Dike, 393-Filter Strip, 484-Mulching 587-Structure for Water Control, 533-Pumping Plant, 580 Streambank and Shoreline Protection, 584 Channel Stabilization, 578 Stream Crossing.	Length of channel	Foot	$5.37	$8.05	$8.05	$9.66

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POLLINATOR HABITAT PLAN - WRITTEN

Practice Code 146

Practice Units: NUMBER

Definition: A pollinator habitat enhancement plan is a site-specific conservation plan developed for a client that addresses the improvement, restoration, enhancement, expansion of flower-rich habitat that supports native and/or managed pollinators.

The pollinator habitat enhancement plan will:

A. Meet NRCS quality criteria for soil erosion control, water quality, soil quality, plant condition, fish and wildlife, rangeland/pasture/grazed woodland health and productivity, and other identified resource concerns.

B. Comply with federal, state, tribal, and local laws, regulations, and permit requirements.

C. Meet the client'sobjectives.

Pollinator Habitat Enhancement Plan Technical Criteria

Purpose: Conservation plan to address the resource needs for the "Pollinator Habitat Enhancement Plan". The record of decisions shall include the planned practice, schedule for implementation, and site-specific specifications to apply the conservation practice. The site-specific specifications can be on an NRCS Job Sheet available for the conservation practice or in a narrative form for the non-engineering type practices. Planned engineering type practices shall include the conservation practice, schedule of implementation, and identified on the plan map.

Conditions Where Practice Applies: On lands in Iowa that will benefit from the development and implementation of a Pollinator Habitat Enhancement Plan.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
146-10	Pollinator Habitat Enhancement Plan CAP	**Scenario Description:** Various on-farm land uses. Natural Resource Concern: Fish and Wildlife, Plant Condition, Soil Erosion, Water Quality on an agricultural operation. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Pollinator Habitat Enhancement' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to improve, restore, or enhance flower-rich habitat that supports native and/or managed pollinator species. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 146 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$2,528.19	$3,033.83	N/A	N/A
146-11	Pollinator Habitat Enhancement Plan CAP - No Local TSP	**Scenario Description:** Various on-farm land uses, No qualified TSP within 300 miles. Natural Resource Concern: Fish and Wildlife, Plant Condition, Soil Erosion, Water Quality on an agricultural operation. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified TSP for develop of the 'Pollinator Habitat Enhancement' conservation activity plan. The CAP criteria requires the plan to meet quality criteria for applicable resource concerns and provides for opportunities to improve, restore, or enhance flower-rich habitat that supports native and/or managed pollinator species. The CAP plan may include recommendations for associated conservation practices which address other related resource concerns. CAP meets the basic quality criteria for the 146 plan as cited in the NRCS Field Office Technical Guide.	Number	Number	$3,671.90	$4,406.27	N/A	N/A

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POND

Practice Code 378

Practice Units: NUMBER

Definition: A water impoundment made by constructing an embankment or by excavating a pit or dugout. In this standard, ponds constructed by the first method are referred to as embankment ponds, and those constructed by the second method are referred to as excavated ponds. Ponds constructed by both the excavation and the embankment methods are classified as embankment ponds if the depth of water impounded against the embankment at the auxiliary spillway elevation is 3 feet or more above the lowest original ground along the centerline of the embankment.

Purpose: A pond stores water for livestock, fish and wildlife, recreation, fire control, erosion control, flow detention, and other uses such as improving water quality.

Conditions Where Practice Applies: This standard establishes the minimum acceptable criteria for the design and construction of low-hazard embankment ponds and all excavated ponds where:

- Failure of the dam will not result in loss of life; damage to homes, commercial or industrial buildings, main highways, or railroads; or in interruption of the use or service of public utilities.
- The product of the storage times the effective height of the dam is less than 3,000. Storage is the volume, in acre-feet, in the reservoir below the elevation of the crest of the auxiliary spillway. The effective height of the dam is the difference in elevation, in feet, between the auxiliary spillway crest and the lowest point in the cross section taken along the centerline of the dam. If there is no auxiliary spillway, the top of the dam is the upper limit.
- The effective height of the dam is 35 feet or less.

Limitations: Ponds are eligible for EQIP Financial Assistance when used as a water supply for grazing system improvements. Seeding, if needed, may be contracted by using Critical Area Planting – Practice Code 342.

Maintenance: Practice will be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
378-1	Embankment, Tile Conduit	**Scenario Description:** A low-hazard water impoundment structure on agricultural land to maintain or improve water quality and to provide water for livestock, fish and wildlife, recreation, fire control, developing renewable energy systems and other related uses. An earthen embankment will be constructed with a principle spillway conduit and earthen auxiliary spillway, as designed. The resource concerns addressed include inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. **After Practice Description:** The typical low hazard pond is constructed by excavating the pool area, constructing the auxiliary spillway, preparing the foundation as designed, and using 3100 cubic yards to create an embankment. The product of the storage times the effective height of the dam is less than 3,000. The effective height of the dam is 35 feet or less. The principle spillway is 6' corrugated plastic tubing. The earthen auxiliary spillway will be constructed as designed. Vegetation will be completed under critical area planting (342). **Associated practices include** 382, 516, 521A, 533, 614, 587, 396.	Embankment Volume	Cubic Yard	$1.60	$2.39	$2.39	$2.87
378-2	Embankment, 4in-6in Pipe	**Scenario Description:** A low-hazard water impoundment structure on agricultural land to maintain or improve water quality and to provide water for livestock, fish and wildlife, recreation, fire control, developing renewable energy systems and other related uses. An earthen embankment will be constructed with a principle spillway conduit and earthen auxiliary spillway, as designed. The resource concerns addressed include inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. **After Practice Description:** The typical low hazard pond is constructed by excavating the pool area, constructing the auxiliary spillway, preparing the foundation as designed, and using 5000 cubic yards to create an embankment. The product of the storage times the effective height of the dam is less than 3,000. The effective height of the dam is 35 feet or less. The principle spillway is installed using an approved conduit material. The earthen auxiliary spillway will be constructed as designed. Vegetation will be completed under critical area planting (342). **Associated practices include** 382, 516, 521A, 533, 614, 587, 396.	Embankment Volume	Cubic Yard	$2.09	$3.13	$3.13	$3.76

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
378-3	Embankment, 8in-12in Pipe	**Scenario Description:** A low-hazard water impoundment structure on agricultural land to maintain or improve water quality and to provide water for livestock, fish and wildlife, recreation, fire control, developing renewable energy systems and other related uses. An earthen embankment will be constructed with a principle spillway conduit and earthen auxiliary spillway, as designed. The resource concerns addressed include inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. **After Practice Description:** The typical low hazard pond is constructed by excavating the pool area, constructing the auxiliary spillway, preparing the foundation as designed, and using 5000 cubic yards to create an embankment. The product of the storage times the effective height of the dam is less than 3,000. The effective height of the dam is 35 feet or less. The principle spillway is installed using an approved conduit material. The earthen auxiliary spillway will be constructed as designed. Vegetation will be completed under critical area planting (342). **Associated practices include** 382, 516, 521A, 533, 614, 587, 396.	Embankment Volume	Cubic Yard	$2.19	$3.29	$3.29	$3.95
378-4	Embankment, >12in Pipe	**Scenario Description:** A low-hazard water impoundment structure on agricultural land to maintain or improve water quality and to provide water for livestock, fish and wildlife, recreation, fire control, developing renewable energy systems and other related uses. An earthen embankment will be constructed with a principle spillway conduit and earthen auxiliary spillway, as designed. The resource concerns addressed include inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. **After Practice Description:** The typical low hazard pond is constructed by excavating the pool area, constructing the auxiliary spillway, preparing the foundation as designed, and using 11,000 cubic yards to create an embankment. The product of the storage times the effective height of the dam is less than 3,000. The effective height of the dam is 35 feet or less. The principle spillway is installed using an approved conduit material. The earthen auxiliary spillway will be constructed as designed. Vegetation will be completed under critical area planting (342). **Associated practices include** 382, 516, 521A, 533, 614, 587, 396.	Embankment Volume	Cubic Yard	$2.28	$3.42	$3.42	$4.10

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POND SEALING OR LINING, GEOMEMBRANE OR GEOSYNTHETIC CLAY LINER

Practice Code 521

Practice Units: SQ.FT.

Definition: A liner for an impoundment constructed using a geomembrane or a geosynthetic clay material.

Purpose: This practice is applied to-

- Reduce seepage losses from an impoundment for water conservation.
- Protect soil and water from contaminants.

Conditions Where Practice Applies: This practice applies where in-place natural soils have excessive seepage rates.

Limitations: Follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
521-1	Flexible Membrane - Uncovered without liner drainage or venting	**Scenario Description:** Installation of a flexible geosynthetic membrane liner, uncovered, to reduce seepage from ponds or waste storage impoundment structures. Practice implementation includes a geotextile or soil cushion to protect the liner from subgrade damage. **Associated practices include** PS378 Pond, PS313 Waste Storage Facility. **After Practice Description:** Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.	Surface area of Liner Material (including anchorage)	Square Yard	$7.25	$10.88	$10.88	$13.05
521-2	Flexible Membrane - Uncovered with liner drainage or venting	**Scenario Description:** Installation of a flexible geosynthetic membrane liner, uncovered, to reduce seepage from ponds or waste storage impoundment structures. Practice implementation includes a geotextile or soil cushion to protect the liner from subgrade damage, and liner drainage or venting. **Associated practices include** PS378 Pond, PS313 Waste Storage Facility. **After Practice Description:** Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.	Surface area of Liner Material (including anchorage)	Square Yard	$10.84	$16.26	$16.26	$19.52
521-3	Flexible Membrane - Covered without liner drainage or venting	**Scenario Description:** Installation of a flexible geosynthetic membrane liner to reduce seepage from ponds or waste storage impoundment structures. Practice implementation includes 1 foot of soil cover for liner protection, and a geotextile or soil cushion to protect liner from subgrade damage. **Associated practices include** PS378 Pond, PS313 Waste Storage Facility. **After Practice Description:** Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.	Surface area of Liner Material (including anchorage)	Square Yard	$8.13	$12.19	$12.19	$14.63

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
521-4	Flexible Membrane - Covered with liner drainage or venting	**Scenario Description:** Installation of a flexible geosynthetic membrane liner to reduce seepage from ponds or waste storage impoundment structures. Practice implementation includes 1 foot of soil cover for liner protection, a geotextile or soil cushion to protect liner from subgrade damage, and liner drainage or venting. **Associated practices include** PS378 Pond, PS313 Waste Storage Facility. **After Practice Description:** Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.	Surface area of Liner Material (including anchorage)	Square Yard	$11.51	$17.27	$17.27	$20.72

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POND SEALING OR LINING, COMPACTED SOIL TREATMENT

Practice Code 520

Practice Units: SQ. FT.

Definition: A liner for an impoundment constructed using compacted soil with or without soil amendments.

Purpose: This practice is installed to reduce seepage losses from impoundments constructed for water conservation and environmental protection.

Conditions Where Practice Applies:

This practice applies where—

- In-place natural soils have excessive seepage rates, and
- An adequate quantity and type of soil suitable for constructing a compacted soil liner without amendments is available, or
- An adequate quantity and type of soil suitable for treatment with a soil dispersant or bentonite amendment is available for an amended soil liner.

Limitations: Follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
520-18	Compacted Earth Liner with Soil Cover	**Scenario Description:** Construction of a compacted soil liner, treated with compacted clay, to reduce seepage from ponds or waste storage impoundment structures. Practice implementation includes compaction of the soil liner under proper moisture conditions to the designed liner thickness, and soil cover to protect the finished liner. Scenario includes a 12" compacted clay liner with 6" of soil cover covering an area 1 acre in size. Material haul < 1 mile. **Associated practices include** PS378, PS313, & other waste water impoundments. **After Practice Description:** Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.	Volume of Liner Material including soil cover over liner	Cubic Yard	$4.57	$6.85	$6.85	$8.22
520-19	Compacted Earth Liner	**Scenario Description:** Construction of a compacted soil liner, treated with compacted clay, to reduce seepage from ponds or waste storage impoundment structures. Practice implementation includes compaction of the soil liner under proper moisture conditions to the designed liner thickness, and soil cover to protect the finished liner. Scenario includes a 12" compacted clay liner covering an area 1 acre in size. Material haul < 1 mile. **Associated practices include** PS378, PS313, & other waste water impoundments. **After Practice Description:** Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.	Volume of Liner Material	Cubic Yard	$3.40	$5.10	$5.10	$6.11
520-40	Soil Dispersant - Uncovered	**Scenario Description:** Construction of a compacted soil liner, treated with a soil dispersant, to reduce seepage from ponds or waste storage impoundment structures. Practice implementation includes incorporation of the dispersant with the soil liner under proper moisture conditions and compaction to the designed liner thickness. Practice implementation may require filter compatibility with the subgrade (graded filter or geotextile). **Associated practices include** PS378, PS313. **After Practice Description:** Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.	Volume of Liner Material	Cubic Yard	$3.33	$4.99	$4.99	$5.99

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
520-41	Soil Dispersant - Covered	**Scenario Description:** Construction of a compacted soil liner, treated with a soil dispersant, to reduce seepage from ponds or waste storage impoundment structures. Practice implementation includes incorporation of the dispersant with the soil liner 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. **After Practice Description:** Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.	Volume of Liner Material including Soil Cover over Liner	Cubic Yard	$2.67	$4.00	$4.00	$4.80
520-42	Bentonite Treatment - Uncovered	**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. Practice implementation may require filter compatibility with the subgrade (graded filter or geotextile). **Associated practice** PS378, PS313. **After Practice Description:** Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.	Volume of Liner Material	Cubic Yard	$32.98	$49.48	$49.48	$59.37
520-43	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. **After Practice Description:** Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.	Volume of Liner Material (includes 1 foot of soil cover over liner)	Cubic Yard	$17.49	$26.24	$26.24	$31.49

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POND SEALING OR LINING - CONCRETE

Practice Code 522

Practice Units: SQ. FT.

Definition: A liner for an impoundment constructed using reinforced or nonreinforced concrete.

Purpose: To reduce seepage losses from impoundments constructed for water conservation and environmental protection.

Conditions Where Practice Applies:

- In-place natural soils have excessive seepage rates.
- Construction of a compacted soil liner is not feasible with available soils.
- Use of impoundment requires concrete both as a liner and a protective subgrade cover.

Limitations: Follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
522-3	Reinforced concrete liner	**Scenario Description:** Construction of a concrete liner to address a water quality degradation or Livestock Production Limitation resource concern by reducing seepage from ponds. Practice implementation includes construction of a concrete liner to the designed liner thickness. Planned management of the impoundment and lack of availability of clay material precludes the use of a compacted clay liner, so a concrete lining is planned according to CPS 522. **Associated practices include** CPS 378. The reinforced concrete lining will be 5 inches thick and cover the bottom and side slopes of the pit. The typical scenario is for a rectangular pit, 100 ft. x 120 ft. with 2:1 side slopes, 12 feet deep, with a 16 ft. wide access ramp (also concrete lined) on a 9:1 slope. Does not apply to waste storage structures. **After Practice Description:** Water conservation and environmental protection provided by limiting seepage losses from ponds.	Surface area to be lined	Square Foot	$3.51	$5.27	$5.27	$6.32
522-6	Concrete liner, non-reinforced	**Scenario Description:** Construction of a non-reinforced concrete liner to reduce seepage losses from ponds or waste storage impoundment structures. A non-reinforced concrete liner is intended to be used where liquid tightness is not required. Practice implementation may require filter compatibility with the subgrade (graded filter or geotextile). **Associated Practices:** Pond (378), Waste Storage Facility (313), Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Roofs and Covers (367), and Waste Separation Facility (632), Waste Treatment (629), Subsurface Drain (606), Underground Outlet (620), Pumping Plant (533). **After Practice Description:** Water conservation and environmental protection provided by reducing seepage losses from ponds or waste storage impoundments.	Volume of Concrete liner	Cubic Yard	$103.63	$155.44	$155.44	$186.53

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
522-7	Concrete liner, reinforced	**Scenario Description:** Construction of a reinforced concrete liner to reduce seepage losses from ponds or waste storage impoundment structures. A reinforced concrete liner is intended to be used where liquid tightness is required. Practice implementation may require filter compatibility with the subgrade (graded filter or geotextile). **Associated Practices:** Pond (378), Waste Storage Facility (313), Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Roofs and Covers (367), and Waste Separation Facility (632), Waste Treatment (629), Subsurface Drain (606), Underground Outlet (620), Pumping Plant (533). **After Practice Description:** Water conservation and environmental protection provided by reducing seepage losses from ponds or waste storage impoundments.	Volume of Concrete Liner	Cubic Yard	$184.95	$277.43	$277.43	$332.91

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PRESCRIBED BURNING

Practice Code 338

Practice Units: ACRE

Definition: The application of controlled fire to a predetermined area.

Purpose:

- to control undesirable vegetation
- prepare sites for planting or seeding
- to control plant disease
- to reduce wildfire hazards
- improve wildlife habitat
- improve plant production quantity and/or quality
- to remove slash and debris
- enhance seed and seedling production.
- facilitate distribution of grazing and browsing animals
- restore and maintain ecological sites

Conditions Where Practice Applies: On all lands as appropriate.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
338-1	Grassland, > 10 acres	**Scenario Description:** Applying a prescribed burn according to designed burn plan and NRCS Prescribed Burning (338) standard and specifications in order to control undesirable species, improve wildlife habitat, improve plant productivity and/or quality, facilitate grazing distribution and maintain ecological processes. This scenario is based on a burn area consisting of herbaceous and/or low volatile woody fuel. Constructed firebreak cost is not included in cost of burn. Refer to Firebreak (394) standard and cost scenarios. **After Practice Description:** Desirable plant composition is restored, plant vigor improved, and invasive species reduced. Forage production and quality for livestock and /or wildlife is improved.	Acres planned	Acre	$22.76	$27.31	$22.76	$27.31
338-2	Grassland, Small acreage (<=10 acres)	**Scenario Description:** Applying a prescribed burn according to designed burn plan and NRCS Prescribed Burning (338) standard and specifications in order to control undesirable species, improve wildlife habitat, improve plant productivity and/or quality, facilitate grazing distribution and maintain ecological processes. This scenario is based on a burn area consisting of herbaceous and/or low volatile woody fuel. Constructed firebreak cost is not included in cost of burn. Refer to Firebreak (394) standard and cost scenarios. **After Practice Description:** Desirable plant composition is restored, plant vigor improved, and invasive species reduced. Forage production and quality for livestock and /or wildlife is improved.	Acres planned	Acre	$29.93	$35.92	$29.93	$35.92
338-3	Woodland, >10 acres	**Scenario Description:** Applying a prescribed burn according to designed burn plan and NRCS Prescribed Burning (338) standard and specifications. A woodland burn can consume debris or leaf litter under controlled conditions that otherwise could burn uncontrollably and devastatingly. Prior to burning, unit may need to be treated to reduce slash height and quantities. Burn should be cool enough to not cause mortality to residual stand but still reduce litter and debris and promote desired plant community. Constructed firebreak cost is not included in cost of burn. Refer to Firebreak (394) standard and cost scenarios. **After Practice Description:** Litter, debris and slash are consumed, small seedlings may be killed during active burning. Residual larger trees have little to no scorching. Post treatment fire danger is significantly reduced, and desired plant community is promoted/restored.	Acres planned	Acre	$57.51	$69.01	$57.51	$69.01

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
338-4	Woodland, Small acreage (<=10 acres)	**Scenario Description:** Applying a prescribed burn according to designed burn plan and NRCS Prescribed Burning (338) standard and specifications. A woodland burn can consume debris or leaf litter under controlled conditions that otherwise could burn uncontrollably and devastatingly. Prior to burning, unit may need to be treated to reduce slash height and quantities. Burn should be cool enough to not cause mortality to residual stand but still reduce litter and debris and promote desired plant community. Constructed firebreak cost is not included in cost of burn. Refer to Firebreak (394) standard and cost scenarios. **After Practice Description:** Litter, debris and slash are consumed, small seedlings may be killed during active burning. Residual larger trees have little to no scorching. Post treatment fire danger is significantly reduced, and desired plant community is promoted/restored.	Acres planned	Acre	$82.26	$98.71	$82.26	$98.71

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PRESCRIBED BURNING PLAN - WRITTEN

Practice Code 112

Practice Units: NUMBER

Definition: The CAP 112 is a Prescribed Burning Plan that is a site-specific plan developed with a client which addresses one or more resource concerns on land through the use of fire.

Purpose: To document the landowner's and/or operator's plan to utilize fire to achieve the goal resource concern treatment with the use of fire.

Conditions Where Practice Applies: On forestland, native pasture, pastureland, wildlife areas, hayland, and other land as appropriate.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
112-38	Prescribed Burning Plan Less Than or Equal to 20 Acres	**Scenario Description:** Non-Industrial Private Forest Land, Pasture or Range Land typically less than or equal to 20 acres in size and is dominated by fire tolerant species that are competing with undesirable vegetation and accumulating fuel load. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified Technical Service Provider (TSP) for development of the 'Prescribed Burning Plan' Conservation Activity Plan (CAP). The CAP criteria require the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Prescribed Burning Plan CAP is not considered a Forest Management Plan, a Reforestation Plan, a Forest Harvest Plan, or a Prescribed Grazing Plan, but should complement the needs of those plans if they exist and if desired by the decision maker. The CAP plan will fully describe all aspects of the prescribed burn including, but not limited to objectives of the burn (i.e. - site preparation, wildlife habitat, etc.), site conditions (i.e. - fuel load, fuel type, etc.), implementation strategies (i.e. - method of ignition, number of persons required, equipment needs, etc.), tolerable weather parameters (i.e. - wind direction, relative humidity, mixing height, etc.) and identification of Smoke Sensitive Areas. Additional CAP plan criteria are detailed in the Field Office Technical Guide and potentially state developed technical criteria.	Number	Number	$278.85	$334.62	N/A	N/A
112-39	Prescribed Burning Plan 21-100 Acres	**Scenario Description:** Non-Industrial Private Forest Land, Pasture or Range Land typically 21 to 100 acres in size and is dominated by fire tolerant species that are competing with undesirable vegetation and accumulating fuel load. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified Technical Service Provider (TSP) for development of the 'Prescribed Burning Plan' Conservation Activity Plan (CAP). The CAP criteria require the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Prescribed Burning Plan CAP is not considered a Forest Management Plan, a Reforestation Plan, a Forest Harvest Plan, or a Prescribed Grazing Plan, but should complement the needs of those plans if they exist and if desired by the decision maker. The CAP plan will fully describe all aspects of the prescribed burn including, but not limited to objectives of the burn (i.e. - site preparation, wildlife habitat, etc.), site conditions (i.e. - fuel load, fuel type, etc.), implementation strategies (i.e. - method of ignition, number of persons required, equipment needs, etc.), tolerable weather parameters (i.e. - wind direction, relative humidity, mixing height, etc.) and identification of Smoke Sensitive Areas. Additional CAP plan criteria are detailed in the Field Office Technical Guide and potentially state developed technical criteria.	Number	Number	$446.16	$535.39	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
112-40	Prescribed Burning Plan 101-250 Acres	**Scenario Description:** Non-Industrial Private Forest Land, Pasture or Range Land typically 101 to 250 acres in size and is dominated by fire tolerant species that are competing with undesirable vegetation and accumulating fuel load. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified Technical Service Provider (TSP) for development of the 'Prescribed Burning Plan' Conservation Activity Plan (CAP). The CAP criteria require the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Prescribed Burning Plan CAP is not considered a Forest Management Plan, a Reforestation Plan, a Forest Harvest Plan, or a Prescribed Grazing Plan, but should complement the needs of those plans if they exist and if desired by the decision maker. The CAP plan will fully describe all aspects of the prescribed burn including, but not limited to objectives of the burn (i.e. - site preparation, wildlife habitat, etc.), site conditions (i.e. - fuel load, fuel type, etc.), implementation strategies (i.e. - method of ignition, number of persons required, equipment needs, etc.), tolerable weather parameters (i.e. - wind direction, relative humidity, mixing height, etc.) and identification of Smoke Sensitive Areas. Additional CAP plan criteria are detailed in the Field Office Technical Guide and potentially state developed technical criteria.	Number	Number	$669.24	$803.09	N/A	N/A
112-41	Prescribed Burning Plan 251-500 Acres	**Scenario Description:** Non-Industrial Private Forest Land, Pasture or Range Land typically 251 to 500 acres in size and is dominated by fire tolerant species that are competing with undesirable vegetation and accumulating fuel load. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified Technical Service Provider (TSP) for development of the 'Prescribed Burning Plan' Conservation Activity Plan (CAP). The CAP criteria require the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Prescribed Burning Plan CAP is not considered a Forest Management Plan, a Reforestation Plan, a Forest Harvest Plan, or a Prescribed Grazing Plan, but should complement the needs of those plans if they exist and if desired by the decision maker. The CAP plan will fully describe all aspects of the prescribed burn including, but not limited to objectives of the burn (i.e. - site preparation, wildlife habitat, etc.), site conditions (i.e. - fuel load, fuel type, etc.), implementation strategies (i.e. - method of ignition, number of persons required, equipment needs, etc.), tolerable weather parameters (i.e. - wind direction, relative humidity, mixing height, etc.) and identification of Smoke Sensitive Areas. Additional CAP plan criteria are detailed in the Field Office Technical Guide and potentially state developed technical criteria.	Number	Number	$892.32	$1,070.78	N/A	N/A

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
112-42	Prescribed Burning Plan 501-1000 Acres	**Scenario Description:** Non-Industrial Private Forest Land, Pasture or Range Land typically 501 to 1000 acres in size and is dominated by fire tolerant species that are competing with undesirable vegetation and accumulating fuel load. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified Technical Service Provider (TSP) for development of the 'Prescribed Burning Plan' Conservation Activity Plan (CAP). The CAP criteria require the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Prescribed Burning Plan CAP is not considered a Forest Management Plan, a Reforestation Plan, a Forest Harvest Plan, or a Prescribed Grazing Plan, but should complement the needs of those plans if they exist and if desired by the decision maker. The CAP plan will fully describe all aspects of the prescribed burn including, but not limited to objectives of the burn (i.e. - site preparation, wildlife habitat, etc.), site conditions (i.e. - fuel load, fuel type, etc.), implementation strategies (i.e. - method of ignition, number of persons required, equipment needs, etc.), tolerable weather parameters (i.e. - wind direction, relative humidity, mixing height, etc.) and identification of Smoke Sensitive Areas. Additional CAP plan criteria are detailed in the Field Office Technical Guide and potentially state developed technical criteria.	Number	Number	$1,115.40	$1,338.48	N/A	N/A
112-43	Prescribed Burning Plan Greater Than 1000 Acres	**Scenario Description:** Non-Industrial Private Forest Land, Pasture or Range Land typically greater than 1000 acres in size and is dominated by fire tolerant species that are competing with undesirable vegetation and accumulating fuel load. Natural Resource Concern: Fish and Wildlife; Soil Erosion; Soil Condition; Water Quality; Plant Condition. **After Practice Description:** After EQIP contract approval, participant has obtained services from a certified Technical Service Provider (TSP) for development of the 'Prescribed Burning Plan' Conservation Activity Plan (CAP). The CAP criteria require the plan to identify approved Field Office Technical Guide conservation practices where needed to address identified resource concerns. The Prescribed Burning Plan CAP is not considered a Forest Management Plan, a Reforestation Plan, a Forest Harvest Plan, or a Prescribed Grazing Plan, but should complement the needs of those plans if they exist and if desired by the decision maker. The CAP plan will fully describe all aspects of the prescribed burn including, but not limited to objectives of the burn (i.e. - site preparation, wildlife habitat, etc.), site conditions (i.e. - fuel load, fuel type, etc.), implementation strategies (i.e. - method of ignition, number of persons required, equipment needs, etc.), tolerable weather parameters (i.e. - wind direction, relative humidity, mixing height, etc.) and identification of Smoke Sensitive Areas. Additional CAP plan criteria are detailed in the Field Office Technical Guide and potentially state developed technical criteria.	Number	Number	$1,338.48	$1,606.18	N/A	N/A

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PRESCRIBED GRAZING

Practice Code 528

Practice Units: ACRE

Definition: Managing the harvest of vegetation with grazing and/or browsing animals.

Purpose: This practice may be applied as a part of conservation management system to achieve one or more of the following:

- Improve or maintain desired species composition and vigor of plant communities
- Improve or maintain quantity and quality of forage for grazing and browsing animals' health and productivity
- Improve or maintain surface and/or subsurface water quality and quantity
- Reduce accelerated soil erosion, and maintain or improve soil condition
- Improve or maintain the quantity and quality of food and/or cover available for wildlife
- Manage fine fuel loads to achieve desired conditions

Conditions Where Practice Applies: This practice applies to all lands where grazing and/or browsing animals are managed.

Limitations: Conservation Practice Standard 528 Prescribed Grazing, is a management practice (One-year lifespan) and may be scheduled for up to 3 consecutive years. Payment is made only after all associated contracted grazing practices have been applied according to NRCS standards and specifications, and record keeping has been turned in.

Prescribed Grazing financial assistance is eligible on expired or expiring Conservation Reserve Program (CRP) land changing to a grazing operation; however, the practices may not be installed until the CRP contract has expired. Where the EQIP contract includes supporting practices that promote a change in production systems, the program contract must contain the appropriate Management practice to ensure that environmental benefits will be achieved.

On Cropland being converted to Pastureland to implement Prescribed Grazing, supporting practices are eligible for EQIP financial assistance. Where the EQIP contract includes supporting practices that promote a change in production systems, the program contract must contain the appropriate Management practice (Prescribed Grazing) to ensure that environmental benefits will be achieved.

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
528-1	Low Intensity, > 7 Day Rotation Frequency	**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. Livestock graze each pasture for more than seven (7) days in rotation and adequate rest is provided for the forages. **After Practice Description:** Typical scenario is based on a grazing system consisting of a 30-animal unit cow/calf operation (including bull(s), calves and replacement females) on 80 acres. Activities include farm labor to mow or clip pastures; monitor and measure forage growth; complete record keeping; analyze plant growth and animal performance; and make decisions or other management techniques. Management techniques reduce the use of supplemental feed, control weeds, and reduce energy requirements. 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. Runoff, sediment and nutrient loss are reduced by improving plant density, diversity and percent cover. Grazing system success is evaluated through short term monitoring and maintaining grazing stop height requirements. Acquisition of technical knowledge needed to effectively implement prescribed grazing. Costs and activities are typical for conventional and organic producers. **Associated Practices:** (511) Forage Harvest Management, (512) Forage and Biomass Planting, (590) Nutrient Management, (595) Integrated Pest Management, (561) Heavy Use Area Protection, (382) Fence, (614) Watering Facility, (378) Pond, (642) Water Well, (314) Brush Management, (315) Herbaceous Weed Treatment, (338) Prescribed Burning.	Acre	Acre	$20.61	$24.73	$20.61	$24.73

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
528-2	Medium Intensity, 7-3 Days Rotation Frequency	**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. Livestock graze each pasture from three (3) to seven (7) days in rotation. Rotation is based on monitoring livestock demand and supply. **After Practice Description:** Typical scenario is based on a grazing system consisting of a 30-animal unit cow/calf operation (including bull(s), calves and replacement females) on 80 acres. Scenario results in an increase (above the low intensity option) in labor required to complete the following activities: farm labor to mow or clip pastures; monitor and measure forage growth; complete record keeping; analyze plant growth and animal performance; and make decisions or other management techniques. Management techniques reduce the use of supplemental feed, control weeds, and reduce energy requirements. 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. Runoff, sediment and nutrient loss are reduced by improving plant density, diversity and percent cover. Grazing system success is evaluated through short term monitoring and maintaining grazing stop height requirements. Acquisition of technical knowledge needed to effectively implement prescribed grazing. Costs and activities are typical for conventional and organic producers. **Associated Practices:** (511) Forage Harvest Management, (512) Forage and Biomass Planting, (590) Nutrient Management, (595) Integrated Pest Management, (561) Heavy Use Area Protection, (382) Fence, (614) Watering Facility, (378) Pond, (642) Water Well, (314) Brush Management, (315) Herbaceous Weed Treatment, (338) Prescribed Burning.	Acre	Acre	$30.28	$36.34	$30.28	$36.34

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
528-3	High Intensity, <=2 Day Rotation Frequency	**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. Livestock graze each pasture/paddock from less than three (3) days in rotation. Rotation is based on monitoring livestock demand and supply. **After Practice Description:** Typical scenario is based on a grazing system consisting of a 30-animal unit cow/calf operation (including bull(s), calves and replacement females) on 80 acres. Scenario results in an increase (above the medium intensity option) in labor required to complete the following activities: farm labor to mow or clip pastures; monitor stop grazing heights and measure forage growth; complete record keeping; analyze plant growth and animal performance; and make decisions or other management techniques. Management techniques reduce the use of supplemental feed, control weeds, and reduce energy requirements. 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. Runoff, sediment and nutrient loss are reduced by improving plant density, diversity and percent cover. Grazing system success is evaluated through short term monitoring and maintaining grazing stop height requirements. Acquisition of technical knowledge needed to effectively implement prescribed grazing. Costs and activities are typical for conventional and organic producers. **Associated Practices:** (511) Forage Harvest Management, (512) Forage and Biomass Planting, (590) Nutrient Management, (595) Integrated Pest Management, (561) Heavy Use Area Protection, (382) Fence, (614) Watering Facility, (378) Pond, (642) Water Well, (314) Brush Management, (315) Herbaceous Weed Treatment, (338) Prescribed Burning.	Acre	Acre	$43.70	$52.44	$43.70	$52.44

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
528-4	Enhanced - Strip Grazing	**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: photos points, stubble height after grazing, etc.) & record keeping. Livestock are part of a managed grazing system which includes utilization of management techniques such as stockpiling/strip grazing to assist in extending the grazing season and improve animal demand and supply efficiency, or summer strip grazing on mature pasture to improve soil health by maintaining and/or improving ideal cover, plant diversity, organic matter and soil temperatures favorable for sustained microbial life. **After Practice Description:** Typical scenario is based on a grazing system consisting of a 30-animal unit cow/calf operation (including bull(s), calves and replacement females) on 80 acres for a 200 to 290 day grazing season. Scenario results in an increase (above the Standard option) in labor required to complete the following activities: farm labor to mow or clip pastures; monitor and measure forage growth; complete record keeping; analyze plant growth and animal performance; and make decisions or other management techniques. Management techniques reduce the use of supplemental feed, control weeds, and reduce energy requirements. 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. Runoff, sediment and nutrient loss are reduced by improving plant density, diversity and percent cover. Grazing system success is evaluated through short term monitoring. Acquisition of technical knowledge needed to effectively implement prescribed grazing. Consultant or TSP used to develop detailed grazing plan. Costs and activities are typical for conventional and organic producers. **Associated Practices:** (511) Forage Harvest Management, (512) Forage and Biomass Planting, (590) Nutrient Management, (595) Integrated Pest Management, (561) Heavy Use Area Protection, (382) Fence, (614) Watering Facility, (378) Pond, (642) Water Well, (314) Brush Management, (315) Herbaceous Weed Treatment, (338) Prescribed Burning.	Acre	Acre	$52.44	$62.93	$52.44	$62.93

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
528-5	High Density Grazing	**Scenario Description:** An improved grazing management system where livestock are grazed on pasture and managed at a stock density of at least 50,000 lbs. for 75% of the grazing days. Pastures will be managed for a livestock utilization rate of 60% per grazing event. The grazing days will be identified in the Prescribed Grazing Plan. **After Practice Description:** A grazing system for a 30-animal unit cow-calf operation (includes bull(s), calves and replacement females) on 80 acres and designed for a 300 day grazing season. The grazing system has a stock density of at least 50,000 pounds for 75% of the grazing days. Pastures will be monitored and measure pasture growth to ensure a livestock utilization rate of 60% or less per grazing event. Acquisition of technical knowledge needed to effectively implement prescribed grazing is included. Management techniques will improve soil condition, reduce soil compaction, reduce the use of supplemental feed, reduce the need for weed control, and reduce energy requirements. Consultant or TSP used to develop detailed grazing plan. Costs and activities are typical for conventional and organic producers. **Associated Practices:** (511) Forage Harvest Management, (512) Forage and Biomass Planting, (590) Nutrient Management, (595) Integrated Pest Management, (561) Heavy Use Area Protection, (382) Fence, (614) Watering Facility, (378) Pond, (642) Water Well, (314) Brush Management, (315) Herbaceous Weed Treatment, (338) Prescribed Burning.	Acre	Acre	$59.42	$71.31	$59.42	$71.31

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
528-6	Deferment, 90 - 209 days	**Scenario Description:** Defer grazing of the pasture for a minimum of 90 days to manage for any of the following purposes: invasive weed control; improve the health of the forage plants; or provide cover for wildlife species. Keep records of dates out and monitor to determine when desired objectives of deferment are met. Does not include the purpose of deferment for the establishment of forages. **After Practice Description:** Scenario describes activities completed to restrict grazing for a defined period during the normal grazing period to provide benefits for invasive weed control, improvement in the health of the forage plants or providing cover for wildlife species. Activities include moving livestock to alternate locations, sampling and analyzing pasture condition, recordkeeping. Forgone Income used represents the acreage of usable forage not utilized during the deferment period as a proportion of the grazing season. Typical size of 80- acre pasture operation with 30 animal units where 50% of the acreage (or 40 acres) is deferred from grazing for 90 days. Costs and activities are typical for conventional and organic producers. **Associated Practices:** (511) Forage Harvest Management, (512) Forage and Biomass Planting, (590) Nutrient Management, (595) Integrated Pest Management, (561) Heavy Use Area Protection, (382) Fence, (614) Watering Facility, (378) Pond, (642) Water Well, (314) Brush Management, (315) Herbaceous Weed Treatment, (338) Prescribed Burning.	Acre	Acre	$57.52	$60.48	$57.52	$60.48

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
528-7	Deferment, >=210 days	**Scenario Description:** Defer the pasture for 210 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. Does not include the purpose of deferment for the establishment of forages. **After Practice Description:** Scenario describes activities completed to restrict grazing for a defined period during the normal grazing period to provide benefits for invasive weed control, improvement in the health of the forage plants or providing cover for wildlife species. Activities include moving livestock to alternate locations, sampling and analyzing pasture condition, recordkeeping. Forgone Income used represents the acreage of usable forage not utilized during the deferment period as a proportion of the grazing season. Typical size of 80 acre pasture operation with 30 animal units where 75% of the acreage (or 60 acres) is deferred from grazing for 210 days. Costs and activities are typical for conventional and organic producers. **Associated Practices:** (511) Forage Harvest Management, (512) Forage and Biomass Planting, (590) Nutrient Management, (595) Integrated Pest Management, (561) Heavy Use Area Protection, (382) Fence, (614) Watering Facility, (378) Pond, (642) Water Well, (314) Brush Management, (315) Herbaceous Weed Treatment, (338) Prescribed Burning.	Acre	Acre	$81.70	$84.73	$81.70	$84.73
528-8	Biological Control with Grazing Animals	**Scenario Description:** Management of herbaceous and/or woody plant species through the use of livestock such as goats, sheep or other grazing animal that will graze on the undesirable species. Payment is based on impacted acres only. Payment is based on the use of goats for problems where a stocking rate equivalent of 50 goats can adequately clear 1 acre of undesirable herbaceous species in one day (or equivalent stocking; for example, 5 goats for 1 week to clear an acre), or equivalent number of other livestock. Costs are related to transportation of livestock, setting up temporary fencing and/or watering system. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **After Practice Description:** Livestock grazing is managed to limit the regrowth of weed species and achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend and plant health and vigor is returning to near normal levels.	Acres treated	Acre	$388.93	$466.72	$388.93	$466.72

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PUMPING PLANT

Practice Code 533

Practice Units: NUMBER

Definition: A facility that delivers water at a designed pressure and flow rate. Includes the required pump(s), associated power unit(s), plumbing, appurtenances, and may include on-site fuel or energy source(s), and protective structures.

Purpose: This practice may be applied as part of a resource management system to achieve one or more of the following purposes:

- Delivery of water for irrigation, watering facilities, wetlands, or fire protection
- Removal of excessive subsurface or surface water
- Provide efficient use of water on irrigated land
- Transfer of animal waste as part of a manure transfer system
- Improvement of air quality
- Reduce energy use

Conditions Where Practice Applies: This practice applies where conservation objectives require the addition of energy to pressurize and transfer water to maintain critical water levels in soils, wetlands, or reservoirs; transfer wastewater; or remove surface runoff or groundwater.

Limitations: Contracts that include Agricultural Energy Management Plans or audits as required for 533 – Pumping Plant shall have energy plans or audits sent to the Area Engineer who will forward a copy to the State Office Environmental Engineer (Mark Garrison) for administrative review before certification of plans or installation of practices outlined in plans or audits. Plans must meet the technical requirements of ASABE S612 - Performing On-farm Energy Audits and/or CAP 128 criteria. The Farm Energy Improvement Practices Implementation and Certification Record worksheet will be completed and signed by the participant prior to practice certification for payment.

For applications involving animal waste management application follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
533-1	Wastewater Pump < 1 Hp	**Scenario Description:** Scenario is for the implementation of an electric chopper screw pump of less than 1 horsepower. Implementation examples include, but are not limited to, pumping wastewater from the source to a storage facility such as in a dairy milk parlor, or pumping supernatant from the sump of a settling basin to a level spreader device upstream of a Vegetated Treatment Area, in flat topography where gravity flow from the settling basin is not feasible. Payment includes the pump and controls, installation and concrete pad base for the pump. **After Practice Description:** Practice typically installed for transfer of wastewater to a storage facility using 3/4 HP chopper/screw pump. Dairy milk parlor wastewater is directed to a waste storage facility, or feedlot runoff is directed to a solid/liquid settling basin, and supernatant is pumped from the sump of the settling basin to a Vegetated Treatment Area. Contaminated water no longer enters the stream. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices include:** 374 - Farmstead Energy Improvement; 313 - Waste Storage Facility; 634 - Waste Transfer; 633 Waste Utilization; 632 Solid/liquid Waste Separation Facility; 635 Vegetated Treatment Area	Per Pump	Each	$661.20	$991.81	$991.81	$1,190.17

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
533-2	Wastewater Pump 1-5 Hp	**Scenario Description:** Scenario is for the implementation of an electric chopper screw pump of 1-5 horsepower. Implementation examples include, but are not limited to, pumping wastewater from the source to a storage facility such as in a dairy milk parlor, or pumping supernatant from the sump of a settling basin to a level spreader device upstream of a Vegetated Treatment Area, in flat topography where gravity flow from the settling basin is not feasible. Payment includes the pump and controls, installation and concrete pad base for the pump. **After Practice Description:** Practice typically installed for transfer of wastewater to a storage facility using 3 HP chopper/screw pump. Dairy milk parlor wastewater is directed to a waste storage facility, or feedlot runoff is directed to a solid/liquid settling basin, and supernatant is pumped from the sump of the settling basin to a Vegetated Treatment Area. Contaminated water no longer enters the stream. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices include:** 374 - Farmstead Energy Improvement; 313 - Waste Storage Facility; 634 - Waste Transfer; 633 Waste Utilization; 632 Solid/liquid Waste Separation Facility; 635 Vegetated Treatment Area	Per Pump	Each	$1,827.92	$2,741.88	$2,741.88	$3,290.26
533-3	Manure Pump >5 Hp	**Scenario Description:** Scenario is for the implementation of an electric chopper screw pump of >5 horsepower to pump manure from the source to a storage facility. Implementation examples include, but are not limited to, situations where a dairy or swine operation is pumping manure to an above ground storage facility. Payment includes the pump and controls, installation and concrete pad. **After Practice Description:** Practice typically installed for transfer of manure to a storage facility using 10 HP chopper/screw pump. Manure is directed to a waste storage facility, or feedlot runoff is directed to a solid/liquid settling basin, and supernatant is pumped from the sump of the settling basin to a Vegetated Treatment Area. Contaminated water no longer enters the stream. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices include:** 374 - Farmstead Energy Improvement; 313 - Waste Storage Facility; 634 - Waste Transfer; 633 Waste Utilization; 632 Solid/liquid Waste Separation Facility; 635 Vegetated Treatment Area	Per Pump	Each	$3,652.13	$5,478.20	$5,478.20	$6,573.84

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
533-4	Small Wastewater Fuel Driven Pump <= 50 Hp	**Scenario Description:** Scenario is for the implementation of a fuel or PTO-driven pump of <= 50 horsepower for transferring manure or wastewater. Implementation examples include, but are not limited to, pumping wastewater from a storage facility to an end use such as a field, or transferring manure and wastewater from a shallow pit under a hog confinement building to a deep pit manure storage on the headquarters site. Payment includes all controls and appurtenances needed to mount the pump and connect the pump to the piping system. The piping system and any associated reception tank is specified under 634 - Waste Transfer. **After Practice Description:** For semi-solid or liquid waste, wastes that have been collected through a waste transfer system are now efficiently transferred to appropriate treatment or storage facilities or crop application. Due to topography, gravity transfer is not possible, and a properly sized pump is needed to transfer waste as part of a waste transfer system. **Associated Practices include**: 374 - Farmstead Energy Improvement; 313 - Waste Storage Facility; 634 - Waste Transfer	Per Pump	Each	$12,827.79	$19,241.68	$19,241.68	$23,090.02
533-5	Large Wastewater Fuel Driven Pump > 50 Hp	**Scenario Description:** Scenario is for the implementation of a fuel or PTO-driven pump of >50 horsepower for transferring manure or wastewater. Implementation examples include, but are not limited to, moving wastewater from a waste holding pond to a dragline field application system, supplying wastewater to a sprinkler irrigation system, or any other transfer of wastewater from a storage facility to an end use. Includes all controls and appurtenances needed to mount the pump and connect the pump to the piping system. The piping system and any associated reception tank is specified under 634 - Waste Transfer. **After Practice Description:** For semi-solid or liquid waste, wastes that have been collected through a waste transfer system are now efficiently transferred to appropriate treatment or storage facilities or crop application. Due to topography, gravity transfer is not possible, and a properly sized pump is needed to transfer waste as part of a waste transfer system. **Associated Practices include**: 374 - Farmstead Energy Improvement; 313 - Waste Storage Facility; 634 - Waste Transfer	Per Pump	Each	$24,160.34	$36,240.50	$36,240.50	$43,488.61

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
533-6	Irrigation Pump	**Scenario Description:** The practice is installed to pump irrigation water from the source to a final destination. Payment includes the pump and controls, installation and concrete pad. **After Practice Description:** Practice typically installed for transfer of irrigation water to a final destination using 50 HP pump. Conservation benefits of the installation are improved efficiency for the delivery of irrigation water. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** 430 Irrigation Pipeline, 442 Irrigation System - Sprinkler, 449 Irrigation Water Management, 590 nutrient management, 595 integrated pest management; 374-Farmstead Energy Improvement	per pump	Each	$16,024.34	$24,036.50	$24,036.50	$28,843.81
533-7	Microirrigation Pump	**Scenario Description:** The practice is installed to pump irrigation water from the source to a final destination for a micro irrigation system. Payment includes the pump and controls, installation and concrete pad. **After Practice Description:** Practice typically installed for transfer of irrigation water to a final destination using 1 HP pump. Conservation benefits of the installation are improved efficiency for the delivery of irrigation water. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** 430 Irrigation Pipeline, 441 Irrigation System - Micro irrigation, 449 Irrigation Water Management, 590 nutrient management, 595 integrated pest management; 374-Farmstead Energy Improvement	per pump	Each	$716.30	$1,074.45	$1,074.45	$1,289.34

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
533-8	Solar Pump for Shallow Well or Spring Development	**Scenario Description:** The scenario is for the installation of a solar panel array, pump, pressure tank, and appurtenances in a shallow well or spring development for supplying water to livestock in situations where standard electric power is inaccessible. The installation includes the pump, wiring, drop pipe, solar panels, mounts, inverter, and all appurtenances. Payment does not include battery backup. **After Practice Description:** The typical scenario assumes installation of a 200-watt photovoltaic (PV) panel. 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. **Associated Practices include**: 516 - Livestock Pipeline; 642 Water Well, 528 Prescribed Grazing and, 614 - Watering Facility.	Pump	Each	$821.75	$1,232.63	$1,232.63	$1,479.15
533-9	Solar Pump for Pond	**Scenario Description:** The scenario is for the installation of a solar panel array, and pump from a pond for supplying water to livestock in situations where standard electric power is inaccessible. The installation includes the pump, wiring, drop pipe, solar panels, mounts, inverter, and all appurtenances. Payment does not include battery backup. **After Practice Description:** The typical scenario assumes installation of a 200-watt photovoltaic (PV) panel. The installation includes the pump, wiring, solar panels, frame mounts, inverter, and all appurtenances. Water will be pumped to an existing pond 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. **Associated Practices include**: 516 - Livestock Pipeline; 528 Prescribed Grazing and, 614 - Watering Facility.	Pump	Each	$637.22	$955.84	$955.84	$1,147.00

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
533-10	Livestock Water, Shallow Well Pump (<= 25 ft deep)	**Scenario Description:** The scenario is for the installation of a pump and pressure tank in a shallow well (<= 25 feet deep) or collection for supplying water to livestock. Payment includes pump, controls, pressure tank and installation. **After Practice Description:** Practice typically installed for 30 animal units and consists of installing a centrifugal pump, pressure tank, and appurtenances for a shallow draw watering system. Conservation benefits of the installation is proper grazing distribution, which will allow a degraded site to be restored. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** 528 Prescribed Grazing, 516 Pipeline, 614 Watering Facility, 642 Water Well; 574 Spring Development	Per pump	Each	$674.71	$1,012.07	$1,012.07	$1,214.48
533-11	Livestock Water, Shallow Well Pump (<= 25ft deep) with Above Ground Pump House	**Scenario Description:** The scenario is for the installation of a pump and pressure tank in a shallow well (<=25 feet deep) or collection for supplying water to livestock. Payment includes pump, controls, pressure tank and installation. Payment also includes a pump house installed above ground for situations where there is not an existing sheltered location for the pump to be installed. **After Practice Description:** Practice typically installed for 30 animal units and consists of installing a centrifugal pump, pressure tank, and appurtenances for a shallow draw watering system. A 5' x 4' x 5' (100 cu ft.) prefabricated concrete above ground pump house is installed above ground on an 8' x 8' x 1' gravel pad. An above ground pump house is utilized where burying is not feasible in a cost-effective manner due to shallow soils. Conservation benefits of the installation is proper grazing distribution, which will allow a degraded site to be restored. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** 528 Prescribed Grazing, 516 Pipeline, 614 Watering Facility, 642 Water Well; 574 Spring Development.	Per pump	Each	$1,170.60	$1,755.90	$1,755.90	$2,107.08

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
533-12	Livestock Water, Shallow Well Pump (<= 25 ft deep) with Buried Pump House	**Scenario Description:** The scenario is for the installation of a pump and pressure tank in a shallow well (<= 25 feet deep) or collection for supplying water to livestock. Payment includes pump, controls, pressure tank and installation. Payment also includes a buried pump house for situations where there is not an existing sheltered location for the pump to be installed. **After Practice Description:** Practice typically installed for 30 animal units and consists of installing a centrifugal pump, pressure tank, and appurtenances for a shallow draw watering system. A 160 cu ft. concrete well house is buried. A buried pump house is utilized where the ground is such that burying is not difficult, and the climate conditions warrant burying for improved protection. Conservation benefits of the installation is proper grazing distribution, which will allow a degraded site to be restored. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** 528 Prescribed Grazing, 516 Pipeline, 614 Watering Facility, 642 Water Well; 574 Spring Development.	Per pump	Each	$1,807.81	$2,711.71	$2,711.71	$3,254.05
533-13	Livestock Water, Deep Well Pump (>25 ft deep)	**Scenario Description:** The scenario is for the installation of a pump and pressure tank in a deep well (> 25 feet) for supplying water to livestock. Payment includes pump, controls, pressure tank and installation. **After Practice Description:** Practice typically installed for 30 animal units and consists of installing a jet or submersible pump, pressure tank, and appurtenances for a watering system. When utilizing a pond or stream a sump will be installed and used rather than a well. Conservation benefits of the installation is proper grazing distribution, which will allow a degraded site to be restored. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** 528 Prescribed Grazing, 516 Pipeline, 614 Watering Facility, 642 Water Well	Per pump	Each	$915.57	$1,373.35	$1,373.35	$1,648.02

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
533-14	Livestock Water, Deep Well Pump (> 25ft deep) with Above Ground Pump House	**Scenario Description:** The scenario is for the installation of a pump and pressure tank in a deep well (> 25 feet) for supplying water to livestock. Payment includes pump, controls, pressure tank and installation. Payment also includes a pump house installed above ground for situations where there is not an existing sheltered location for the pump to be installed. **After Practice Description:** Practice typically installed for 30 animal units and consists of installing a jet or submersible pump, pressure tank, and appurtenances for a watering system. A 5' x 4' x 5' (100 cu ft.) prefabricated concrete above ground pump house is installed above ground on an 8' x 8' x 1' gravel pad. An above ground pump house is utilized where burying is not feasible in a cost-effective manner due to shallow soils. Conservation benefits of the installation is proper grazing distribution, which will allow a degraded site to be restored. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** 528 Prescribed Grazing, 516 Pipeline, 614 Watering Facility, 642 Water Well	Per pump	Each	$1,411.46	$2,117.18	$2,117.18	$2,540.62
533-15	Livestock Water, Deep Well Pump (> 25 ft deep) with Buried Pump House	**Scenario Description:** The scenario is for the installation of a pump and pressure tank in a deep well (> 25 feet) for supplying water to livestock. Payment includes pump, controls, pressure tank and installation. Payment also includes a buried pump house for situations where there is not an existing sheltered location for the pump to be installed. **After Practice Description:** Practice typically installed for 30 animal units and consists of installing a jet or submersible pump, pressure tank, and appurtenances for a watering system. A 160 cu ft. concrete well house is buried. A buried pump house is utilized where the ground is such that burying is not difficult, and the climate conditions warrant burying for improved protection. Conservation benefits of the installation is proper grazing distribution, which will allow a degraded site to be restored. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** 528 Prescribed Grazing, 516 Pipeline, 614 Watering Facility, 642 Water Well	Per pump	Each	$2,046.60	$3,069.90	$3,069.90	$3,683.88

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
533-16	Pump with Sump	**Scenario Description:** The scenario is for the installation of a pump, pressure tank, and sump that supplies a dependable water supply to livestock from a pond, stream, or spring development. **After Practice Description:** Practice typically installed for 30 animal units and consists of installing a pump, pressure tank, sump, and appurtenances for a watering system from a pond or stream or spring development. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** 528 Prescribed Grazing, 516 Pipeline, 614 Watering Facility, 642 Water Well	Per pump	Each	$1,668.53	$2,502.80	$2,502.80	$3,003.36
533-17	Milk Transfer Pump	**Scenario Description:** The typical scenario is for the installation of a 1 HP motor and transfer pump with appurtenances, used in a dairy milking system to transfer milk from the milk receiver to the bulk tank. The motor will be used in conjunction with a VSD. This practice is to be used exclusively for implementing recommendations from on-farm energy audits. Payment includes pump, controls and labor to install. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of a more efficient motor and pump combination. A VSD will be used with the motor/pump combination so that the motor speed can be adjusted to reduce power requirements and better match varied flow or pressure requirements. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated Practice:** 122-AgEMP - HQ, and other activities within 374-Farmstead Energy Improvement.	Per pump	Each	$574.45	$861.68	$861.68	$1,034.01

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
533-18	Vacuum Pump	**Scenario Description:** The typical scenario is for the installation of a 10 HP motor and vacuum pump with appurtenances, used in a dairy milking system to transfer the milk from the animal to the milk receiver. The motor will be used in conjunction with a VSD. This practice is to be used exclusively for implementing recommendations from on-farm energy audits. Payment includes pump, controls and labor to install. **After Practice Description:** An on-farm energy audit has determined that energy use can be reduced through use of a more efficient motor and pump combination. A VSD will be used with the motor/pump combination so that the motor speed can be adjusted to reduce power requirements and better match varied flow or pressure requirements. The resource concern is inefficient use of energy in the farm operation which increases dependence on non-renewable energy sources and can be addressed through improved energy efficiency. Any improvements are based on a Type 2 energy audit meeting the requirements of ASABE S612. **Associated Practice:** 122-AgEMP - HQ, and other activities within 374-Farmstead Energy Improvement.	Per pump	Each	$3,075.54	$4,613.32	$4,613.32	$5,535.98
533-62	Solar Pump for Deep Well	**Scenario Description:** The scenario is for the installation of a solar panel array, pump, and appurtenances in a deep well for supplying water to livestock is situations where standard electric power is inaccessible. The installation includes the pump, wiring, drop pipe, solar panels, mounts, inverter, and all appurtenances. Payment does not include battery backup. **After Practice Description:** The typical scenario assumes installation of a 500-watt photovoltaic (PV) panel. Pump TDH 200ft at 5 gallons per minute. 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. **Associated Practices include:** 516 - Livestock Pipeline; 642 Water Well, 528 Prescribed Grazing and, 614 - Watering Facility.	Pump	Each	$2,842.68	$4,264.02	$4,264.02	$5,116.83

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
533-63	Livestock Non-Electric Pump	**Scenario Description:** A non-electric pump (nose pump, sling pump, water ram, etc.) is 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. 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 pump is adequate for 20 cattle. Resource Concerns: Insufficient stock water; Inefficient energy use - Equipment and facilities. **After Practice Description:** One non-electric 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. **Associated Practices include**: 374 - Farmstead Energy Improvement; 382 - Fence; 516 - Livestock Pipeline; 561 - Heavy Use Area Protection; and, 614 - Watering Facility	Number of Pumps	Each	$615.98	$923.96	$923.96	$1,108.76
533-67	Windmill-Powered Pump	**Scenario Description:** A windmill is installed in order to supply a reliable water source for livestock and/or wildlife. The windmill includes the tower, concrete footings, wheel blade unit, sucker rod, down pipe, gear box, pump, plumbing, and well head protection concrete pad. The typical scenario will be a windmill system with a 10-ft. diameter mill and 27-foot tower which is pumping from a 150-foot well. As a result of installing this windmill, resource concerns of inadequate stock water, plant establishment, growth, productivity, health, and vigor, and water quantity can be addressed. Resource Concerns: Insufficient stock water. **After Practice Description:** 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.	Diameter of Mill Wheel	Foot	$528.64	$792.97	$792.97	$951.56

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RESIDUE AND TILLAGE MANAGEMENT, NO-TILL

Practice Code 329

Practice Units: ACRE

Definition: Limiting soil disturbance to manage the amount, orientation and distribution of crop and plant residue on the soil surface year around.

Purpose:

- Reduce sheet, rill and wind erosion and excessive sediment in surface waters.
- Reduce tillage-induced particulate emissions.
- Maintain or increase soil health and organic matter content.
- Increase plant-available moisture.
- Reduce energy use.
- Provide food and escape cover for wildlife

Conditions Where Practice Applies: This practice applies to all cropland.

These planting methods are commonly referred to as no-till, strip till, direct seed, zero till, slot till, or zone till. Approved implements are: no-till and strip-type fertilizer and manure injectors and applicators; and similar implements that only disturb strips and slots. All others are considered to be full-width or capable of full disturbance and therefore not compatible.

Soil disturbance percentage is determined by measuring the amount of the row width that is disturbed by soil preparation and planting equipment. For example, for a 30” row, up to 9” can be disturbed by drilling equipment and still qualify as No-till for EQIP.

STIR (Soil Tillage Intensity Ratio) is estimated using the Revised Universal Soil Loss Equation 2 (RUSLE2) which estimates soil loss from rill and inter-rill erosion caused by rainfall on cropland, for several alternative combinations of crop system and management practices. It also considers specified soil types, rainfall patterns, and topography.

Limitations: Conservation Practice Standard 329 Residue and Tillage Management, No-till, is a management practice (One-year lifespan) and may be scheduled for up to 3 consecutive years. This practice is payable only to producers who have not previously used the practice or have not used the practice for a full rotation on the land where they are applying for financial assistance, example: If the applicant has only No-tilled the soybean year of a corn-soybean rotation they are eligible if they will be doing the full rotation with No-till. Applicants who previously received financial assistance from any government program for applying this practice on the land applied for, are not eligible for EQIP financial assistance for No-till, unless the practice is taken to a higher level. When No-till is scheduled for more than one year, the scheduled years must run consecutively on the same land. The No-Till scenario “No-Till/Strip-Till” will be used for both organic and non-organic applications.

Maintenance: Practice will be maintained for a minimum lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
329-1	No-Till/Strip-Till	**Scenario Description:** This practice typically involves conversion from a clean-tilled (conventional tilled) system to no-till or strip-till system on 100 acres of cropland. This involves managing the amount, orientation and distribution of crop and other plant residue on the soil surface year-round while limiting soil-disturbing activities used to establish and harvest crops. The practice is used to reduce sheet and rill erosion, reduce wind erosion, improve soil quality, reduce CO2 losses from the soil, reduce energy use, increase plant available moisture and provide food and escape cover for wildlife. The no-till/strip-till system includes non-tillage types of weed control and may also include a period of no till fallow. System is applicable in both irrigated and non-irrigated fields of organic and non-organic operations. **After Practice Description:** The Implementation Requirements for 329 Residue Management, No Till is prepared and installed. Managing crop residue on the surface of a field (typical 100 acre) year around according to the 329-practice plan while limiting soil disturbing activities to those which place nutrients, and plant crops that meet the minimum criteria in the 329- practice standard. All crops are seeded/planted with a no-till drill or no-till/strip-till planter, which minimizes soil disturbance while establishing good seed-soil contact. All residues are to be maintained on the soil surface in a uniform distribution over the entire field and not burned or removed. Crop residues provide soil surface cover throughout the year. Runoff and erosion are reduced, and no rills are visible on the soil surface. Wind erosion is reduced by standing residues and surface cover. Over time, soil health is improved due to the additional biomass (crop residues), ground cover, and soil infiltration. Crop residues and/or cover crop residues left on the soil surface may maximize weed control by increasing allelopathic and mulching effect and provides cover for wildlife. The practice would require reducing soil disturbance and erosion and increasing biomass returned to the soil in sufficient amounts to achieve increased SCI and decreased STIR.	Area planted	Acre	$11.37	$17.06	$17.06	$20.47

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RESIDUE AND TILLAGE MANAGEMENT, REDUCED TILL

Practice Code 345

Practice Units: ACRE

Definition: Managing the amount, orientation and distribution of crop and other plant residue on the soil surface year-round while limiting the soil-disturbing activities used to grow and harvest crops in systems where the field surface is tilled prior to planting.

Purpose:

- Reduce sheet, rill, and wind erosion and excessive sediment in surface waters (soil erosion).
- Reduce tillage-induced particulate emissions (air quality impact).
- Improve soil health and maintain or increase organic matter content (soil quality degradation).
- Reduce energy use (inefficient energy use).

Conditions Where Practice Applies: This practice applies to all cropland.

This practice includes tillage methods commonly referred to as mulch tillage or chiseling and disking. It applies to stubble mulching on summer-fallowed land, to tillage for annually planted crops and to tillage for planting perennial crops. It also includes some planting operations, such as hoe drills, air seeders and “no-till” drills that disturb a large percentage of the soil surface during the planting operation.

Limitations: Conservation Practice Standard 345 Residue and Tillage Management, Reduced Till, is a management practice (One-year lifespan) and may be scheduled for up to 3 consecutive years. This practice is payable only to producers who have not previously used the practice for a full rotation on the land they are applying for the financial assistance, example: If the applicant has only used reduced till the soybean year of a corn- soybean rotation they are eligible if they are implementing the full rotation with Residue and Tillage Management, Reduced Till, but if the applicant had used reduced till on both corn and soybeans on the land they are applying for financial assistance they are not eligible. When Reduced Till is scheduled for more than one year, the scheduled years must run consecutively on the same land. The Payment Schedule, “Residue and Tillage Management, Reduced Till” under the Residue and Tillage Management, Reduced Till (345) is only offered in the Energy and Organic Initiatives. Applicants who previously received financial assistance from any government program for applying this practice, are not eligible for EQIP financial assistance for Residue and Tillage Management, Reduced Till.

Maintenance: Practice will be maintained for a minimum lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
345-2	Residue and Tillage Management, Reduced Till	**Scenario Description:** Mulch-till is managing the amount, orientation and distribution of crop and other plant residue on the soil surface year-round while limiting the soil-disturbing activities used to grow crops in systems where the entire field surface is tilled by the planter/drill or tillage tools prior to planting. This practice includes tillage methods commonly referred to as mulch tillage, vertical tillage, chiseling and disking, or the use of high disturbance drills without additional tillage. It applies to stubble mulching on summer-fallowed land, to tillage for annually planted crops, to tillage for planted crops and to tillage for planting perennial crops. All residue shall be uniformly spread or managed over the surface throughout the critical erosion period(s). All residue shall be uniformly distributed over the entire field and not burned or removed. These periods of intensive tillage have led to excessive soil loss, often above the soil loss tolerance (T), due to the loss of crop residue on the soil surface. The NRCS erosion prediction model(s) will be used to review the farming operations and determine the amount of surface residue to manage throughout the rotation to keep soil loss below T. The producer will adopt a reduced till system to meet one or more of the practice purposes. **After Practice Description:** The Implementation Requirements are prepared following the criteria in the 345 Residue and Tillage Management, Reduced Till conservation practice standard. Reduced till applies to all cropland and other lands where crops are planted. This scenario includes the use of a reduce till systems and high disturbance drills, such as a hoe drill, air seeder, or no-till drill that disturbs a large percentage of soil surface during the planting operation. The residue that remains on the soil surface provides soil cover during late fall, throughout the winter, and into the early spring. Runoff and water/wind erosion are reduced, and water quality improves. Over time, soil health is improved due to less tillage, the additional biomass, ground cover, soil infiltration, and plant diversity in the cropping system.	Area planted	Acre	N/A	N/A	$14.63	$17.55

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RESTORATION AND MANAGEMENT OF DECLINING HABITATS

Practice Code 643

Practice Units: ACRE

Definition: Restoring and managing rare and declining habitats and their associated wildlife species to conserve biodiversity

Purpose:

- To restore and manage unique or declining land or aquatic, native habitats;
- Provide habitat for rare and declining species;
- To restore, conserve, and manage native plant communities
- Increase native plant community diversity.

Note: NRCS uses the term “wildlife” to include all animals, terrestrial and aquatic.

Conditions Where Practice Applies: Sites that previously or currently support a rare or declining habitat targeted for restoration or management. Iowa habitats deemed rare and in decline for the purposes of this practice include prairie, savanna, fen, sedge and wet meadow, and forest/woodlands.

For the purposes of this standard, reconstruction refers to the restoration of native plant communities where such a community does not currently exist, or within areas that have been seeded to native vegetation but need to be enhanced to reflect a natural community. A remnant is recognized as a natural habitat with pre-settlement components and diversity still intact.

Please see the Specifications for Practice Code 643 which accompany the Standard in the eFOTG.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
643-2	Habitat Monitoring and Management, Low Intensity and Complexity	**Scenario Description:** This scenario is applied to all land use types including those with wildlife as a modifier, where native plant conditions (T&E plants) or wildlife have been identified as the resource concern, and where low intensity and complexity of monitoring or management will treat the identified resource concern. Only 1-2 monitoring efforts are needed and each requiring less than 2 people and 4 hours per effort. The adaptive management actions such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires only hand labor and less than 8 hours labor per year. **After Practice Description:** Rare and declining habitat is improved by implementation of annual adaptive management actions of low intensity and complexity.	Monitoring efforts and adaptive manageme nt actions	Acre	$2.87	$3.44	$2.87	$3.44
643-3	Rare or Declining Habitat Monitoring and Management, Medium Intensity and Complexity	**Scenario Description:** This scenario is applied to all land use types including those with wildlife as a modifier, where any resource concern is identified related to rare or declining habitats, and where medium intensity and complexity of monitoring or management will treat the identified resource concern. Two or three monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. Two or three adaptive management efforts are required (such as cutting of limbs that impede monitoring efforts, replacing damaged fence markers, or other minor adaptive management activities). The adaptive mgmt. requires hand labor and the occasional use of light equipment. A crew of 2 is needed for the hand labor efforts and the crew will require less than 16 total hours of labor per mgmt. effort. Mowing of roads and trail is required to provide access for monitoring and management. **After Practice Description:** Rare or declining habitat is improved by implementation of annual adaptive management actions of medium intensity and complexity.	Monitoring efforts and adaptive manageme nt actions	Acre	$9.06	$10.87	$9.06	$10.87

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
643-4	Habitat Monitoring and Management, High Intensity and Complexity	**Scenario Description:** This scenario is applied to all land use types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where high intensity and complexity of monitoring or management will treat the identified resource concern. Two - four monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. The adaptive management actions (2 - 5 efforts) such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires hand labor and light equipment, requiring a 2-person crew less than 1 day per effort. **After Practice Description:** Wildlife habitat is improved by implementation of annual adaptive management actions of high intensity and complexity.	Monitoring efforts and adaptive management actions	Acre	$16.86	$20.23	$16.86	$20.23
643-5	Development of Shallow Micro-Topographic Features with Normal Farming Equipment.	**Scenario Description:** This typical scenario is installed on open non-wetlands. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed to loosen the soil. Then the soil is excavated with normal farming equipment (e.g. tractor and box-blade) to a depth of 2-6 inches and immediately deposited. This lowering and raising of a box-blade restores the original micro-topographic features (6' X 6' depressions and mounds) common to most landscapes and landforms prior to clearing, tilling, and annual mowing. Restoration of shallow but frequent micro-topographic features has been lost by the smoothing action of tillage, mowing and the original land-clearing. This scenario it typically implemented for ecosystem restoration projects such as prairie restoration and range-land restoration, and particularly on moderately well-drained soils. **After Practice Description:** Shallow micro-depressions and mounds are numerous. This varied micro-topographic features provided varied moisture gradients required for high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the micro depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.	Hours of tractor use	Acre	$30.15	$36.17	$30.15	$36.17

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
643-6	Development of Deep Micro-Topographic Features with Heavy Equipment.	**Scenario Description:** This typical scenario is installedon open non-wetlands, where micro-topographic features have been removed by past farming and/or ranching cultural practices. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed 2 weeks prior to excavation to kill existing vegetation and allow for proper dirt work. Then the soil is excavated with track equipment (dozer) to a depth of 6-12 inches and immediately deposited. This lowering and raising of a dozer -blade restores the original deep micro-topographic features (10' X10' depressions and mounds) common to many landscapes and landforms prior to the lands conversion to agricultural lands. This scenario it typically implemented for ecosystem restoration projects such as wetland restoration (herbaceous or prior to planting of woody species), prairie restoration and range-land restoration. It is most commonly applied to well-drained soils as the purpose is for the micro-depression to pond water for short duration (less than 7 days). **After Practice Description:** Deep (6-12" depth) micro-depressions and mounds are numerous. These varied micro-topographic features provide varied moisture gradients required for development of high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the deep micro-depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.	Hours	Acre	$80.35	$96.42	$80.35	$96.42
643-26	Savanna or Prairie Restoration, Heavy	**Scenario Description:** Removing or reducing woody plant canopy and utilizing chemical treatment (except for non-sprouting woody species) to promote herbaceous growth to restore and manage savannas or prairies where the Ecological Site Description indicates a savanna or prairie. Scenario is for savanna or prairie restoration where greater than 60% canopy cover across the treatment area is in undesirable non-herbaceous cover. Payment is based on impacted acres only. This scenario is intended to restore and manage the ecological site for associated wildlife species that benefit from habitats such as savannas or prairies **After Practice Description:** Savanna or prairie is restored and flora and fauna that depend on that habitat flourish. **Associated practices include:** Early Successional Habitat Management/Development (647), Prescribed Burning (338) and Conservation Cover (327).	treated acres	Acre	$247.30	$296.76	$247.30	$296.76

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
643-27	Savanna or Prairie Restoration, Medium	**Scenario Description:** Removing or reducing woody plant canopy and utilizing chemical treatment (except for non-sprouting woody species) to promote herbaceous growth to restore and manage savannas or prairies where the Ecological Site Description indicates a savanna or prairie. Scenario is for savanna or prairie restoration where 40% - 60% canopy cover across the treatment area is in undesirable non-herbaceous cover. Payment is based on impacted acres only. This scenario is intended to restore and manage the ecological site for associated wildlife species that benefit from habitats such as savannas or prairies. **After Practice Description:** Savanna or prairie is restored and flora and fauna that depend on that habitat flourish. **Associated practices include:** Early Successional Habitat Management/Development (647), Prescribed Burning (338) and Conservation Cover (327).	acres treated	Acre	$154.09	$184.91	$154.09	$184.91
643-28	Savanna or Prairie Restoration, Light	**Scenario Description:** Removing or reducing woody plant canopy and utilizing chemical treatment (except for non-sprouting woody species) to promote herbaceous growth to restore and manage savannas or prairies where the Ecological Site Description indicates a savanna or prairie. Scenario is for savanna or prairie restoration where 10% - 39% canopy cover across the treatment area is in undesirable non-herbaceous cover. Payment is based on impacted acres only. This scenario is intended to restore and manage the ecological site for associated wildlife species that benefit from habitats such as savannas or prairies. **After Practice Description:** Savanna or prairie is restored and flora and fauna that depend on that habitat flourish. **Associated practices include:** Early Successional Habitat Management/Development (647), Prescribed Burning (338) and Conservation Cover (327).	Area treated	Acre	$65.52	$78.63	$65.52	$78.63

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
643-29	Woodland Restoration, Heavy	**Scenario Description:** Removing or reducing the tree canopy and utilizing chemical treatment (except for non-sprouting woody species) to promote herbaceous growth or early woody succession to benefit wildlife habitat where the Ecological Site Description indicates a woodland. Scenario is for open woodland restoration where basal area removal is >40 square feet per acre, or >400 stems per acre. This scenario is intended to restore and manage the ecological site for associated wildlife species that benefit from habitats such as open woodlands by felling the majority of the undesirable trees to allow installation of associated practices. **After Practice Description:** The ecological site is restored and flora and fauna that depend on open woodland habitat flourish. **Associated practices include:** Early Successional Habitat Management/Development (647), Prescribed Burning (338) and Conservation Cover (327).	Treatment area	Acre	$174.28	$209.14	$174.28	$209.14
643-30	Woodland Restoration, Medium	**Scenario Description:** Removing or reducing the tree canopy and utilizing chemical treatment (except for non-sprouting woody species) to promote herbaceous growth or early woody succession to benefit wildlife habitat where the Ecological Site Description indicates a woodland. Scenario is for open woodland restoration where basal area removal is 30 - 40 square feet per acre, or 200 - 400 stems per acre. This scenario is intended to restore and manage the ecological site for associated wildlife species that benefit from habitats such as open woodlands by felling the majority of the undesirable trees to allow installation of associated practices. **After Practice Description:** The woodland ecological site is restored and flora and fauna that depend on open woodland habitat flourish. **Associated practices include:** Early Successional Habitat Management/Development (647), Prescribed Burning (338) and Conservation Cover (327).	Area Treated	Acre	$137.09	$164.50	$137.09	$164.50

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
643-31	Woodland Restoration, Light	**Scenario Description:** Removing or reducing the tree canopy and utilizing chemical treatment (except for non-sprouting woody species) to promote herbaceous growth or early woody succession to benefit wildlife habitat where the Ecological Site Description indicates a woodland. Scenario is for open woodland restoration where basal area removal is 20 - 29 square feet per acre, or 100 - 199 stems per acre. This scenario is intended to restore and manage the ecological site for associated wildlife species that benefit from habitats such as open woodlands by felling the majority of the undesirable trees to allow installation of associated practices. **After Practice Description:** The woodland ecological site is restored and flora and fauna that depend on open woodland habitat flourish. **Associated practices include:** Early Successional Habitat Management/Development (647), Prescribed Burning (338) and Conservation Cover (327).	Area Treated	Acre	$112.77	$135.32	$112.77	$135.32

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RIPARIAN FOREST BUFFER

Practice Code 391

Practice Units: ACRE

Definition: An area predominantly trees and/or shrubs located adjacent to and up-gradient from watercourses or water bodies.

Purpose:

- Create shade to lower or maintain water temperatures to improve habitat for aquatic organisms.
- Create or improve riparian habitat and provide a source of detritus and large woody debris.
- Reduce excess amounts of sediment, organic material, nutrients and pesticides in surface runoff and reduce excess nutrients and other chemicals in shallow ground water flow.
- Reduce pesticide drift entering the water body.
- Restore riparian plant communities.
- Increase carbon storage in plant biomass and soils

Conditions Where Practice Applies: On areas adjacent to and up-gradient from permanent or intermittent streams, lakes, ponds, and wetlands.

The riparian forest buffer will be most effective when used as a component of a total resource management system including nutrient management, pest management, and erosion runoff and sediment control practices.

Limitations: This practice is not applied to stabilize stream banks or shorelines (see Practice 580 Streambank and Shoreline Protection for this). Nor should it be applied to small cold-water trout streams.

Maintenance: Practice will be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
391-1	Direct Seeding	**Scenario Description:** Establish a buffer of trees and/or shrubs to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body and extend the minimum required width. The planting will consist of trees or shrubs planted through direct seeding. Payment includes tree seed, equipment and labor to seed, and foregone income for the land taken out of crop production to install the riparian buffer. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A buffer of trees and shrubs will be established along the riparian corridor which will provide stability, filtration, shade, and desirable habitat to address the resource concerns of Soil Erosion - excessive bank erosion; Water Quality - excess sediment and organics in surface waters and elevated temperature; Degraded Plant Condition - inadequate structure and composition; and Inadequate Habitat for Fish and Wildlife - habitat degradation. **Additional associated practices may include:** 315 Herbaceous Weed Treatment, 660 Tree/Shrub Pruning, 484 Mulching	Area of planting	Acre	$945.52	$1,069.58	$945.52	$1,069.58
391-2	Bareroot trees and shrubs	**Scenario Description:** Establish a buffer of trees and shrubs into a suitably prepared site to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body and extend the minimum required width. The planting will consist of machine planted bare-root shrubs and trees at spacings recommended in a tree/shrub planting plan. Payment includes trees, equipment and labor to plant, and foregone income for the land taken out of crop production to install the riparian buffer. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A buffer of trees and shrubs will be established along the riparian corridor which will provide stability, filtration, shade, and desirable habitat to address the resource concerns of Soil Erosion - excessive bank erosion; Water Quality - excess sediment and organics in surface waters and elevated temperature; Degraded Plant Condition - inadequate structure and composition; and Inadequate Habitat for Fish and Wildlife - habitat degradation. **Additional associated practices may include:** 315 Herbaceous Weed Treatment, 660 Tree/Shrub Pruning, 484 Mulching	Area of planting	Acre	$692.28	$765.69	$692.28	$765.69

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RIPARIAN HERBACEOUS COVER

Practice Code 390

Practice Units: ACRE

Definition: Grasses, sedges, rushes, ferns, legumes, and forbs tolerant of intermittent flooding or saturated soils, established or managed as the dominant vegetation in the transitional zone between upland and aquatic habitats.

Purpose: Practice is applied as part of a conservation management system to accomplish one or more of the following purposes:

- Improve and maintain water quality
- Establish and maintain habitat corridors.
- Increase water storage on floodplains
- Enhance pollen, nectar, and nesting habitat for pollinators
- Dissipate stream energy and trap sediment
- Provide or improve food and cover for fish, wildlife and livestock
- Reduce erosion and improve stability to stream banks and shorelines
- Increase net carbon storage in the biomass and soil
- Restore, improve or maintain the desired plant communities.
- Enhance stream bank protection as part of stream bank soil bioengineering practices.

Conditions Where Practice Applies:

- Areas adjacent to perennial and intermittent watercourses or water bodies where the natural plant community is dominated by herbaceous vegetation that is tolerant of periodic flooding or saturated soils. For seasonal or ephemeral watercourses and water bodies, this zone extends to the center of the channel or basin.
- Where channel and stream bank stability is adequate to support this practice.
- Where the riparian area has been altered and the potential natural plant community has changed.

Limitations: This practice is not applied to stabilize stream banks or shorelines (see Practice 580 Streambank and Shoreline Protection for this). Nor should it be applied to small cold-water trout streams.

Maintenance: Practice will be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
390-3	Native Grass	**Scenario Description:** This scenario addresses inadequate herbaceous plant community function or diversity within the specific transitional zone between terrestrial and aquatic habitats in rangeland, pasture, cropland, and forest where natural seeding methods and/or management is unlikely to improve the plant community within a reasonable time period. This scenario applies to work not covered under NRCS Conservation Practice Forage and Biomass Planting (512), Critical Area Planting (342), Filter Strip (393), Restoration and Management of Rare and Declining Habitats (643), Streambank and Shoreline Protection (580), Vegetated Treatment Area (635), Wetland Enhancement (659), or Wetland Restoration (657). The typical setting for this scenario is usually a narrow strip between the aquatic and terrestrial habitats subject to intermittent flooding and saturated soils where the existing plant community has been disturbed, destroyed, or the species diversity is unable to provide proper function and/or adequate habitat. Native Grass is established by seeding. Where chemical control of undesirable vegetation, including invasive, is required to reduce competition for the desired plant community the Herbaceous Weed Control (315) practice should be used. Payment includes seedbed preparation, seed, and planting, and foregone income for land removed from production. **After Practice Description:** The riparian zone, the transitional zone between the terrestrial and aquatic habitats, is established to an adapted, diverse vegetative plant community and is under close management to insure long term survival and ecological succession. The quality and quantity of the riparian zone components are managed to support the species that depend on it for habitat as well as the functions it performs for stabilizing the streambank and/or shoreline, dissipating stream energy and trapping sediment, and improving and/or maintaining water quality. These functions include: stream temperature moderation through shading, recruitment of non-woody organic matter, habitat for terrestrial insects and other riparian dependent species, streambank integrity, and filtration of contaminants from surface run-off into the stream.	Acres of Riparian Herbaceous Cover	Acre	$487.74	$520.25	$487.74	$520.25

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
390-4	Pollinator	**Scenario Description:** This scenario addresses inadequate herbaceous plant community function or diversity within the specific transitional zone between terrestrial and aquatic habitats in rangeland, pasture, cropland, and forest where natural seeding methods and/or management is unlikely to improve the plant community within a reasonable time period. This scenario applies to work not covered under NRCS Conservation Practice Forage and Biomass Planting (512), Critical Area Planting (342), Filter Strip (393), Restoration and Management of Rare and Declining Habitats (643), Streambank and Shoreline Protection (580), Vegetated Treatment Area (635), Wetland Enhancement (659), or Wetland Restoration (657). The typical setting for this scenario is usually a narrow strip between the aquatic and terrestrial habitats subject to intermittent flooding and saturated soils where the existing plant community has been disturbed, destroyed, or the species diversity is unable to provide proper function and/or adequate habitat. Pollinator habitat is established by seeding. Where chemical control of undesirable vegetation, including invasive, is required to reduce competition for the desired plant community the Herbaceous Weed Control (315) practice should be used. Payment includes seedbed preparation, seed, and planting, and foregone income for land removed from production. **After Practice Description:** The riparian zone, the transitional zone between the terrestrial and aquatic habitats, is established to an adapted, diverse vegetative plant community and is under close management to insure long term survival and ecological succession. The quality and quantity of the riparian zone components are managed to support the species that depend on it for habitat as well as the functions it performs for stabilizing the streambank and/or shoreline, dissipating stream energy and trapping sediment, and improving and/or maintaining water quality. These functions include: stream temperature moderation through shading, recruitment of non-woody organic matter, habitat for terrestrial insects and other riparian dependent species, streambank integrity, and filtration of contaminants from surface run-off into the stream.	Acres of Riparian Herbaceous Cover	Acre	$1,010.72	$1,147.82	$1,010.72	$1,147.82

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ROOF RUNOFF STRUCTURE

Practice Code 558

Practice Units: NUMBER

Definition: A structure that will collect, control and convey precipitation runoff from a roof.

Purpose: This practice is applied to achieve one or more of the following purposes:

- Protect surface water quality by excluding roof runoff from contaminated areas
- Protect a structure foundation from water damage or soil erosion from excess water runoff
- Increase infiltration of runoff water
- Capture water for other uses

Conditions Where Practice Applies: Where roof runoff from precipitation needs to be:

- diverted away from a contaminated area or the foundation of a structure;
- collected and conveyed to a stable outlet or infiltration area; or
- collected and captured for other uses such as evaporative cooling systems, livestock water and irrigation

If needed, Underground Outlet – Practice 620 may be added to the contract as a separate item.

Limitations: Only building roof areas that contribute clean water runoff to an area of livestock concentration are eligible. Follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP).

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
558-1	Roof Gutter, Small	**Scenario Description:** A gutter-downspout system for the side of a 30' x 70' livestock confinement building, to exclude clean water from the loafing area adjacent to the building. Roof area served by the 70' long gutter is 1,050 square feet. The gutter is a 5" K-type, with two 12' downspouts to convey the roof runoff to ground level. Underground outlets (CPS 620) are then utilized to safely outlet the water from the downspouts. Facilitates waste management and protects environment by minimizing clean water additions to waste systems and addresses water quality concerns. **After Practice Description:** A gutter-downspout system has been installed on the side of the building adjacent to the loafing area, routing the clean water away from the contaminated surface, and reducing the volume of contaminated runoff from the loafing area. **Associated practices include** Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Underground Outlet (620), and/or Diversion (362) to capture flow from downspouts and route away from contaminated areas as needed.	Linear Length of Roof to be Drained	Foot	$4.72	$7.08	$7.08	$8.50
558-2	Roof Gutter, Medium	**Scenario Description:** A gutter-downspout system for the side of a 70' x 140' livestock confinement building, to exclude clean water from the loafing area adjacent to the building. Roof area served by the 140' long gutter is 4,900 square feet. The gutter is a 7" K-type, with two 12' downspouts to convey the roof runoff to ground level. Underground outlets (CPS 620) are then utilized to safely outlet the water from the downspouts. Facilitates waste management and protects environment by minimizing clean water additions to waste systems and addresses water quality concerns. **After Practice Description:** A gutter-downspout system has been installed on the side of the building adjacent to the loafing area, routing the clean water away from the contaminated surface, and reducing the volume of contaminated runoff from the loafing area. **Associated practices include** Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Underground Outlet (620), and/or Diversion (362) to capture flow from downspouts and route away from contaminated areas as needed.	Linear Length of Roof to be Drained	Foot	$6.52	$9.77	$9.77	$11.73

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
558-3	Roof Gutter, Large	**Scenario Description:** A gutter-downspout system for the side of a 160' x 220' livestock confinement building, to exclude clean water from the loafing area adjacent to the building. Roof area served by the 220' long gutter is 17,600 square feet. The gutter is 11", with two 12' downspouts to convey the roof runoff to ground level. Underground outlets (CPS 620) are then utilized to safely outlet the water from the downspouts. Facilitates waste management and protects environment by minimizing clean water additions to waste systems and addresses water quality concerns. **After Practice Description:** A gutter-downspout system has been installed on the side of the building adjacent to the loafing area, routing the clean water away from the contaminated surface, and reducing the volume of contaminated runoff from the loafing area. **Associated practices include** Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Underground Outlet (620), and/or Diversion (362) to capture flow from downspouts and route away from contaminated areas as needed.	Linear Length of Roof to be Drained	Foot	$15.11	$22.66	$22.66	$27.19
558-4	Rock Trench Drain	**Scenario Description:** An aggregate-filled infiltration trench lined with geotextile, 3 ft. wide by 2 ft. deep, is placed on each side of a 40' x 100' hoop structure storing feedstock at the headquarters site of a confined livestock operation, to exclude roof runoff from contaminated lot surfaces. Facilitates waste management and protects environment by minimizing clean water additions to waste systems and addresses water quality concerns. This scenario is to be used where environmental/design considerations, (for example snow loads, or a building without proper structural support needed for gutters) dictate the use of the trench drain. May be used to prevent roof runoff from causing erosion or ponding of water adjacent to a High Tunnel, benefitting water quality, water quantity, and soil erosion. In situations where the roof runoff will not properly infiltrate the soil, a subsurface drain system will be installed using 606 - Subsurface Drain. **After Practice Description:** An aggregate-filled infiltration trench lined with geotextile is placed on each side of the hoop structure. Runoff from the roof of the structure enters the infiltration trench and drains off site to a stable outlet through a subsurface drain. The volume of contaminated water at the confinement site is reduced. **Associated practices include** Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), High Tunnel (325), Subsurface Drain (606), and Diversion (362).	Linear Length of Roof to be Drained	Foot	$3.80	$5.70	$5.70	$6.84

ID	Scenario Name	Scenario Description & <u>After Practice Description</u>	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
558-12	Concrete Channel with Wall	**Scenario Description:** A roof runoff structure, consisting of a concrete wall with concrete channel installed on existing impervious surface or the ground with appropriate outlet facilities. Environmental/design considerations, for example snow loads, or a building without proper structural support needed for gutters dictate the use of an on-ground concrete wall. Used to keep roof clean water runoff uncontaminated and provide a stable outlet to ground surface. Facilitates waste management and protects the environment by minimizing clean water additions to waste systems and addresses water quality concerns. **After Practice Description:** A concrete wall with channel and outlet system servicing the portion of the building roof that would otherwise drain into a waste management system or create erosion. Concrete wall (2' high) with an adjacent 4' wide concrete channel extending the length of a 200' roof with additional length (5') for stable outlet. **Associated practices include** Waste Storage Facility (313), Composting Facility (317), Heavy Use Area Protection (561), Underground Outlet (620), and Diversion (362).	Linear Length of Roof to be Curbed	Linear Foot	$35.94	$53.91	$53.91	$64.69
558-20	Roof Gutter, 6 inches wide with runoff Storage Tank	**Scenario Description:** A roof runoff structure, consisting of gutter(s), downspout(s), and a storage tank. Used to keep roof clean water runoff uncontaminated, provide storage for on-farm use of roof water and a stable outlet for any excess to ground surface in a way that avoids erosion. Facilitates waste management and protects environment by minimizing clean water additions to waste systems and addresses water quality concerns. **After Practice Description:** A gutter and downspouts servicing the portion of the building roof that would otherwise drain into a waste management system or create erosion. Roof line of 200 Ln. Ft. serviced with gutter, downspouts, and appurtenances. A 1,500 gallon tank is installed for storage and use of roof runoff. **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.	Linear Length of Roof to be Guttered	Foot	$7.28	$10.92	$10.92	$13.11

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ROOFS and COVERS

Practice Code 367

Practice Units: NUMBER

Definition: A rigid, semirigid, or flexible manufactured membrane, composite material, or roof structure placed over a waste management facility, agrichemical handling facility, or an on-farm secondary containment facility

Purpose: Provide a roof or cover to:

- protect clean water from dilution in waste water in an existing or planned animal waste handling or storage area
- improve waste management and utilization to protect nearby surface water quality
- capture biogas emissions from an existing or planned animal waste storage facility to reduce the net effect of greenhouse gas emissions, improve air quality, and reduce odor as a result of:
    - biological treatment with composite cover material o combustion by flare
    - combustion by engine generator for energy production
- protect clean water by excluding it from a chemically contaminated area

Conditions Where Practice Applies:

- Precipitation should be excluded from contaminated areas, such as animal feeding and management areas, facilities for waste storage, animal mortality, composting, waste transfer or waste treatment, and agrichemical handling.
- Biotreatment of emissions using a porous cover on a wastewater storage facility is needed to improve air quality, limit odors, and moderate the net effect of greenhouse gas emissions.
- A cover is needed to exclude precipitation from a wastewater storage facility. Auxiliary elements of the cover will also capture and manage biogas emissions, improve air quality, limit odors, and reduce the net effect of greenhouse gas emissions.
- Biogas capture for energy production is a component of an existing or planned waste management system. Biogas capture and utilization will also improve air quality, limit odors, and reduce the net effect of greenhouse gas emissions.

Limitations: Roofs and Covers Scenarios (Roof Structures) are not eligible for (313) Waste Storage Facilities to cover deep pits that are directly below animal housing (e.g. pits under slats). Follow the guidance contained in the document "Conservation Practice Guidance for Winter Feeding Stations" located on Section IV in the IA eFOTG for applications involving winter feeding stations. For other applications involving animal waste management application follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Financial assistance for the animal waste storage, management, or treatment facility is eligible to treat the existing resource concern, and expansion of the existing extent of the resource concern. Priority is given to treating existing resource concerns and up to 25% expansion of the existing resource concern.

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
367-1	Roof Structure, less than 33 feet Wide	**Scenario Description:** A timber or steel framed roof structure with a wood sheathing, steel 'sheet' or fabric-like roof. Scenario does not include foundation costs. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues. **After Practice Description:** A timber or steel framed roof structure with a wood sheathing, steel 'sheet' or fabric-like roof. Roof or cover will be engineered and installed in accordance with appropriate building codes and permits. Typical size is 1000 square feet and is over an approved animal waste management facility as a component of a CNMP. It is designed to prevent precipitation to allow proper management of animal waste streams (manure or compost streams), thus mitigating the negative factors from the 'before practice implementation'. **Associated practices include** Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Obstruction Removal (500), Roof Runoff Structure (558), and Waste Treatment (629).	Roof Area	Square Foot	$4.94	$7.41	$7.41	$8.89
367-2	Roof Structure, 33 feet to 60 feet Wide	**Scenario Description:** A timber or steel framed roof structure with a wood sheathing, steel 'sheet' or fabric-like roof. Scenario does not include foundation costs. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues. **After Practice Description:** A timber or steel framed roof structure with a wood sheathing, steel 'sheet' or fabric-like roof. Engineered and installed in accordance with appropriate building codes and permits. Typical size is 7,500 square feet and is over an approved animal waste management facility as a component of a CNMP. It is designed to prevent precipitation to allow proper management of animal waste streams (manure or compost streams), thus mitigating the negative factors from the 'before practice implementation'. **Associated practices include** Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Obstruction Removal (500), Roof Runoff Structure (558), and Waste Treatment (629).	Roof Area	Square Foot	$5.39	$8.08	$8.08	$9.70

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
367-3	Roof Structure, more than 60 feet Wide	**Scenario Description:** A timber or steel framed roof structure with a wood sheathing, steel 'sheet' or fabric-like roof. Scenario does not include foundation costs. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues. **After Practice Description:** A timber or steel framed roof structure with a wood sheathing, steel 'sheet' or fabric-like roof. Engineered and installed in accordance with appropriate building codes and permits. Typical size is 24,000 square feet and is over an approved animal waste management facility as a component of a CNMP. It is designed to prevent precipitation to allow proper management of animal waste streams (manure or compost streams), thus mitigating the negative factors from the 'before practice implementation'. **Associated practices include** Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Obstruction Removal (500), Roof Runoff Structure (558), and Waste Treatment (629).	Roof Area	Square Foot	$3.65	$5.47	$5.47	$6.56
367-4	Roof structure with foundation	**Scenario Description:** A timber or steel framed roof structure with a wood sheathing or steel 'sheet' roof. Scenario includes foundation costs. Roof support is separate from associated manure storage structure, or roof structure may be used to cover an existing feed lot to eliminate runoff from rainfall events. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues. **After Practice Description:** A timber or steel framed roof structure with a timber or steel 'sheet' roof and supporting foundation. Engineered and installed in accordance with appropriate building codes and permits. Typical size is 7,500 square feet and is over an approved animal waste management facility or feedlot as a component of a CNMP. It is designed to prevent precipitation to allow proper management of animal waste streams (manure or compost streams), thus mitigating the negative factors from the 'before practice implementation'. **Associated practices include** Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Agrichemical Handling Facility (309), Obstruction Removal (500), Roof Runoff Structure (558), and Waste Treatment (629).	Roof Area	Square Foot	$6.37	$9.56	$9.56	$11.47

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
367-6	Flexible Membrane Cover	**Scenario Description:** A fabricated rigid, semi-rigid, or flexible membrane covering the entire surface of a waste storage or treatment facility (e.g. waste treatment lagoon or anaerobic digester) with typical size of one acre. Cover will exclude precipitation and improve air quality. **After Practice Description:** A fabricated rigid, semi-rigid, or flexible membrane over a waste storage or treatment facility. Rainfall is excluded, minimizing the volume of contaminated liquid to be stored and/or treated. Air quality in the vicinity of the facility is improved. **Associated practices include** Waste Storage Facility (313), Waste Treatment Lagoon (359), Anaerobic Digester (366), Animal Mortality Facility (316), Composting Facility (317), Roof Runoff Structure (558), Pumping Plant (533), and Waste Treatment (629).	Surface Area of Facility Covered	Square Foot	$2.18	$3.26	$3.26	$3.92
367-7	Permeable Composite or Inorganic Cover	**Scenario Description:** A permeable floating composite cover is deployed on the liquid surface of a waste storage or treatment facility. Permeable covers reduce radiation and wind velocity over the surface of a liquid storage to reduce transmission of odors and act as a medium for growth of microorganisms that utilize carbon, nitrogen, and sulfur to decompose odorous compounds. The permeable composite cover utilizes fabricated shapes or tiles that fit together to cover a minimum of 90% of the liquid surface of a waste storage facility. **After Practice Description:** A permeable modular cover applied to the liquid surface of a waste storage or treatment facility. Installation of the permeable modular cover will improve air quality by reducing emissions of odors and ammonia. The waste storage volume must be documented in the CNMP as adequate to store the waste product and rainfall on the surface of the facility for the intended period without any credit for evaporative loss. Installation of the practice will address air quality by reducing emissions of odors and ammonia. The typical waste storage structure has a liquid surface area of 7,000 square feet. **Associated practices include** Waste Storage Facility (313) and Waste Treatment Lagoon (359).	Storage Surface Area at Normal Full Level	Square Foot	$1.14	$1.71	$1.71	$2.05

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SATURATED BUFFER

Practice Code 604

Practice Units: FEET

Definition: A subsurface, perforated distribution pipe used to divert and spread drainage system discharge to a vegetated area to increase soil saturation.

Purpose:

Install the practice to achieve one or more of the following purposes:

- To reduce nitrate loading from subsurface drain outlets.
- To enhance or restore saturated soil conditions in riverine, lacustrine fringe, slope, or depression hydrogeomorphic landscape classes.

Conditions Where Practice Applies: This practice is applicable to lands with a subsurface drainage system adaptable to discharge in a vegetated area.

Apply this practice where the soils and topography of the vegetated discharge area can maintain a raised water table without adverse effects to crops, channel banks, shorelines, or adjacent land.

This practice does not apply to drainage systems or underground outlet systems that have surface inlets which allow entry of soil and debris capable of plugging the distribution pipe(s).

Do not use this practice to discharge septic system effluent or animal waste.

Limitations: Water Control Structure (587) will not be included as an associated practice. This practice is included in the component costs for the Saturated Buffer.

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
604-2	Saturated Buffer	**Scenario Description:** Water discharging from a subsurface drainage system is dispersed along a buffer strip (often a riparian buffer). The water flows underground through the buffer area where nutrients and sediment can be removed before the water reaches the stream. Resource Concerns: Water Quality Degradation (Nutrients) **After Practice Description:** Water from a subsurface drainage system is dispersed through at 400 feet of 5" HDPE single wall perforated pipe tile drain along an established vegetated buffer strip at least 30 feet from the receiving stream. Drainage pipe is trenched in at 4 feet depth. The water is detained by passing underground where the nitrogen is removed by bacteria and natural processes. **Associated Practices:** 606 - Subsurface Drain; 554 - Drainage Water Management	Length of Dispersal conduit	Foot	$4.57	$5.49	$4.57	$5.49

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SEDIMENT BASIN

Practice Code 350

Practice Units: NUMBER

Definition: A basin constructed with an engineered outlet, formed by constructing an embankment, excavating a dugout, or a combination of both.

Purpose: To capture and detain sediment-laden runoff, or other debris for a sufficient length of time to allow it to settle out in the basin.

Conditions Where Practice Applies: This practice applies to urban land, construction sites, agricultural land, and other disturbed lands where:

- Physical conditions or land ownership preclude treatment of a sediment source by the installation of erosion-control measures.
- Failure of the basin will not result in loss of life, damage to homes, commercial or industrial buildings, main highways or railroads; or in the use of public utilities.
- The product of the storage times the effective height of the dam is less than 3,000. Storage is the volume, in acre-feet, in the reservoir below the elevation of the crest of the auxiliary spillway.
- The effective height of the dam is 35 feet or less. The effective height of the dam is the difference in elevation between the auxiliary spillway crest and the lowest point in the cross section taken along the centerline of the dam.
- The dam is classified low hazard according to section 520.21(E) of the NRCS National Engineering Manual (NEM).

Limitations:

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
350-2	Embankment earthen basin with no pipe	**Scenario Description:** A low hazard class earthen embankment sediment basin in an existing drainage way on a farm for purpose of trapping sediment and preserving the capacity of reservoirs, ditches, canals, diversions, waterways and streams and to prevent undesirable deposition on bottom lands and other developed lands. An earthen embankment will be constructed with a principal spillway conduit and earthen auxiliary spillway, as designed. Resource concerns addressed include excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. Surface water causes the sediment (and potentially pesticides and nutrients) to be transported into the riparian areas and water bodies downstream. **After Practice Description:** The typical sediment basin is constructed by excavating the pool area and using the excavated material to construct the earthen embankment. The embankment will have a constructed auxiliary spillway and a core trench (10' wide, 3' deep, 1:1 slopes) using 1,500 cubic yards of material to create the embankment and core trench. The embankment will be designed and constructed according the Pond standard (378). The product of the storage times the effective height of the dam is less than 3,000. The effective height of the dam is 35 feet or less. The sediment storage capacity should be a minimum of 900 cubic feet per acre of disturbed area. The detention storage should be a minimum of 3600 cubic feet per acre of drainage area. The earthen auxiliary spillway will be constructed as designed based on Pond standard (378). No principal spillway will be used. **Associated practice(s):** Other practices that may need to be implemented along with sediment basin to address all of the site-specific resource concerns include: Critical Area Planting (342) and Mulching (484) where necessary to prevent erosion following construction activities, Structure for Water Control (587) if using a dewatering device, Pond Sealing or Lining (521A, 520,522).	Embankment volume	Cubic Yard	$2.66	$3.99	$3.99	$4.79

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
350-3	Embankment earthen basin with pipe	**Scenario Description:** A low hazard class earthen embankment sediment basin in an existing drainage way on a farm for purpose of trapping sediment and preserving the capacity of reservoirs, ditches, canals, diversions, waterways and streams and to prevent undesirable deposition on bottom lands and other developed lands. An earthen embankment will be constructed with a principal spillway conduit and earthen auxiliary spillway, as designed. Resource concerns addressed include excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. Surface water causes the sediment (and potentially pesticides and nutrients) to be transported into the riparian areas and water bodies downstream. **After Practice Description:** The typical sediment basin is constructed by excavating the pool area and using the excavated material to construct the earthen embankment. The embankment will have a constructed auxiliary spillway and a core trench (10' wide, 3' deep, 1:1 slopes) using 1,500 cubic yards of material to create the embankment and core trench. The embankment will be designed and constructed according the Pond standard (378). The product of the storage times the effective height of the dam is less than 3,000. The effective height of the dam is 35 feet or less. The sediment storage capacity should be a minimum of 900 cubic feet per acre of disturbed area. The detention storage should be a minimum of 3600 cubic feet per acre of drainage area. The principal spillway is created using an approved conduit material and filter diaphragm. The earthen auxiliary spillway will be constructed as designed based on Pond standard (378). **Associated practice(s):** Other practices that may need to be implemented along with sediment basin to address all of the site-specific resource concerns include: Critical Area Planting (342) and Mulching (484) where necessary to prevent erosion following construction activities, Structure for Water Control (587) if using a dewatering device, Pond Sealing or Lining (521A, 520,522).	Embankment volume	Cubic Yard	$3.57	$5.35	$5.35	$6.42

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SHALLOW WATER DEVELOPMENT AND MANAGEMENT

Practice Code 646

Practice Units: ACRE

Definition: The inundation of lands to provide habitat for fish and/or wildlife.

Purpose: To provide habitat for wildlife such as shorebirds, waterfowl, wading birds, mammals, fish, reptiles, amphibians, and other species that require shallow water for at least a part of their life cycle.

Conditions Where Practice Applies: On lands where water can be impounded or regulated by diking, excavating, ditching, and/or flooding.

On floodplain areas that provide refuge habitats for native fish during high flow periods.

Limitations: See practice standard for 646 for situations where 646 does not apply.

Maintenance: Practice will be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
646-1	Low Level Management, Natural Ponding	**Scenario Description:** This scenario addresses inadequate habitat for fish and wildlife on cropland. The resource concern is addressed by providing shallow water habitat for wildlife such as shorebirds, waterfowl, wading birds, mammals, fish, reptiles, amphibians, and other species that require shallow water for at least part of their life cycle. Sites are flooded up to a depth of 18" with an average depth of 9". Before flooding, fields are prepared by rolling residue if necessary. Water is provided by natural flooding and/or precipitation. **After Practice Description:** A single or series of shallow water areas that are managed per standard and specification. Water levels are regulated to maintain temporary wildlife habitat. Timing and duration of flooding and de-watering is dependent on specific species requirements. Water is pumped into area to be flooded. Flooded sites vary from mudflats to water depths of 18" with an average depth of 9". The hydrologic conditions of ponding and saturation (frequency, depth, duration, timing) provides optimum seasonal habitat for waterfowl, shorebirds, and other wildlife (amphibians, reptiles, mammals, invertebrates, etc.). **Associated practices include** Structure for Water Control (587) and Dike (356) if needed. Depending on local conditions, other Conservation Practices may also be required.	Managed Area	Acre	$28.50	$30.11	$28.50	$30.11

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
646-2	High Level Management, Pumping	**Scenario Description:** This scenario addresses inadequate habitat for fish and wildlife on cropland. To facilitate practice code 643, 644, 645, or 395, seasonal shallow water is provided annually for target species by purchasing of water, lifting of such water, monitoring of the water quality, response by target plant community, use by target flora or fauna. Sites are flooded up to a depth of 18" with an average depth of 9". Before flooding, fields are prepared by rolling residue if necessary. Monitoring and adaptive management accomplished of existing water control structures is accomplished to meet very specific conditions needed to address previously identified degraded plant conditions or inadequate habitat for fish and/or wildlife. This high-level management is applied to lands used for crop, pasture, hay, forests or wildlife lands where target flora and fauna have been identified as a primary concern. Loss of some level of crop, forage, hay or forest products may occur depending on site specific conditions. **After Practice Description:** A single or series of shallow water areas that are managed per standard and specification. Water levels are regulated to maintain temporary wildlife habitat. Timing and duration of flooding and de-watering is dependent on specific species requirements. Water is pumped into area to be flooded. Flooded sites vary from mudflats to water depths of 18" with an average depth of 9". The hydrologic conditions of ponding and saturation (frequency, depth, duration, timing) provides optimum seasonal habitat for waterfowl, shorebirds, and other wildlife (amphibians, reptiles, mammals, invertebrates, etc.). **Associated practices include** Structure for Water Control (587) and Dike (356) if needed and Pumping Plan (533) if a natural water source (i.e. precipitation for flooding) is not available. Depending on local conditions, other Conservation Practices may also be required.	Managed Area	Acre	$37.30	$40.66	$37.30	$40.66

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SHORT TERM STORAGE OF ANIMAL WASTE AND BYPRODUCTS

Practice Code 318

Practice Units: CU. FT.

Definition: Temporary, non-structural measures used to store solid or semi-solid, organic agricultural waste or manure (stackable livestock and poultry manure, bedding, litter, spilled feed, or soil mixed with manure) on a short-term basis between collection and utilization.

Purpose: Apply this practice to achieve one or more of the following purposes:

- Temporarily stockpile or store manure in an environmentally safe manner for improved nutrient utilization and conservation.
- Provide the agricultural operation management greater flexibility in nutrient utilization.
- Protect surface and ground water resources.
- Reduce energy use.

Conditions Where Practice Applies: This practice applies where a Comprehensive Nutrient Management Plan (CNMP) or a nutrient management plan (NMP) has been developed and where a temporary stockpile or storage is needed because:

- Clean out of animal housing facilities or transfer of manure is required at a time when the manure cannot be readily land applied due to weather, soil conditions, or farm management requirements.
- Daily spreading operations are not possible when weather or cropping conditions are not appropriate for field spreading.
- Land area is limited, and split applications of manure nutrients are required for proper nutrient management and water quality protection.

Limitations: Follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice will be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
318-5	Poly Cover, Earthen Pad	**Scenario Description:** A compacted earthen pad is constructed to store wastes on a short-term basis between collection and utilization as part of an agricultural waste management system. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. **After Practice Description:** Using a compacted earthen pad with a cover provides an environmentally safe measure for temporarily managing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Typical design: volume of material temporarily stored 12,576 ft3, pad area 6,000 ft2 (60' X 100'); 4' width around edge of manure stack to properly anchor and cover the manure; footprint of manure pile: 52' X 92", 6' manure stack height on 4:1 slopes; cover is a 6-mil poly film; 15" x 1/2" diameter auger anchors on 2' centers. **Potential Associated Practices:** Nutrient Management (590), Waste Recycling (633)	Volume of stored manure solids	Cubic Foot	$0.18	$0.27	$0.27	$0.32

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SILVOPASTURE

Practice Code 381

Practice Units: ACRE

Definition: Establishment and/or management of desired trees and forages on the same land unit.

Purpose:

- Provide forage, shade, and/or shelter for livestock.
- Improve the productivity and health of trees/shrubs and forages.
- Improve water quality.
- Reduce erosion.
- Enhance wildlife habitat.
- Improve biological diversity.
- Improve soil quality.
- Increase carbon sequestration and storage.
- Provide for beneficial organisms and pollinators.

Conditions Where Practice Applies: This practice may be applied on any area that is suitable for the desired forages, trees, and livestock.

Limitations: This practice should be a supporting practice to a grazing system.

Maintenance: Practice will be maintained for a lifespan of 15 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
381-13	Bareroot Trees and Shrubs, with Tree Shelters	**Scenario Description:** Bare-root trees and/or shrubs to be planted or interplanted into an existing pasture to establish woody plants in any area where they can be grown as part of an agroforestry application establishing a combination of trees or shrubs and compatible forages on the same acreage. Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings and equipment and labor to plant. Foregone income is not included with this scenario. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Trees/shrubs have been planted, providing shade and wind protection to livestock and wildlife, and, in time, producing a viable wood products crop. Scenario assumes trees are planted in a 30' x 30' spacing over 10 acres. Per the conservation practice standard, livestock grazing will be deferred until the trees reach adequate height to resist damage or use exclusion measures until the trees are established. **Additional associated practices may include:** 315 Herbaceous Weed Treatment, 660 Tree/Shrub Pruning, 484 Mulching.	Each tree/shrub established	Each	$4.79	$5.74	$4.79	$5.74
381-14	Bareroot Trees and Shrubs	**Scenario Description:** Bare-root trees and/or shrubs to be planted or interplanted into an existing pasture to establish woody plants in any area where they can be grown as part of an agroforestry application establishing a combination of trees or shrubs and compatible forages on the same acreage. Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings and equipment and labor to plant. Foregone income is not included with this scenario. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Trees/shrubs have been planted, providing shade and wind protection to livestock and wildlife, and, in time, producing a viable wood products crop. Scenario assumes trees are planted in a 30' x 30' spacing over 10 acres. Per the conservation practice standard, livestock grazing will be deferred until the trees reach adequate height to resist damage or use exclusion measures until the trees are established. **Additional associated practices may include:** 315 Herbaceous Weed Treatment, 660 Tree/Shrub Pruning, 484 Mulching.	Per Tree/Shrub planted	Each	$1.42	$1.71	$1.42	$1.71

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
381-26	Container Trees and Shrubs, less than 2 gallon with tree shelters	**Scenario Description:** Container trees and/or shrubs (potted) to be planted or interplanted into an existing pasture to establish woody plants in any area where they can be grown as part of an agroforestry application establishing a combination of trees or shrubs and compatible forages on the same acreage. Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes container trees/shrubs, tree shelters, and equipment and labor to plant. Foregone income is not included with this scenario. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Trees/shrubs have been planted, providing shade and wind protection to livestock and wildlife, and, in time, producing a viable wood products crop. Scenario assumes trees are planted in a 30' x 30' spacing over 10 acres. Per the conservation practice standard, livestock grazing will be deferred until the trees reach adequate height to resist damage or use exclusion measures until the trees are established. **Additional associated practices may include:** 315 Herbaceous Weed Treatment, 660 Tree/Shrub Pruning, 484 Mulching.	Each tree/shrub	Each	$10.92	$13.11	$10.92	$13.11
381-27	Container Trees and Shrubs, less than 2 gallon	**Scenario Description:** Container trees and/or shrubs (potted) to be planted or interplanted into an existing pasture to establish woody plants in any area where they can be grown as part of an agroforestry application establishing a combination of trees or shrubs and compatible forages on the same acreage. Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes container trees/shrubs and equipment and labor to plant. Foregone income is not included with this scenario. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Trees/shrubs have been planted, providing shade and wind protection to livestock and wildlife, and, in time, producing a viable wood products crop. Scenario assumes trees are planted in a 30' x 30' spacing over 10 acres. Per the conservation practice standard, livestock grazing will be deferred until the trees reach adequate height to resist damage or use exclusion measures until the trees are established. **Additional associated practices may include:** 315 Herbaceous Weed Treatment, 660 Tree/Shrub Pruning, 484 Mulching.	Each tree/shrub	Each	$5.54	$6.65	$5.54	$6.65

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	cenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
381-29	Bareroot Trees and Shrubs with Tree Protection	**Scenario Description:** Bare-root trees and/or shrubs to be planted or interplanted into an existing pasture to establish woody plants in any area where they can be grown as part of an agroforestry application establishing a combination of trees or shrubs and compatible forages on the same acreage. Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings and equipment and labor to plant plus the installation of wire cage tree shelters around each tree for protection from grazing animals. This is a standard forestry technique to improve tree/shrub survival during the establishment phase. Shelters will be monitored by the client, repaired as needed, and removed when trees are sufficiently established. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Trees have been planted on the site, providing shade, wind, and snow protection to livestock and wildlife, and benefitting soil, water, and carbon sequestration. Scenario assumes trees are planted in a 30' x 30' spacing over 10 acres and each tree is protected with a wire cage tree shelter covering a 4 ft diameter area around the tree, to be removed when trees are established. **Additional associated practices may include:** 315 Herbaceous Weed Treatment, 660 Tree/Shrub Pruning, 484 Mulching.	Per Tree/Shrub Planted	Each	$24.41	$29.29	$24.41	$29.29
381-30	Container Trees and Shrubs, less than 2 gallon with Tree Protection	**Scenario Description:** Container trees and/or shrubs (potted) to be planted or interplanted into an existing pasture to establish woody plants in any area where they can be grown as part of an agroforestry application establishing a combination of trees or shrubs and compatible forages on the same acreage. Payment includes container trees/shrubs and equipment and labor to plant plus the installation of wire cage tree shelters around each tree for protection from grazing animals. This is a standard forestry technique to improve tree/shrub survival during the establishment phase. Shelters will be monitored by the client, repaired as needed, and removed when trees are sufficiently established. Foregone income is not included with this scenario. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Trees have been planted on the site, providing shade, wind, and snow protection to livestock and wildlife, and benefitting soil, water, and carbon sequestration. Scenario assumes trees are planted in a 30' x 30' spacing over 10 acres and each tree is protected with a wire cage tree shelter covering a 4 ft diameter area around the tree, to be removed when trees are established. **Additional associated practices may include:** 315 Herbaceous Weed Treatment, 660 Tree/Shrub Pruning, 484 Mulching.	Per Tree/Shrub Planted	Each	$28.53	$34.23	$28.53	$34.23

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	cenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
381-31	Container Trees and Shrubs, 2 gallon and larger with Tree Protection	**Scenario Description:** Container trees and/or shrubs (potted) to be planted or interplanted into an existing pasture to establish woody plants in any area where they can be grown as part of an agroforestry application establishing a combination of trees or shrubs and compatible forages on the same acreage. Payment includes container seedlings and equipment and labor to plant plus the installation of wire cage tree shelters around each tree for protection from grazing animals. This is a standard forestry technique to improve tree/shrub survival during the establishment phase. Shelters will be monitored by the client, repaired as needed, and removed when trees are sufficiently established. Foregone income is not included with this scenario. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Trees have been planted on the site, providing shade, wind, and snow protection to livestock and wildlife, and benefitting soil, water, and carbon sequestration. Scenario assumes trees are planted in a 30' x 30' spacing over 10 acres and each tree is protected with a wire cage tree shelter covering a 4 ft diameter area around the tree, to be removed when trees are established. **Additional associated practices may include:** 315 Herbaceous Weed Treatment, 660 Tree/Shrub Pruning, 484 Mulching.	Per Tree/Shrub Planted	Each	$32.03	$38.44	$32.03	$38.44

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SPRING DEVELOPMENT

Practice Code 574

Practice Units: NUMBER

Definition: Developing or development of a method to collect water from springs or seeps to provide water for a conservation need. May include cutoff trench, gravel pack, intercept tile, etc.

Purpose: To improve the quantity and/or quality of water for livestock, wildlife or other agricultural uses.

Conditions Where Practice Applies: In areas where a spring or seep will provide a dependable supply of suitable water for the planned agricultural use.

Limitations:

Maintenance: Practice will be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
574-1	Collection Structure	**Scenario Description:** Develop a water source from a natural spring or seep to provide water for livestock and/or wildlife needs. This scenario includes excavating and exposing the water source at the spring/seep (typically on a hillside) and installing a water collection structure. Payment includes excavation and labor to expose the spring, concrete for collection box, lid and gravel backfill. Resource Concern: Livestock production limitation - Inadequate livestock water. **After Practice Description:** Spring development system provides adequate water for the intended use. The system typically runs all year long in most zones. Site is excavated with a backhoe to expose the seep, a concrete collection box (3'x3'x4') is installed and gravel is backfilled between the spring source and collection box. **Associated Practices:** 516-Livestock Pipeline; 614-Watering Facility; 533 Pumping Plant	Number of Developments	Each	$650.58	$975.88	$975.88	$1,171.05
574-2	Horizontal Collection Pipe	**Scenario Description:** Develop a water source from a natural spring or seep to provide water for livestock and/or wildlife needs. This scenario includes excavating and exposing the water source at the spring/seep (typically on a hillside) and installing a horizontal water collection system. The collection system is commonly composed of perforated drainage pipe placed in an excavated collection trench that runs across the slope and is piped directly to watering facilities (implemented through associated practice 614). Resource Concern: Livestock production limitation - Inadequate livestock water. **After Practice Description:** Spring development system provides adequate water for the intended use. The system typically runs all year long in most zones. Horizontal water collection system is a 50 ft. long, 4-inch diameter HDPE perforated pipe enclosed in a sand/gravel envelope overlaid by 2 ft. wide filter fabric (50 ft. long). **Associated Practices:** 516-Livestock Pipeline; 614-Watering Facility	Number of Developments	Each	$466.50	$699.75	$699.75	$839.70

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
574-3	Horizontal Pipe with Collection Box	**Scenario Description:** Develop a water source from a natural spring or seep to provide water for livestock and/or wildlife needs. This scenario includes excavating and exposing the water source at the spring/seep (typically on a hillside) and installing a horizontal water collection system and a water storage structure. The collection system is commonly composed of perforated 4-inch diameter drainage pipe placed in an excavated collection trench that runs across the slope into the collection box. Resource Concern: Livestock production limitation - Inadequate livestock water. **After Practice Description:** Spring development system provides adequate water for the intended use. The system typically runs all year long in most zones. Water is collected in a spring box (48-inch diameter x 6 ft. long CMP). Horizontal water collection system is a 50 ft. long, 4-inch diameter HDPE perforated pipe enclosed in a sand/gravel envelope overlaid by 2 ft. wide filter fabric (50 ft. long). **Associated Practices:** 516-Livestock Pipeline; 614-Watering Facility; 533 Pumping Plant	Number of Developments	Each	$1,221.84	$1,832.76	$1,832.76	$2,199.32
574-4	Vertical Collection and Storage Pipe	**Scenario Description:** Develop a water source from a natural spring or seep to provide water for livestock and/or wildlife needs. Typically installed at the point source of a spring and provides for collection and storage of water. Payment includes the vertical excavation of the spring source, placement of vertical collection pipe and gravel around the pipe. Resource Concern: Livestock production limitation - Inadequate livestock water. **After Practice Description:** Spring development system provides adequate water for the intended use. The system typically runs all year long in most zones. Water is collected in a vertical 48-inch diameter x 12 ft. tall CMP. **Associated Practices:** 516-Livestock Pipeline; 614-Watering Facility; 533 Pumping Plant	Number of Developments	Each	$1,035.99	$1,553.99	$1,553.99	$1,864.79

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SPRINKLER SYSTEM

Practice Code 442

Practice Units: ACRE

Definition: A distribution system that applies water by means of nozzles operated under pressure.

Purpose: This practice is applied as part of a conservation management system to accomplish one or more of the following:

- Efficient and uniform application of water on irrigated lands
- Improve plant condition, productivity, health and vigor
- Reduce energy use
- Improve condition of soil contaminated with salts and other chemicals
- Reduce particulate matter emissions to improve air quality
- Prevent the entry of excessive nutrients, organics, and other chemicals in surface and groundwater

Conditions Where Practice Applies: This standard applies to the planning and functional design of all sprinkler system components (e.g., laterals, risers, nozzles, heads, and pressure regulators). Individual sprinkler design discharge rates covered by this standard typically have design nozzle discharge rates exceeding 1 gallon per minute and wet the entire field surface uniformly. Areas must be suitable for sprinkler water application and have a water supply of adequate quantity and quality for intended purpose(s).

This standard applies to planning and design of sprinkler application systems for

- meeting crop water demands
- application of chemicals, nutrients, and/or waste water
- dust and particulate control from:
  - confined animal pen areas
  - unpaved road
  - staging areas
  - equipment storage yards
- crop cooling, frost protection, or bloom delay
- leaching or reclamation of saline or sodic soils, or soils contaminated by other chemicals that can be controlled by leaching

This standard applies to renozzling existing sprinkler systems to reduce pressure, reduce flow rate, or increase distribution uniformity.

Limitations: This practice pertains to the planning and functional design of all sprinkler components except for special structures, such as permanently installed main and lateral pipelines or pumping plants. Other components shall meet appropriate NRCS conservation practice standards. This practice does not include mini- or micro-sprinkler systems. In order for land to be eligible for an irrigation-related practice, that land must have been irrigated in two out of the last five years. This means that irrigation must have been part of managing the cropping system to meet the needs of the plant and to maintain the yields of an irrigated crop. To ensure the practice meets the program purpose, the irrigation practice must be addressing an identified resource concern, such as Soil Erosion – Irrigation Induced or Water Quantity – Inefficient Water Use. To document irrigation history, use the “Irrigation History Documentation.docx”.

Maintenance: Practice must be maintained for a lifespan of 15 years.
Payment Schedule: If an existing center pivot system is being retrofitted for low pressure and the participant wants to replace the existing pivot with a new pivot the scenario and payment rate for retrofitting is to be used. The payment rate for portable systems is based on the number of acres the portable system can irrigate at 1 time. When center pivot systems overlap the overlap, acres are not eligible for financial assistance.

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
442-1	Conversion to Center Pivot or Linear Move System	**Scenario Description:** A surface irrigated field is converted to a center pivot sprinkler irrigation system or a linear move irrigation system to improve efficiency and uniformity of applied irrigation water to maintain adequate soil water for the desired level of plant growth and water quality impairment. Payment is based on length of equipment, not length of treated area. **After Practice Description:** The existing surface irrigation system is converted to a low-pressure center pivot. Corners are converted to non-irrigated cropland. The pivot is 1300 feet in length with pressure regulators and low-pressure sprinklers on drops. The new irrigation system has a coefficient of uniformity above 85%. Irrigation water is efficiently and uniformly applied to maintain adequate soil water for the desired level of plant growth. Deep percolation and field runoff is eliminated and there are no excess nutrients, salts or pathogens delivered to the receiving waters. Irrigation induced runoff is eliminated. Resource concerns include: Soil Erosion (Concentrated flow erosion e.g. irrigation induced), Insufficient Water (Inefficient use of irrigation water), Water Quality Degradation (Excess nutrients in surface and ground waters, Excessive salts in surface and ground waters, Excess pathogens and chemicals from manure, bio-solids or compost applications). **Associated Practices:** Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449)	Length of Center Pivot Lateral	Foot	$33.42	$50.13	$50.13	$60.15
442-2	Sprinkler Conversion to Low Pressure	**Scenario Description**: Center Pivot and Linear Move sprinkler systems are used in large crop fields with fairly regular field borders and flat topography. The scenario involves changing nozzles on center pivot or lateral move irrigation systems to low-pressure systems to improve efficiency of water use and reduce energy use. This scenario is intended for cropland areas where the objective is water conservation. Scenario includes end booms renozzled with low-pressure nozzles **After Practice Description**: A Center Pivot or Linear Move sprinkler system with a span of 1300 linear foot is renozzled with low-pressure nozzles. The irrigation water is applied efficiently and uniformly to maintain adequate soil moisture for optimum plant growth. Runoff and deep percolation are eliminated, and the surface and ground water is no longer degraded. The irrigation induced soil erosion caused by runoff is also eliminated. The lower pressure requirements of the sprinklers reduce the energy used by the pump. Resource concerns include: Soil Erosion (Concentrated flow erosion e.g. irrigation induced), Insufficient Water (Inefficient use of irrigation water), Water Quality Degradation (Excess nutrients in surface and ground waters, Excessive salts in surface and ground waters, Excess pathogens and chemicals from manure, bio-solids or compost applications), Inefficient Energy Use (Equipment and facilities e.g. pumping) **Associated Practices:** Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449)	Length of Lateral Retrofitted	Foot	$2.82	$4.23	$4.23	$5.08

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
442-3	Wheel Line System	**Scenario Description:** A 1,280-foot wheel line (also called side roll, wheel move, or lateral-roll) with 7 foot diameter wheels and five inch diameter supply pipeline. A wheel line consists of the mover, lateral pipe, wheels, sprinklers, couplers, and connectors to the mainline supply. **After Practice Description:** A 1,280-foot wheel line with 7 foot diameter wheels and five inch diameter supply pipeline. Sprinklers are spaced along the wheel line at 40-foot intervals and risers are spaced at 60-foot increments along the mainline. The wheel line irrigates 40 acres of cropland. The wheel line improves distribution uniformity. Irrigation application efficiency improves to 75%. Water application rates meet the consumptive use of the crop and matches soil intake rates in order to prevent irrigation induced erosion, runoff, and deep percolation. Resource concerns include: Soil Erosion (Concentrated flow erosion e.g. irrigation induced), Insufficient Water (Inefficient use of irrigation water), Water Quality Degradation (Excess nutrients in surface and ground waters, Excessive salts in surface and ground waters, Excess pathogens and chemicals from manure, bio-solids or compost applications), Inefficient Energy Use (Equipment and facilities e.g. pumping) **Associated Practices**: Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449)	Length of Wheel Line Lateral	Foot	$8.08	$12.11	$12.11	$14.54
442-4	Solid Set System	**Scenario Description:** Installation of a solid set irrigation system. Payment includes pipe, sprinklers, connections, appurtenances, and installation. **After Practice Description**: The system is installed on 10 acres or less. The installed solid set system has 3-4-inch pipe sizes and sprinklers set 30 - 50 ft. apart. Improved distribution uniformity and irrigation efficiency will result. Resource concerns include: Soil Erosion (Concentrated flow erosion e.g. irrigation induced), Insufficient Water (Inefficient use of irrigation water), Water Quality Degradation (Excess nutrients in surface and ground waters, Excessive salts in surface and ground waters, Excess pathogens and chemicals from manure, bio-solids or compost applications) **Associated Practices**: Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449)	Area of Irrigation System	Acre	$2,038.15	$3,057.23	$3,057.23	$3,668.67

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
442-5	Traveling Gun System, < 2in Hose	**Scenario Description:** A portable small gun system used to apply irrigation water on small fields. A small traveling gun irrigation system is installed to apply water uniformly and at an acceptable application rate operated under pressure to effectively irrigate less than 5 acres. The irrigation system is installed with all necessary appurtenances. **After Practice Description**: A small traveling gun irrigation system is installed to irrigate 5 acres based on the determined spacing needs. Irrigation is applied efficiently and uniformly to maintain adequate soil water for plant growth without causing excessive water loss, erosion, or water quality degradation Resource concerns: Soil Erosion (Concentrated flow erosion, e.g. overflowing waste storage) and Water Quality Degradation (Excess nutrients in surface and ground waters, Excessive salts in surface and ground waters, Excess pathogens and chemicals from liquid manure) **Associated Practices**: Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449), Conservation Crop Rotation (328), Cover Crop (340), Nutrient Management (590), Waste Utilization (633), Manure Transfer (634)	Number of Traveling Gun Systems	Each	$9,238.33	$13,857.50	$13,857.50	$16,628.99
442-6	Traveling Gun System, 2in to 3in Hose	**Scenario Description**: A portable big gun system used to apply waste water from animal feeding operations. This traveling big gun unit includes a sprinkler, towable cart, 1000' or more of PE hard hose, a self-propelled reel that moves the sprinkler toward the reel during operation. The reel attaches to a mainline with appropriately designed towpath width. The scenario describes an irrigation system that is typical to confined animal feeding operations. **After Practice Description:** The big gun applies animal manure in an appropriate quantity and location that eliminates both runoff of the manure and deep percolation of excess nutrients, salts, and pathogens. The big gun system is typically located on 50 acres or less of hay/pasture land, or 100 acres or less of cropland. The system includes a large irrigation gun with 1" to 1-1/2" orifice mounted onto a movable cart. 1000' or more flexible 3" PE pipe is attached to the cart on one end and a large reel on the other end. The reel serves as storage are for the pipe as the cart moves back to the reel. The reel is turned by a small engine which gradually pulls the flexible pipe and cart back to the reel/base. Resource concerns: Soil Erosion (Concentrated flow erosion, e.g. overflowing waste storage) and Water Quality Degradation (Excess nutrients in surface and ground waters, Excessive salts in surface and ground waters, Excess pathogens and chemicals from liquid manure) **Associated Practices:** Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449), Conservation Crop Rotation (328), Cover Crop (340), Nutrient Management (590), Waste Utilization (633), Manure Transfer (634)	Number of Traveling Gun Systems	Each	$12,264.48	$18,396.72	$18,396.72	$22,076.06

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
442-7	Traveling Gun System, > 3in Hose	**Scenario Description**: A portable big gun system used to apply waste water from animal feeding operations. This traveling big gun unit includes a sprinkler, towable cart, 1200' or more of PE hard hose, a self-propelled reel that moves the sprinkler toward the reel during operation. The reel attaches to a mainline with appropriately designed towpath width. The scenario describes an irrigation system that is typical to confined animal feeding operations. **After Practice Description**: The big gun applies animal manure in an appropriate quantity and location that eliminates both runoff of the manure and deep percolation of excess nutrients, salts, and pathogens. The big gun system is typically located on 50 acres or less of hay/pasture land, or 100 acres or less of cropland. The system includes a large irrigation gun with 1" to 1-1/2" orifice mounted onto a movable cart. 1200' or more flexible 4" PE pipe is attached to the cart on one end and a large reel on the other end. The reel serves as storage are for the pipe as the cart moves back to the reel. The reel is turned by a small engine which gradually pulls the flexible pipe and cart back to the reel/base. Resource concerns: Soil Erosion (Concentrated flow erosion, e.g. overflowing waste storage) and Water Quality Degradation (Excess nutrients in surface and ground waters, Excessive salts in surface and ground waters, Excess pathogens and chemicals from liquid manure) **Associated Practices**: Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449), Conservation Crop Rotation (328), Cover Crop (340), Nutrient Management (590), Waste Utilization (633), Manure Transfer (634)	Number of Traveling Gun Systems	Each	$22,800.67	$34,201.00	$34,201.00	$41,041.20

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
442-8	Pod System	**Scenario Description:** A portable irrigation system consisting of Polyethylene (PE) pipe and pods that have attached sprinklers. This scenario addresses installation of all pod style irrigation sprinkler systems. **After Practice Description:** A 10-acre irrigated pasture with a medium pressure irrigation system consisting of sprinkler pods along a PE line is installed. The pods and PE line are placed in different sections of the pasture by dragging both with a four-wheeler. The PE line is 660 feet in length and has 14 pods evenly spaced along its length. The improved distribution uniformity and irrigation efficiency reduces the inefficient use of water on irrigated land, reducing irrigation water applied and energy use. Water application rates meet the pasture vegetation consumptive use requirements. Runoff and deep percolation as a result of irrigation are eliminated, and the receiving waters are no longer degraded. Resource concerns include: Soil Erosion (Concentrated flow erosion e.g. irrigation induced), Insufficient Water (Inefficient use of irrigation water), Water Quality Degradation (Excess nutrients in surface and ground waters, Excessive salts in surface and ground waters, Excess pathogens and chemicals from manure, bio-solids or compost applications) **Associated Practices:** Irrigation Pipeline (430), Pumping Plant (533), Irrigation Water Management (449)	Number of Sprinkler Pods	Each	$133.99	$200.99	$200.99	$241.19

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STORMWATER RUNOFF CONTROL

Practice Code 570

Practice Units: ACRE

Definition: Controlling the quantity and quality of storm water runoff.

Purpose: To control storm water runoff to achieve one or more of the following:

- Minimize erosion and sedimentation during and following construction activities.
- Reduce the quantity of storm water leaving developing or developed sites.
- Improve the quality of storm water leaving developing or developed sites.

Conditions Where Practice Applies: This practice applies to sites where storm water runoff causes or may cause undesirable downstream flooding, sedimentation or channel degradation and/or degradation of surface or ground water quality if left untreated. This practice may apply both to sites undergoing development as well as remedial work on already developed sites.

Limitations:

Maintenance: Practice will be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
570-1	Storm water Runoff Control	**Scenario Description:** This scenario involves installation of silt fence, straw wattles, coconut fabric mats or jute mats, and synthetic mats 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 practice may also be used in the installation of rain gardens, permeable pavement, and/or bio swales. **After Practice Description:** When properly installed, the combination structures slow down runoff flow velocity and reduce high velocity erosion, detain and filter the storm water 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. 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. All erosion control blankets and straw mulches will be covered under 484 - Mulching. If earthen basins are warranted for water quality improvement purposes, use Sediment Basin (350) or Dam (402) as appropriate. If seeding is warranted for water quality and erosion control purpose, use Critical Area Planting (342).	Area of construction site	Acre	$615.82	$923.72	$923.72	$1,108.47

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
570-13	Rain Garden	**Scenario Description:** Typical Size: 36' x 30' area, 4-8' deep. Additional Considerations from the practice standard that would be addressed by the practice are: Design stormwater control practices to fit into the visual landscape as well as to function for runoff control. If properly designed, stormwater control practices can be beneficial to wildlife. **After Practice Description:** Stormwater is managed to prevent erosion, reduce quantity of runoff, enhance visual impact and increase wildlife habitat and/or food.	square feet of rain garden	Square Feet	$0.39	$0.58	$0.58	$0.70
570-14	Combination, Most common Best Management Practices	**Scenario Description:** This scenario involves installation of silt fence, straw wattles, and straw bales 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. **After Practice Description:** 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, straw bales can also help to protect water quality. 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. All erosion control blankets and straw mulches will be covered under 484-Mulching. If earthen basins are warranted for water quality improvement or retention/detention purposes, use Sediment Basin (350) or Dam (402) as appropriate. If seeding is warranted for water quality and erosion control purposes, all temporary and permanent vegetation will use Critical Area Planting (342).	Area of construction site	Acres	$472.04	$708.05	$708.05	$849.66

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STREAM CROSSING

Practice Code 578

Practice Units: NUMBER

Definition: A stabilized area or structure constructed across a stream to provide controlled access for people, livestock, equipment or vehicles.

Purpose: This practice is applied to:

- Improve water quality by reducing sediment, nutrient, or organic loading to a stream.
- Reduce streambank and streambed erosion.

Conditions Where Practice Applies: This practice applies to all land uses where:

- An intermittent or perennial watercourse (stream) exists.
- Controlled access from one side of the stream to the other side is necessary to reduce or eliminate environmental degradation.
- Soils, geology, fluvial geomorphology, and topography are suitable for construction of a stream crossing.

Limitations: The landowner is responsible for obtaining all necessary permits prior to construction.

Maintenance: Practice will be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
578-1	Gravel Crossing	**Scenario Description:** A stabilized area or structure constructed across a stream to provide a travel way for people, livestock, equipment, or vehicles. This practice applies to all land uses where an intermittent or perennial watercourse exists, and a ford crossing is desired for livestock, people, and /or equipment. Stream bed in the channel reach containing the crossing must be vertically stable. Scenario is for stabilizing the bottom and slope of a stream channel using gravel and geotextile. This scenario includes site preparation, dewatering, acquiring and installing gravel on channel bottom and approaches. Use (396) Aquatic Organism Passage when the primary intent is biological concerns, not hydrologic. **After Practice Description:** Scenario is based upon a vehicle crossing 8' wide stream with 5' high banks and a 12' wide crossing with 6:1 approach. Stream flow is not impeded, and a stable base exists for equipment, people and/or animals to cross. **Associated Practices:** (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization.	Crossing dimensions	Square Foot	$0.55	$0.82	$0.82	$0.99
578-2	Rip Rap Crossing	**Scenario Description:** A stabilized area or structure constructed across a stream to provide a travel way for people, livestock, equipment, or vehicles. This practice applies to all land uses where an intermittent or perennial watercourse exists, and a ford crossing is desired for livestock, people, and /or equipment. Stream bed in the channel reach containing the crossing must be vertically stable. Scenario is for stabilizing the bottom and slope of a stream channel using Rip Rap, gravel and geotextile. This scenario includes site preparation, dewatering, acquiring and installing rip rap and gravel on channel bottom and approaches. Scenario is based on a 20' wide x 50' long crossing. Use (396) Aquatic Organism Passage when the primary intent is biological concerns, not hydrologic. **After Practice Description:** Stream flow is not impeded, and a stable base exists for equipment, people and/or animals to cross. **Associated Practices:** (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization.	Crossing dimensions	Square Foot	$2.25	$3.37	$3.37	$4.05

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
578-4	Concrete Crossing	**Scenario Description:** A stabilized area or structure constructed across a stream to provide a travel way for people, livestock, equipment, or vehicles. This practice applies to all land uses where an intermittent or perennial watercourse exists, and a ford crossing is desired for livestock, people, and /or equipment. Stream bed in the channel reach containing the crossing must be vertically stable. Scenario is for stabilizing the bottom and slope of a stream channel using concrete. This scenario includes site preparation, dewatering, acquiring and installing gravel and concrete channel bottom and approaches. Scenario is based on a 20' wide x 50' long crossing. Use (396) Aquatic Organism Passage when the primary intent is biological concerns, not hydrologic. **After Practice Description:** Stream flow is not impeded, and a stable base exists for equipment, people and/or animals to cross. **Associated Practices:** (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization.	Crossing dimensions	Square Foot	$4.26	$6.39	$6.39	$7.67
578-6	Culvert Installation	**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. 30-inch Culvert installation with <75 cy of fill needed and < 2 yds. rock riprap for headwalls. Pipe is 40 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. **After Practice Description:** 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:** (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization.	Culvert	Diameter Inch Foot	$1.81	$2.72	$2.72	$3.26

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STREAMBANK AND SHORELINE PROTECTION

Practice Code 580

Practice Units: FEET

Definition: Treatment(s) used to stabilize and protect banks of streams or constructed channels, and shorelines of lakes, reservoirs, or estuaries.

Purpose: To prevent the loss of land or damage to land uses, or facilities adjacent to the banks of streams or constructed channels, shoreline of lakes, reservoirs, or estuaries including the protection of known historical, archeological, and traditional cultural properties. To maintain the flow capacity of streams or channels. Reduce the offsite or downstream effects of sediment resulting from bank erosion. To improve or enhance the stream corridor for fish and wildlife habitat, aesthetics, or recreation.

Conditions Where Practice Applies: This practice applies to streambanks of natural or constructed channels and shorelines of lakes, reservoirs, or estuaries where they are susceptible to erosion. It does not apply to erosion problems on main ocean fronts, beaches or similar areas of complexity.

Limitations: This practice does not apply to erosion problems on main lake fronts and similar areas of complexity not normally within the scope of NRCS authority or expertise. **EQIP financial assistance is not eligible for Streambank and Shoreline Protection projects on Iowa's meandering navigable streams.** A map of Iowa Meandering Navigable Streams is located on the Iowa EQIP website.

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-1	Bank Shaping	**Scenario Description:** Protection of streambanks consisting of shaping banks to a stable slope and 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; 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. **After Practice Description:** 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. Critical Area Planting (342) is included for establishment of vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). 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. **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; 484-Mulching; 570-Stormwater Runoff Control.	Linear Feet of Streambank /Shoreline Protected	Foot	$7.22	$8.66	$7.22	$8.66

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-2	Bioengineered	**Scenario Description:** Protection of streambanks consisting of a bioengineered technique comprised of non-structural measures such as earth revetments and benches with vegetative measures to stabilize and protect the streambank against scour and erosion. Soil bioengineering is a system of living plant materials used as structural components. Adapted types of woody vegetation (shrubs and trees) are initially installed in specified configurations that offer immediate soil protection and reinforcement. In addition, soil bioengineering systems create resistance to sliding or shear displacement in a streambank as they develop roots or fibrous inclusions. Environmental benefits derived from woody vegetation include diverse and productive riparian habitats, shade, organic additions to the stream, cover for fish, and improvements in aesthetic value and water quality. Under certain conditions, soil bioengineering installations work well in conjunction with structures to provide more permanent protection and healthy function, enhance aesthetics, and create a more environmentally acceptable product. Soil bioengineering systems normally use unrooted plant parts in the form of cut branches and rooted plants. For streambanks, living systems include brush mattresses, live stakes, joint plantings, vegetated geogrids, branch packing, and live fascines. 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 and willow tree planting. 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. **After Practice Description:** 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. Critical Area Planting (342) is included for establishment of vegetation if needed. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). 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. **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; 484-Mulching; 570-Stormwater Runoff Control.	Linear Feet of Streambank /Shoreline Protected	Foot	$15.84	$19.01	$15.84	$19.01

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-3	Structural	**Scenario Description:** Protection of streambanks using rock riprap to stabilize and protect banks of streams or excavated channels against scour and erosion. Additional structural measures may also include tree revetments; log, root wad and boulder revetments; dormant post plantings; piling revetments with wire or geotextile fencing; piling revetments with slotted fencing; jacks or jack fields; rock riprap; stream jetties; stream barbs; and gabions. 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, geotextile, and rock rip rap; a 10-foot high bank at 2(H):1(V) slope for 500 linear feet is used for estimation purposes. The rock will be 2' thick and 10' high. The bank above the riprap will be graded to a stable slope and revegetated. 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. **After Practice Description:** 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. **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; 484-Mulching; 570-Stormwater Runoff Control.	Cubic Yard of Riprap	Cubic Yard	$46.13	$55.36	$46.13	$55.36

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-4	Stream Barb/LPSTP-Longitudinal Peaked Stone Toe Protection-small Streams	**Scenario Description:** Protection of streambanks using longitudinal peaked stone toe protection to stabilize and protect banks of streams or excavated channels against scour and erosion. Additional structural measures may also include tree revetments; log, root wad and boulder revetments; dormant post plantings; piling revetments with wire or geotextile fencing; piling revetments with slotted fencing; jacks or jack fields; rock riprap; stream jetties; stream barbs; J-Hooks and gabions. 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 includes rock rip rap and placement. A 4' high stone toe with 1.5:1 side slopes, 275 linear feet in length is used for estimation purposes. The bank behind the riprap will not be modified. Stream with less than 100 sq. miles drainage area. 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. **After Practice Description:** 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. **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; 484-Mulching; 570-Stormwater Runoff Control.	Linear foot of bank protected	Foot	$40.23	$48.27	$40.23	$48.27

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-5	Stone Toe protection with vegetation	**Scenario Description:** Protection of streambanks using riprap toe protection with grass vegetation on the upper portion of the bank to stabilize and protect banks of streams or excavated channels against scour and erosion. Additional structural measures may also include tree revetments; log, root wad and boulder revetments; dormant post plantings; piling revetments with wire or geotextile fencing; piling revetments with slotted fencing; jacks or jack fields; rock riprap; stream jetties; stream barbs; and gabions. 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 includes rock rip rap and bank shaping. Typical installation consists of 4 vertical feet of riprap toe protection on a 2:1 slope, 2' thick. 4 vertical feet of bank above the rock will be shaped to a 4:1 slope, seeded to cool season vegetation and covered with erosion control blanket. 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. **After Practice Description:** 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. **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; 484-Mulching; 570-Stormwater Runoff Control.	Linear Feet of Bank Protected	Foot	$39.06	$46.87	$39.06	$46.87

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-6	Stream Barb/Bendway Weir-large stream	**Scenario Description:** Protection of streambanks using stream barbs to stabilize and protect banks of streams or excavated channels 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 includes rock rip rap, bank shaping, erosion control blanket and seeding. Typical installation consists of 7 stream barbs, each 7' tall and 60' long protecting 650' of bank. Stream with 100 sq. miles or more drainage area. 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. **After Practice Description:** 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. **Associated Practices include**: 342 - Critical Area Planting; 382 - Fence; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream Habitat Improvement and Management; 614 - Watering Facility; 484-Mulching; 570- Storm water Runoff Control.	Lineal Feet of bank protected	Foot	$66.23	$79.47	$66.23	$79.47

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-7	Weir/Riffle Small	**Scenario Description:** Protection of streambanks using a rock riffle to stabilize and protect banks of streams or excavated channels against scour and erosion by controlling down cutting. Additional structural measures may also include tree revetments; log, root wad and boulder revetments; dormant post plantings; piling revetments with wire or geotextile fencing; piling revetments with slotted fencing; jacks or jack fields; rock riprap; and gabions. 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 includes rock rip rap, bank shaping, erosion control blanket and seeding. Typical installation consists of a 1' high riffle on a stream with an 8' bottom width and 5' banks. 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. **After Practice Description:** 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. **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; 484-Mulching; 570-Stormwater Runoff Control.	Per structure installed	Each	$2,706.41	$3,247.70	$2,706.41	$3,247.70

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-8	Weir/Riffle Medium	**Scenario Description:** Protection of streambanks using a rock riffle to stabilize and protect banks of streams or excavated channels against scour and erosion by controlling down cutting. Additional structural measures may also include tree revetments; log, root wad and boulder revetments; dormant post plantings; piling revetments with wire or geotextile fencing; piling revetments with slotted fencing; jacks or jack fields; rock riprap; and gabions. 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 includes rock rip rap, bank shaping, erosion control blanket and seeding. Typical installation consists of a 1.5' high riffle on a stream with a 20' bottom width and 6' banks. 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. **After Practice Description:** 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. **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; 484-Mulching; 570-Stormwater Runoff Control.	Per structure installed	Each	$5,534.29	$6,641.14	$5,534.29	$6,641.14

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-9	Weir/Riffle Large	**Scenario Description:** Protection of streambanks using a rock riffle to stabilize and protect banks of streams or excavated channels against scour and erosion by controlling down cutting. Additional structural measures may also include tree revetments; log, root wad and boulder revetments; dormant post plantings; piling revetments with wire or geotextile fencing; piling revetments with slotted fencing; jacks or jack fields; rock riprap; and gabions. 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 includes rock rip rap, bank shaping, erosion control blanket and seeding. Typical installation consists of a 1.5' high riffle on a stream with a 30' bottom width and 7' banks. 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. **After Practice Description:** 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. **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; 484-Mulching; 570-Stormwater Runoff Control.	Per structure installed	Each	$7,295.20	$8,754.24	$7,295.20	$8,754.24

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-23	Bankfull Bench, Wood Toe	**Scenario Description:** Protection of streambanks using toewood (large wood members with root wads) as a structural measure in conjunction with bioengineering techniques involving vegetative measures to stabilize and protect the streambank against scour and erosion. Environmental benefits derived from woody vegetation include diverse and productive riparian habitats, shade, organic additions to the stream, cover for fish, and improvements in aesthetic value and water quality. 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 protection by use of large wood members with root wads, willow cuttings and revetments, bankfull bench construction, bank shaping and riparian-corridor revegetation. 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. **After Practice Description:** 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. **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	Linear Feet of Streambank Protected	Linear Foot	$104.64	$125.57	$104.64	$125.57

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-24	Bankfull Bench, Rock Toe	**Scenario Description:** Protection of streambanks using rock riprap as a structural measure to stabilize and protect banks of streams or excavated channels 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 bankfull bench construction, bank shaping, riparian-corridor revegetation, geotextile, willow trees and rock riprap; a 6-foot high bank at 3(H):1(V) slope for 1000 linear feet (1667 cubic yards) is used for estimation purposes. The rock toe will be 3' thick and 5' high. The bank at the top horizon of the riprap (at bankfull) will be graded to a stable slope and revegetated. 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. **After Practice Description:** 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. **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	Cubic Yards of Rock Boulders	Cubic Yard	$238.13	$285.76	$238.13	$285.76

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
580-25	In-Channel Boulder Structure	**Scenario Description:** Protection of streambanks using bank stabilization measures to stabilize eroding stream banks, reduce near bank stress and prevent sediment from entering streams by constructing in-stream structures such as J-Hooks, Stream barbs, Cross Vanes or Vortex Weirs. The purpose of this practice is to maintain, improve, and restore physical, chemical, and biological functions of a stream to provide diverse aquatic communities to improve habitat for desired aquatic species. Typical scenario: Install two J hooks on a 300 ' section of 30 square mile watershed channel, with a bankfull width of 42' and a bankfull depth of 4'. Each J hook has an arm length of 45' with a 14' hook and 14' sill. Boulders are an average dimension of 3'x3'x3' and weigh 2 tons. 47 boulders are required for one structure (47 CY). 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. **After Practice Description:** 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. **Associated Practices include:** 560 - Access Road; 382 - Fence; 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream Habitat Improvement and Management; 614 - Watering Facility, 570 Stormwater Runoff Control.	Cubic Yards of Boulders Installed	Cubic Yards	$172.37	$206.84	$172.37	$206.84

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STREAM HABITAT IMPROVEMENT AND MANAGEMENT

Practice Code 395

Practice Units: ACRE

Definition: Maintain, improve, or restore the physical, chemical and biological functions of a stream.

Purpose:

- Provide suitable habitat for desired aquatic species and a diverse aquatic community.
- Provide channel morphology and associated riparian characteristics important to desired aquatic species.
- Provide esthetic values and recreational opportunities associated with stream habitats such as angling and fish viewing.

Conditions Where Practice Applies: In streams with habitat deficiencies limiting survival, growth, reproduction, and/or diversity of aquatic species in relation to the streams potential.

Limitations:

Maintenance: Practice will be maintained for a lifespan of 5 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
395-1	Riparian Zone Improvement, Forested	**Scenario Description:** This scenario describes fish and wildlife habitat improvement and/or management actions focused on the community structure and function of forested riparian zone plant communities. The planned activity meets the 395 standard, and facilitating practice standards, especially Codes 390 and 391, utilized in combination to satisfy all requirements specific to habitats needed for the stream and riparian species for which the practice is being implemented. Implementation will improve instream and riparian habitat complexity, water quality, hiding and resting cover, and/or increased food availability for desired riparian and stream species. **After Practice Description:** Revegetation/reforestation of the riparian zone is completed, and the vegetation community is under close management to insure long-term survival and ecological succession of the plant community. The quality and quantity of the riparian zone components of the site are managed to support a diverse vegetation community suitable for the site, the species that depend on it for habitat, and the functions it performs or will eventually perform as the vegetation matures. These functions include: stream temperature moderation thru shading, recruitment of instream large wood and/or non-woody organic matter, riparian habitat for terrestrial insects and other riparian-dependent species, streambank integrity, and filtration of contaminants from surface run-off into the stream.	Acres	Acre	$3,058.70	$3,670.44	$3,058.70	$3,670.44

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
395-2	Instream wood placement	**Scenario Description:** This scenario involves placement of large wood (logs, root wads, log structures) into a stream channel in order to improve aquatic habitat that currently does not meet quality criteria for stream species habitat. A stream assessment (i.e. Stream Visual Assessment Protocol) should be conducted in order to document habitat components lacking for aquatic species (i.e. large wood, pools). A project design for wood placement will be based on assessment of the target stream reach characteristics and those of a suitable reference reach. These characteristics include channel geometry, channel slope, stream bottom substrate size and composition, and the geomorphic setting influencing the channel form, pattern and profile. Large wood and root wads placed into the stream will mimic genus, age, and size of mature trees found in intact, reference riparian areas in the MLRA where the project is located. Large wood/trees with root wads intact should be placed in streams to create pool habitat according to NRCS engineering specifications and with close review & approval of a fish habitat biologist. Boulders placed to provide ballast shall only be used if the geomorphic setting and project design demand this component. The planned activity will meet the current 395 standard, and facilitating practice standards utilized, including timing of work windows required for protected aquatic and riparian species, and protecting/restoring vegetation and substrates of/to areas impacted by heavy equipment. Implementation will result in the improvement of instream habitat complexity, hiding and resting cover, and/or increased food availability for fish and other stream species. Payment for implementation is to defray the costs of project implementation. Monitoring records demonstrating implementation of this scenario will address resource concerns for stream species of concern are required. **After Practice Description:** Stream habitat within the project reach is improving as a result of placing logs, root wads, and/or wood structures in the channel and/or along the stream bank. Pool habitat in the reach is improved, and hiding cover, food availability and refuge habitat for all stream species is improving.	Per Structure	Each	$447.50	$537.00	$447.50	$537.00

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
395-3	Instream rock placement	**Scenario Description:** This scenario describes the implementation of a stream habitat improvement and management project that places individual boulders or boulder clusters, or rock structures in or adjacent to the stream channel as habitat components. A project design for boulder placement will be based on assessment of the target stream reach characteristics and those of a suitable reference reach. These characteristics include channel geometry, channel slope, stream bottom substrate size and composition, and the geomorphic setting influencing the channel form, pattern and profile. Large rocks/boulders placed in the stream channel will mimic geologic material sizes typically present in the watershed or observed in intact, reference stream reaches in the MLRA where the project is located. Boulders should be placed in streams to create pool habitat and hydraulic complexity according to NRCS engineering specifications and with close review & approval of a fish habitat biologist onsite during implementation of the project design. Spawning gravel placement should be placed to restore spawning area substrates potentially disturbed by rock placement. The planned activity will meet the current 395 standard and facilitating practice standards utilized. Implementation will result in the improvement of instream habitat complexity, hiding and resting cover, spawning habitat, and/or increased food availability for fish and other stream species. Payment for implementation is to defray the costs of stream habitat assessment, and project implementation. Records demonstrating implementation of this scenario will address resource concerns for stream species of concern will be required. **After Practice Description:** Stream habitat within the project reach is improving as a result of placing boulders or constructing rock structures in the channel and/or along the stream bank. Hydraulic complexity of the habitat in the reach is increased, and hiding cover, food availability and refuge habitat for stream species is improving. Streambank vegetation is increasing and contributing to stability of the streambanks.	Per Structure	Each	$507.98	$609.58	$507.98	$609.58

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
395-4	Rock and wood structures	**Scenario Description:** This scenario describes the implementation of a stream habitat improvement and management project where practices are focused on instream habitat improvement with a combination of rock AND wood structures. This scenario involves placement of large wood and rock structures into a stream channel in order to improve aquatic habitat that currently does not meet quality criteria for stream species habitat. A stream assessment (i.e. Stream Visual Assessment Protocol) should be conducted in order to document habitat components (such as large wood, pools) are not currently present in the stream or are limited for aquatic species. A project design for placement of habitat structures (boulders, boulder clusters, wood, wood structures) will be based on assessment of (a) the target stream reach characteristics and (b) those of a suitable reference reach. These characteristics include channel geometry, channel slope, stream bottom substrate size and composition, and the geomorphic setting influencing the channel form, pattern and profile. Large rocks/boulders placed in the stream channel will mimic geologic material sizes typically present in the watershed or observed in intact, reference stream reaches in the MLRA where the project is located. Rock boulder sizes should also reflect the geomorphic setting of the stream reach. Large wood placed into the stream under this scenario should be similar in species, age, and size (diameter) as trees found in the surrounding riparian area, to the extent possible. Wood, boulders and/or boulder clusters will be placed in the stream to create pool habitat and hydraulic complexity according to NRCS engineering specifications and with close review & approval of a fish habitat biologist onsite during the planning and implementation of the project. This scenario involves restoring one acre of stream. The planned activity will meet the current 395 standard and facilitating practice standards utilized. Implementation will result in the improvement of instream habitat complexity, hiding and resting cover, and/or increased food availability for fish and other stream species. Payment for implementation is to defray the costs of project implementation. Records demonstrating implementation of this scenario will address resource concerns for stream species of concern will be required. **After Practice Description:** Stream habitat within the project reach is improving as a result of placing logs, rocks, or constructing wood and rock structures in the channel and/or along the stream bank. Pool habitat in the reach is improved, and hiding cover, food availability and refuge habitat for all stream species is improving.	Per Structure	Each	$610.49	$732.59	$610.49	$732.59

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
395-5	Wood with Lunkers	**Scenario Description:** This scenario involves placement of large wood (root wads) and lunkers (overhang/undercut bank structures) into a stream channel in order to improve aquatic habitat that currently does not meet quality criteria for stream species habitat. A stream assessment (i.e. Stream Visual Assessment Protocol) should be conducted in order to document habitat components lacking for aquatic species (i.e. large wood, pools). A project design for wood placement will be based on assessment of the target stream reach characteristics and those of a suitable reference reach. These characteristics include channel geometry, channel slope, stream bottom substrate size and composition, and the geomorphic setting influencing the channel form, pattern and profile. Large wood and root wads placed into the stream will mimic genus, age, and size of mature trees found intact, reference riparian areas in the MLRA where the project is located. Large wood/trees with root wads intact should be placed in streams to create pool habitat according to NRCS engineering specifications and with close review & approval of a fish habitat biologist. The planned activity will meet the current 395 standard, and facilitating practice standards utilized, including timing of work windows required for protected aquatic and riparian species, and protecting/restoring vegetation and substrates of/to areas impacted by heavy equipment. Implementation will result in the improvement of instream habitat complexity, hiding and resting cover, and/or increased food availability for fish and other stream species. Payment for implementation is to defray the costs of project implementation. Monitoring records demonstrating implementation of this scenario will address resource concerns for stream species of concern are required. **After Practice Description:** Stream habitat within the project reach is improving as a result of placing a series of root wads, and/or wood structures in the channel and/or along the stream bank. Pool habitat in the reach is improved, and hiding cover, food availability and refuge habitat for all stream species is improving.	Bankfull width x reach length	Acre	$5,054.24	$6,065.09	$5,054.24	$6,065.09

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STRIPCROPPING

Practice Code 585

Practice Units: ACRE

Definition: Growing planned rotations of erosion-resistant and erosion susceptible crops or fallow in a systematic arrangement of strips across a field.

Purpose: This practice supports one or more of the following purposes:

- Reduce water erosion – Resource Concern (SOIL EROSION - Sheet, rill, & wind erosion)
- Reduce wind erosion – Resource Concern (SOIL EROSION - Sheet, rill, & wind erosion)
- Reduce the transport of sediment and other water and wind borne contaminants – Resource Concerns (Excess nutrients in surface and ground waters and WATER QUALITY DEGRADATION – Pesticides transported to surface and ground waters)
- Protect growing crops from damage by wind-borne soil particles – Resource Concern (DEGRADED PLANT CONDITION – Undesirable plant productivity and health)

Conditions Where Practice Applies: This practice applies on cropland.

Limitations: This practice is unsuitable on undulating to rolling topography because of the difficulty of maintaining parallel strip boundaries across the hill slope and/or staying within in-row grade limits. It is most suitable on uniform slopes with slope lengths (L) equal to or less than the Critical Slope Length Limits as determined using the RUSLE2. The effect on erosion reduction for this practice is reduced on fields where slope lengths (L) exceeds the Critical Slope Length limits for contouring by 1.5 times, unless the slope length (L) is shortened by the installation of other practices such as terraces. This standard does not apply to situations where alternating strips are not generally equal in width or where the land is treated with Contour Buffer Strips (332)

Maintenance: Practice must be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
585-3	Stripcropping - wind and water erosion	**Scenario Description:** This scenario describes the implementation of a strip cropping system that is designed specifically for the control of wind and water erosion or minimizing the transport of sediments or other water borne contaminants originating from runoff on cropland. The planned strip cropping system will meet the current 585 standard. Implementation will result in alternating strips of erosion susceptible crops with erosion resistant crops that are oriented as close to perpendicular to water flows as possible. The designed system will reduce erosion/sediment/contaminants to desired objectives. Payment for implementation is to defray the costs of designing the system, installing the strips on the landscape appropriately, and integrating a crop rotation that includes water erosion resistant species. **After Practice Description:** A strip cropping 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 wind, 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.	Area of strips	Acre	$0.75	$1.13	$1.13	$1.35

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STRUCTURE FOR WATER CONTROL

Practice Code 587

Practice Units: NUMBER

Definition: A structure in a water management system that conveys water, controls the direction or rate of flow, maintains a desired water surface elevation, or measures water.

Purpose: The practice may be applied as a component of a water management system to control the stage, discharge, distribution, delivery, or direction of water flow.

Conditions Where Practice Applies: This practice applies to a permanent structure needed as an integral part of a water control system to serve one or more of the following functions:

- Convey water from one elevation to a lower elevation within, to, or from a water conveyance system such as a ditch, channel, canal, or pipeline. Typical structures include drops, chutes, turnouts, surface water inlets, head gates, pump boxes and stilling basins.
- Control the elevation of water in drainage or irrigation ditches. Typical structures include checks, flashboard risers, and check dams.
- Control the division or measurement of irrigation water. Typical structures include division boxes and water measurement devices.
- Keep trash, debris or weed seeds from entering pipelines. Typical structures include trash racks and debris screens.
- Control the direction of channel flow resulting from tides and high water or backflow from flooding. Typical structures include tide and water management gates.
- Control the water table level, remove surface or subsurface water from adjoining land, flood land for frost protection, or manage water levels for wildlife or recreation. Typical structures include water level control structures, flashboard risers, pipe drop inlets, and box inlets.
- Convey water over, under, or along a ditch, canal, road, railroad or other barriers. Typical structures include bridges, culverts, flumes, inverted siphons, and long span pipes.
- Modify water flow to provide habitat for fish, wildlife and other aquatic animals. Typical structures include chutes, cold water release structures, and flashboard risers.
- Provide silt management in ditches or canals. Typical structures include sluice gates and sediment traps.
- Supplement a resource management system on land where organic waste or commercial fertilizer is applied.
- Create, restore, or enhance wetland hydrology.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
587-1	Inline Stoplog WCS, Surface Water Control, 6-10 in. dia. Pipe	**Scenario Description:** An Inline Water Control Structure (WCS) composed of plastic that maintains a desired water surface elevation, controls the direction or rate of flow, or conveys water to address the resource concern: Inadequate habitat for Fish and Wildlife. The water surface elevation is controlled by addition or removal of slats or 'stoplogs'. This scenario is applicable to variable crest weir structures where the elevation is controlled at point along a pipe extending through an embankment, providing ease of access to the structure and provide better protection against beaver activity. There are commercially available models composed of plastic that are commonly used when the width of the is 24" or less. Cost estimate is based on a using a such a commercial product. The typical scenario is an inline structure with a width of 12", height of six feet, the pipe is 65' of 8" SCH 40 PVC (inlet and outlet combined). **After Practice Description:** A WCS is installed in a flow line allowing shallow water impoundments. A wetland area is enhanced, and water levels can be varied to better accommodate wildlife needs. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Wetland Creation (658), Wetland Enhancement (659) Wetland Wildlife Habitat Management (644), Dike (356), and Grade Stabilization Structure (410) will use the corresponding Standard(s) as appropriate.	Number of structures	Each	$1,346.13	$2,019.20	$2,019.20	$2,423.04
587-2	Inline Stoplog WCS, Surface Water Control, 12-18 in. dia. Pipe	**Scenario Description:** An Inline Water Control Structure (WCS) composed of plastic that maintains a desired water surface elevation, controls the direction or rate of flow, or conveys water to address the resource concern: Inadequate habitat for Fish and Wildlife. The water surface elevation is controlled by addition or removal of slats or 'stoplogs'. This scenario is applicable to variable crest weir structures where the elevation is controlled at point along a pipe extending through an embankment, providing ease of access to the structure and provide better protection against beaver activity. There are commercially available models composed of plastic that are commonly used when the width of the is 24" or less. Cost estimate is based on a using a such a commercial product. The typical scenario is an inline structure with a width of 20", height of six feet, the pipe is 65' of 15" SDR35 PVC (inlet and outlet combined). **After Practice Description:** A WCS is installed in a flow line allowing shallow water impoundments. A wetland area is enhanced, and water levels can be varied to better accommodate wildlife needs. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Wetland Creation (658), Wetland Enhancement (659) Wetland Wildlife Habitat Management (644), Dike (356), and Grade Stabilization Structure (410) will use the corresponding Standard(s) as appropriate	Number of Structures	Each	$2,224.95	$3,337.42	$3,337.42	$4,004.90

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
587-3	Inline Stoplog WCS, Surface Water Control, >18 in. dia. Pipe	**Scenario Description:** An Inline Water Control Structure (WCS) composed of plastic that maintains a desired water surface elevation, controls the direction or rate of flow, or conveys water to address the resource concern: Inadequate habitat for Fish and Wildlife. The water surface elevation is controlled by addition or removal of slats or 'stoplogs'. This scenario is applicable to variable crest weir structures where the elevation is controlled at point along a pipe extending through an embankment, providing ease of access to the structure and provide better protection against beaver activity. There are commercially available models composed of plastic that are commonly used when the width of the is 24" or less. Cost estimate is based on a using a such a commercial product. The typical scenario is an inline structure with a width of 31", height of six feet, the pipe is 65' of 24" used steel (inlet and outlet combined). **After Practice Description:** A WCS is installed in a flow line allowing shallow water impoundments. A wetland area is enhanced, and water levels can be varied to better accommodate wildlife needs. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Wetland Creation (658), Wetland Enhancement (659) Wetland Wildlife Habitat Management (644), Dike (356), and Grade Stabilization Structure (410) will use the corresponding Standard(s) as appropriate.	Number of structures	Each	$3,568.34	$5,352.50	$5,352.50	$6,423.00

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
587-4	Weir Box Inlet WCS, Surface Water Control, <=16 in. dia. Pipe.	**Scenario Description:** A structure in a water management system that conveys water, controls the direction or rate of flow, maintains a desired water surface elevation or measures water. This practice applies wherever a permanent structure is needed as an integral part of a water-control system. A fabricated weir box structure with a pipe of 16" diameter or less is placed in a levee to manage water level elevation. Payment incorporates pipe, anti-seep collar, trash guard, animal guard, flap gate and weir box structure. **After Practice Description:** A weir box structure is placed in a levee to manage water level elevation. A wetland area is enhanced, and water levels can be varied to better accommodate wildlife needs. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Wetland Creation (658), Wetland Enhancement (659) Wetland Wildlife Habitat Management (644), Dike (356), and Grade Stabilization Structure (410) will use the corresponding Standard(s) as appropriate.	Number of structures	Each	$1,828.98	$2,743.47	$2,743.47	$3,292.17
587-5	Weir Box Inlet WCS, Surface Water Control, >16 in. dia. Pipe.	**Scenario Description:** A structure in a water management system that conveys water, controls the direction or rate of flow, maintains a desired water surface elevation or measures water. This practice applies wherever a permanent structure is needed as an integral part of a water-control system. A fabricated weir box structure with a pipe of greater than 16" diameter is placed in a levee to manage water level elevation. Payment incorporates pipe, anti-seep collar, trash guard, animal guard, flap gate and weir box structure. **After Practice Description:** A weir box structure is placed in a levee to manage water level elevation. A wetland area is enhanced, and water levels can be varied to better accommodate wildlife needs. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Wetland Creation (658), Wetland Enhancement (659) Wetland Wildlife Habitat Management (644), Dike (356), and Grade Stabilization Structure (410) will use the corresponding Standard(s) as appropriate.	Number of structures	Each	$2,619.32	$3,928.97	$3,928.97	$4,714.77

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
587-9	Inline WCS, Subsurface Drainage Control, <=10 in. dia. Pipe	**Scenario Description:** A subsurface drainage system on a field with a fairly flat slope (less than 2% and preferably less than 1%) outlets through a control structure which is operated with stoplogs. This allows the operator to keep the water in the soil profile when it is not critical to dry the soil. This retention time allows nutrients to be reduced by bacteria such that the nutrients do not leave with the water. A single stoplog structure may have its influence extended by buried float-activated structures which can be counted as structures also for a separate payment. Resource Concerns: Water Quality Degradation (Nutrients). **After Practice Description:** The discharge from a subsurface drainage system enters ditches or streams only when the soil profile needs to be dry. The retention time in the soil profile removes nutrients. Typical affected area for a single structure is 10-20 acres. A single structure with stoplogs may have its influence extended by use of buried float-activated control structures, which may be paid for as separate structures also. **Associated Practices:** 606 - Subsurface Drain; 554 - Drainage Water Management	Number of Structures	Each	$865.96	$1,298.94	$1,298.94	$1,558.73
587-10	Inline WCS, Subsurface Drainage Control, >10 in. dia. Pipe	**Scenario Description:** A subsurface drainage system on a field with a fairly flat slope (less than 2% and preferably less than 1%) outlets through a control structure which is operated with stoplogs. This allows the operator to keep the water in the soil profile when it is not critical to dry the soil. This retention time allows nutrients to be reduced by bacteria such that the nutrients do not leave with the water. A single stoplog structure may have its influence extended by buried float-activated structures which can be counted as structures also for a separate payment. Resource Concerns: Water Quality Degradation (Nutrients). **After Practice Description:** The discharge from a subsurface drainage system enters ditches or streams only when the soil profile needs to be dry. The retention time in the soil profile removes nutrients. Typical affected area for a single structure is 10-20 acres. A single structure with stoplogs may have its influence extended by use of buried float-activated control structures, which may be paid for as separate structures also. **Associated Practices:** 606 - Subsurface Drain; 554 - Drainage Water Management	Number of Structures	Each	$1,215.81	$1,823.71	$1,823.71	$2,188.45

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
587-11	Inline WCS, Subsurface Drainage Control, float activated head pressure valve	**Scenario Description:** A subsurface drainage system on a field with a fairly flat slope (less than 2% and preferably less than 1%) outlets through an inline water level control structure which is used in conjunction with 3 float activated head pressure valves. Each float activated head pressure valve increases the zone of influence by 1'. This allows the operator to keep the water in the soil profile when it is not critical to dry the soil. This retention time allows nutrients to be reduced by bacteria such that the nutrients do not leave with the water. Multiple buried float-activated structures can be used to extend the influence of a single inline water control structure. Resource Concerns: Water Quality Degradation (Nutrients). **After Practice Description:** The discharge from a subsurface drainage system enters ditches or streams only when the soil profile needs to be dry. The retention time in the soil profile removes nutrients. Typical affected area for a single structure is 10-20 acres. **Associated Practices:** 606 - Subsurface Drain; 554 - Drainage Water Management	Number of Structures	Each	$538.09	$807.13	$807.13	$968.55
587-12	Straight Pipe, Surface Water Control, <=10 in. dia. Pipe (w/o adjustable control)	**Scenario Description:** Used as an outlet for Wetland; no drop box; straight through 10" diameter PVC pipe; pipe is backfilled with #57 stone to 1' over the top of the pipe; 12" thick layer of Type D riprap is placed at the outlet end with 6" thick of #57 stone under it. **After Practice Description:** A straight pipe (principal spillway) is installed through an earth embankment to create a wetland. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Wetland Creation (658), Wetland Enhancement (659) Wetland Wildlife Habitat Management (644), Dike (356), and Grade Stabilization Structure (410) will use the corresponding Standard(s) as appropriate.	Feet of pipe installed	Foot	$22.25	$33.38	$33.38	$40.06

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
587-13	Straight Pipe, Surface Water Control, >=12 in. dia. Pipe (w/o adjustable control)	**Scenario Description:** Used as an outlet for Wetland; no drop box; straight through 12" diameter PVC pipe; pipe is backfilled with #57 stone to 1' over the top of the pipe; 12" thick layer of Type D riprap is placed at the outlet end with 6" thick of #57 stone under it. **After Practice Description:** A straight pipe (principal spillway) is installed through an earth embankment to create a wetland. Any needed re-vegetation of disturbed areas use Critical Area Planting (342). **Other associated practices such as:** Wetland Creation (658), Wetland Enhancement (659) Wetland Wildlife Habitat Management (644), Dike (356), and Grade Stabilization Structure (410) will use the corresponding Standard(s) as appropriate.	Feet of pipe installed	Foot	$27.58	$41.37	$41.37	$49.65
587-310	Automated DWM Control Structure	**Scenario Description:** A subsurface drainage system on a field with a fairly flat slope (less than 2% and preferably less than 1%) that outlets through a control structure which is operated with an automated slide gate. This structure configuration facilitates meeting the conservation practice standard 554 - Drainage Water Management by managing the subsurface water table year-round. This allows the operator to keep the water in the soil profile when it is not critical to dry the soil for crop health or field operations. This retention time reduces the volume of water discharged and thereby the quantity of nutrients lost. A single automated structure may have its influence extended by buried float-activated structures to provide a greater area of control. Resource Concerns: Water Quality Degradation (Nutrients). **After Practice Description:** The water surface profile in the subsurface drainage system is managed in a manner which retains moisture in the soil for plant update and to allow for enhanced nutrient utilization. The use of automated control structures allow water levels to be monitored and adjusted remotely to allow for more active management in accordance with the drainage systems Drainage Water Management plan. Typical affected area for a single structure is 10 to 20 acres. A single structure with an automated slide gate may have its influence extended by use of buried float-activated control structures. **Associated Practices:** 606 - Subsurface Drain; 554 - Drainage Water Management	Number of Structures	Number	$2,381.67	$3,572.51	$3,572.51	$4,287.01

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STRUCTURES FOR WILDLIFE

Practice Code 649

Practice Units: NUMBER

Definition: A structure installed to replace or modify a missing or deficient wildlife habitat component.

Purpose: To provide structures, in proper amounts, locations, and seasons to:

- enhance or sustain non-domesticated wildlife or
- modify existing structures that pose a hazard to wildlife.

Conditions Where Practice Applies: This practice applies to all lands where planting or managing vegetation fails to meet the short-term needs of the species or guild under consideration. In addition, where a State-approved wildlife habitat assessment identifies a need as listed in the 649 standard under the section, "Conditions Where Practice Applies".

Limitations:

Maintenance: Practice will be maintained for a lifespan of 5 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
649-2	Nesting Box, Small, with pole	**Scenario Description:** Constructing a nest box and mounting on a pole. A structure is provided to support the nesting and rearing of targeted species, such as pollinators and birds. Trees, buildings or other structures are not available. These structures are designed to meet targeted species biology and life history needs. **Addresses Resource Concern:** Inadequate Cover/Shelter. **After Practice Description:** The installation nesting and rearing boxes support the life-cycle needs of targeted species, such as blue birds and waterfowl. Location and conditions suggest that predator guards are not needed. These structures/features enhance habitat, cover, and improve species survivability.	Number of structures with poles.	Number	$43.41	$52.09	$43.41	$52.09
649-4	Nesting Box or Raptor Perch, Large, with Pole	**Scenario Description:** Constructing a nest box or rapture perch on a steel pole with a predator guard where needed. A structure is provided to support the nesting and rearing of larger targeted species such as wood ducks, bats, barn owls or to provide needed perches or nesting structures for raptures. Addresses Resource Concern: Inadequate Cover/Shelter. **After Practice Description:** The installation of pole mounted nesting and rearing boxes support the life-cycle needs of targeted species, such as bats and waterfowl.	Number of structures	Each	$278.22	$333.86	$278.22	$333.86
649-5	Escape Ramp	**Scenario Description:** Retrofit an existing watering trough/tank with an appropriately designed and installed wildlife escape ramp to reduce wildlife mortality and maintain water quality within the watering facility. **After Practice Description:** Watering facilities provide wildlife safe access. Water quality is improved within the watering facility and wildlife mortality is reduced.	Each Ramp	Each	$48.72	$58.46	$48.72	$58.46

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
649-6	Fence Markers, Vinyl Undersill	**Scenario Description:** Existing fences are retrofitted with vinyl markers that increase wire visibility and reduce mortality due to collision for wildlife species of concern. Markers are installed approximately every 3 feet along top wire. Scenario is typically implemented along fences in potential high-risk areas (red areas in SGI Fence Collision Risk Model) or where a known problem exists. **After Practice Description:** Fence related mortality of species of special concern is reduced.	Feet of fence marked	Foot	$0.12	$0.14	$0.12	$0.14
649-7	Brush Pile, Small	**Scenario Description:** Small brush piles are created to provide shrubby/woody escape cover for wildlife. Pushing or cutting of select small trees and placement in selected locations to provide wildlife cover. Typical scenario of 10' x 20' area for structure covered by interlocking limbs of trees less than 12 inches in diameter. **After Practice Description:** Small brush piles provide needed escape, ground nesting and safe loafing cover for targeted wildlife species.	Brush piles	Each	$29.92	$35.91	$29.92	$35.91
649-8	Downed Tree Structure	**Scenario Description:** Downed tree structures will be created to provide shrubby/woody escape cover for wildlife. Felling of select trees and placement in selected locations to provide wildlife cover. Minimum 30' x 50' area for structure covered by interlocking limbs of trees at least 12" in diameter. Payment includes tree felling and placement. **Facilitating practices may include but not limited to:** Upland Wildlife Habitat Management (645), Wetland Creation (658), Wetland Restoration (657), Wetland Enhancement (659), Early Successional Habitat Management/Development (647), Prescribed Burning (338), Restoration and Management of Rare and Declining Habitats (643), and Conservation Cover (327). **After Practice Description:** The installation of a downed tree structure enhances the overall habitat needs of quail and other small game species. These structures/features enhance habitat and improve species survivability.	Area covered by structure	Each	$195.69	$234.83	$195.69	$234.83

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
649-9	Edgefeathering, light	**Scenario Description:** Trees are cut, and brush clipped in the border along a woodland edge using a chainsaw to create dense woody cover and a transitional area between a timbered edge and the adjacent land use such as cropland, pasture, or idle lands. The edge feathering will extend at least 30' wide, measured from the outside tree trunk, and at least 50' long -- resulting in a minimum area of 1500 square foot covered by interlocking woody branches. Cut stumps will be treated with brush herbicide. Some hand placement of the cut trees is necessary. **Facilitating practices may include but not limited to:** Upland Wildlife Habitat Management (645), Wetland Creation (658), Wetland Restoration (657), Wetland Enhancement (659), Early Successional Habitat Management/Development (647), Prescribed Burning (338), Restoration and Management of Rare and Declining Habitats (643), and Conservation Cover (327). **After Practice Description:** The cut trees serve as brush small piles, enhancing the overall habitat needs of wildlife species requiring dense woody cover and increase survival and the population of these species.	Area covered by edgefeathering	Acre	$416.40	$499.67	$416.40	$499.67
649-10	Edgefeathering, heavy	**Scenario Description:** Trees are cut, and brush clipped in the border along a woodland edge using a tractor and chainsaw to create dense woody cover and a transitional area between a timbered edge and the adjacent land use such as cropland, pasture, or idle lands. The edgefeathering will extend at least 30' wide, measured from the outside tree trunk, and at least 50' long -- resulting in a minimum area of 1500 square foot covered by interlocking woody branches. Cut stumps will be treated with brush herbicide. Some hand placement of the cut trees is necessary. **Facilitating practices may include but not limited to:** Upland Wildlife Habitat Management (645), Wetland Creation (658), Wetland Restoration (657), Wetland Enhancement (659), Early Successional Habitat Management/Development (647), Prescribed Burning (338), Restoration and Management of Rare and Declining Habitats (643), and Conservation Cover (327). **After Practice Description:** Creation of woody debris and small piles improves the overall habitat needs of wildlife species requiring dense woody cover and increase survival and the population of these species.	Area covered by edgefeathering	Acre	$780.32	$936.39	$780.32	$936.39

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SUBSURFACE DRAIN

Practice Code 606

Practice Units: FEET

Definition: A conduit installed beneath the ground surface to collect and/or convey excess water.

Purpose: This practice may be applied as part of a resource management system to achieve one or more of the following purposes:

- Remove or distribute excessive soil water.
- Remove salts and other contaminants from the soil profile

Conditions Where Practice Applies: This standard applies to agricultural land where a shallow water table exists and where a subsurface drainage system can mitigate the following adverse conditions caused by excessive soil moisture:

- Poor health, vigor and productivity of plants.
- Poor field trafficability.
- Accumulation of salts in the root zone.
- Health risk and livestock stress due to pests such as flukes, flies, or mosquitoes.
- Wet soil conditions around farmsteads, structures, and roadways.

This standard also applies where collected excess water can be distributed through a subsurface water utilization or treatment area.

Limitations: This practice can only be used when required in combination or supporting another conservation practice to address an identified resource concern. When Subsurface Drain (606) is associated with a grassed waterway, the tile is limited to no more than the amount needed to maintain the grassed waterway, not to exceed six-inch diameter tile. When additional tile is needed for upland drainage outlet(s), it may be installed at the participant's expense as long as all other requirements involving wetland conservation compliance are met.

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
606-1	<= 5in CPP	**Scenario Description:** Description: Below ground installation of perforated HDPE (Corrugated Plastic Pipe) pipeline, using a trencher. Scenario describes the construction 2,000 feet of 5- inch, Single-Wall, perforated HDPE Corrugated Plastic Pipe (CPP), installed below ground to a minimum depth of 5 feet. Subsurface drainage is installed as a supporting practice for a number of associated conservation practices. Resource Concerns: Excess Water (Seasonal High-Water Table); Degraded Plant Condition; Water Quality Degradation (Nutrients). **After Practice Description:** The drainage modifications result in reduced water in the upper horizons of the soil profile, allowing for sufficient aeration to allow vegetation to establish. Gully erosion and sediment transport are minimized by established vegetation, a direct result of removing excess water from the soil profile. Plant stress due to excessive wetness caused by a seasonal high-water table is minimized, and drainage water quality is improved due to increased erosion control. **Associated Practices:** 608 - Surface Drain, Main or Lateral; 587 - Structure for Water Control, 533 - Pumping Plant; and 554 - Drainage Water Management; 620 - Underground Outlet; 412 - Grassed Waterway; 638 - Water and Sediment Control Basin; 342 - Critical Area Planting; 484 - Mulching; 410 - Grade Stabilization Structure; 468 - Lined Waterway or Outlet; 313 Waste Storage Facility	Length of pipe	Foot	$1.06	$1.59	$1.59	$1.91
606-2	6in CPP	**Scenario Description:** Below ground installation of perforated HDPE (Corrugated Plastic Pipe) pipeline, using a trencher. Scenario describes construction of 2,000 feet of 6- inch, Single-Wall, perforated HDPE Corrugated Plastic Pipe (CPP), installed below ground to a minimum depth of 5 feet. Subsurface drainage is installed as a supporting practice for a number of associated conservation practices. Resource Concerns: Excess Water (Seasonal High-Water Table); Degraded Plant Condition; Water Quality Degradation (Nutrients). **After Practice Description:** The drainage modifications result in reduced water in the upper horizons of the soil profile, allowing for sufficient aeration to allow vegetation to establish. Gully erosion and sediment transport are minimized by established vegetation, a direct result of removing excess water from the soil profile. Plant stress due to excessive wetness caused by a seasonal high-water table is minimized, and drainage water quality is improved due to increased erosion control. **Associated Practices**: 608 - Surface Drain, Main or Lateral; 587 - Structure for Water Control, 533 - Pumping Plant; and 554 - Drainage Water Management; 620 - Underground Outlet; 412 - Grassed Waterway; 638 - Water and Sediment Control Basin; 342 - Critical Area Planting; 484 - Mulching; 410 - Grade Stabilization Structure; 468 - Lined Waterway or Outlet; 313 - Waste Storage Facility	Length of pipe	Foot	$1.29	$1.93	$1.93	$2.32

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
606-3	8in CPP	**Scenario Description:** Description: Below ground installation of perforated HDPE (Corrugated Plastic Pipe) pipeline, using a trencher. Scenario describes the construction 2,000 feet of 8- inch, Single-Wall, perforated HDPE Corrugated Plastic Pipe (CPP), installed below ground to a minimum depth of 5 feet. Subsurface drainage is installed as a supporting practice for a number of associated conservation practices. Resource Concerns: Excess Water (Seasonal High-Water Table); Degraded Plant Condition; Water Quality Degradation (Nutrients). **After Practice Description:** The drainage modifications result in reduced water in the upper horizons of the soil profile, allowing for sufficient aeration to allow vegetation to establish. Gully erosion and sediment transport are minimized by established vegetation, a direct result of removing excess water from the soil profile. Plant stress due to excessive wetness caused by a seasonal high-water table is minimized, and drainage water quality is improved due to increased erosion control. **Associated Practices:** 608 - Surface Drain, Main or Lateral; 587 - Structure for Water Control, 533 - Pumping Plant; and 554 - Drainage Water Management; 620 - Underground Outlet; 412 - Grassed Waterway; 638 - Water and Sediment Control Basin; 342 - Critical Area Planting; 484 - Mulching; 410 - Grade Stabilization Structure; 468 - Lined Waterway or Outlet; 313 - Waste Storage Facility	Length of pipe	Foot	$2.81	$4.21	$4.21	$5.06
606-4	10in CPP	**Scenario Description**: Below ground installation of perforated HDPE (Corrugated Plastic Pipe) pipeline, using a trencher. Scenario describes the construction 2,000 feet of 10- inch, Single-Wall, perforated HDPE Corrugated Plastic Pipe (CPP), installed below ground to a minimum depth of 5 feet. Subsurface drainage is installed as a supporting practice for a number of associated conservation practices. Resource Concerns: Excess Water (Seasonal High-Water Table); Degraded Plant Condition; Water Quality Degradation (Nutrients). **After Practice Description:** The drainage modifications result in reduced water in the upper horizons of the soil profile, allowing for sufficient aeration to allow vegetation to establish. Gully erosion and sediment transport are minimized by established vegetation, a direct result of removing excess water from the soil profile. Plant stress due to excessive wetness caused by a seasonal high-water table is minimized, and drainage water quality is improved due to increased erosion control. **Associated Practices**: 608 - Surface Drain, Main or Lateral; 587 - Structure for Water Control, 533 - Pumping Plant; and 554 - Drainage Water Management; 620 - Underground Outlet; 412 - Grassed Waterway; 638 - Water and Sediment Control Basin; 342 - Critical Area Planting; 484 - Mulching; 410 - Grade Stabilization Structure; 468 - Lined Waterway or Outlet; 313 - Waste Storage Facility	Length of pipe	Foot	$3.66	$5.48	$5.48	$6.58

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
606-5	12in CPP	**Scenario Description:** Below ground installation of perforated HDPE (Corrugated Plastic Pipe) pipeline, using a trencher. Scenario describes the construction 2,000 feet of 12- inch, Single-Wall, perforated HDPE Corrugated Plastic Pipe (CPP), installed below ground to a minimum depth of 5 feet. Subsurface drainage is installed as a supporting practice for a number of associated conservation practices. Resource Concerns: Excess Water (Seasonal High-Water Table); Degraded Plant Condition; Water Quality Degradation (Nutrients). **After Practice Description:** The drainage modifications result in reduced water in the upper horizons of the soil profile, allowing for sufficient aeration to allow vegetation to establish. Gully erosion and sediment transport are minimized by established vegetation, a direct result of removing excess water from the soil profile. Plant stress due to excessive wetness caused by a seasonal high-water table is minimized, and drainage water quality is improved due to increased erosion control. **Associated Practices:** 608 - Surface Drain, Main or Lateral; 587 - Structure for Water Control, 533 - Pumping Plant; and 554 - Drainage Water Management; 620 - Underground Outlet; 412 - Grassed Waterway; 638 - Water and Sediment Control Basin; 342 - Critical Area Planting; 484 - Mulching; 410 - Grade Stabilization Structure; 468 - Lined Waterway or Outlet; 313 - Waste Storage Facility	Length of pipe	Foot	$4.10	$6.15	$6.15	$7.38
606-6	>= 15in CPP	**Scenario Description**: Below ground installation of perforated HDPE (Corrugated Plastic Pipe) pipeline, using a trencher. Scenario describes the construction 2,000 feet of 15- inch, twin-Wall, perforated HDPE Corrugated Plastic Pipe (CPP), installed below ground to a minimum depth of 5 feet. Subsurface drainage is installed as a supporting practice for a number of associated conservation practices. Resource Concerns: Excess Water (Seasonal High-Water Table); Degraded Plant Condition; Water Quality Degradation (Nutrients). **After Practice Description:** The drainage modifications result in reduced water in the upper horizons of the soil profile, allowing for sufficient aeration to allow vegetation to establish. Gully erosion and sediment transport are minimized by established vegetation, a direct result of removing excess water from the soil profile. Plant stress due to excessive wetness caused by a seasonal high-water table is minimized, and drainage water quality is improved due to increased erosion control. **Associated Practices**: 608 - Surface Drain, Main or Lateral; 587 - Structure for Water Control, 533 - Pumping Plant; and 554 - Drainage Water Management; 620 - Underground Outlet; 412 - Grassed Waterway; 638 - Water and Sediment Control Basin; 342 - Critical Area Planting; 484 - Mulching; 410 - Grade Stabilization Structure; 468 - Lined Waterway or Outlet; 313 - Waste Storage Facility	Length of pipe	Foot	$6.90	$10.35	$10.35	$12.42

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
606-7	Enveloped Corrugated Plastic Pipe (CPP), Single-Wall, <= 6 inch	**Scenario Description:** Description: Below ground installation of perforated HDPE (Corrugated Plastic Pipe) pipeline with Sand-Gravel envelope, using a drainage trencher. Scenario includes the construction of 2,000 feet of 5-inch, Single-Wall, perforated HDPE Corrugated Plastic Pipe (CPP), installed below ground to a minimum depth of 5 feet, and surrounded with a sand-gravel envelope. The unit is in weight of pipe material in pounds. 2,000 feet of 5-inch, Single-Wall, perforated HDPE CPP weighs 0.50 lb./ft., or a total of 1,000 pounds. The typical volume sand-gravel for 2,000 feet of 12" wide x 12" high envelope is 64 cubic yards. Subsurface drainage is installed as a supporting practice for a number of associated conservation practices including (but not limited to) perimeter drainage around a waste storage facility. Resource Concerns: Excess Water (seasonal High-Water Table); Degraded Plant Condition; Water Quality Degradation (Nutrients). **After Practice Description:** The drainage modifications result in reduced water in the upper horizons of the soil profile, preventing uplift pressures from damaging the integrity of installed structures. Excessive wetness caused by a seasonal high-water table is minimized, and drainage water quality is improved due decreased erosion. **Associated Practices:** 608 - Surface Drain, Main or Lateral; 587 - Structure for Water Control, 533 - Pumping Plant; and 554 - Drainage Water Management; 620 - Underground Outlet; 412 - Grassed Waterway; 638 - Water and Sediment Control Basin; 342 - Critical Area Planting; 484 - Mulching; 410 - Grade Stabilization Structure; 468 - Lined Waterway or Outlet; 313 - Waste Storage Facility	Length of pipe	Length of pipe	$2.14	$3.21	$3.21	$3.86
606-8	Secondary Main Retrofit for DWM	**Scenario Description:** An agricultural field has existing patterned tile system installed at 75-foot spacings. The field is 75 acres in size: 2475' x 1320', with a single main line at the low end of the field (2475'). The laterals are installed perpendicular to the topographic contours. The field has 3.5 feet of fall in the 1/4-mile length of the laterals, so a secondary main will be needed to allow drainage water management to be implemented on the higher half of the field. **After Practice Description:** A 12-inch diameter secondary mainline is retrofitted to the drainage system, located halfway up the field and relatively parallel to the topographic contours. This new mainline is hooked to each individual lateral and continued to a stable outlet. A Drainage Water practice must be completed along with the mainline; typically Structures for Water Control (587) installed at two-foot vertical intervals so that water can be retained in the field. This scenario also applies to systems where the secondary main is used to connect drain lines that formerly each exited separately to the ditch, with a structure that distributes the drainage water into the subsurface soil at a Saturated Buffer (604) OR a Denitrifying Bioreactor (605) might be installed at the outlet. In combination or singly, one of these practices must be installed with the secondary main.	Length of pipe	Feet of Pipe	$3.62	$5.43	$5.43	$6.51

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TERRACE

Practice Code 600

Practice Units: FEET

Definition: An earth embankment, or a combination ridge and channel, constructed across the field slope.

Purpose: This practice may be applied as part of a resource management system to support one or both of the following:

- Reduce soil erosion
- Retain runoff for moisture conservation

Conditions Where Practice Applies: This practice applies where:

- Soil erosion by water is a problem
- There is a need to conserve water
- The soils and topography are such that terraces can be constructed and farmed with reasonable effort
- Suitable outlet can be provided
- Excess runoff is a problem

For tile in terraces use Underground Outlet Practice 620.

Limitations: Practice must be applied in accordance with the Iowa FOTG Terrace Standard 600. When a Terrace Summer Construction Scenario is included in the contract, construction must occur between June 15 and October 15 of the scheduled year. The Payment Scenario for summer construction is only available on land in row crop and requires a temporary cover or cover crop. No crop is allowed to be harvested. Haying or grazing of the cover crop after October 15th is allowed. No payments can be made for any items associated with the summer construction initiative until all associated practices are installed.

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
600-1	Broadbase, with Topsoiling	**Scenario Description:** An earthen embankment with channel constructed across the field slope as part of a system to shorten slope lengths and reduce sheet, rill, and gully erosion in a cropped field. Scenario is for the installation of a system of broadbase terraces where channel and berm are farmed. Topsoil is stripped and stockpiled during construction. A stable outlet is provided in the form of a Grassed Waterway, other open outlet or Underground Outlet through associated practices. Payment include all equipment and labor necessary to excavate, shape, and compact terraces, and stripping and stockpiling topsoil. This practice addresses Concentrated Flow Erosion and Excessive Sediment in surface waters. **After Practice Description:** A system of broadbased terraces measuring 2,500 feet in length, 2.5 height, and 5:1 front and back slopes is installed with spacing designed to intercept flow of water and shorten slope length to reduce erosion to acceptable levels. Work is done with dozer, scraper, or road grader. The installed terrace is typically farmed. **Associated Practices:** Underground Outlet (620), Critical Area Planting (342) and Grassed Waterway (412).	Length of Terrace	Foot	$1.95	$2.92	$2.92	$3.51
600-2	Broadbase, no Topsoiling	**Scenario Description:** An earthen embankment with channel constructed across the field slope as part of a system to shorten slope lengths and reduce sheet, rill, and gully erosion in a cropped field. Scenario is for the installation of a system of broadbase terraces where channel and berm are farmed. A stable outlet is provided in the form of a Grassed Waterway, other open outlet or Underground Outlet through associated practices. Payment includes all equipment and labor necessary to excavate, shape, and compact terraces. This practice addresses Concentrated Flow Erosion and Excessive Sediment in surface waters. **After Practice Description:** A system of broadbased terraces measuring 2,500 feet in length, 2.5 height, and 5:1 front and back slopes is installed with spacing designed to intercept flow of water and shorten slope length to reduce erosion to acceptable levels. Work is done with dozer, scraper, or road grader. The installed terrace is typically farmed. **Associated Practices:** Underground Outlet (620), Critical Area Planting (342) and Grassed Waterway (412).	Length of Terrace	Foot	$1.21	$1.82	$1.82	$2.19

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
600-3	Broadbase, with Topsoiling, Crop Season Construction	**Scenario Description:** An earthen embankment with channel constructed across the field slope as part of a system to shorten slope lengths and reduce sheet, rill, and gully erosion in a cropped field. Scenario is for the installation of a system of broadbase terraces where channel and berm are farmed. Topsoil is stripped and stockpiled during construction. A stable outlet is provided in the form of a Grassed Waterway, other open outlet or Underground Outlet through associated practices. Payment includes all equipment and labor necessary to excavate, shape and compact terraces, stripping and stockpiling topsoil and foregone income for the loss of crop income due to construction of the practice during the crop season. This practice addresses Concentrated Flow Erosion and Excessive Sediment in surface waters. **After Practice Description:** A system of broadbased terraces measuring 2,500 feet in length, 2.5 height, and 5:1 front and back slopes is installed with spacing designed to intercept flow of water and shorten slope length to reduce erosion to acceptable levels. Work is done with dozer, scraper, or road grader. The installed terrace is typically farmed. **Associated Practices:** Underground Outlet (620), Critical Area Planting (342) and Grassed Waterway (412).	Length of Terrace	Foot	$3.51	$4.48	$4.48	$5.07

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
600-10	Grassed Terrace, with Topsoiling	**Scenario Description:** An earthen embankment with channel constructed across the field slope as part of a system to shorten slope lengths and reduce sheet, rill, and gully erosion in a cropped field. Scenario is for the installation of a system of terraces where each terrace is constructed as a narrowbase terrace with 2:1 slopes, OR where each terrace is constructed with one relatively flat (5:1) slope and one steep (2:1) slope. Topsoil is stripped from the borrow area and replaced upon completion of the terrace. The steep slopes are established to permanent vegetation and the flatter slopes are farmed. A stable outlet is provided in the form of a Grassed Waterway, other open outlet or Underground Outlet through associated practices. Payment includes all equipment and labor necessary to excavate, shape, and compact terraces, and stripping and stockpiling topsoil. For the establishment of permanent vegetation on the terraces use associated practice Critical Area Planting (342). This practice addresses Concentrated Flow Erosion and Excessive Sediment in surface waters. **After Practice Description:** A system of terraces measuring 2,500 feet in length is installed with the spacing designed to intercept flow of water and shorten slope length to reduce erosion to acceptable levels. Terraces are installed with either 2:1 slopes and a 4.2' height, OR with one steep (2:1) and one flat (5:1) slope and 3.2' height. Work is done with dozer, scraper, or road grader. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), and Underground Outlet (620).	Length of Terrace	Foot	$1.80	$2.71	$2.71	$3.25

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
600-11	Grassed Terrace, no Topsoiling	**Scenario Description:** An earthen embankment with channel constructed across the field slope as part of a system to shorten slope lengths and reduce sheet, rill, and gully erosion in a cropped field. Scenario is for the installation of a system of terraces where each terrace is constructed as a narrowbase terrace with 2:1 slopes, OR where each terrace is constructed with one relatively flat (5:1) slope and one steep (2:1) slope. The steep slopes are established to permanent vegetation and the flatter slopes are farmed. A stable outlet is provided in the form of a Grassed Waterway, other open outlet or Underground Outlet through associated practices. Payment includes all equipment and labor necessary to excavate, shape, and compact terraces. For the establishment of permanent vegetation on the terraces use associated practice Critical Area Planting (342). This practice addresses Concentrated Flow Erosion and Excessive Sediment in surface waters. **After Practice Description:** A system of terraces measuring 2,500 feet in length is installed with the spacing designed to intercept flow of water and shorten slope length to reduce erosion to acceptable levels. Terraces are installed with either 2:1 slopes and a 4.2' height, OR with one steep (2:1) and one flat (5:1) slope and 3.2' height. Work is done with dozer, scraper, or road grader. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), and Underground Outlet (620).	Length of Terrace	Foot	$1.07	$1.60	$1.60	$1.92

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
600-12	Grassed Terrace, with Topsoiling, Crop Season Construction	**Scenario Description:** An earthen embankment with channel constructed across the field slope as part of a system to shorten slope lengths and reduce sheet, rill, and gully erosion in a cropped field. Scenario is for the installation of a system of terraces where each terrace is constructed as a narrowbase terrace with 2:1 slopes, OR where each terrace is constructed with one relatively flat (5:1) slope and one steep (2:1) slope. Topsoil is stripped from the borrow area and replaced upon completion of the terrace. The steep slopes are established to permanent vegetation and the flatter slopes are farmed. A stable outlet is provided in the form of a Grassed Waterway, other open outlet or Underground Outlet through associated practices. Payment includes all equipment and labor necessary to excavate, shape and compact terraces, stripping and stockpiling topsoil, and foregone income for the loss of crop income due to construction of the practice during the crop season. For the establishment of permanent vegetation on the terraces use associated practice Critical Area Planting (342). This practice addresses Concentrated Flow Erosion and Excessive Sediment in surface waters. **After Practice Description:** A system of terraces measuring 2,500 feet in length is installed with the spacing designed to intercept flow of water and shorten slope length to reduce erosion to acceptable levels. Terraces are installed with either 2:1 slopes and a 4.2' height, OR with one steep (2:1) and one flat (5:1) slope and 3.2' height. Work is done with dozer, scraper, or road grader. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), and Underground Outlet (620).	Length of Terrace	Foot	$3.36	$4.27	$4.27	$4.81

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TRAILS OR WALKWAYS

Practice Code 575

Practice Units: FEET

Definition: A trail is a constructed path with a vegetated or earthen surface. A walkway is a constructed path with an artificial surface. A trail/walkway is used to facilitate the movement of animals, people, or off-road vehicles.

Purpose: A trail/walkway is used to accomplish one or more of the following purposes:

- Provide or improve animal access to forage, water, working/handling facilities, or shelter.
- Facilitate improved grazing efficiency and distribution.
- Protect ecologically sensitive, erosive, or potentially erosive sites.
- Provide pedestrian or off-road vehicle access to agricultural, construction, or maintenance operations.
- Provide trails/walkways for recreational activities or access to recreation sites.

Conditions Where Practice Applies: On all lands where management of animal or human movement is needed.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
575-4	Trail or Walkway, Rock/Gravel on Geotextile	**Scenario Description:** Layout and construct a trail or walkway with rock and or gravel on a geotextile fabric foundation to facilitate the movement of animals, people, or off-road vehicles to provide or improve access to forage, water, working/handling facilities, and/or shelter, improve grazing efficiency and distribution, and/or protect ecologically sensitive, erosive and/or potentially erosive sites, pedestrian or off-road vehicle access to agricultural, construction, or maintenance operations, provide trails for recreational activities or access to recreation sites and address the resource concerns of soil erosion and water quality degradation. Includes excavation, shaping, grading, rock and or gravel, geotextile, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice. **After Practice Description:** The typical trail or walkway is an 8-foot-wide by 600-foot-long lane with a surface treatment of rock and or gravel on a geotextile fabric foundation. The trail or walkway is constructed of approved materials, with a life expectancy that meets or exceeds the planned useful life of the installation. All materials, equipment, and labor to install the trail or walkway and surfacing is included. Vegetation of adjacent disturbed areas is also included. The resource concerns of soil erosion, water quality, and livestock production limitations have been addressed. Other **Associated practices include** Stream Crossing (578), Diversion (362), and Fence (382). Use Access Road (560) if the movement of vehicles or equipment is needed for purposes other than management and maintenance of the trail or walkway.	Length of trail or walkway	Foot	$3.17	$4.75	$4.75	$5.70

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TREE / SHRUB ESTABLISHMENT

Practice Code 612

Practice Units: ACRE

Definition: To establish woody plants in non-forested areas by planting seedlings, container/potted plants, cuttings or by direct seeding.

Purpose: This practice may be applied as part of a conservation system to support one or more of the following purposes:

- To provide erosion control
- Establish woody plants for forest products
- Improve energy conservation and beautification
- Improve water quality through uptake of soil and water borne chemicals and nutrients
- Beautify an area (Aesthetics)
- Protect a watershed
- Improve air quality
- Provide wildlife habitat
- Control drifting snow
- Store carbon in biomass

Conditions Where Practice Applies: In non-forested appropriately prepared areas where woody plants can be grown.

Limitations: Practice is not applicable in areas with a canopy cover greater than 25% with the exception of the use of Scenario ID 612-53. These areas are considered forests. A Woodland Stewardship Plan written by the District Forester is required documentation. A copy must be kept in the contract file.

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
612-1	Direct Seeding	**Scenario Description:** This practice involves planting of tree and shrubs through direct seeding after the site has been prepared for seedling growth and establishment. Planting rate will be approximately 3000 seed per acre. The productivity of the site is good and will handle a medium density planting rate. The resource concerns addressed is degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes tree seed, equipment and labor to seed, and foregone income for the land taken out of crop production. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Seed from native species are collected or purchased and planted at prescribed rates. 5 acres of land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of Treatment	Acre	$945.52	$1,069.58	$945.52	$1,069.58
612-2	Direct Seeding, no Foregone Income	**Scenario Description:** This practice involves planting of tree and shrubs through direct seeding after the site has been prepared for seedling growth and establishment. Planting rate will be approximately 3000 seed per acre. The productivity of the site is good and will handle a medium density planting rate. The resource concerns addressed is degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes tree seed and equipment and labor to seed. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Seed from native species are collected or purchased and planted at prescribed rates. 5 acres of land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of Treatment	Acre	$620.30	$744.36	$620.30	$744.36

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
612-3	Hardwood Establishment, Bareroot	**Scenario Description:** This practice involves planting of bare-root hardwood tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will support a planting rate of 436 trees per acre (10' x 10' spacing). Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings, equipment and labor to plant, and foregone income for the land taken out of crop production. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** The land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of Treatment	Acre	$588.26	$640.87	$588.26	$640.87
612-5	Shrub Establishment, Bareroot	**Scenario Description:** This practice involves planting of bare-root shrub seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will support a planting rate of 1210 shrub per acre (6' x 6' spacing). Plantings are in either uplands or bottomlands. The site lacks ground level habitat structure and diversity for wildlife. Resource concern is inadequate habitat for fish and wildlife - habitat fragmentation. Payment includes bare-root seedlings, equipment and labor to plant, and foregone income for the land taken out of crop production. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** Multiple small blocks of shrubs are planted that total 1 acre. The blocks are based on a habitat appraisal that determines the specific size and location to maximize habitat structure and diversity. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of Treatment	Acre	$1,270.03	$1,458.99	$1,270.03	$1,458.99

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
612-6	Conifer Establishment, Bareroot	**Scenario Description:** This practice involves planting of bare-root conifer tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will support a planting rate of 436 trees per acre (10' x 10' spacing). Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings, equipment and labor to plant, and foregone income for the land taken out of crop production. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** The land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of Treatment	Acre	$607.88	$664.41	$607.88	$664.41
612-7	Bareroot Trees and Shrubs, Each	**Scenario Description:** Bare-root trees and/or shrubs to be planted or interplanted to establish woody plants in any area where they can be grown for wildlife, erosion control, water quality improvement, carbon sequestration, forest products, and aesthetics. Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings and equipment and labor to plant. Foregone income is not included with this scenario. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** The land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of Treatment	Each	$0.61	$0.73	$0.61	$0.73

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
612-8	Bareroot Trees and Shrubs, with Tree Shelters, Each	**Scenario Description:** Bare-root trees and/or shrubs to be planted or interplanted to establish woody plants in any area where they can be grown for wildlife, erosion control, water quality improvement, carbon sequestration, forest products, and aesthetics. Seedlings are protected from deer browsing by installing tree tube shelters. Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings, tree shelters, and equipment and labor to plant and install shelters. Foregone income is not included with this scenario. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** The land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of Treatment	Each	$2.56	$3.07	$2.56	$3.07
612-50	Hardwood Establishment, Bareroot, Pasture Conversion	**Scenario Description:** This practice involves planting of bare-root tree seedlings after the site has been prepared for seedling growth and establishment. The productivity of the site is good and will support a planting rate of 500 trees per acre. Tree tube shelters are placed on 10% of the seedlings to reduce damage from deer browsing. Resource concerns addressed are degraded plant condition -- undesirable plant productivity and health, and inadequate structure and composition and degraded wildlife habitat. Payment includes bare-root seedlings, equipment and labor to plant, and foregone income for the land taken out of grazing production. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** The land is established with permanent tree cover that will improve degraded plant condition, reduce soil erosion, establish wildlife habitat, sequester carbon and reduce invasive species presence. Establishing forest vegetation also creates corridors for wildlife movement. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of treatment	Acre	$370.13	$434.27	$370.13	$434.27

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
612-53	Bareroot Trees and Shrubs, Hand Planting	**Scenario Description:** This practice involves hand planting of bare-root tree seedlings in an existing woodland. The productivity of the site is good and will support a planting rate of 300 trees per acre. Plantings are in either uplands or bottomlands. The site lacks ground level habitat structure and diversity for wildlife and degraded plant condition. Payment includes bare-root seedlings, and equipment and labor to hand plant seedlings. Site preparation is implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** The land is regenerated with permanent tree cover that will improve degraded plant condition and wildlife habitat structure and diversity. **Additional associated practices may include:** Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Each Tree or Shrub	Each	$1.92	$2.30	$1.92	$2.30

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TREE/SHRUB SITE PREPARATION

Practice Code 490

Practice Units: ACRE

Definition: Treating areas to encourage natural seeding of desirable trees or to permit reforestation by planting or direct seeding.

Purpose: To prepare land for establishing a stand of trees to conserve soil and water, improve watersheds, or to produce wood crops.

Conditions Where Practice Applies: In understocked areas or in areas of undesirable vegetation where the soils are suited to growing trees for wood crops.

Limitations: A Woodland Stewardship Plan written by the District Forester is required documentation. A copy must be kept in the contract file.

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
490-1	Chemical Application	**Scenario Description:** This practice involves the use of various herbicides applied using ground-based machinery in order to remove undesirable vegetation and improve site conditions for establishing trees and/or shrubs. Typical sites include abandoned fields, pastures, rangelands, agricultural fields or forestland that was recently harvested. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate structure and composition. **After Practice Description:** Undesirable vegetation has been treated using appropriate herbicides, reducing competition for target trees and/or shrubs. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size of the practice is 5 acres. **Associated practices may include**: Tree and Shrub Establishment (612), Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of Treatment	Acre	$46.71	$56.06	$46.71	$56.06
490-2	Light Mechanical	**Scenario Description:** This practice involves the use of light/moderate machinery to clear above ground vegetation and to also rip/cut/lift underground root systems in order to improve site conditions for establishing trees and/or shrubs. Typical sites include abandoned fields, pastures, rangelands, agricultural fields or forestlands that have been harvested. This following resource concerns: soil quality degradation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health and inadequate structure and composition. **After Practice Description:** Undesirable vegetation has been removed using a bush hog to knock down stand vegetation and heavy tillage equipment is used to breakup and lift root systems, breakup plow pans (<18" deep), thus enhancing the conditions for planting and survival of trees and/or shrubs. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size of the practice is 5 acres. **Associated practices may include**: Tree and Shrub Establishment (612), Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of Treatment	Acre	$91.54	$109.85	$91.54	$109.85

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
490-3	Light Mechanical with Chemical	**Scenario Description:** This practice involves the use of light/moderate machinery to clear above ground vegetation and to also rip/cut/lift underground root systems followed by appropriate herbicide application in order to improve site conditions for establishing trees and/or shrubs. Typical sites include small trees (<2" dbh) and brush cover on less than 60% of area that is not appropriate to the site or providing the desired condition for the landowner. Typical sites include abandoned fields, pastures, rangelands, agricultural fields or forestlands that have been harvested. This following resource concerns: soil quality degradation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health and inadequate structure and composition. **After Practice Description:** Undesirable vegetation has been removed using a bush hog to knock down stand vegetation and heavy tillage equipment is used to breakup and lift root systems, breakup plow pans (<18" deep), thus enhancing the conditions for planting and survival of trees and/or shrubs. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size of the practice is 5 acres. **Associated practices may include**: Tree and Shrub Establishment (612), Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of Treatment	Acre	$138.26	$165.91	$138.26	$165.91
490-4	Heavy Mechanical with Chemical	**Scenario Description:** This practice involves the use of heavy machinery combined with appropriate herbicide application to treat an area in order to improve site conditions for establishing trees and/or shrubs. Typical sites include large trees (>2" dbh) and brush cover on 60% of area that is not appropriate to the site or providing the desired condition for the landowner. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate structure and composition and soil quality degradation - soil erosion - sheet and rill. **After Practice Description:** Undesirable vegetation has been removed using mechanical methods reducing competition for target trees and/or shrubs. Woody debris has been removed to facilitate tree/shrub planting operations. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size is 5 acres. **Associated practices may include**: Tree and Shrub Establishment (612), Herbaceous Weed Treatment (315), Tree/Shrub Pruning (660), Mulching (484)	Area of Treatment	Acre	$318.27	$381.92	$318.27	$381.92

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UNDERGROUND OUTLET

Practice Code 620

Practice Units: FEET

Definition: A conduit or system of conduits installed beneath the surface of the ground to convey surface water to a suitable outlet.

Purpose: To carry water to a suitable outlet from terraces, water and sediment control basins, diversions, waterways, surface drains, and other similar practices or flow concentrations without causing damage by erosion or flooding.

Conditions Where Practice Applies: This practice applies where:

- Disposal of surface water is necessary.
- An outlet is needed for a terrace, diversion, water and sediment control basin or similar practice and a surface outlet is impractical because of stability problems, topography, climatic conditions, land use or equipment traffic.
- Directional drilled conduits are used for water and sediment control basin outlets in loess soils in Waubonsie Creek Watershed on sites with drainage areas less than 50 acres and gullies greater than 20 feet deep.

Limitations: This practice can only be used when required in combination or supporting another conservation practice to address an identified resource concern. The unit cost includes all affiliated appurtenances (inlets, outlets and fittings) installed beneath the ground to collect and/or convey drainage water.

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
620-2	<= 5in Diameter Pipe with Risers	**Scenario Description:** Scenario is for the Installation of a 5" or less diameter approved plastic pipe to convey storm water from one location to a suitable and stable outlet. Payment includes pipe, perforated PVC riser inlet, trench excavation, and trench backfill. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices. **After Practice Description:** Excessive sedimentation and soil erosion is controlled after UGO is installed in association with terraces or water and sediment control basin. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)	Length of Conduit	Foot	$1.51	$2.27	$2.27	$2.72
620-4	6in Diameter Pipe with Risers	**Scenario Description:** Scenario is for the Installation of a 6" diameter approved plastic pipe to convey storm water from one location to a suitable and stable outlet. Payment includes pipe, perforated PVC riser inlet, trench excavation, and trench backfill. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices. **After Practice Description:** Excessive sedimentation and soil erosion is controlled after UGO is installed in association with terraces or water and sediment control basin. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)	Length of Conduit	Foot	$1.78	$2.67	$2.67	$3.20
620-6	8in Diameter Pipe with Risers	**Scenario Description:** Scenario is for the Installation of an 8" diameter approved plastic pipe to convey storm water from one location to a suitable and stable outlet. Payment includes pipe, perforated PVC riser inlet, trench excavation, and trench backfill. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices. **After Practice Description:** Excessive sedimentation and soil erosion is controlled after UGO is installed in association with terraces or water and sediment control basin. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)	Length of Conduit	Foot	$3.10	$4.65	$4.65	$5.58

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
620-8	10in Diameter Pipe with Risers	**Scenario Description:** Scenario is for the Installation of a 10" diameter approved plastic pipe to convey storm water from one location to a suitable and stable outlet. Payment includes pipe, perforated PVC riser inlet, trench excavation, and trench backfill. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices. **After Practice Description:** Excessive sedimentation and soil erosion is controlled after UGO is installed in association with terraces or water and sediment control basin. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)	Length of Conduit	Foot	$4.44	$6.66	$6.66	$7.99
620-10	>=12in Diameter Pipe with Risers	**Scenario Description:** Scenario is for the Installation of a 12" diameter approved plastic pipe to convey storm water from one location to a suitable and stable outlet. Payment includes pipe, perforated PVC riser inlet, trench excavation, and trench backfill. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices. **After Practice Description:** Excessive sedimentation and soil erosion is controlled after UGO is installed in association with terraces or water and sediment control basin. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)	Length of Conduit	Foot	$5.69	$8.53	$8.53	$10.23

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
620-11	Blind Inlet	**Scenario Description:** Install an excavated earthen box with perforated collector tubing placed in the bottom and filled to the surface with bedding material and rock riprap to direct surface flow into a 'main line' or subsurface drain. Typically installed at the upper end of a waterway to protect the vegetation of the waterway from prolonged surface flow, thus facilitating vegetative growth and controlling ephemeral gully erosion. Costs include the collection pipe, excavation, and rock. This practice is often installed in conjunction with waterways or similar practices. **After Practice Description:** Excessive sedimentation and soil erosion is controlled through the installation of the blind inlet and grassed waterway. Vegetation is successfully established within the waterway. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)	Length of Conduit	Foot	$35.38	$53.07	$53.07	$63.69
620-13	Trickle Flow Collector	**Scenario Description:** Install a perforated pipe to collect surface flow and redirect water to a subsurface outlet. The Trickle Flow Collector consists of a rock/rip rap area bedded around the perforated pipe to trap sediment prior to outletting water. Scenario describes a 10' long by 30' wide by 1.5' deep rectangular shaped area lined with riprap. This scenario includes the installation of pipe in the bottom of the rock bedding to serve as a trickle flow collector. These typically are installed adjacent to waterway and with same flow dimensions. Half the flow channel is excavated, before excavation for riprap. Excess excavation is spoiled in the immediate area. Cost include excavation, spoiling of excess material, geotextile underlayment and installing Rock Riprap. TFC area is measured from upstream to downstream flow catchment area. **After Practice Description:** Rock lined area is 10' long by 30' wide by 1.5' deep. This armor will result in a protected surface to address the initial concern of erosion. Placement of the perforated pipe and rock/rip rap bedding will not only armor the surface area from erosion but will provide a filter for trapping sediment laden with nutrients and/or pesticides, to result in an improvement to water quality. Area is excavated, and rock is placed using a hydraulic excavator. Geotextile underlayment is installed by laborers. **Associated Practices:** Subsurface Drain (606), Underground Outlet (620), Structure for Water Control (587), and Critical Area Seeding (342).	Width of collector area (ft)	Foot	$35.90	$53.85	$53.85	$64.62

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
620-14	<=5in Diameter Pipe	**Scenario Description:** Scenario is for the Installation of a 5" or less diameter approved plastic pipe to convey storm water from one location to a suitable and stable outlet. Payment includes pipe, trench excavation, and trench backfill. The typical use for this scenario is non-pressure underground outlet for roof runoff management and non-perforated outlet for upstream drainage installed adjacent to a wetland. **After Practice Description:** Excessive sedimentation and soil erosion is controlled, or 'clean' storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultural waste. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)	Length of Conduit	Foot	$1.36	$2.05	$2.05	$2.46
620-15	6in Diameter Pipe	**Scenario Description:** Scenario is for the Installation of a 6" diameter approved plastic pipe to convey storm water from one location to a suitable and stable outlet. Payment includes pipe, trench excavation, and trench backfill. The typical use for this scenario is non-pressure underground outlet for roof runoff management and non-perforated outlet for upstream drainage installed adjacent to a wetland. **After Practice Description:** Excessive sedimentation and soil erosion is controlled, or 'clean' storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultural waste. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)	Length of Conduit	Foot	$1.63	$2.45	$2.45	$2.94

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
620-16	8in Diameter Pipe	**Scenario Description:** Scenario is for the Installation of an 8" diameter approved plastic pipe to convey storm water from one location to a suitable and stable outlet. Payment includes pipe, trench excavation, and trench backfill. The typical use for this scenario is non-pressure underground outlet for roof runoff management and non-perforated outlet for upstream drainage installed adjacent to a wetland. **After Practice Description:** Excessive sedimentation and soil erosion is controlled, or 'clean' storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultural waste. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)	Length of Conduit	Foot	$3.13	$4.70	$4.70	$5.64
620-17	10in Diameter Pipe	**Scenario Description:** Scenario is for the Installation of a 10" diameter approved plastic pipe to convey storm water from one location to a suitable and stable outlet. Payment includes pipe, trench excavation, and trench backfill. The typical use for this scenario is non-pressure underground outlet for roof runoff management and non-perforated outlet for upstream drainage installed adjacent to a wetland. **After Practice Description:** Excessive sedimentation and soil erosion is controlled, or 'clean' storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultural waste. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)	Length of Conduit	Foot	$4.12	$6.18	$6.18	$7.41

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
620-18	>=12in Diameter Pipe	**Scenario Description:** Scenario is for the Installation of a 12" diameter approved plastic pipe to convey storm water from one location to a suitable and stable outlet. Payment includes pipe, trench excavation, and trench backfill. The typical use for this scenario is non-pressure underground outlet for roof runoff management and non-perforated outlet for upstream drainage installed adjacent to a wetland. **After Practice Description:** Excessive sedimentation and soil erosion is controlled, or 'clean' storm water runoff is diverted away from an agricultural waste management system to minimize the volume of runoff that is contaminated by agricultural waste. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)	Length of Conduit	Foot	$4.65	$6.98	$6.98	$8.38
620-61	Perforated Pipe Riser	**Scenario Description:** Scenario is for the Installation of approved perforated plastic pipe riser to convey storm water from one location to a suitable and stable outlet. Payment includes perforated PVC riser inlet, stone. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices. **After Practice Description:** Excessive sedimentation and soil erosion is controlled after perforated plastic pipe riser is installed in association with terraces or water and sediment control basin. **Associated Practices:** Critical Area Planting (342), Grassed Waterway (412), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606).	Number of Risers	Each	$144.59	$216.88	$216.88	$260.26

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UPLAND WILDLIFE HABITAT MANAGEMENT

Practice Code 645

Practice Units: ACRE

Definition: Provide and manage upland habitats and connectivity within the landscape for wildlife.

Purpose: Treating upland wildlife habitat concerns identified during the conservation planning process that enable movement, or provide shelter, cover, food in proper amounts, locations and times to sustain wild animals that inhabit uplands during a portion of their life cycle

Conditions Where Practice Applies: Land where the decision maker has identified an objective for conserving a wild animal species, guild, suite, or ecosystem.

Land within the range of targeted wildlife species and capable of supporting the desired habitat.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
645-1	Macro Topography, deep	**Scenario Description:** Establishment of a topographic feature on the landscape consisting of a small dam and pool or small excavated depression that will hold water to provide a source of water for wildlife, including habitat for reptiles and amphibians. Payment includes the equipment and labor associated with establishing the water feature. **After Practice Description:** This practice consists of an excavated depression to collect water for wildlife to access. Excavated depressions are typically 1000 ft^2 and 3 feet deep in center with 4:1 side slopes around edge. **Associated Practices:** Critical Area Planting (342), Conservation Cover (327)	Each deep macro-topography feature	Each	$636.51	$763.81	$636.51	$763.81
645-3	Habitat Monitoring and Management, Low Intensity and Complexity	**Scenario Description:** This scenario is applied to all land use types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where low intensity and complexity of monitoring or management will treat the identified resource concern. Only 1-2 monitoring efforts are needed and each requiring less than 2 people and 4 hours per effort. The adaptive management actions such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires only hand labor and less than 8 hours labor per year. **After Practice Description:** Wildlife habitat is improved by implementation of annual adaptive management actions of low intensity and complexity.	Monitoring efforts and adaptive manageme nt actions	Acre	$2.87	$3.44	$2.87	$3.44

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
645-4	Habitat Monitoring and Management, Medium Intensity and Complexity	**Scenario Description:** This scenario is applied to all land use types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where medium intensity and complexity of monitoring or management will treat the identified resource concern. Two or three monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. Two or three adaptive management efforts are required (such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures). The adaptive mgmt. requires hand labor and the occasional use of light equipment. A crew of 2 is needed for the hand labor efforts and the crew will require less than 16 total hours of labor per mgmt. effort. Mowing of roads and trail is required to provide access for monitoring and management. **After Practice Description:** Wildlife habitat is improved by implementation of annual adaptive management actions of medium intensity and complexity.	Monitoring efforts and adaptive manageme nt actions	Acre	$9.06	$10.87	$9.06	$10.87
645-5	Habitat Monitoring and Management, High Intensity and Complexity	**Scenario Description:** This scenario is applied to all land use types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where high intensity and complexity of monitoring or management will treat the identified resource concern. Two - four monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. The adaptive management actions (2 - 5 efforts) such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires hand labor and light equipment, requiring a 2-person crew less than 1 day per effort. **After Practice Description:** Wildlife habitat is improved by implementation of annual adaptive management actions of high intensity and complexity.	Monitoring efforts and adaptive manageme nt actions	Acre	$21.98	$26.38	$21.98	$26.38
645-6	Wildlife Habitat Enhancement w/ FI	**Scenario Description:** Exclusion of livestock on 40 acres of pastureland for the enhancement of habitat for wildlife. Monitoring to assure gates are closed and cattle remain excluded during critical nesting period. **After Practice Description:** Livestock are excluded for wildlife habitat enhancement for the desired wildlife species. Implementation includes the exclusion of livestock to allow for adequate deferment for sufficient regrowth and development of the habitat.	Acres Excluded	Acre	$20.56	$20.88	$20.56	$20.88

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
645-7	Deferred Acres	**Scenario Description:** Setting is any land use with the potential to provide habitat for species of plants and animals identified as Rare and Declining and the habitat potential is not currently being captured. The identified habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring. Habitat management and monitoring needed to treat the resource concerns requires no training, no qualitative data assessment, no water quality monitoring and is low in complexity and intensity. Examples of prescribed monitoring include but are not limited to: photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. The planner will specify locations and identify the methods to the customer who will implement the monitoring and management plan. Includes foregone income. Setting is cropland that will be managed to benefit rare and declining habitats through deferral or seeding to permanent vegetation. **After Practice Description:** Based on the results of a State-approved upland wildlife habitat assessment process, the application of habitat management efforts and prescribed monitoring has been implemented. Crop production has been halted to allow for implementation, management, and monitoring of wildlife habitat, resulting in income foregone. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate habitat conditions have been addressed. Monitoring has maximized the benefits of the needed habitat treatment efforts.	Acres Managed and Monitored	Acre	$337.71	$340.21	$337.71	$340.21

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VEGETATED TREATMENT AREA

Practice Code 635

Practice Units: ACRE

Definition: An area of permanent vegetation used for agricultural wastewater treatment.

Purpose: To improve water quality by reducing loading of nutrients, organics, pathogens, and other contaminants associated with livestock, poultry, and other agricultural operations.

Conditions Where Practice Applies:

- Where a vegetated treatment area (VTA) can be constructed, operated, and maintained to treat contaminated runoff from such areas as feedlots, compost areas, barnyards, and other livestock holding areas, or to treat process wastewater from agricultural operations.
- A VTA is a component of a planned agricultural waste management system.

Limitations: State Office Environmental Engineer shall be contacted before planning or design of this practice. For applications involving animal waste management application follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
635-1	VTA-Constructed Vegetative Area with Flow Distribution	**Scenario Description:** This is a permanent herbaceous vegetative area installed near livestock production area. Wastewater (runoff or milking parlor wastewater) is properly collected and released with a controlled gravity outflow or is pumped into distribution piping within the VTA. The VTA vegetation is harvested to removed nutrients on a regular basis. This practice addresses water quality degradation due to uncontrolled nutrient rich wastewater that can flow into surface waters or leach into ground water. **After Practice Description:** Typical VTA is 1.0 ac in size, includes a gravel trench for distribution flow (sheet flow) into the VTA. Typically requires grading and shaping, gravel spreader trenches and perforated pipe to maintain sheet flow throughout the VTA. A settling basin for wastewater collection is contracted using Solid/Liquid Waste Separation Facility (632). For milkhouse waste, Waste Treatment (629) and/or Waste Storage Facility (313) could be contracted to provide pre-treatment/ storage prior to being released into the VTA. The VTA practice will provide a controlled release of nutrient rich wastewater into a designed vegetative area for nutrient uptake. This system will improve water quality by treating nutrient rich wastewater and prevent contamination of surface and ground water resources. **Associated Practices:** Waste Storage Facility (313), Fence (382), Solid/Liquid Waste Separation Facility (632), Manure Transfer (634), Roof runoff Management (558), Pumping Plant (533), Subsurface Drain (606), Critical Area Planting (342), Terrace (600), Nutrient Management (590), Diversion (362), Pipeline (516), Land Smoothing (466), Precision Land Forming (462), Waste Treatment (629)	Amount of VTA installed	Acre	$3,274.24	$4,911.35	$4,911.35	$5,893.62

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
635-2	VTA-Constructed with Mechanical distribution	**Scenario Description:** This is a permanent herbaceous vegetative area located adjacent to a livestock production area. Wastewater (runoff or milking parlor wastewater) is properly collected at the production area and pumped to mechanically distribute wastewater onto the VTA. The VTA vegetation is harvested to removed nutrients on a regular basis. This practice addresses water quality degradation due to uncontrolled nutrient rich wastewater that can flow into surface waters or leach into ground water. **After Practice Description:** Typical VTA is 1.0 ac in size, includes the sizing, grading and shaping of the VTA area. Typically requires grading and shaping to maintain sheet flow onto the VTA. A settling basin for wastewater collection is contracted using Solid/Liquid Waste Separation Facility (632) and Pumping Plant (533) to get the wastewater to the VTA mechanical distribution component that is contracted using Irrigation System, Sprinkler (442). For milkhouse waste, Waste Treatment (629) could be contracted to provide pretreatment prior to being pumped and distributed onto the VTA. The VTA practice will provide a controlled release of nutrient rich wastewater into a designed vegetative area for nutrient uptake. This system will improve water quality by treating nutrient rich wastewater and prevent contamination of surface and ground water resources. **Associated Practices:** Waste Storage Facility (313), Fence (382), Solid/Liquid Waste Separation Facility (632), Manure Transfer (634), Irrigation System, Sprinkler (442), Roof runoff Management (558), Pumping Plant (533), Subsurface Drain (606), Critical Area Planting (342), Terrace (600), Nutrient Management (590), Diversion (362), Pipeline (516), Land Smoothing (466), Precision Land Forming (462), Waste Treatment (629)	Amount of VTA installed	Acre	$1,092.15	$1,638.22	$1,638.22	$1,965.87

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
635-3	VTA using an Existing Vegetative Area with Flow Distribution	**Scenario Description:** An existing permanent herbaceous vegetated area that meets the requirements for a VTA and is used as an overland flow area for nutrient rich runoff treatment. A flow distribution component is installed to achieve sheet flow at the start of the VTA. Clean runoff is diverted where possible. The VTA vegetation is harvested to removed nutrients on a regular basis. This practice addresses water quality degradation due to uncontrolled nutrient rich runoff that can flow into surface waters or leach into ground water. **After Practice Description:** Typical VTA is 1.0 ac in size, includes a gravel trench and perforated pipe to establish sheet flow into the VTA where and existing permanent herbaceous vegetated area meets the requirements for a VTA. Does not include any grading or seeding. The VTA practice will provide a controlled release of nutrient rich runoff into an existing vegetative area for nutrient uptake. This system will improve water quality by treating nutrient rich runoff and prevent contamination of surface and ground water resources. **Associated Practices:** Waste Storage Facility (313), Fence (382), Solid/Liquid Waste Separation Facility (632), Manure Transfer (634), Irrigation System, Sprinkler (442), Roof runoff Management (558), Pumping Plant (533), Subsurface Drain (606), Critical Area Planting (342), Terrace (600), Nutrient Management (590), Diversion (362), Pipeline (516), Land Smoothing (466), Precision Land Forming (462), Waste Treatment Area (629)	Amount of VTA treating wastewater	Acre	$4,445.84	$6,668.75	$6,668.75	$8,002.50

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WASTE FACILITY CLOSURE

Practice Code 360

Practice Units: NUMBER

Definition: The decommissioning of facilities, and/or the rehabilitation of contaminated soil, in an environmentally safe manner, where agricultural waste has been handled, treated, and/or stored and is no longer used for the intended purpose.

Purpose:

- Protect the quality of surface water and groundwater resources.
- Mitigate air emissions.
- Eliminate a safety hazard for humans and livestock.
- Safeguard the public health.

Conditions Where Practice Applies: This practice applies to agricultural waste facilities or livestock production sites that are no longer needed as a part of a waste management system and are to be permanently closed or converted for another use. These facilities include liquid/dry waste storage facilities, confined animal housing, feedlots, livestock yards, or composting facilities. This practice applies to open lot operations that are closed and converted to confinement based operations (buildings).

This practice applies where impoundments that are to be converted to fresh water storage meet current NRCS standards**.**

Where structures that include agricultural waste storage, such as confined animal housing, are to be decommissioned, this practice will apply to the removal of the waste and rehabilitation of soil within the facility.

This practice applies to remediation of soil contaminated by agricultural wastes that have been stored on-site.

Limitations: Follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice will be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
360-1	Poultry House Soil Remediation	**Scenario Description:** Remediation of the soil in an abandoned poultry structures previously used for production or to store poultry waste (litter) on an earthen floor. Payment includes all activities associated with structure removal and soil remediation. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrient and pathogens in ground and/or surface waters and air quality impacts from greenhouse gases, particulate matter and associated precursors, and objectionable odors. **After Practice Description:** This scenario is based on a 40' wide x 400' long poultry house with 1-foot depth of nutrient laden soil to remediate (16,000 CF). Payment under this scenario includes activities associated with the soil remediation and structure removal. Soil remediation activities in this scenario include removing the first 6 inches of soil beneath the litter floor and mixing wood chips with the remaining 6 inches of soil. Nutrient level testing and field application of the removed soil shall be performed according to nutrient planning in conformance with Nutrient Management, Code 590. The soil will be remediated in-situ by mixing in wood chips, at a rate of 33% of the volume of remaining soil, for the purpose of nitrogen sequestration. Shaping and crowning of the soil material on the disturbed area and critical area seeding (342) will be done to provide drainage, complete the site remediation and establish vegetation. Operation and maintenance of the site will include nutrient testing the following year to determine if the nutrients in the mixed soil have been remediated and surface and ground water resource concerns have been addressed. In this scenario, samples at four (4) locations will be taken at 6, 12, 18 and 24 inches at the end of Year 1. **Associated Practices:** Nutrient Management (590), Critical Area Planting (342).	Square feet area remediated	Square Foot	$0.42	$0.63	$0.63	$0.76

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
360-2	Feedlot Closure	**Scenario Description:** Remediation of the soil on an abandoned feedlot previously used to feed animals on a bare earthen lot. Payment includes activities associated with soil remediation of the feedlot area. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrient and pathogens in ground and/or surface waters and air quality impacts from greenhouse gases, particulate matter and associated precursors, and objectionable odors. **After Practice Description:** This scenario is based on a 3-acre feedlot. Surveys and testing have determined the manure pack and contaminated soil is 12 inches. Payment under this scenario includes only activities associated with the soil remediation. Soil remediation activities in this scenario include, but are not limited to, removing the nutrient enriched manure pack and soil, an average of 12 inches below the existing surface (130,680 CF). The excavated surface will be vegetated with a mix of salt tolerant plants in conformance with Critical Area Planting, Code 342. Nutrient level testing and field application of the removed soil shall be performed according to nutrient planning in conformance with Nutrient Management, Code 590. Shaping and crowning of the soil material on the disturbed area and critical area seeding will be done to provide drainage, complete the site remediation and establish vegetation. Operation and maintenance of the site will include nutrient testing the following year to determine if the soil has been remediated and surface and ground water resource concerns have been addressed. In this scenario, samples at four (4) locations will be taken at 6, 12, 18 and 24 inches at the end of Year 1. **Associated Practices:** Nutrient Management (590), Critical Area Planting (342).	Square feet of closure	Square Foot	$0.15	$0.23	$0.23	$0.28

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
360-3	Demolition of Concrete Waste Storage Structure, Walls >6 ft	**Scenario Description:** Demolition of a concrete waste storage structure. Payment includes all materials and labor to demolish the structure, remove the concrete and earth fill the site. The scenario does not include payment for removal of manure as this would be accomplished as part of normal operation and maintenance when the facility was operating. A concrete structure left full of manure creates a toxic situation that would not be in compliance with normal operation and maintenance. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrient and pathogens in ground and/or surface waters and air quality impacts from greenhouse gases, particulate matter and associated precursors, and objectionable odors. **After Practice Description:** This scenario assumes a concrete waste storage structure, with top dimensions of 60 ft. x 60 ft. with 10 ft. vertical walls. The walls are 8 inches thick and the concrete floor is 5 inches thick. The total structural storage volume equals 36,000 cubic feet. The total volume of concrete to be demolished is 3,580 cubic feet ([4 X 60 ft. X 10 ft.) X 8in /12 in./ft.] + [60 ft. X 60 ft. X 5 in./12 in./ft.] + [240 X 2 sq. ft./ ft. footing]). The volume of earthwork (earthfill and/or excavation, final grading) required is approximately 50% of the structural volume. The concrete will be demolished and hauled off-site for recycling or disposal. Structural removal, as necessary, may include the sealing or removal and disposal of waste transfer components and other appurtenances associated with closure of the facility. All waste material shall be land applied in accordance with Nutrient Management (590). Excavated areas will be filled in. The disturbed areas shall be vegetated in accordance with Critical Area Planting (342). Demolition of the concrete waste structure will address water quality degradation, air quality impacts and safety hazards by removing and properly utilizing the waste from the impoundment. The site will also become available for another use. **Associated Practices:** Nutrient Management (590), Critical Area Planting (342)	Square Feet of structure (plan view)	Square Foot	$1.11	$1.67	$1.67	$2.00

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
360-4	Earthen Basin Closure with Sludge Removal	**Scenario Description:** Decommissioning of an earthen liquid waste impoundment (embankment or excavated type). Payment includes the removal and spreading of accumulated sludge and the removal of contaminated soil at the soil/sludge interface, and equipment and labor required to close the impoundment in an environmentally safe manner. If present, the synthetic liner will be removed and properly disposed of. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrient and pathogens in ground and/or surface waters and air quality impacts from greenhouse gases, particulate matter and associated precursors, and objectionable odors. **After Practice Description:** This scenario assumes a waste storage basin, with top dimensions of 110 ft. x 110 ft., 8 ft. total depth with 3:1 side slopes. The 8-ft. total depth is the height of the earthen berm above the bottom of the basin for a total structural storage volume equal to 63,500 cubic feet. The volume of sludge and contaminated soil is 20% of the structural volume, 12,700 cu ft. Decommissioning of a liquid waste storage impoundment includes agitating, removing, and spreading liquid/slurry waste material, removing solid/sludge waste remaining in the bottom. All waste material shall be land applied in accordance with Nutrient Management (590). The volume of earthwork (earthfill and excavation) required to fill in the impoundment and perform final grading of the site is approximately 40% of the structural volume, 25,400. Structural removal, as necessary, may include the removal and disposal of waste transfer components and other appurtenances associated with closure of the facility. All inflow devices and associated appurtenances will be removed and properly disposed of. The embankment will be excavated and used for levelling or manipulating the site so not to impound surface water. The disturbed areas shall be vegetated in accordance with Critical Area Planting (342). Closure of the waste impoundment will address water quality degradation, air quality impacts and safety hazards by removing and properly utilizing the waste from the impoundment. The site will also become available for another use. **Associated Practices:** Nutrient Management (590), Critical Area Planting (342)	Cubic feet of sludge removed	Cubic Foot	$0.43	$0.65	$0.65	$0.78

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
360-5	Earthen Basin Closure no Sludge Removal	**Scenario Description:** Decommissioning of an earthen liquid waste impoundment (embankment or excavated type) where there is no accumulated sludge that needs to be removed. Payment includes equipment and labor required to close the impoundment in an environmentally safe manner. If present, the synthetic liner will be removed and properly disposed of. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrient and pathogens in ground and/or surface waters and air quality impacts from greenhouse gases, particulate matter and associated precursors, and objectionable odors. **After Practice Description:** This scenario assumes a waste storage basin, with top dimensions of 110 ft. x 110 ft., 8 ft. total depth with 3:1 side slopes. The 8-ft. total depth is the height of the earthen berm above the bottom of the basin for a total structural storage volume equal to 63,500 cubic feet. The volume of sludge and contaminated soil is such that removal is not necessary. The volume of earthwork (excavation) required to fill in the impoundment and perform final grading of the site is approximately 40% of the total structural storage volume (63,500 * 0.4 = 25,400). Earthfill is assumed to be 50% of the excavation amount. Structural removal, as necessary, may include the removal and disposal of waste transfer components and other appurtenances associated with closure of the facility. All inflow devices and associated appurtenances will be removed and properly disposed of. The embankment will be excavated and used for levelling or manipulating the site so not to impound surface water. The disturbed areas shall be vegetated in accordance with Critical Area Planting (342). Closure of the waste impoundment will address water quality degradation, air quality impacts and safety hazards by removing and properly utilizing the waste from the impoundment. The site will also become available for another use. **Associated Practices:** Nutrient Management (590), Critical Area Planting (342)	Cubic feet of berm removed	Cubic Foot	$0.11	$0.17	$0.17	$0.20

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
360-6	Conversion to Freshwater Structure with Sludge Removal	**Scenario Description:** This practice scenario is for the conversion of an earthen liquid waste impoundment (embankment or excavated type) to a freshwater impoundment where the site needs retrofitting to serve as a freshwater impoundment. Payment includes removal and spreading of manure sludge and the removal of contaminated soil at the soil/sludge interface, construction/excavation of storm water diversions and principle spillway, and the removal of the waste transfer pipe and appurtenances as required to convert the impoundment in an environmentally safe manner. If present, the synthetic liner will be removed and properly disposed of. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrient and pathogens in ground and/or surface waters and air quality impacts from greenhouse gases, particulate matter and associated precursors, and objectionable odors. **After Practice Description:** This scenario assumes a waste storage basin, with top dimensions of 110 ft. x 110 ft., 8 ft. total depth with 3:1 side slopes. The 8-ft. total depth is the height of the earthen berm above the bottom of the basin for a total structural storage volume equal to 63,500 cubic feet. The volume of sludge and contaminated soil is 20% of the structural volume, 12,700 cu ft. Decommissioning of a liquid waste storage impoundment includes agitating, removing, and spreading liquid/slurry waste material, removing solid/sludge waste remaining in the bottom. All waste material shall be land applied in accordance with Nutrient Management (590). The volume of earthwork (earthfill and excavation) required to change or remove the storm water diversions and provide stable principal spillway for the impoundment is approximately 10% of the structural volume. All inflow devices and associated appurtenances will be removed and properly disposed of. The disturbed areas shall be vegetated in accordance with Critical Area Planting (342). Closure of the waste impoundment will address water quality degradation, air quality impacts and safety hazards by removing and properly utilizing the waste from the impoundment. The site will also become available for another use. **Associated Practices:** Nutrient Management (590), Critical Area Planting (342)	Cubic feet of sludge removed	Cubic Foot	$0.26	$0.39	$0.39	$0.46

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	cenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
360-18	Demolition of Concrete Waste Storage Structure, Walls <= 6 Foot	**Scenario Description:** Demolition of a concrete waste storage structure. Payment includes all materials and labor to demolish the structure, remove the concrete and earth fill the site. The scenario does not include payment for removal of manure as this would be accomplished as part of normal operation and maintenance when the facility was operating. A concrete structure left full of manure creates a toxic situation that would not be in compliance with normal operation and maintenance. The purpose of the practice is to address resource concerns related to water quality degradation due to excess nutrient and pathogens in ground and/or surface waters and air quality impacts from greenhouse gases, particulate matter and associated precursors, and objectionable odors. **After Practice Description:** This scenario assumes a concrete waste storage structure, with plan view dimensions of 40 ft. x 16 ft. with 5 ft. vertical walls. The walls are 8 inches thick and the concrete floor is 5 inches thick. The total structural storage volume equals 3,200 cubic feet. The total volume of concrete to be demolished is 883 cubic feet. The volume of earthwork (earth fill and/or excavation, final grading) required is approximately 50% of the structural volume. The concrete will be demolished and hauled off-site for recycling or disposal. Structural removal, as necessary, may include the sealing or removal and disposal of waste transfer components and other appurtenances associated with closure of the facility. All waste material shall be land applied in accordance with Nutrient Management (590). Excavated areas will be filled in. The disturbed areas shall be vegetated in accordance with Critical Area Planting (342). Demolition of the concrete waste structure will address water quality degradation, air quality impacts and safety hazards by removing and properly utilizing the waste from the impoundment. The site will also become available for another use. **Associated Practices:** Nutrient Management (590), Critical Area Planting (342).	Square Feet of Structure (plan view)	Square Foot	$2.40	$3.60	$3.60	$4.32

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WASTE SEPARATION FACILITY

Practice Code 632

Practice Units: NUMBER

Definition: A filtration or screening device, settling tank, settling basin, or settling channel used to partition solids and/or nutrients from a waste stream.

Purpose: To partition solids, liquids, and their associated nutrients as part of a conservation management system to:

- improve or protect air quality
- improve or protect water quality
- improve manure handling methods or serve as a pre- or post-treatment for other processes

Conditions Where Practice Applies: Where solid/liquid separation will:

- Remove solids from the liquid waste stream as a primary treatment process and allow further treatment processes to be applied such as composting and anaerobic digestion, allow partly digested feed to be separated from the liquid waste stream so that it can be used as a feed supplement or for bedding
- Reduce problems associated with solids accumulation in liquid storage facilities (i.e. decrease odors in liquid storages)
- Reduce solids in stored liquids so liquids can be recycled for other uses (i.e.: flush
- Reduce solids in stored liquids to better facilitate land application of liquids using irrigation techniques
- Assist with partitioning nutrients in the waste stream to improve nutrient management

Limitations: Follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
632-1	Earthen Settling Structure	**Scenario Description:** An earthen structure, such as a basin or a terrace or dike like structure, used to capture and separate a portion of the solids from a liquid stream from a feedlot or confinement facility. A concrete pad should be installed on the bottom of the basin and around outlet structures to facilitate cleanout. Removes as portion of the solids to facilitate waste handling and to address water quality concerns. **After Practice Description:** One earthen settling basin structure (60 ft. wide by 200 ft. long by 3 ft. deep, with three screening outlet structures) constructed around or at a livestock feeding operation. Removes a portion of the solids that otherwise would leave with the runoff from an animal feeding operation. Part of an animal waste management system. **Associated practices include** Nutrient Management (590), Composting Facility (317), Anaerobic Digester (366), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Vegetated Treatment Area (635), Pond Lining or Sealing (521A-D), and Waste Treatment (629).	Cubic Foot of Total Storage	Cubic Foot	$0.16	$0.24	$0.24	$0.28
632-2	Concrete Basin	**Scenario Description:** A concrete structure, such as a basin with concrete walls and floor, used to capture and separate a portion of the solids from a liquid stream from a feedlot or confinement facility. Removes as portion of the solids to facilitate waste handling and to address water quality concerns. **After Practice Description:** One 3' deep concrete settling basin structure (20'x20' flat bottom with 3' walls on 2 sides, 10:1 ramps on other sides, 50'x50' overall footprint) and weeping wall/picket structure or outlet control) constructed at the outlet of an open feedlot. Removes a portion of the solids that otherwise would leave with the runoff from an animal feeding operation. Part of an animal waste management system. **Associated practices include** Nutrient Management (590), Composting Facility (317), Anaerobic Digester (366), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Pumping Plant (533), Vegetated Treatment Area (635), Pond Lining or Sealing (521A-D), and Waste Treatment (629).	Cubic Foot of Total Storage	Cubic Foot	$2.42	$3.63	$3.63	$4.36

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
632-3	Concrete Sand Settling Lane	**Scenario Description:** A concrete structure, a concrete lane with curbs, used to capture and separate a portion of the solids, mainly sand, from a liquid stream from a confinement facility. Removes as portion of the solids to facilitate waste handling and to address water quality concerns. Pond Lining or Sealing (521A-D), and Waste Treatment (629). **After Practice Description:** One concrete settling lane structure (25 ft. wide by 200 ft. long by 0.5 ft. thick with 18" walls on each side.) constructed around or at a livestock feeding operation. Removes a portion of the solids (sand) that otherwise would leave with the runoff from an animal feeding operation. Part of an animal waste management system. **Associated practices include** Nutrient Management (590), Composting Facility (317), Anaerobic Digester (366), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Pumping Plant (533), Vegetated Treatment Area (635),	Square Foot of Settling Lane Footprint	Square Foot	$4.29	$6.44	$6.44	$7.73

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
632-4	Gravity Tank	**Scenario Description:** A concrete tank used for gravity separation of solid material in a dairy waste management system. The waste management system must utilize a 'flush' type system in order to convey and agitate the material. The flush system is needed to maintain high solids removal. **After Practice Description:** A concrete tank 20' x 20' x 6' with a full width ramp of 20' x 72'. For a total structure capacity of 6,720 cu ft. Separator description: Dairy manure is flushed into the Gravity Tank (Pull Plug) Separator that utilizes a vertical pipe, surrounded by a baffle, that is open at the top. The vertical pipe maintains 4.5 feet of material in the tank. When the manure is flushed into the tank the level rises in the tank and slowly drains through the baffle, floating mat of fibrous material (roughage from the dairy manure) and the open top of the vertical pipe as the level returns to 4.5 feet. The liquid goes to a storage structure. This process is repeated each time the manure is flushed into the tank, typically 2 times per day. The floating material will form a mat on the surface of the separator, the heavy material will sink to the bottom of the separator. Eventually the floating mat and the heavy material will meet, and the tank level will not return to 4.5 feet. The basin will continue to be used a few more weeks. This helps to dewater the separated solids. When the separator is ready to be cleaned out the vertical pipe (Pull Plug) is removed and the basin dewaters for 12 to 24 hours. The solids are removed. The vertical pipe installed, and the process starts again. **Associated practices include** Nutrient Management (590), Composting Facility (317), Anaerobic Digester (366), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Pumping Plant (533), Vegetated Treatment Area (635), Pond Lining or Sealing (521A-D), and Waste Treatment (629).	Total capacity of basin	Cubic Foot	$2.44	$3.66	$3.66	$4.39

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	cenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
632-9	Mechanical Separation Facility	**Scenario Description:** A small mechanical separation facility to partition solids, liquids, and/or associated nutrients from animal waste streams. The partitioning of the previously mentioned components facilitates the protection of air and water quality, protects animal health, and improves the management of an animal waste management system. Mechanical separators may include, but are not limited to: static inclined screens, vibratory screens, rotating screens, centrifuges, screw or roller presses, or other systems. **After Practice Description:** One small mechanical separation facility (a vibratory or rotating screen) installed at livestock facility before storage or treatment or after treatment, for example, after an anaerobic digester. Part of an animal waste management system. **Associated practices include** Nutrient Management (590), Composting Facility (317), Anaerobic Digester (366), Waste Storage Facility (313), Waste Recycling (633), Waste Transfer (634), Amendments for the Treatment of Agricultural Waste (591), Pumping Plant (533), Vegetated Treatment Area (635), Pond Lining or Sealing (521A-D), and Waste Treatment (629).	Item	Each	$17,805.38	$26,708.07	$26,708.07	$32,049.69

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WASTE STORAGE FACILITY

Practice Code 313

Practice Units: NUMBER

Definition: A waste impoundment made by construction of an embankment and/or excavating a pit or dugout, or by fabricating a structure.

Purpose: To temporarily store waste such as manure, wastewater, and contaminated runoff as a function of an agricultural waste management system.

Conditions Where Practice Applies: • The storage facility is a component of a planned agricultural waste management system, • Temporary storage is needed for organic wastes generated by agricultural production or processing, • The storage facility can be constructed, operated, and maintained without polluting air or water resources, • Soils, geology, and topography are suitable for construction of the facility

The practice applies to:

- Waste storage pond facilities utilizing embankments with an effective height of 35 feet or less where damage resulting from failure would be limited to farm buildings, agricultural land, or township and county roads
- Fabricated structure facilities such as tanks, stacking facilities, and pond appurtenances

Waste storage facilities described in this standard are waste storage ponds, fabricated structures, and short-term storage basins.

The short-term storage basin may be used to store manure, bedding, spilled feed, runoff, etc., from open concrete lots for swine or for other livestock enterprises, where the producer's management objectives may include scraping solids from the feedlot and into the basin, utilizing a frequent hauling system, and having a manure management plan that is consistent with these objectives.

Additional considerations include situations where:

- solid settling is nearly impossible to achieve
- long term total containment is not practical
- total containment does not meet the producer's management objectives

Short term storage basins for confinement systems shall not be used except as allowed in Criteria – Stacking Facilities. A manure management plan (nutrient management or waste utilization plan) shall be developed for all systems.

Limitations: If an EQIP plan of operations includes an animal waste storage, management, or treatment facility, the participant must develop a Comprehensive Nutrient Management Plan (CNMP), prior to the design of the waste storage, management, or treatment facility. Follow the guidance contained in the document "Conservation Practice Guidance for Winter Feeding Stations" located on Section IV in the IA eFOTG for applications involving winter feeding stations. For other applications involving animal waste management application follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities". Financial assistance for the animal waste storage, management, or treatment facility is eligible to treat the existing resource concern, and expansion of the existing extent of the resource concern. Priority is given to treating existing resource concerns and up to 25% expansion of the existing resource concern. When a 313 Waste Storage Facility replaces an open feedlot, the open feedlot shall be closed prior to payment.

Maintenance:

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-1	Earthen Storage Facility	**Scenario Description:** An earthen waste impoundment constructed with cuts and fills balanced such that one half of the impoundment depth is excavated and the remainder of the storage is created with the embankment. The structure is constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Payment includes materials and equipment necessary for construction of the storage structure. If a roof is to be included in the installation, refer to Practice Standard 367 - Roofs and Covers. If an earthen storage liner is to be included in the installation, refer to associated Practice Standards 521A, 521B, 521C, or 521D. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Adequately protect liner at agitation and access points. **After Practice Description:** An earthen storage structure constructed from on-site material provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design size: total storage volume 147,000 ft3; 150'X150' (top); 3:1 inside and outside side slopes; embankment top width = 10'; compaction ratio = 1.1; total depth = 10'; embankment volume = 10,430 cu yd. **Potential Associated Practices:** Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Roofs and Covers (367), and Solid/Liquid Waste Separation Facility (632), Waste Treatment (629) .	Total Storage Volume	Cubic Foot	$0.10	$0.15	$0.15	$0.18

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-2	Earthen Natural Storage	**Scenario Description:** An embankment is constructed in a location to utilize naturally available storage to serve as a waste impoundment structure for storing wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Payment includes materials and equipment necessary for construction of the storage structure. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. If an earthen storage liner is to be included in the installation refer to associated Practice Standards 521A, 521B, 521C, or 521D. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Adequately protect liner at agitation and access points. **After Practice Description:** An earthen storage structure constructed from on-site material provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design size: design storage volume 153,000 ft3; embankment top width = 10'; 3:1 upstream slope; 3:1 downstream slope; compaction ratio = 1.1; settlement = 10%; total depth = 10'. **Potential Associated Practices:** Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Roofs and Covers (367), and Solid/Liquid Waste Separation Facility (632), Waste Treatment (629).	Total Storage Volume	Cubic Foot	$0.05	$0.07	$0.07	$0.08

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-6	Dry Stack Facility, Earthen Floor with Concrete Side Walls	**Scenario Description:** This scenario consists of a dry stack facility with compacted earthen floor with concrete side walls. This scenario is intended for poultry litter or similar dry product. Payment includes materials and equipment necessary for construction of the floor and walls. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. **After Practice Description:** The typical is 40' x 56' slab with walls. The earthen floor will be prepared by stripping the top 1' of soil and roller compacting it back into floor. Walls are 5' reinforced concrete. Walls consist of three perimeter walls (40' + 56' + 40') for a total wall length of 136 linear feet. Walls allow for greater storage volume. Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. **Potential Associated Practices:** Critical Area Planting (342), Diversion (362), Heavy Use Area Protection (561), Roofs and Covers (367), Roof Runoff Structure (558), Composting Facility (317), Waste Recycling (633), and Solid/Liquid Waste Separation Facility (632), Waste Treatment (629), Waste Transfer (634), Vegetated Treatment Area (635)	Cubic Foot Storage	Cubic Foot	$0.69	$1.04	$1.04	$1.25

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-7	Dry Stack Facility, Concrete Floor without Side Walls	**Scenario Description:** This scenario consists of a dry stack facility with reinforced concrete floor without side walls. This scenario is intended for situations where consistency of manure or geographical conditions prohibit earthen floors. Payment includes materials and equipment necessary for construction of the floor. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). The purpose of this practice is to properly store manure and other agricultural by-products that are stackable until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. **After Practice Description:** The typical is 75'x226'. The facility floor is 5" reinforced concrete without side walls. Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. **Potential Associated Practices:** Critical Area Planting (342), Diversion (362), Heavy Use Area Protection (561), Roofs and Covers (367), Roof Runoff Structure (558), Composting Facility (317), Waste Recycling (633), Waste Transfer (634), Vegetated Treatment Area (635)	Square Foot Floor Area	Square Foot	$2.78	$4.18	$4.18	$5.01

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-8	Dry Stack Facility, Concrete Floor with Wood Side Walls	**Scenario Description:** This scenario consists of a dry stack facility with reinforced concrete Floor with pressure treated wood side walls. Payment includes materials and equipment necessary for construction of the floor and walls. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). This scenario is intended for situations where consistency of manure or geographical conditions prohibit earthen floors. The purpose of this practice is to temporarily, properly store manure and other agricultural by-products that are stackable until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. **After Practice Description:** The typical is 40' x 56' concrete slab with 5' high walls. The facility floor is 5" reinforced concrete with 5' pressure treated wood (2" x 8" boards) walls, 6" x 6" x 8' posts set 4' c-c with 6" concrete curbing. Walls allow for greater storage volume. Walls consist of three perimeter walls (40' + 56' + 40') for a total wall length of 136 linear feet. Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. **Potential Associated Practices:** Critical Area Planting (342), Diversion (362), Heavy Use Area Protection (561), Roofs and Covers (367), Roof Runoff Structure (558), Composting Facility (317), Waste Recycling (633), Waste Transfer (634), Vegetated Treatment Area (635)	Cubic Foot Storage	Cubic Foot	$0.91	$1.37	$1.37	$1.64

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-9	Dry Stack Facility, Concrete Floor with Concrete Side Walls	**Scenario Description:** This scenario consists of a dry stack facility with reinforced concrete floor and concrete side walls. This scenario is intended for situations where consistency of manure or geographical conditions prohibit earthen floors. Payment includes materials and equipment necessary for construction of the floor and walls. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). The purpose of this practice is to properly store manure and other agricultural by-products that are stackable until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and groundwater. **After Practice Description:** The typical is 40' x 56' concrete slab with 5' high walls. The facility floor is 5" reinforced concrete with 5' reinforced concrete walls. Walls allow for greater storage volume. Walls consist of three perimeter walls (40' + 56' + 40') for a total wall length of 136 linear feet. Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Note on use of concrete walls versus wood walls: different states utilize different options depending on many specific conditions which may change what is considered least cost. Each state will decide individually based on the suite of scenarios developed which meets their program policy and resource goals and needs **Potential Associated Practices:** Critical Area Planting (342), Diversion (362), Heavy Use Area Protection (561), Roofs and Covers (367), Roof Runoff Structure (558), Composting Facility (317), Waste Recycling (633), Waste Transfer (634), Vegetated Treatment Area (635)	Cubic Foot Storage	Cubic Foot	$1.24	$1.85	$1.85	$2.23

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-10	Concrete Lid Tank, <1,000 Cu Ft Storage	**Scenario Description:** This scenario consists of installing a small concrete tank with a solid lid and a total storage volume of less than 1,000 Cu Ft. Design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete lid tank and gravel for drain fill around the tank. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 5' deep x 8' wide x 9' long, with a total storage volume of 360 cubic feet. Sizing based on manure, other wastes, rainfall, lot runoff, etc. Tanks associated with open lots sized to handle design storm in tank or in combination with lot as per state regulations. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), Pumping Plant (533), and Underground Outlet (620).	Total Storage Volume	Cubic Foot	$7.44	$11.16	$11.16	$13.39
313-11	Concrete Lid Tank, >=1,000 Cu Ft Storage	**Scenario Description:** This scenario consists of installing a small concrete tank with a solid lid and a total storage volume of greater than or equal to 1,000 Cu Ft. Design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete lid tank and gravel for drain fill around the tank. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 8' deep x 12' wide x 40' long, with a total storage volume of 3,840 cubic feet. Sizing based on manure, other wastes, rainfall, lot runoff, etc. Tanks associated with open lots sized to handle design storm in tank or in combination with lot as per state regulations. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), Pumping Plant (533), and Underground Outlet (620).	Total Storage Volume	Cubic Foot	$3.23	$4.84	$4.84	$5.81

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-12	Concrete Tank Open Top, <5,000 Cu Ft Storage	**Scenario Description:** This scenario consists of installing an open top concrete tank with or without a full width ramp that has a total storage volume less than 5,000 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. Design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drain fill around the tank. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 5' deep, with a bottom area of 880 sq. ft., and a total storage volume of 4,400 cu ft. Sizing based on volume of manure, other wastes, rainfall, lot runoff, etc. as appropriate. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620).	Total Storage Volume	Cubic Foot	$2.69	$4.03	$4.03	$4.84

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-13	Concrete Tank Open Top, 7,500 - 14,999 Cu Ft Storage	**Scenario Description:** This scenario consists of installing an open top concrete tank that has a total storage volume from 7,500 to 14,999 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drain fill around the tank. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 8' deep, with a bottom area of 1256 SF, and a total storage volume of 10,048 cubic feet. Sizing based on volume of manure, other wastes, rainfall, lot runoff, etc. as appropriate. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620).	Total Storage Volume	Cubic Foot	$1.90	$2.85	$2.85	$3.42

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-14	Concrete Tank Open Top, 15,000 - 24,999 Cu Ft Storage	**Scenario Description:** This scenario consists of installing an open top concrete tank that has a total storage volume from 15,000 to 24,999 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drain fill around the tank. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank is typically 8 ft. deep, with a bottom area of 2,670 sq. ft., and a total storage volume of 21,360 cubic feet. Size based on volume of manure, other wastes, rainfall, lot runoff, etc. as appropriate. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), Pumping Plant (533) and Underground Outlet (620).	Total Storage Volume	Cubic Foot	$1.02	$1.53	$1.53	$1.83

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	cenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-15	Concrete Tank Open Top, 25,000 - 49,999 Cu Ft Storage	**Scenario Description:** This scenario consists of installing an open top concrete tank that has a total storage volume from 25,000 to 49,999 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drain fill around the tank. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank installed is 8' deep, with an interior bottom area of 3,786 SF, and a total storage volume of 30,288 cubic feet. Outside dimensions, 4,225 sq. ft. (includes 3' footing and 8" wall). Size based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620).	Total Storage Volume	Cubic Foot	$1.03	$1.54	$1.54	$1.85

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-16	Concrete Tank Open Top, 50,000 - 74,999 Cu Ft Storage	**Scenario Description:** This scenario consists of installing an open top concrete tank that has a total storage volume from 50,000 to 74,999 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drain fill around the tank. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 8' deep, with a bottom area of 8470 SF, and a total storage volume of 67,760 cubic feet. Outside dimensions 9,216 sq. ft. (includes 3' footing and 8" wall). Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620).	Total Storage Volume	Cubic Foot	$0.82	$1.23	$1.23	$1.47

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-17	Concrete Tank Open Top, 75,000 - 109,999 Cu Ft Storage	**Scenario Description:** This scenario consists of installing an open top concrete tank that has a total storage volume from 75,000 to 109,999 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drain fill around the tank. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Tank typically 8' deep, with a bottom area of 12,642 SF, and a storage capacity of 101,136 cubic feet. Outside dimensions 13,456 sq. ft. (includes 3' footing and 8" wall). Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Pipeline (516), Subsurface Drain (606), and Underground Outlet (620).	Total Storage Volume	Cubic Foot	$0.74	$1.11	$1.11	$1.33

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-18	Concrete Tank Open Top, >=110,000 Cu Ft Storage	**Scenario Description:** This scenario consists of installing an open top concrete tank that has a total storage volume of 110,000 Cu Ft or greater. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drain fill around the tank. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 8' deep with a bottom area of 21,000 SF and a total storage volume of 168,000 CF. Outside dimensions 22,200 sq. ft. (includes 3' footing and 8" wall). Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Pipeline (516), Subsurface Drain (606), and Underground Outlet (620).	Total Storage Volume	Cubic Foot	$0.65	$0.98	$0.98	$1.17

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-19	Composted Bedded Pack - Gravel Floor	**Scenario Description:** A composted bedded pack facility is constructed to store wastes as part of an agricultural waste management system. Payment includes materials and equipment necessary for construction of the floor and walls. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. **After Practice Description:** Using a bedded pack provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design: floor area 4,000 ft2, (40' X 100'); 4' concrete wall height, 3' footing depth with a geotextile and 6" gravel layer over an earthen floor; 20' openings on each end of structure. **Potential Associated Practices:** Fence (382), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Obstruction Removal (500), and Roofs and Covers (367).	Square Foot Floor Area	Square Foot	$3.67	$5.51	$5.51	$6.61

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-21	Composted Bedded Pack, 5 inch Reinforced Concrete Floor	**Scenario Description:** A composted bedded pack facility is constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This scenario is intended for situations where consistency of manure or geological conditions prohibit the use of earthen floors. Payment includes materials and equipment necessary for construction of the floor and walls. The walls may be constructed of concrete or wood as allowed by state policies and regulations. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. **After Practice Description:** Using a bedded pack provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design: floor area 4,000 ft2, (40' X 100'); 4' concrete wall height, 3' footing depth with a 5" reinforced concrete floor; 20' openings on each end of structure. 5" reinforced concrete floor is the minimum requirement in Iowa. **Potential Associated Practices:** Fence (382), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Obstruction Removal (500) and Roofs and Covers (367).	Square Foot Floor Area	Square Foot	$5.35	$8.03	$8.03	$9.63

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
313-30	Concrete Tank Open Top, 5,000 - 7,499 Cu Ft Storage	**Scenario Description:** This scenario consists of installing an open top concrete tank that has a total storage volume from 5,000 to 7,499 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drain fill around the tank. **After Practice Description:** Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 5' deep, with a bottom area of 1200 SF, and a total storage volume of 6,000 cubic feet. Sizing based on volume of manure, other wastes, rainfall, lot runoff, etc. as appropriate. **Potential Associated Practices:** Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620).	Total Storage Volume	Cubic Foot	$2.52	$3.78	$3.78	$4.53

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WASTE TRANSFER

Practice Code 634

Practice Units: NUMBER

Definition: A system using structures, pipes or conduits installed to convey wastes or waste byproducts from the agricultural production site to storage/treatment or application.

Purpose: To transfer agricultural waste material associated with production, processing, and harvesting to:

- a storage facility,
- a treatment facility,
- a handling or loading area
- agricultural land for agronomic application.

Conditions Where Practice Applies: The waste transfer system is included as an element of the agricultural production area, storage/treatment facility and/or land application areas of the agricultural operation. The practice applies where it is necessary to transfer waste material generated by livestock production or agricultural product processing from:

- the generation site to the application area,
- the generation site to a storage/treatment facility,
- the storage/treatment facility to land for agronomic application.

This practice does not apply to hauling waste material with equipment or vehicles.

Limitations: For applications involving animal waste management application follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Not applicable for field application of manure.

Maintenance: Practice must be maintained for a lifespan of 15 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
634-1	Manure Auger	**Scenario Description:** Scenario is for a manure auger associated with an agricultural production operation to transfer agricultural waste product from the storage facility to manure spreading equipment for proper utilization. This auger is used when the manure consistency will not allow for pumping. Payment includes the cost of the auger and labor for the electrical hook-up. The waste transfer equipment is installed to address water quality concerns by facilitating timely land application of waste at agronomic rates according to the nutrient management plan. This scenario addresses the potential for surface water and groundwater quality degradation. **After Practice Description:** A typical installation would be for an auger to remove manure from an animal waste storage structure and facilitate the transfer of this material to the next step of waste treatment or utilization. This auger is for a tank less than 14' deep and is part of an animal waste management system to address water quality concerns. **Associated practices may include:** Waste Storage Facility for storage structures (313); Waste Separation Facility (632); Nutrient Management for waste application (590); Waste Recycling (633)	Auger, installed	Each	$3,787.77	$5,681.66	$5,681.66	$6,817.99
634-3	Concrete Channel with Wall	**Scenario Description:** Installation of a concrete channel that consists of a slab with a 2' wall on each side of the channel to enable the facility manager to direct liquid waste to a collection basin and/or waste storage facility. Water quality concerns will be addressed by preventing liquid waste from entering surface waters, and to facilitate timely land application of manure and wastewater at agronomic rates according to the CNMP. This scenario addresses the potential for surface water and groundwater quality degradation. **After Practice Description:** Typical installation of a 12-foot-wide 100' long concrete channel that consists of a 5" thick concrete slab with a wall that is 2' high, 6" thick with footing for the entire length. The purpose is to transfer liquids or manure slurry from one area to a collection basin or waste storage facility. **Associated practices may include:** Waste Storage Facility for storage structures (313); Waste Separation Facility (632); Pumping Plant (533); Nutrient Management for waste application (590); Waste Recycling (633).	Bottom surface area of concrete channel	Square Foot	$7.34	$11.01	$11.01	$13.21

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
634-4	Concrete Channel with Curb	**Scenario Description:** Installation of a concrete channel that consists of a slab with a 6" curb on each side of the channel to enable the facility manager to direct liquid waste to a collection basin and/or waste storage facility. Water quality concerns will be addressed by preventing liquid waste from entering surface waters, and to facilitate timely land application of manure and wastewater at agronomic rates according to the CNMP. This scenario addresses the potential for surface water and groundwater quality degradation. **After Practice Description:** Typical installation of a 12-foot-wide 100' long concrete channel that consists of a 5" thick concrete slab with a curb each side that is 6" high for the entire length. The purpose is to transfer liquids or manure slurry from one area to a collection basin or waste storage facility. **Associated practices may include:** Waste Storage Facility for storage structures (313); Waste Separation Facility (632); Pumping Plant (533); Nutrient Management for waste application (590); Waste Recycling (633).	Bottom surface area of concrete channel	Square Foot	$3.55	$5.32	$5.32	$6.39
634-5	Lot Runoff Containment Wall, >1ft Tall	**Scenario Description:** Installation of a concrete wall with footing to direct manure laden lot runoff to a collection basin and/or waste storage facility. Water quality concerns will be addressed by preventing liquid waste from entering surface waters, and to facilitate timely land application of manure and wastewater at agronomic rates according to the CNMP. This scenario addresses the potential for surface water and groundwater quality degradation. **Associated practices may include:** 313 Waste Storage Facility for storage structures; 533, Pumping Plant; 632, Solid/Liquid Waste Separation Facility; 590 Nutrient Management for waste application; 633, Waste Recycling. **After Practice Description:** Typical installation consists of a 2' high concrete wall with an adjacent 5' wide, 5" thick concrete slab. Typical length is 300'. The purpose is to direct lot runoff to a collection basin or waste storage facility. Wall also allows manure to be scraped to waste storage facility. **Associated practices may include:** Waste Storage Facility for storage structures (313); Waste Separation Facility (632); Nutrient Management for waste application (590); Waste Recycling (633).	Length of Wall installed	Foot	$33.80	$50.70	$50.70	$60.85

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
634-6	Concrete Channel with push-off wall at pond and safety gate	**Scenario Description:** Installation of a concrete channel that consists of a slab with curb and footing on each side of the slab for the entire length of the channel and push off wall to enable the facility manager to direct liquid waste to a collection basin and/or waste storage facility. The purpose is to transfer liquids or manure slurry from one area to a collection basin or waste storage facility. Includes safety gate for human and animal exclusion. Water quality concerns will be addressed by preventing liquid waste from entering surface waters, and to facilitate timely land application of manure and wastewater at agronomic rates according to the CNMP. This scenario addresses the potential for surface water and groundwater quality degradation. **After Practice Description:** Typical installation of a 12-foot-wide 100' long concrete channel that consists of a 5" thick concrete slab with curbing on each side of the slab that is 2' high, 6" thick with footing for the entire length. The push-off ramp is a concrete cantilever structure that allows the waste to be moved into the storage facility. **Associated practices may include:** Waste Storage Facility for storage structures (313); Waste Separation Facility (632); Nutrient Management for waste application (590); Waste Recycling (633).	Bottom surface area of concrete channel	Square Foot	$7.51	$11.26	$11.26	$13.52

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
634-7	Concrete Channel with Drop Chute	**Scenario Description:** Installation of a concrete channel that consists of a slab with wall and footing on each side of the slab for the entire length of the channel, in addition to an overfall structure at the channel outlet, to enable the facility manager to direct liquid waste to a collection basin and/or waste storage facility. Water quality concerns will be addressed by preventing liquid waste from entering surface waters, and to facilitate timely land application of manure and wastewater at agronomic rates according to the CNMP. This scenario addresses the potential for surface water and groundwater quality degradation. **After Practice Description:** Typical installation of a 12' wide x 12' long push-off platform having an 8" thick slab and 4' high side walls. Push-off platform slab is supported on all four sides by a 6' high wall with footer. A horizontal concrete beam is installed above the end of the platform to serve as a safety barrier for scraping equipment. Manure scraped off the end of the platform drops vertically onto a 16' wide x 6" thick concrete chute installed on the lower half of a 2:1 sideslope of a manure holding pond. The purpose is to transfer manure and runoff from a feedlot area or livestock building to a waste storage facility. **Associated practices may include:** Waste Storage Facility for storage structures (313); Pumping Plant (533), Solid/Liquid Waste Separation Facility (632); Nutrient Management for waste application (590); Waste Recycling (633).	Channel with Drop Chute, installed	Each	$5,769.29	$8,653.94	$8,653.94	$10,384.72
634-8	Manure Flush System	**Scenario Description:** Installation of a manure flush system consisting of a flushwater storage tank, flushing mechanism such as a valve, and flush water distribution. This practice scenario is suitable only where the water or wastewater supplies are available for operating a flush system to collect the animal waste deposited on the concrete surfaces. Payment includes tank, valve and distribution pipeline, site prep and concrete to support these structures. This scenario addresses the potential for surface water and groundwater quality degradation from animal waste. **After Practice Description:** The design flush volume for the flush system is less than 1000 gallons. Concrete slab to support the tank and distribution pipeline is 28 ft x 12 ft. x 5" thick. with 40 ft. of above ground 8" pipe is used for distribution. **Associated practices may include:** Waste Storage Facility for storage structures (313); Pumping Plant (533), Solid/Liquid Waste Separation Facility (632); Nutrient Management for waste application (590); Waste Recycling (633).	Gallons of water used per flush	Gallon	$2.92	$4.38	$4.38	$5.25

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
634-9	Wastewater Recycle System for Flush System, Pipes only	**Scenario Description:** Installation of a wastewater recycle pipeline utilized with manure and wastewater flush system using recycled wastewater. Scenario is for the pipe system only to retrofit flush systems to utilize recycled water. Payment includes excavation, placement of bedding as needed, conveyance pipelines with valves and pipe backfill to transport water to the flush tank. This scenario addresses the potential for surface water and groundwater quality degradation from animal waste. **After Practice Description:** Supplemental piping is needed to install the recycled flush water as a means to collect the animal waste deposited on the concrete production surfaces. The pipe design for the flush volume requires 300 feet of 3-inch diameter pipe for pressure flow. **Associated practices may include:** Waste Storage Facility for storage structures (313); Pumping Plant (533), Solid/Liquid Waste Separation Facility (632); Nutrient Management for waste application (590); Waste Recycling (633).	Flush - pipes	Foot	$4.57	$6.86	$6.86	$8.23
634-10	Gravity or Low Pressure Flow Pipeline, Small	**Scenario Description:** Gravity or low-pressure flow pipeline used to transfer manure or wastewater according to the CNMP. Payment includes the pipe plus clean-out risers and fittings, trench excavation and backfill, labor and equipment for installation. Typical installation applies to soils with no special bedding requirements. This scenario addresses the transport of liquid waste to a waste storage or treatment facility to prevent a water quality resource concern of excessive nutrients/organics and harmful levels of pathogens in surface water and/or excessive nutrients/organics in ground water. **After Practice Description:** Install a 100-foot-long 8-inch diameter PVC gasket IPS pipe to transfer the manure wastewater. The transfer pipeline will deliver the manure slurry according to the CNMP, thereby protecting water quality resources. **Associated practices may include:** Waste Storage Facility for storage structures (313); Pumping Plant (533), Solid/Liquid Waste Separation Facility (632); Nutrient Management for waste application (590); Waste Recycling (633), Vegetated Treatment Area (635)	Length of pipe installed	Foot	$8.59	$12.88	$12.88	$15.46

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
634-11	Gravity or Low Pressure Flow Pipeline, Large	**Scenario Description:** Gravity or low-pressure flow pipeline used to transfer manure or wastewater according to the CNMP. Payment includes the pipe plus clean-out risers and fittings, trench excavation and backfill, gravel bedding, labor and equipment for installation. This scenario addresses the transport of liquid waste to a waste storage or treatment facility to prevent a water quality resource concern of excessive nutrients/organics and harmful levels of pathogens in surface water and/or excessive nutrients/organics in ground water. **After Practice Description:** Install a 100-foot-long 24-inch diameter dual wall gasket IPS pipe to transfer the manure wastewater. The transfer pipeline will deliver the manure slurry according to the CNMP, thereby protecting water quality resources. **Associated practices may include:** Waste Storage Facility for storage structures (313); Pumping Plant (533), Solid/Liquid Waste Separation Facility (632); Nutrient Management for waste application (590); Waste Recycling (633), Vegetated Treatment Area (635).	Length of pipe installed	Foot	$17.24	$25.85	$25.85	$31.03

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
634-12	Pressurized Pipeline	**Scenario Description:** Pressure flow pipeline used to transfer manure wastewater by pumping from the waste storage pond to the field where it is to be applied according to the CNMP. The pressure pipe moves the water by pumping from the intake riser location, through a buried mainline with outlet risers. Payment includes the pipe plus an inlet riser structure, clean-out risers and outlet risers plus all other valves and fittings, trench excavation and backfill, labor and an equipment for installation. Appurtenances include: couplings, fittings, air vents, pressure relief valves, thrust blocks, risers, and inline valves. Cost of appurtenances does not include flow meters or backflow preventers. Typical installation applies to soils with no special bedding requirements. This pipeline is part of a manure transfer system for a planned waste management or comprehensive nutrient management plan. This scenario addresses the transport of liquid waste to a waste storage or treatment facility to prevent a water quality resource concern of excessive nutrients/organics and harmful levels of pathogens in surface water and/or excessive nutrients/organics in ground water. **After Practice Description:** Install a 2000-foot-long 8-inch diameter PVC gasket IPS pipe that has an SDR of 21 and is water tight under pressure flow to transfer the manure wastewater. An inlet riser and is located near the pump site of the waste storage pond and designed for the desired pressure and flow for the application system. The transfer pipeline will deliver the manure slurry to the fields for agronomic nutrient utilization according to the CNMP, thereby protecting water quality resources. **Associated practices may include:** Waste Storage Facility for storage structures (313); Pumping Plant (533), Solid/Liquid Waste Separation Facility (632); Nutrient Management for waste application (590); Waste Recycling (633), Vegetated Treatment Area (635)	Length of pipe installed	Foot	$9.02	$13.53	$13.53	$16.24

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
634-38	Cased Pipeline with Boring	**Scenario Description:** Installation of a 6" plastic pipeline with an outer casing, bored under a road or other obstruction to convey wastewater from a storage structure to points of use. **After Practice Description:** The typical installation consists of installing 120 ft. of 6" PVC SDR 21 pipe with a 10" outer casing under a roadbed. Pipeline boring includes all pipe under roadbed and labor and equipment involved during installation of pipe. The pipeline is installed as a facilitating practice for utilization of waste in a waste management system, to improve water quality. Payment incorporates couplers and fittings. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated practices include** Waste Storage Facility (313), Pumping Plant (533).	Foot	Foot	$67.79	$101.69	$101.69	$122.02
634-39	Lot Runoff Containment Wall, <=1ft tall	**Scenario Description:** Installation of a concrete wall with footing to direct manure laden lot runoff to a collection basin and/or waste storage facility. Water quality concerns will be addressed by preventing liquid waste from entering surface waters, and to facilitate timely land application of manure and wastewater at agronomic rates according to the CNMP. This scenario addresses the potential for surface water and groundwater quality degradation. **After Practice Description:** Typical installation consists of a 9" high concrete wall with an adjacent 5' wide, 5" thick concrete slab. Typical length is 300'. The purpose is to direct lot runoff to a collection basin or waste storage facility. Wall also allows manure to be scraped to waste storage facility. **Associated practices may include:** Waste Storage Facility for storage structures (313); Pumping Plant (533), Solid/Liquid Waste Separation Facility (632); Nutrient Management for waste application (590); Waste Recycling (633), Heavy Use Protection Area (561)	Length of wall installed	Foot	$28.21	$42.31	$42.31	$50.77

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
634-51	Wastewater catch basin, less than or equal to 1000 gal.	**Scenario Description:** Installation for a wastewater collection system that includes materials and structures to collect liquids of a design volume less than 1000 gallons such as silage leachate, lot runoff and other contaminated liquid effluent. This may include curbs, screens, precast manholes, sumps or catch basins. The wastewater will typically be transferred from the collection basin to a waste storage facility through a gravity or low pressure flow conduit. This scenario addresses the potential for surface water and groundwater quality degradation from liquid wastewater running unchecked out of silage bunkers and off of animal feeding lots. **After Practice Description:** This practice scenario is suitable where the estimated design volume for wastewater transfer is less than 1000 gallons of contaminated liquid that may flow from silage bunkers or animal lot areas after a precipitation event. The practice scenario typically includes materials and installation of flat and formed concrete for curbs and/or gutters to collect liquids. With the installation of a precast manhole with lid or catch basin with grate. The cost includes excavation, placement of bedding as needed, placement of structure and backfill with construction of concrete inlet collection area. Transfer pump if needed must be contracted under pumping plant, PS 533. **Associated practices may include:** PS 313 Waste Storage Facility; PS 533, Pumping Plant; PS 430, Irrigation Pipeline; PS 632, Waste Separation Facility; PS 468, Lined Waterway or Outlet; PS 590 Nutrient Management; PS 633, Waste Recycling.	Collection volume installed	Gallon	$4.08	$6.12	$6.12	$7.34

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
634-52	Wastewater reception pit, 1000 to 5000 gal.	**Scenario Description:** Installation for a wastewater collection system that includes materials and structures to collect liquids of a design volume between 1000 and 5000 gallons such as silage leachate, lot runoff and other contaminated liquid effluent. This scenario includes a reinforced concrete manure reception pit for temporary storage and transfer of manure and wastewater for an animal operation. Reception Pit includes safety fence w/gate or solid/grated cover. The wastewater will typically be transferred from the collection basin to a waste storage facility through a gravity or low pressure flow conduit. This scenario addresses the potential for surface water and groundwater quality degradation from liquid wastewater running unchecked out of silage bunkers and off of animal feeding lots. **After Practice Description:** This practice scenario is suitable where the estimated design volume for waste collection and transfer is between 1000 and 5000 gallons of liquid waste. The practice scenario typically includes materials and installation of flat and formed concrete for curbs and gutters to collect liquid slurry waste and the installation of an 8'x12'x6' reinforced concrete reception pit formed in place that includes safety fence w/gate or solid/grated cover. The cost includes excavation, placement of subgrade as needed, forming, pouring and finishing of concrete structure and backfilling. Transfer pump if needed must be contracted under pumping plant, PS 533. **Associated practices may include:** PS 313 Waste Storage Facility; PS 533, Pumping Plant; PS 430, Irrigation Pipeline; PS 632, Waste Separation Facility; PS 468, Lined Waterway or Outlet; PS 590 Nutrient Management; PS 633, Waste Recycling	Collection volume installed	Gallon	$1.84	$2.76	$2.76	$3.31

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
634-53	Wastewater basin, 5000 gal. and larger	**Scenario Description**: Installation for a wastewater collection system that includes materials and structures to collect liquids of a design volume greater than 5000 gallons such as lot runoff, manure slurry and other contaminated liquid effluent. The wastewater collected in this pit is intended to be transferred to final storage within a 48 hour period. This scenario includes a reinforced concrete manure reception pit for temporary storage and transfer of manure and wastewater for an animal operation. Reception Pit includes safety fence w/gate or solid/grated cover. The wastewater will typically be transferred from the collection basin to a waste storage facility through a gravity or low pressure flow conduit. This scenario addresses the potential for surface water and groundwater quality degradation from liquid wastewater running unchecked out of silage bunkers and off of animal feeding lots. **After Practice Description:** This practice scenario is suitable where the estimated maximum design volume for wastewater collected is greater than 5000 gallons of liquid waste within 48 hours or before it is stored or treated. The practice scenario typically includes materials and installation of flat and formed concrete for curbs and gutters inlet area to collect liquid slurry waste and the installation of a 12 ft wide x 16 ft long x 6 ft deep reinforced concrete reception pit formed in place that includes safety fence w/gate or solid/grated cover. The cost includes excavation, placement of subgrade as needed, forming, pouring and finishing of concrete structure and backfilling. Transfer pump if needed must be contracted under pumping plant, PS 533. **Associated practices may include:** PS 313 Waste Storage Facility; PS 533, Pumping Plant; PS 430, Irrigation Pipeline; PS 632, Waste Separation Facility; PS 468, Lined Waterway or Outlet; PS 590 Nutrient Management; PS 633, Waste Recycling.	Collection volume installed	Gallon	$1.40	$2.11	$2.11	$2.53

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WASTE TREATMENT

Practice Code 629

Practice Units: NUMBER

Definition: The use of unique or innovative mechanical, chemical or biological technologies that change the characteristics of manure and agricultural waste.

Purpose: To use manure and waste treatment facilities to improve water quality and air quality by:

- Reducing the nutrient content, organic strength, and/or pathogen levels of manure and agricultural waste.
- Reducing odors and gaseousemissions
- Facilitating desirable waste handling and storage
- Producing value added byproducts that facilitate manure and waste utilization.

Conditions Where Practice Applies: This practice applies where there is a need to implement waste treatment technologies that are not within the scope of other NRCS Conservation Practice Standards and that are sufficiently developed for incorporation into a manure or agricultural waste management system. This includes new or unique components or processes.

Limitations: State Office Environmental Engineer shall be contacted before planning or design of this practice. Follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice must be maintained for a lifespan of 10 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
629-1	Poultry Litter Gasifier	**Scenario Description:** This practice scenario includes gasification of poultry litter to reduce the volume of Phosphorus to be spread (as ash). The purpose of the practice is to address resource concerns related to water quality degradation due to (excess nutrient and pathogens) and air quality impacts (PM & PM precursors, and objectionable odors). In addition, energy is captured as heat from the process. **After Practice Description:** The poultry litter gasification system is in place to accept litter from the adjacent barn or litter stacking area. The gasifier reduces the poultry litter to a more compact, dry ash that can more easily be hauled long distances to take to fields with lower P soil values. Energy produced by the gasifier can be used to heat the poultry house, providing a drier, healthier environment for the birds. **Associated Practices:** Amendments for Treatment of Agricultural Waste (591), Waste Storage Facility (313), & Nutrient Management (590)	Each poultry farm	Each	$119,300.00	$178,950.00	$178,950.00	$214,740.00
629-2	Milking Parlor Waste Treatment System with Dosing System	**Scenario Description:** This practice scenario includes a dosed treatment system for milking parlor wastewater that will outlet to a constructed wetland and/or vegetated treatment area and/or other acceptable treatment. The purpose of the practice is to address resource concerns related to water quality degradation due to (excess nutrient, salts and pathogens). **After Practice Description:** This scenario assumes that the treatment system is designed for 500 gal/day of wastewater from the milking parlor. It assumes a two-tank scenario. The grease trap acts as the primary settling basin. The wastewater overflows into the septic tank, which is then dosed to a treatment area (constructed wetland and/or vegetated treatment area and/or other acceptable treatment). This practice scenario reduces nutrient content, organic strength, or pathogen levels of agricultural waste; improve air quality by reducing odors and gaseous emissions (methane or ammonia). **Associated Practices:** Constructed Wetland (656), Vegetated Treatment Area (635), Waste Transfer (634), Nutrient Management (590), Pumping Plant (533), Fence (382), & Waste Storage Facility (313)	Each	Each	$4,236.14	$6,354.20	$6,354.20	$7,625.04

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WASTE TREATMENT LAGOON

Practice Code 359

Practice Units: NUMBER

Definition: A waste treatment impoundment made by constructing an embankment and/or excavating a pit or dugout.

Purpose: To biologically treat waste, such as manure and wastewater, and thereby reduce pollution potential by serving as a treatment component of a waste management system.

Conditions Where Practice Applies:

- Where the lagoon is a component of a planned agricultural waste management system
- Where treatment is needed for organic wastes generated by agricultural production or processing
- On any site where the lagoon can be constructed, operated, and maintained without polluting air or water resources
- To lagoons utilizing embankments with an effective height of 35 feet or less where damage resulting from failure would be limited to damage of farm buildings, agricultural land, or township and country roads

Limitations: State Office Environmental Engineer shall be contacted before planning or design of this practice. The CNMP must be written before any design work is begun on the waste facility.

For applications involving animal waste management application follow the guidance contained in IA Instruction 190-396 "Technical and Financial Assistance for Manure Management for Animal Feeding Operation and the Associated Land Application of Manure through a Comprehensive Nutrient Management Plan (CNMP). Comply with IA Instruction 210-389 - "Requirements for Subsurface Geological Investigations for Animal Waste Storage Facilities".

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
359-1	Waste Treatment Lagoon	**Scenario Description:** A waste treatment lagoon is a component of a waste management system that provides biological treatment of manure and other byproducts of agricultural operations by reducing the pollution potential. Resource concern addressed is water quality by reducing the pollution potential to surface and groundwater by treating and storing liquid waste. Earthen lagoon liners are addressed with another standard. **After Practice Description:** A waste treatment lagoon constructed from on-site material provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing and treating waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design size: Design Volume 439,440 ft3; 260' X 208' (top); 3:1 inside and outside side slopes; cut/fill ratio = 1.25; total depth = 13' **Potential Associated Practices:** Pond Sealing or Lining, Compacted Soil Treatment (520), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Concrete Liner (522), Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), and Solid/Liquid Waste Separation Facility (632)	Total Storage Volume	Cubic Foot	$0.07	$0.11	$0.11	$0.13

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WATER AND SEDIMENT CONTROL BASIN

Practice Code 638

Practice Units: NUMBER

Definition: An earth embankment or a combination ridge and channel constructed across the slope of minor drainageway.

Purpose: This practice may be applied for one or more of the following purposes to:

- Reduce gully erosion
- Trap sediment
- Reduce and manage runoff.

Conditions Where Practice Applies: This practice applies to sites where:

- The topography is generally irregular.
- Gully erosion is a problem.
- Other conservation practices control sheet and rill erosion.
- Runoff and sediment damages land and works of improvement.
- Stable outlets are available.

Do not use this standard in place of a terrace. Use Terrace (600) or Diversion (362) where the ridge and/or channel extends beyond the detention basin or level embankment.

Limitations: When a Water & Sediment Control Basin Summer Construction Scenario is included in the contract, construction must occur between June 15 and October 15 of the scheduled year. The Payment Scenario for summer construction is only available on land in row crop and requires a temporary cover or cover crop. No crop is allowed to be harvested. Haying or grazing of the cover crop after October 15th is allowed. No payments can be made for any items associated with the summer construction initiative until all associated practices are installed.

Maintenance: Practice must be maintained for a lifespan of 10 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
638-1	Base	**Scenario Description:** Typical scenario for the construction of an earthen embankment or the rebuild of an existing WASCOB. Rebuild work includes the removal of accumulated sediment from the pool area to restore original capacity. Outlet is typically an underground outlet. An earthen embankment or combination ridge and channel generally constructed/rebuilt across the slope and minor watercourses to form a sediment trap and water detention basin. Work is done with dozer, scraper, or road grader. Costs include all equipment necessary to excavate, shape, grade and compact the Water and Sediment Control Basin and mobilization of equipment. Seeding not included. This practice is utilized to reduce watercourse and gully erosion, trap sediment, reduce and manage onsite and downstream runoff. Sheet and rill erosion will be controlled by other conservation practices. **After Practice Description:** Water and Sediment Control Basin is constructed or rebuilt by the excavation/earthfill with dozer, scraper and/or road grader. Rill and/or gully erosion is reduced. If riser and underground outlet are needed, then include Underground Outlet (620). Include Critical Area Planting (342) where necessary to prevent erosion following construction activities.	CY of WASCOB Embankment	Cubic Yard	$1.42	$2.13	$2.13	$2.56
638-2	Topsoil	**Scenario Description:** Typical scenarios for the construction of an earthen embankment or the rebuild of an existing WASCOB. Prior to constructing/reconstructing the embankment, 6 inches of topsoil is removed and stockpiled. Outlet is typically an underground outlet. An earthen embankment or combination ridge and channel generally constructed/rebuilt across the slope and minor watercourses to form a sediment trap and water detention basin. Topsoil is replaced following construction of the embankment. Costs include all equipment necessary to strip and stock pile topsoil, excavate, shape, grade and compact the Water and Sediment Control Basin, spread and replace topsoil after construction and mobilization of equipment. Seeding not included. This practice is utilized to reduce watercourse and gully erosion, trap sediment, reduce and manage onsite and downstream runoff. Sheet and rill erosion will be controlled by other conservation practices. Work is done with dozer, scraper, or road grader. **After Practice Description:** Water and Sediment Control Basis is constructed or rebuilt by the excavation/earthfill with dozer, scraper and/or road grader. Rill and/or gully erosion is reduced. If riser and underground outlet are needed, then include Underground Outlet (620). Include Critical Area Planting (342) where necessary to prevent erosion following construction activities.	CY of WASCOB Embankment	Cubic Yard	$1.57	$2.35	$2.35	$2.82

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
638-5	Base, crop seasonal construction	**Scenario Description:** Typical scenario for the construction of an earthen embankment or the rebuild of an existing WASCOB. Rebuild work includes the removal of accumulated sediment from the pool area to restore original capacity. Outlet is typically an underground outlet. An earthen embankment or combination ridge and channel generally constructed/rebuilt across the slope and minor watercourses to form a sediment trap and water detention basin. Work is done with dozer, scraper, or road grader. Costs include all equipment necessary to excavate, shape, grade and compact the Water and Sediment Control Basin and mobilization of equipment. Seeding not included. This practice is utilized to reduce watercourse and gully erosion, trap sediment, reduce and manage onsite and downstream runoff. Sheet and rill erosion will be controlled by other conservation practices. Foregone income reflects entire construction area to account for crop loss while constructing during the growing season. **After Practice Description:** Water and Sediment Control Basin is constructed or rebuilt by the excavation/earthfill with dozer, scraper and/or road grader. Rill and/or gully erosion is reduced. If riser and underground outlet are needed, then include Underground Outlet (620). Include Critical Area Planting (342) where necessary to prevent erosion following construction activities.	CY of WASCOB Embankment	Cubic Yard	$1.88	$2.60	$2.60	$3.02

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
638-6	Topsoil, crop seasonal construction	**Scenario Description:** Typical scenarios for the construction of an earthen embankment or the rebuild of an existing WASCOB. Prior to constructing/reconstructing the embankment, 6 inches of topsoil is removed and stockpiled. Outlet is typically an underground outlet. An earthen embankment or combination ridge and channel generally constructed/rebuilt across the slope and minor watercourses to form a sediment trap and water detention basin. Topsoil is replaced following construction of the embankment. Costs include all equipment necessary to strip and stock pile topsoil, excavate, shape, grade and compact the Water and Sediment Control Basin, spread and replace topsoil after construction and mobilization of equipment. Seeding not included. This practice is utilized to reduce watercourse and gully erosion, trap sediment, reduce and manage onsite and downstream runoff. Sheet and rill erosion will be controlled by other conservation practices. Work is done with dozer, scraper, or road grader. Foregone income reflects entire construction area to account for crop loss while constructing during the growing season. **After Practice Description:** Water and Sediment Control Basis is constructed or rebuilt by the excavation/earthfill with dozer, scraper and/or road grader. Rill and/or gully erosion is reduced. If riser and underground outlet are needed, then include Underground Outlet (620). Include Critical Area Planting (342) where necessary to prevent erosion following construction activities.	CY of WASCOB Embankment	Cubic Yard	$2.03	$2.81	$2.81	$3.28

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WATER WELL

Practice Code 642

Practice Units: NUMBER

Definition: A hole drilled, dug, driven, bored, jetted, or otherwise constructed into an aquifer for water supply.

Purpose: To provide access to a groundwater supply suitable for livestock watering, fire control, wildlife, and other agricultural uses.

Conditions Where Practice Applies: This practice applies to all types of agricultural land where the quality and quantity of underground water is appropriate for the intended purpose.

Limitations: Specifically excluded are any types of wells installed solely for monitoring or observation purposes; injection wells; and piezometers.
Well must be installed by an Iowa DNR Certified Well Installer. The landowner shall provide NRCS a copy of the following items prior to the installation of the well:

- A signed and completed copy of the IDNR “Application for Private Well Construction Permit”
- A copy of the county “approval” well installation letter
- Upon construction completion of well installation the landowner must provide NRCS a completed copy of the IDNR “Well Record” form.

Submission of all three documents listed above will serve as proof that the well was installed in accordance with all applicable standards and specifications.

The payment rate does not include above ground installations such as pumping plants, pipelines, and tanks. If these components are required, they may be added to the contract separately. See practice codes 533 – Pumping Plant; 516 – Pipeline or 614 – Watering Facility.

EQIP FA for a Water Well is only eligible for watering of livestock as part of a grazing system to treat the resource concern, Livestock Production Limitation - Inadequate Water.

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
642-1	Large Diameter Drilled Well	**Scenario Description:** Typical construction is for the drilling of a well using a bucket well drill rig. These wells are large diameter drilled wells. The purpose of the practice is to provide water for livestock. An average well depth is less than 100 feet at 36" diameter. These wells are typically implemented in glacial till areas where the ground water resource has slow recharge rate, and the large diameter of the well allows for storage of water to meet the demand. **After Practice Description:** A 48 ft., 36" diameter well is installed using a bucket drill rig. The large diameter of the well allows for storage of water in glacial till areas where the groundwater recharge rate is less than demand. The well is dug and then cased with concrete. Perforated concrete casing is used as a screen around the bottom of the well. Approximately 6" of gravel is placed around the screen. Sufficient water is available for livestock. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.	Depth of Well	Foot	$111.08	$166.63	$166.63	$199.95
642-2	Shallow Drilled Well, <= 100 feet, <= 6in Dia.	**Scenario Description:** Typical construction is for the installation of a well, in areas where sufficient water is known to occur within 100 feet of the ground surface, and the flow is such that a smaller diameter well is sufficient. The well shall be drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply. The purpose of the practice is to provide water for livestock. **After Practice Description:** An average well depth is 100 feet. Well casings are <= 6" in diameter. Sufficient water is available for livestock. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.	Depth of Well	Foot	$26.37	$39.56	$39.56	$47.47

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
642-3	Shallow Drilled Well, <= 100 feet, > 6in Dia.	**Scenario Description:** Typical construction is for the installation of a well, in areas where sufficient water is known to occur within 100 feet of the ground surface, and the flow is such that a larger diameter well is needed. The well shall be drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply. The purpose of the practice is to provide water for livestock. **After Practice Description:** An average well depth is 100 feet. Well casings are 12" in diameter. Sufficient water is available for livestock. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.	Depth of Well	Foot	$36.05	$54.07	$54.07	$64.88
642-4	Deep Drilled Well, > 100 Feet	**Scenario Description:** Typical construction is for the installation of a well, in areas where sufficient water is known to occur >100 feet of the ground surface. The well shall be drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply. The purpose of the practice is to provide water for livestock. **After Practice Description:** An average well depth is 300 feet. Well casings are 4-6" in diameter. Well is dug into consolidated (bedrock or firm material) where casing and lining is installed to a depth of 240 feet. The remaining depth does not need lining or screening due to the 'open hole' construction and nature of wells in this substrate. Sufficient water is available for livestock. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.	Depth of Well	Foot	$14.20	$21.29	$21.29	$25.55

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WATERING FACILITY

Practice Code 614

Practice Units: NUMBER

Definition: A watering facility is a means of providing drinking water to livestock or wildlife.

Purpose: To store or provide designated access to drinking water for livestock or wildlife to:

- supply daily water requirements
- improve animal distribution
- provide a water source that is an alternative to a sensitive resource

Conditions Where Practice Applies: This practice applies to all land uses where there is a need for a watering facility for livestock or wildlife, where there is a source of water that is adequate in quantity and quality for the purpose, and where soils and topography are suitable for a facility.

Limitations: Watering facilities are only eligible for financial assistance when associated with grazing system improvements or for wildlife.

Maintenance: Practice must be maintained for a lifespan of 20 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
614-1	Permanent Tank, <450 gallons	**Scenario Description:** A permanent watering facility constructed of approved materials with less than 450 gallons of capacity that provides adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. Payment includes materials and labor costs for installing the watering tank, float valve, wildlife escape ramp, and freeze proof hydrant. A stabilized area under and around the watering facility is not included and must be addressed through an associated practice of Heavy Use Area Protection (561). This watering facility will address the resource concerns of inadequate supply of water for livestock and or wildlife, habitat degradation, water quality, and undesirable plant productivity and health. **After Practice Description:** A permanent watering facility with a capacity of less than 450 gallons is typically installed for 30 animal units with all tank materials, tank plumbing and float valve, to provide adequate water storage capacity to ensure an adequate supply and quality of water for livestock or wildlife for storage and or direct drinking access and provides improved plant productivity and health, water quality, and habitat. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing. All needed pipelines are installed using Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations will cause resource concerns will be protected by using Heavy Use Area Protection (561), as appropriate.	Number of Watering Points	Each	$275.29	$412.94	$412.94	$495.53

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
614-2	Portable Tank	**Scenario Description:** Establishment of a portable watering facility for livestock as part of an intensively managed grazing system where the livestock are frequently moved. Payment includes materials and labor costs for installing the watering tank, float valve, and freeze proof hydrant. If needed, a stabilized area under and around the watering facility is not included and must be addressed through an associated practice of Heavy Use Area Protection (561). Payment is based on the number of watering points (i.e. hydrants) installed, not the number of portable tanks used in the watering facility installation. **After Practice Description:** This practice is typically installed for 30 animal units. It consists of a portable trough of either durable plastic, steel, or rubber that provides adequate water and access for the livestock. The trough includes a float for control of inflow of water. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** Pipeline (516), Critical Area Planting (342), Water Harvesting Catchment (636), Water Well (642), Pumping Plant (533), Spring Development (574), and Heavy Use Area Protection (561).	Number of Portable Tanks	Each	$94.99	$142.48	$142.48	$170.98
614-3	Tire Tank	**Scenario Description:** A permanent watering facility constructed from a rubber tire that provides an adequate quantity and quality of water for storage and or direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. Payment includes materials and labor costs for installing the watering tank, float valve, wildlife escape ramp, and freeze proof hydrant. A stabilized area around the watering facility is not included and must be addressed through associated practices of Heavy Use Area Protection (561). This watering facility will address the resource concerns of inadequate supply of water for livestock and or wildlife, habitat degradation, water quality, and undesirable plant productivity and health. **After Practice Description:** This practice is typically installed for 50 animal units. It consists of a necessarily large rubber tire trough, that provides adequate water and access for the livestock. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** Pipeline (516), Critical Area Planting (342), Water Harvesting Catchment (636), Water Well (642), Pumping Plant (533), Spring Development (574), and Heavy Use Area Protection (561). Areas around watering facilities where animal concentrations will cause resource concerns will be protected by using Heavy Use Area Protection (561), as appropriate.	Number of Watering Points	Each	$644.89	$967.34	$967.34	$1,160.81

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
614-4	Large Permanent Tank, 450 -1000 gallons, or Fountain	**Scenario Description:** Establishment of a large permanent watering facility using materials such as a large concrete trough or fountain type waterers. Payment includes materials and labor costs for installing the watering tank, float valve, wildlife escape ramp, and freeze proof hydrant. A stabilized area under and around the watering facility is not included and must be addressed through an associated practice of Heavy Use Area Protection (561). **After Practice Description:** This practice is typically installed for 50 animal units. It consists of a necessarily large permanent concrete trough, or fountain type waterer that provides adequate water and access for the livestock. Cost represents typical situations for conventional, organic, and transitioning to organic producers. **Associated Practices:** Pipeline (516), Critical Area Planting (342), Water Harvesting Catchment (636), Water Well (642), Pumping Plant (533), Spring Development (574), and Heavy Use Area Protection (561). Areas around watering facilities where animal concentrations will cause resource concerns will be protected by using Heavy Use Area Protection (561), as appropriate.	Number of Watering Points	Each	$687.66	$1,031.48	$1,031.48	$1,237.78

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
614-5	Above Ground Storage, 1,000 - 3,000 gallons	**Scenario Description:** A permanent watering facility constructed of approved materials having 1,000 to 3,000 gallons of water storage capacity for an adequate quantity and quality of water in situations where a lower capacity water supply source such as a spring or solar pump is the only feasible water source and backup capacity is needed during peak water demand periods. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. Payment includes materials and labor costs for installing the storage tank. A stabilized area under and around the watering facility is not included and must be addressed through an associated practice of Heavy Use Area Protection (561). This watering facility will address the resource concerns of inadequate supply of water for livestock, habitat degradation, water quality, and undesirable plant productivity and health. **After Practice Description:** A permanent watering facility with water storage capacity of 1,000 to 3,000 gallons is typically installed for 30 animal units to provide adequate water storage capacity to ensure an adequate supply and quality of water for livestock or wildlife. Installation facilitates improved plant productivity and health, water quality, and habitat. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing. All needed pipelines are installed using Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.	Number of tanks	Each	$1,116.00	$1,674.00	$1,674.00	$2,008.80

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
614-6	Above Ground Storage, >3,000 gallons	**Scenario Description:** Establishment of a large permanent watering facility having 3,001 to 5,000 gallons of water storage capacity for an adequate quantity and quality of water in situations where a lower capacity water supply source such as a spring or solar pump is the only feasible water source and backup capacity is needed during peak water demand periods. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. Payment includes materials and labor costs for installing the storage tank. A stabilized area under and around the watering facility is not included and must be addressed through an associated practice of Heavy Use Area Protection (561). This watering facility will address the resource concerns of inadequate supply of water for livestock, habitat degradation, water quality, and undesirable plant productivity and health. **After Practice Description:** A permanent watering facility with water storage capacity of 3,001 to 5,000 gallons is typically installed for 50 animal units to provide adequate water storage capacity to ensure an adequate supply and quality of water for livestock or wildlife. Installation facilitates improved plant productivity and health, water quality, and habitat. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing. All needed pipelines are installed using Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.	Number of tanks	Each	$1,831.23	$2,746.85	$2,746.85	$3,296.22

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
614-7	Underground Storage Tank	**Scenario Description:** A precast concrete tank used for storing water as part of a watering system. The storage tank will consist of 1 storage tank (2500 gal.) adequate base material and backfill around the tank, access riser with lid, and 20 ft. of 4 inch for overflow pipe. **After Practice Description:** A permanent watering facility for livestock constructed of approved materials with a 2,500 gallons of additional storage capacity for adequate quantity and quality of water for storage when backup capacity is needed peak water demand periods. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing. All needed pipelines are installed using Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Pipeline (516) as appropriate.	Number of tanks	Each	$2,756.06	$4,134.10	$4,134.10	$4,960.92
614-8	Frost Free Waterer	**Scenario Description:** A permanent watering facility constructed of approved materials that provides adequate quantity and quality of water for direct drinking access. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. Payment includes materials and labor costs for installing the frost-free waterer. The stabilized area under and around the watering facility is not included and must be addressed through an associated practice of Heavy Use Area Protection (561). This watering facility will address the resource concerns of inadequate supply of water for livestock and or wildlife, habitat degradation, water quality, and undesirable plant productivity and health. **After Practice Description:** A permanent watering facility is typically installed for 30 animal units with all waterer materials to provide an adequate supply and quality of water for livestock or wildlife for direct drinking access and provides improved plant productivity and health, water quality, and habitat. All watering facilities are constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation and placed on a properly prepared foundation with required plumbing. All needed pipelines are installed using Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). Any needed water source installation will use Water Well (642), Pumping Plant (533), or Pipeline (516) as appropriate. Areas around watering facilities where animal concentration will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.	Number of Waterers	Each	$721.14	$1,081.72	$1,081.72	$1,298.06

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	cenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
614-9	Access Ramp	**Scenario Description:** The bank of the stream or pond is severely eroded and water quality is poor due to the unrestricted access of livestock or wildlife. A conservation plan includes provisions for controlled access to drinking water for livestock or wildlife to provide daily water requirements, improve animal distribution to better utilize grazing resources, or provide a water source that is an alternative to a sensitive resource. **After Practice Description:** A permanent watering ramp with a level section at the base is installed to provide drinking water for livestock or wildlife. The access ramp is constructed of approved materials consisting of rock and or gravel surfacing on geotextile fabric foundation, with a life expectancy that meets or exceeds the planned useful life of the installation. The resource concerns of inadequate supply of water for livestock or wildlife, soil erosion, habitat degradation, water quality, and undesirable plant productivity and health have been addressed. The watering facility includes all materials, equipment, and labor to shape the ramp and install the surfacing material. Seeding of berms and construction areas is to be specified using 342 - Critical Area Planting, and 484 - Mulching, as needed. Use 382 - Fence to limit livestock access.	Area of access ramp	Square Foot	$1.31	$1.97	$1.97	$2.36

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WELL DECOMMISSIONING

Practice Code 351

Practice Units: NUMBER

Definition: The sealing and permanent closure of an inactive, abandoned, or unusable water or monitoring well.

Purpose: A well is decommissioned to achieve one or more of the following purposes:

- Remove a water or monitoring well from active use when it is no longer needed, it cannot be rehabilitated, or it has failed structurally.
- Remove a monitoring well from use when it is no longer capable of providing representative samples or it is providing unreliable samples.
- Eliminate a physical hazard to people, animals, and farm machinery and prevent entry of animals, debris, or other foreign substances.
- Prevent contamination of groundwater by surface water inflow.
- Restore the natural hydrogeologic conditions, to the extent possible, by preventing vertical or lateral cross-contamination or commingling of groundwaters between separate water bearing zones.
- Eliminate the possibility of repurposing the well.
- Allow for future alternative use or management of the site

Conditions Where Practice Applies: This practice applies to any water well or monitoring well selected for decommissioning.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 20 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
351-1	Hand Dug	**Scenario Description:** Seal and permanently close an inactive, abandoned, or unusable hand dug or shallow water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water. Well will be cleared of all equipment and materials. Residual water column must be treated with chlorine concentration of >50 ppm or according to local, State, Tribal, or Federal regulations. **After Practice Description:** Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Backfill shall be placed and compacted in a manner that minimizes segregation and bulking to prevent surface subsidence. Typical well is hand dug. **Associated Practices:** 342 Critical Area Seeding	Length of well casing	Foot	$22.32	$33.48	$33.48	$40.17
351-2	Drilled >100ft	**Scenario Description:** Seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water. Well will be cleared of all equipment and materials. Residual water column must be treated with chlorine concentration of >50 ppm or according to local, State, Tribal, or Federal regulations. **After Practice Description:** Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Backfill shall be placed and compacted in a manner that minimizes segregation and bulking to prevent surface subsidence. Typical length of well casing is greater than 100 feet. **Associated Practices:** 342 Critical Area Seeding.	Length of well casing	Foot	$2.36	$3.54	$3.54	$4.25
351-3	Drilled <=100 ft	**Scenario Description:** Seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water. Well will be cleared of all equipment and materials. Residual water column must be treated with chlorine concentration of >50 ppm or according to local, State, Tribal, or Federal regulations. **After Practice Description:** Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Backfill shall be placed and compacted in a manner that minimizes segregation and bulking to prevent surface subsidence. Typical length of well casing is 100 feet or less. **Associated Practices:** 342 Critical Area Seeding.	Length of well casing	Each	$378.41	$567.62	$567.62	$681.14

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WETLAND CREATION

Practice Code 658

Practice Units: ACRE

Definition: The creation of a wetland on a site that was historically non-wetland.

Purpose: To establish wetland hydrology, vegetation, and wildlife habitat functions on soils capable of supporting those functions.

Conditions Where Practice Applies: This practice applies only to sites where hydric soils do not exist and the objective is to establish specific wetland functions. This practice does not apply to:

- The treatment of point and non-point sources of water pollution (Constructed Wetland – Code 656).
- The rehabilitation of a degraded wetland or the reestablishment of a former wetland so that soils, hydrology, vegetative community, and habitat are a close approximation of the original natural condition and boundary that existed prior to the modification. (Wetland Restoration – Code 657).
- The rehabilitation of a degraded wetland, the reestablishment of a former wetland, or the modification of an existing wetland, where specific wetland

Limitations: These wetlands are not intended to treat point or non-point pollutants.

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
658-1	Excavated	**Scenario Description:** A wetland is created on a flat mineral upland at a location where surface runoff may be intercepted and ponded by excavation. Resource concerns are 22 - INDEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** An excavation with an average depth of 12" has created a shallow depression in a broad swale which intercepts surface runoff. The excavated material has been spread on adjacent areas. The INADEQUATE HABITAT FOR FISH AND WILDLIFE resource concern has been addressed with the provision of seasonal open water for terrestrial, aquatic, and waterfowl species.	Acres of Wetland	Acre	$2,975.59	$3,505.66	$2,975.59	$3,505.66
658-2	Embankment	**Scenario Description:** A wetland is created on a flat mineral upland at a location where surface runoff may be intercepted and ponded by excavation and with an embankment. Facilitating practices may include Structure for Water Control (587). Resource concerns are 22 - INDEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** An excavation/embankment with an average depth of 12" has created a shallow depression in a broad swale which intercepts surface runoff. The excavated material has been spread on adjacent areas and used to compact the embankment. The INADEQUATE HABITAT FOR FISH AND WILDLIFE resource concern has been addressed with the provision of seasonal open water for terrestrial, aquatic, and waterfowl species.	Acres of Wetland	Acre	$3,183.92	$3,755.66	$3,183.92	$3,755.66

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WETLAND ENHANCEMENT

Practice Code 659

Practice Units: ACRE

Definition: The augmentation of wetland functions beyond the original natural conditions on a former, degraded, or naturally functioning wetland site; sometimes at the expense of other functions.

Purpose: To increase the capacity of specific wetland functions (such as habitat for targeted species, and recreational and educational opportunities) by enhancing:

- Hydric soil functions (changing soil hydrodynamic and/or bio-geochemical properties).
- Hydrology (dominant water source, hydroperiod, and hydrodynamics).
- Vegetation (including the removal of undesired species, and/or seeding or planting of desired species).
- Plant and animal habitats.

Conditions Where Practice Applies: This practice applies to any degraded or non-degraded wetland sites with hydric soils, where the objective is to enhance selected wetland functions to conditions different than those that originally existed on the site. This practice does not apply to:

- The treatment of point and non-point sources of water pollution (Constructed Wetland – Code 656);
- The rehabilitation of a degraded wetland or the reestablishment of a former wetland so that soils, hydrology, vegetative community, and habitat are a close approximation of the original natural condition and boundary that existed prior to the modification (Wetland Restoration – Code 657).
- The creation of a wetland on a site location that was historically non-wetland. (Wetland Creation – Code 658).

Limitations: These wetlands are not intended to treat point or non-point pollutants.

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
659-1	Mineral Flat, Tile Removal	**Scenario Description:** A Mineral Flat wetland is to be enhanced. The tract size is 40 Acres consists of surface saturated soils interspersed with shallow depressions that are not depressional class HGM wetlands. The wetland size is also 40 acres. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11- WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** The drain tiles have been rendered non-functional by excavating 50-foot lengths of tile mains and laterals in 6 separate locations, and backfilling with excavated earth, which is compacted with the excavator bucket. There are no facilitating practices. Enhancement of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.	Acres of Wetland	Acre	$341.48	$344.73	$341.48	$344.73

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
659-2	Riverine, Levee Removal, ditch plugs and floodplain features	**Scenario Description:** A Riverine HGM tract on a large floodplain is to be enhanced. It has been converted to agricultural production by surface ditching and clearing of woody vegetation. The wetland extent is 60 acres. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11-WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22-INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** The hydrology of the site is enhanced with the installation of ditch plugs, and the excavation of macrotopographic features with an average depth of 6" over 30% of the wetland area. Excavated spoil is placed adjacent to the features on the wetland and adjacent non-wetland area with a maximum depth of 24 inches. The levee has been breached at the upstream and downstream ends of the tract reach, restoring dynamic stream flooding. The breach length is 150 feet long at both locations. Both the wetland and non-wetland areas are planted with a Bottomland Hardwood species mix. The levee breaches are armored with rock riprap. Facilitating practices include Grade Stabilization Structure and Tree and Shrub Planting. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.	Acres of Wetland	Acre	$980.60	$1,111.67	$980.60	$1,111.67

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
659-3	Depression, Sediment Removal and Ditch Plug	**Scenario Description:** A Depressional HGM class wetland is to be enhanced. The wetland size is 10 acres. The site is a recharge depression, fed only from surface runoff. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11- WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** The ditch has been plugged by the installation of a 50' long section of compacted clay fill, and the deposition has been removed down to the original topsoil layer. An herbaceous plant community has been seeded. Facilitative practices include Conservation Cover. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.	Acres of Wetland	Acre	$2,261.92	$2,649.26	$2,261.92	$2,649.26

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
659-4	Riverine, Channel and Floodplain Restoration	**Scenario Description:** A Riverine HGM landscape on a small stream on a low stream order riparian landscape has been converted to agricultural production. The stream channel has degraded. The reach is 1500 feet in length, and the wetland area is 10 acres. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11- WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** The hydrology of the site is restored by the installation of a series of rock check structures to raise the stream water surface profile. Floodplain macrotopographic features replicating the original side channels, oxbows, and backswamps are constructed by excavation. Spoil is placed adjacent to the excavations to replicate natural depositional features. The average depth of the excavated features is 2 feet, and the surface area of the excavations is 25% of the tract size. The eroding stream bank is stabilized with soil bio-engineering features, and fish habitat improvement measures are installed in the channel. The tract is seeded to appropriate hydrophytic and upland vegetation, both woody and herbaceous. Facilitating practices are Streambank and Shoreline protection, Structure for Water Control, Conservation Cover, Tree/Shrub Establishment, and Stream Habitat Improvement and Management. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.	Acres of Wetland	Acre	$1,637.55	$1,900.02	$1,637.55	$1,900.02

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
659-5	Vernal Pool	**Scenario Description:** Wetland hardwood forest with sites that have potential to be enhanced with vernal pools. This involves enhancement of hydrology of a vernal pool site that provides season shallow surface water. Resource concerns include INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** Seasonal inundation of the site has been enhanced on the site without significant disturbance to the native vegetation. Wildlife habitat for species that utilize vernal pools has been developed on the site.	Area of pool	Acre	$8,341.83	$10,010.20	$8,341.83	$10,010.20

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WETLAND RESTORATION

Practice Code 657

Practice Units: ACRE

Definition: The return of a wetland and its functions to a close approximation of its original condition as it existed prior to disturbance on a former or degraded wetland site.

Purpose: To restore wetland function, value, habitat, diversity, and capacity to a close approximation of the pre- disturbance conditions by restoring:

- Conditions conducive to hydric soil maintenance.
- Wetland hydrology (dominant water source, hydroperiod, and hydrodynamics).
- Native hydrophytic vegetation (including the removal of undesired species, and/or seeding or planting of desired species).
- Original fish and wildlife habitats.

Conditions Where Practice Applies: This practice applies only to natural wetland sites with hydric soils which have been subject to the degradation of hydrology, vegetation, or soils.

This practice is applicable only where the natural hydrologic conditions can be approximated by actions such as modifying drainage, restoring stream/floodplain connectivity, removing diversions, dikes, and levees, and/or by using a natural or artificial water source to provide conditions similar to the original, natural conditions.

See explanations of specific practice types under Wetland Creation (658).

Limitations: These wetlands are not intended to treat point or non-point pollutants. For projects that will require removal of material deeper than the original soil surface, or material from natural stream or oxbow levees, contact the NRCS Archeologist.

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
657-1	Mineral Flat, Tile Removal	**Scenario Description:** A Mineral Flat wetland is to be restored. The wetland size is 40 Acres consists of surface saturated soils interspersed with shallow depressions that are not depressional class HGM wetlands. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11- WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** The drain tiles have been rendered non-functional by excavating 50-foot lengths of tile mains and laterals in 6 separate locations, and backfilling with excavated earth, which is compacted with the excavator bucket. There are no facilitating practices. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.	Acres of wetland	Acre	$341.48	$344.73	$341.48	$344.73

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
657-2	Riverine Levee Removal, ditch plugs and floodplain features	**Scenario Description:** A Riverine HGM tract on a large floodplain is to be restored. It has been converted to agricultural production by surface ditching and clearing of woody vegetation. The wetland extent is 60 acres. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11-WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22-INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** The hydrology of the site is restored with the installation of ditch plugs, and the excavation of macrotopographic features with an average depth of 6" over 30% of the wetland area. Excavated spoil is placed adjacent to the features on the wetland and adjacent non-wetland area with a maximum depth of 24 inches. The levee has been breached at the upstream and downstream ends of the tract reach, restoring dynamic stream flooding. The breach length is 150 feet long at both locations. Both the wetland and non-wetland areas are planted with a Bottomland Hardwood species mix. The levee breaches are armored with rock riprap. Facilitating practices include Grade Stabilization Structure and Tree and Shrub Planting. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.	Acres of wetland	Acre	$980.60	$1,111.67	$980.60	$1,111.67

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
657-3	Depression Sediment Removal and Ditch Plug	**Scenario Description:** A Depressional HGM class wetland is to be restored. The wetland size is 10 acres. The site is a recharge depression, fed only from surface runoff. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11- WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** The ditch has been plugged by the installation of a 50' long section of compacted clay fill, and the deposition has been removed down to the original topsoil layer. An herbaceous plant community has been seeded. Facilitative practices include Conservation Cover. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.	Acres of Wetland	Acre	$2,261.92	$2,649.26	$2,261.92	$2,649.26

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
657-4	Riverine Channel and Floodplain Restoration	**Scenario Description:** A Riverine HGM landscape on a small stream on a low stream order riparian landscape has been partially converted to agricultural production on 10 acres of the 15-acre wetland tract. The stream channel has degraded. The reach is 1500 feet in length. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11-WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22-INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** The hydrology of the site is restored by the installation of a series of rock check structures to raise the stream water surface profile. Floodplain macrotopographic features replicating the original side channels, oxbows, and backswamps are constructed by excavation. Spoil is placed adjacent to the excavations to replicate natural depositional features. The average depth of the excavated features is 0.5 feet, and the surface area of the excavations is 25% of the tract size. The eroding stream bank is stabilized with soil bio-engineering features, and fish habitat improvement measures are installed in the channel. The tract is seeded to appropriate hydrophytic and upland vegetation, both woody and herbaceous. Facilitating practices are Streambank and Shoreline protection, Structure for Water Control, Conservation Cover, Tree/Shrub Establishment, and Stream Habitat Improvement and Management. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.	Acres of wetland	Acre	$1,091.70	$1,266.68	$1,091.70	$1,266.68

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
657-5	Vernal Pool	**Scenario Description:** Restoration of vernal pools on suitable sites within areas of hardwood forest. This involves restoration of hydrology to a vernal pool site that provides season shallow surface water. Resource concerns include INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation. **After Practice Description:** Seasonal inundation of the site has been restored to the site without significant disturbance to the native vegetation. Wildlife habitat for species that utilize vernal pools has been restored to the site.	Area of pool	Acre	$8,341.83	$10,010.20	$8,341.83	$10,010.20
657-6	Riverine, oxbow wetland	**Scenario Description:** Restoration of an 0.40-acre oxbow wetland to create off-channel habitat for species such as Topeka Shiner. Includes removal of post settlement alluvium down to the original soil surface, slope, and contour. Reconnection of the oxbow to the stream channel using original, natural inflow and outflow channels will include excavation of post settlement alluvium to the original soil surface, slope, and contour. Resource concerns include habitat degradation and excessive sedimentation. **After Practice Description:** A 0.4 acre off-channel oxbow (35' bottom width, 56' top width, 3.5' depth, 310 feet long) is excavated to remove the post settlement alluvium down to original soil surface, slope and contour. Oxbow is reconnected to the stream channel by excavating the original inflow and outflow channels to post settlement grade, slope and contour.	Area of Excavation	Acre	$19,159.99	$22,991.98	$19,159.99	$22,991.98

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WETLAND WILDLIFE HABITAT MANAGEMENT

Practice Code 644

Practice Units: ACRE

Definition: Retaining, developing or managing wetland habitat and communities for wetland wildlife.

Purpose: To maintain, develop, or improve wetland habitat for waterfowl, shorebirds, fur-bearers, reptiles and amphibians or other wetland dependent or associated flora and fauna.

Conditions Where Practice Applies: On or adjacent to wetlands, rivers, lakes and other water bodies where wetland associated wildlife habitat can be managed. This practice applies to natural wetlands and/or water bodies as well as wetlands that may have been previously restored (657), enhanced (659), and created (658).

Limitations:

Maintenance: Practice must be maintained for a lifespan of 1 year.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
644-2	Wetland Wildlife Habitat Monitoring and Management, Low Intensity and Complexity	**Scenario Description:** This scenario is applied to wetlands on land use types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where low intensity and complexity of monitoring or management will treat the identified resource concern. Only 1-2 monitoring efforts are needed and each requiring less than 2 people and 4 hours per effort. The adaptive management actions such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires only hand labor and less than 8 hours labor per year. **After Practice Description:** Wildlife habitat is improved by implementation of annual adaptive management actions of low intensity and complexity.	Monitoring efforts and adaptive manageme nt actions	Acre	$2.87	$3.44	$2.87	$3.44
644-3	Habitat Monitoring and Management, Medium Intensity and Complexity	**Scenario Description:** This scenario is applied to wetland areas located on all land use types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where medium intensity and complexity of monitoring or management will treat the identified resource concern. Two or three monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. Two or three adaptive management efforts are required (such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures). The adaptive mgmt. requires hand labor and the occasional use of light equipment. A crew of 2 is needed for the hand labor efforts and the crew will require less than 16 total hours of labor per mgmt. effort. Mowing of roads and trail is required to provide access for monitoring and management. **After Practice Description:** Wetland wildlife habitat is improved by implementation of annual adaptive management actions of medium intensity and complexity.	Monitoring efforts and adaptive manageme nt actions	Acre	$9.06	$10.87	$9.06	$10.87

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
644-4	Habitat Monitoring and Management, High Intensity and Complexity	**Scenario Description:** This scenario is applied to all land use types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where high intensity and complexity of monitoring or management will treat the identified resource concern. Two - four monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. The adaptive management actions (2 - 5 efforts) such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires hand labor and light equipment, requiring a 2-person crew less than 1 day per effort. **After Practice Description:** Wetland wildlife habitat is improved by implementation of annual adaptive management actions of high intensity and complexity.	Monitoring efforts and adaptive manageme nt actions	Acre	$21.98	$26.38	$21.98	$26.38
644-5	Development of Shallow Micro-Topographic Features with Normal Farming Equipment.	**Scenario Description:** This typical scenario is installed on non-forested wetlands, including open lands prior to tree planting. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed to loosen the soil. Then the soil is excavated with normal farming equipment (e.g. tractor and box-blade) to a depth of 2-6 inches and immediately deposited. This lowering and raising of a box-blade restores the original micro-topographic features (6' X 6' depressions and mounds) common to most landscapes and landforms prior to clearing, tilling, and annual mowing. Restoration of shallow but frequent micro-topographic features has been lost by the smoothing action of tillage, mowing and the original land-clearing. This scenario it typically implemented for ecosystem restoration projects such as prairie restoration and range-land restoration, and particularly on moderately well-drained soils. **After Practice Description:** Shallow micro-depressions and mounds are numerous. This varied micro-topographic features provided varied moisture gradients required for high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the micro depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.	hours of tractor use	Acre	$30.15	$36.17	$30.15	$36.17

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
644-6	Development of Deep Micro-Topographic Features with Heavy Equipment.	**Scenario Description:** This typical scenario is installed on non-forested wetlands (or open land prior to tree planting), where micro-topographic features have been removed by past farming and/or ranching cultural practices. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed 2 weeks prior to excavation to kill existing vegetation and allow for proper dirt work. Then the soil is excavated with track equipment (dozer) to a depth of 6-12 inches and immediately deposited. This lowering and raising of a dozer - blade restores the original deep micro-topographic features (10' X10' depressions and mounds) common to many landscapes and landforms prior to the lands conversion to agricultural lands. This scenario it typically implemented for ecosystem restoration projects such as wetland restoration (herbaceous or prior to planting of woody species), prairie restoration and range-land restoration. It is most commonly applied to well-drained soils as the purpose is for the micro- depression to pond water for short duration (less than 7 days). **After Practice Description:** Deep (6-12" depth) micro-depressions and mounds are numerous. These varied micro-topographic features provide varied moisture gradients required for development of high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the micro-depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.	Hours	Acre	$80.35	$96.42	$80.35	$96.42
644-7	Topographic Feature Creation, Low	**Scenario Description:** The setting is all landuses, but typically is on lands used for the production of forest products grazing and/or fish and wildlife where the slope gradient is less than two percent and soils that are not excessively drained. The State-approved habitat evaluation or appraisal found that a limiting factor for wetland wildlife is the absence of sufficient variability in microtopographic relief in the area. The construction of topographic features will provide for diverse soil hydrologic conditions needed to treat the degraded plant condition and/or inadequate habitat for wetland wildlife. Excavated spoil is spread adjacent to excavation or moved to designated locations but not compacted. This scenario is for earthwork, not associated with habitat structures or any other national standard (e.g. Wetland Restoration (657), Wetland Enhancement (659), Wetland Creation (658), and Dike (356)). Facilitating practices may include Structure for Water Control (587). **After Practice Description:** As a result of the installation, the topographic relief needed to provide the varied wetland wildlife habitat needs is provided.	Acres of constructed features	Acre	$661.95	$794.35	$661.95	$794.35

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
644-8	Topographic Feature Creation, High	**Scenario Description:** The setting is all landuses, but typically is on lands used for the production of forest products grazing and/or fish and wildlife where the slope gradient is less than two percent and soils that are not excessively drained. The State-approved habitat evaluation or appraisal found that a limiting factor for wetland wildlife is the absence of sufficient variability in microtopographic relief in the area. The construction of topographic features will provide for diverse soil hydrologic conditions needed to treat the degraded plant condition and/or inadequate habitat for wetland wildlife. Excavated spoil is needed to further enhance macrotopographic relief by placing and compacting the fill in strategic areas. This scenario is for earthwork, not associated with habitat structures or any other national standard (e.g. Wetland Restoration (657), Wetland Enhancement (659), Wetland Creation (658), and Dike (356)). Facilitating practices may include Structure for Water Control (587). **After Practice Description:** As a result of the installation, the topographic relief needed to provide the varied wetland wildlife habitat needs is provided.	Acres of constructed features	Acre	$1,310.23	$1,572.27	$1,310.23	$1,572.27
644-9	Management and monitoring only, foregone income	**Scenario Description:** Site management will include managing/monitoring the site to provide food and cover for wetland wildlife species on cropland. Annual vegetation (crops or other annual vegetation) will be allowed to establish and persist during critical nesting and brood rearing seasons and will remain standing (not harvested) until migratory species have left the site. The setting is on lands used for the production of crops where the slope gradient is less than two percent and soils that are not excessively drained. The State-approved habitat evaluation or appraisal found that a limiting factor for wetland wildlife is the absence of sufficient cover and food in the area. The manipulation of existing cover will be accomplished thru mechanical methods to provide a diverse vegetation mosaic with in and adjacent to the existing wetland addressing inadequate habitat for wetland wildlife. Where this occurs on cropped fields, annual crops will be lost for one growing season (foregone income is included). **After Practice Description:** Agricultural crop or annual vegetation has been allowed to persist providing needed food and cover essential for identified species. Crops and annual vegetation will not be harvested during the critical seasons as identified by the habitat evaluation. As a result of the installation, adequate habitat needs have been provided.	Acres of Wetland Wildlife Cover and Food	Acre	$337.21	$339.61	$337.21	$339.61

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WINDBREAK/SHELTERBELT ESTABLISHMENT

Practice Code 380

Practice Units: FEET

Definition: Windbreaks or shelterbelts are single or multiple rows of trees or shrubs in linear configurations

Purpose:

- Reduce soil erosion from wind.
- Protect plants from wind related damage.
- Alter the microenvironment for enhancing plant growth.
- Manage snow deposition.
- Provide shelter for structures, animals, and people.
- Enhance wildlife habitat.
- Provide noise screens
- Provide visual screens
- Improve air quality by intercepting air borne particulate matter, chemicals and odors.
- Delineate property and field boundaries
- Improve irrigation efficiency.
- Increase carbon storage in biomass and soils.
- Reduce energy use

Conditions Where Practice Applies: On any area where woody plants are desired and can be grown and where wind, noise, air quality, or visual problems are a concern.

Limitations:

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
380-1	3 row windbreak, containerized planting stock	**Scenario Description:** Three or more rows of containerized trees, shrubs or a combination of trees and shrubs are planted for wind protection, odor management, energy conservation, wildlife habitat, air quality, snow management or to provide a visual screen. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to hand plant the stock and foregone income for land removed from crop production where windbreak is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of containerized trees and shrubs is installed by hand planting trees 20 ft. apart and shrubs 6 ft. apart with 16' between rows. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$3.43	$4.04	$3.43	$4.04
380-2	3 row windbreak, containerized planting stock, temporary irrigation	**Scenario Description:** Three or more rows of containerized trees, shrubs or a combination of trees and shrubs are planted for wind protection, odor management, energy conservation, wildlife habitat, air quality, snow management or to provide a visual screen. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to hand plant the stock, a temporary irrigation system to aid in establishment, and foregone income for land removed from crop production where windbreak is installed. Tree planting in an area where supplemental water is needed for successful establishment. Generally, these areas would be considered arid or drought stricken, but other factors may contribute to requiring supplemental water. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of containerized trees and shrubs is installed by hand planting trees 20 ft. apart and shrubs 6 ft. apart with 16' between rows. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. Greatly improved success rate of the windbreak due to the supplemental water during establishment. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$5.22	$6.18	$5.22	$6.18

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
380-3	3 row windbreak, bareroot seedling planting stock	**Scenario Description:** Three or more rows of bare-root trees, shrubs or a combination of trees and shrubs are planted for wind protection, odor management, energy conservation, wildlife habitat, air quality, snow management or to provide a visual screen. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to machine the stock and foregone income for land removed from crop production where windbreak is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of bare-root trees and shrubs is installed by machine planting trees 10 ft. apart and shrubs 5 ft. apart with 16' between rows. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$0.94	$1.05	$0.94	$1.05
380-4	3 row windbreak, bareroot seedling planting stock, temporary irrigation	**Scenario Description:** Three or more rows of bare-root trees, shrubs or a combination of trees and shrubs are planted for wind protection, odor management, energy conservation, wildlife habitat, air quality, snow management or to provide a visual screen. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to machine the stock, a temporary irrigation system to aid in establishment, and foregone income for land removed from crop production where windbreak is installed. Tree planting in an area where supplemental water is needed for successful establishment. Generally, these areas would be considered arid or drought stricken, but other factors may contribute to requiring supplemental water. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of bare-root trees and shrubs is installed by machine planting trees 10 ft. apart and shrubs 5 ft. apart with 16' between rows. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. Greatly improved success rate of the windbreak due to the supplemental water during establishment. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$2.72	$3.19	$2.72	$3.19

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	cenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
380-9	1 row windbreak, bareroot trees	**Scenario Description:** One row of bare-root trees planted for wind protection, odor management, energy conservation, wildlife habitat, air quality, snow management or to provide a visual screen. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to machine the stock and foregone income for land removed from crop production where windbreak is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of bare-root trees is installed by machine planting trees 10 ft. apart. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$0.29	$0.32	$0.29	$0.32
380-10	1 row windbreak, bareroot trees with temporary irrigation	**Scenario Description:** One row of bare-root trees planted for wind protection, odor management, energy conservation, wildlife habitat, air quality, snow management or to provide a visual screen. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to machine the stock, a temporary irrigation system to aid in establishment, and foregone income for land removed from crop production where windbreak is installed. Tree planting in an area where supplemental water is needed for successful establishment. Generally, these areas would be considered arid or drought stricken, but other factors may contribute to requiring supplemental water. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of bare-root trees is installed by machine planting trees 10 ft. apart. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. Greatly improved success rate of the windbreak due to the supplemental water during establishment. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$0.37	$0.42	$0.37	$0.42

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
380-11	1 row windbreak, bareroot shrubs	**Scenario Description:** One row of bare-root shrubs planted for wind protection, odor management, energy conservation, wildlife habitat, air quality, snow management or to provide a visual screen. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to machine the stock and foregone income for land removed from crop production where windbreak is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of bare-root shrubs is installed by machine planting shrubs 5 ft. apart. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$0.42	$0.47	$0.42	$0.47
380-12	1 row windbreak, bareroot shrubs with temporary irrigation	**Scenario Description:** One row of bare-root shrubs planted for wind protection, odor management, energy conservation, wildlife habitat, air quality, snow management or to provide a visual screen. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to machine the stock, a temporary irrigation system to aid in establishment, and foregone income for land removed from crop production where windbreak is installed. Tree planting in an area where supplemental water is needed for successful establishment. Generally, these areas would be considered arid or drought stricken, but other factors may contribute to requiring supplemental water. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of bare-root shrubs is installed by machine planting shrubs 5 ft. apart. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. Greatly improved success rate of the windbreak due to the supplemental water during establishment. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$0.50	$0.57	$0.50	$0.57

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
380-30	1 row windbreak, container trees, less than 2 gallons	**Scenario Description:** One row of containerized hardwood and/or conifer trees planted to address resource concerns; Inefficient Energy Use, Air Quality Impacts and/or Fish and Wildlife Habitat. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to hand plant the stock and foregone income for land removed from crop production where windbreak is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of containerized trees is installed by hand planting trees 15 ft. apart. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$0.60	$0.69	$0.60	$0.69
380-31	1 row windbreak, container shrubs, less than 2 gallon	**Scenario Description:** One row of containerized shrubs planted to address resource concerns; Inefficient Energy Use, Air Quality Impacts and/or Fish and Wildlife Habitat. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to hand plant the stock and foregone income for land removed from crop production where windbreak is installed. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of containerized shrubs is installed by hand planting shrubs 6 ft. apart. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$1.38	$1.63	$1.38	$1.63

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
380-33	1 row windbreak, container shrubs, less than 2 gallon with temporary irrigation	**Scenario Description:** One row of containerized shrubs planted to address resource concerns; Inefficient Energy Use, Air Quality Impacts and/or Fish and Wildlife Habitat. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to hand plant the stock, a temporary irrigation system to aid in establishment, and foregone income for land removed from crop production where windbreak is installed. Tree planting in an area where supplemental water is needed for successful establishment. Generally, these areas would be considered arid or drought stricken, but other factors may contribute to requiring supplemental water. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of containerized shrubs is installed by hand planting shrubs 6 ft. apart. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. Greatly improved success rate of the windbreak due to the supplemental water during establishment. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$1.72	$2.04	$1.72	$2.04

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
380-34	1 row windbreak, container trees, less than 2 gallon with temporary irrigation	**Scenario Description:** One row of containerized hardwood and/or conifer trees planted to address resource concerns; Inefficient Energy Use, Air Quality Impacts and/or Fish and Wildlife Habitat. This practice is typically applied on cropland at field edges, around homesteads or around confinement facilities. Payment includes materials, labor and equipment needed to hand plant the stock, a temporary irrigation system to aid in establishment, and foregone income for land removed from crop production where windbreak is installed. Tree planting in an area where supplemental water is needed for successful establishment. Generally, these areas would be considered arid or drought stricken, but other factors may contribute to requiring supplemental water. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. **After Practice Description:** A windbreak of containerized trees is installed by hand planting trees 15 ft. apart. Wind velocity suitably reduced to reduce soil erosion, energy loss or to manage snow deposition. Additional wildlife food and cover, mixing of odor plumes and visual screening. Greatly improved success rate of the windbreak due to the supplemental water during establishment. **Additional associated practices may include:** Herbaceous Weed Control (315), Tree/Shrub Pruning (660), Mulching (484)	Length of windbreak row(s)	Foot	$0.83	$0.97	$0.83	$0.97

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WINDBREAK/SHELTERBELT RENOVATION

Practice Code 650

Practice Units: FEET

Definition: Replacing, releasing, and/or removing selected trees and shrubs or rows within an existing windbreak or shelterbelt, adding rows to the windbreak or shelterbelt, or removing selected tree or shrub branches.

Purpose: Restoring or enhancing the original planned function of existing windbreaks or shelterbelts and thinning where necessary for the health of established windbreaks.

Conditions Where Practice Applies: In any windbreak or shelterbelt that is no longer functioning properly for the intended purpose, or that has been damaged by ice, wind, insects or disease

Limitations:

Maintenance: Practice must be maintained for a lifespan of 15 years.

Payment Schedule:

ID	Scenario Name	Scenario Description & After Practice Description	Scenario Feature Measure	Scenario Unit	EQIP	EQIP-HU	EQIP-Initiative	EQIP-Initiative-HU
650-1	Removal and/or Thinning with Chain Saw	**Scenario Description:** Windbreak renovation requires the removal of degraded, overcrowded, or inappropriate trees or shrubs within a windbreak. This may include removal of entire rows, including stumps or roots, and/or selected trees/shrubs in order to prepare for the necessary planting of a replacement row or parts of the row within the windbreak, improve the health of the remaining rows, and/or allow for supplemental planting to expand the windbreak. Resource concerns: Degrade plant condition- undesirable plant productivity and health; Livestock Production-Inadequate livestock shelter, Soil erosion-wind. **After Practice Description:** Integrity and function of windbreak restored. 1,000 feet of windbreak/shelterbelt renovated.	Length of Renovation	Foot	$0.48	$0.57	$0.48	$0.57
650-2	Within Row Replacement, Containerized Planting Stock	**Scenario Description:** Parts of the windbreak being renovated have died. Supplemental plantings of containerized trees/shrubs within existing rows or establishment of an additional row will improve the effectiveness and longevity of the windbreak. Payment includes materials, labor and equipment needed to hand plant the stock. Resource concerns include Soil erosion - Wind erosion, Degraded plant condition -Inadequate structure and composition, and Livestock production limitation - Inadequate livestock shelter. **After Practice Description:** The integrity and function of the windbreak is restored by hand planting containerized trees/shrubs in gaps created through previous plant mortality.	Length of Renovation	Foot	$1.25	$1.50	$1.25	$1.50
650-4	Within Row Replacement, Bare-root Planting Stock	**Scenario Description:** Parts of the windbreak being renovated have died. Supplemental plantings of bare-root trees/shrubs within existing rows or establishment of an additional row will improve the effectiveness and longevity of the windbreak. Payment includes materials, labor and equipment needed to hand plant the stock. Resource concerns include Soil erosion - Wind erosion, Degraded plant condition -Inadequate structure and composition, and Livestock production limitation - Inadequate livestock shelter. **After Practice Description:** The integrity and function of the windbreak is restored by hand planting bare-root trees/shrubs in gaps created through previous plant mortality.	Length of Renovation	Foot	$0.30	$0.36	$0.30	$0.36