

Activity List For Participants

Enhancement Code	Resource Concern	Resource Concern Cause	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Range	Forest	Associated Ag Land	Farmstead	Enhancement Name	Enhancement Description	Units	Lifespan
E315132Z	DEGRADED PLANT CONDITION	Undesirable Plant Productivity and Health			X		X			Herbaceous weed control that helps create desired plant communities and habitats consistent with the ecological site.	Mechanical, chemical, or biological, herbaceous weed control will be employed to control targeted, herbaceous weeds so as to create, release, or restore desired plant communities that are consistent with achievable, ecological site, steady state descriptions.	acre	5
E315133Z	DEGRADED PLANT CONDITION	Inadequate Structure and Composition				X	X			Herbaceous weed control (for inadequate structure and composition) that helps create desired plant communities and habitats consistent with the ecological site	Mechanical, chemical, or biological, herbaceous weed control will be employed to control targeted, herbaceous weeds so as to create, release, or restore desired plant communities that are consistent with achievable, ecological site, steady state descriptions.	acre	5
E315134Z	DEGRADED PLANT CONDITION	Excessive Plant Pest Pressure			X	X	X	X		Herbaceous weed control for plant pest pressures that helps create desired plant communities and habitats consistent with the ecological site.	Mechanical, chemical, or biological, herbaceous weed control will be employed to control targeted, herbaceous weeds so as to create, release, or restore desired plant communities that are consistent with achievable, ecological site, steady state descriptions.	acre	5
E327136Z1	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food	X	X			X	X	X	Conservation cover to provide food habitat for pollinators and beneficial insects	Seed or plug nectar and pollen producing plants in non-cropped areas such as field borders, vegetative barriers, contour buffer strips, grassed waterways, shelterbelts, hedgerows, windbreaks, conservation cover, and riparian forest and herbaceous buffers.	acre	5
E327136Z2	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food	X	X				X	X	Establish Monarch butterfly habitat	Seed or plug milkweed (<i>Asclepias</i> spp.), the Monarch butterfly larval hostplant, and high-value monarch butterfly nectar plants in non-cropped areas such as field borders, contour buffer strips, and associated grasslands.	acre	5
E327137Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter	X	X			X	X		Conservation cover to provide cover and shelter habitat for pollinators and beneficial insects	Seed or plug nectar and pollen producing plants in non-cropped areas such as field borders, vegetative barriers, contour buffer strips, grassed waterways, shelterbelts, hedgerows, windbreaks, conservation cover, and riparian forest and herbaceous buffers.	acre	5
E327139Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Habitat Continuity (Space)	X	X			X	X		Conservation cover to provide habitat continuity for pollinators and beneficial insects	Seed or plug nectar and pollen producing plants in non-cropped areas such as field borders, vegetative barriers, contour buffer strips, grassed waterways, shelterbelts, hedgerows, windbreaks, conservation cover, and riparian forest and herbaceous buffers.	acre	5
E328101I	SOIL EROSION	Sheet and Rill Erosion	X							Improved resource conserving crop rotation to reduce water erosion	Improve an existing Resource Conserving Crop Rotation. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plan pest pressures.	acre	1
E328101R	SOIL EROSION	Sheet and Rill Erosion	X							Resource conserving crop rotation to reduce water erosion	Establish a Resource Conserving Crop Rotation. Rotation must include AT LEAST one resource conserving crop as determined by the State Conservationist in a minimum three year crop rotation. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plan pest pressures.	acre	1
E328101Z	SOIL EROSION	Sheet and Rill Erosion	X							Conservation crop rotation on recently converted CRP grass/legume cover for water erosion	Implement a crop rotation management system on crop land acres that have recently converted from CRP grass/legume conservation cover to annual planted crops. Crop rotation minimizes disturbance resulting in a Soil Tillage Intensity Rating (STIR) less than 10 and reduces soil erosion from water to below soil tolerance (T) level. The current NRCS wind and water erosion prediction technologies must be used to document the rotation, soil erosion estimate, and STIR calculations. *This enhancement is limited to acres where the conversion event took place not more than 2 years prior. Enhancement not applicable on hayland.	acre	1
E328106I	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X							Improved resource conserving crop rotation for soil organic matter improvement	Improve an existing Resource Conserving Crop Rotation. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plan pest pressures.	acre	1
E328106R	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X							Resource conserving crop rotation for soil organic matter improvement	Establish a Resource Conserving Crop Rotation. Rotation must include AT LEAST one resource conserving crop as determined by the State Conservationist in a minimum three year crop rotation. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plan pest pressures.	acre	1

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E328106Z1	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X							Soil health crop rotation	Implement a crop rotation which addresses all four principle components of soil health: increases diversity of the cropping system; maintains residue throughout the year; keeps a living root; and minimizes soil chemical, physical and biological disturbance. The rotation will include at least 4 different crop and/or cover crop types (crop types include cool season grass, warm season grass, cool season broadleaf, warm season broadleaf) grown in a sequence that will produce a positive trend in the Organic Matter (OM) sub factor value over the life of the rotation, as determined by the Soil Conditioning Index (SCI). The current NRCS wind and water erosion prediction technologies must be used to document the rotation and SCI calculations.	acre	1
E328106Z2	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X							Modifications to improve soil health and increase soil organic matter	Use of soil health assessment to evaluate impact of current conservation crop rotation in addressing soil organic matter depletion (primary assessment made in Year 1). Modifications to the crop rotation and/or crop management will be made as a result of the assessment results (adding a new crop and/or cover crop to the rotation; making changes to planting and/or tillage system, harvest timing of crops, or termination timing of cover crops). During Year 3 a follow up assessment will be completed to allow time for the modifications to show increased soil organic matter. Modified system must produce a positive trend in the Organic Matter (OM) sub factor value over the life of the rotation, as determined by the Soil Conditioning Index (SCI). The current NRCS wind and water erosion prediction technologies must be used to document the rotation and SCI calculations.	acre	1
E328106Z3	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X							Conservation crop rotation on recently converted CRP grass/legume cover for soil organic matter improvement	Implement a crop rotation management system on crop land acres that have recently converted from CRP grass/legume conservation cover to annual planted crops. The crop rotation adds diversity to the system; keeps a living root growing; and is managed to minimize soil chemical, physical and biological disturbance and maintain residue cover on the surface. The rotation includes crops and/or cover crops representing 3 of the 4 crop types during the planned crop sequence: warm season grass (WSG), warm season broadleaf (WSB), cool season grass (CSG), or cool season broadleaf (CSB). The crop rotation will produce a positive trend in the Organic Matter (OM) sub factor value over the life of the rotation, as determined by the SCI. Crop rotation minimizes disturbance and reduces soil erosion from wind to below soil tolerance (T) level. The current NRCS wind and water erosion prediction technologies must be used to document the rotation, STIR and SCI calculations. *This enhancement is limited to acres where the conversion event took place not more than 2 years prior. Enhancement not applicable on hayland.	acre	1
E328107I	SOIL QUALITY DEGRADATION	Compaction	X							Improved resource conserving crop rotation to improve soil compaction	Improve an existing Resource Conserving Crop Rotation. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plan pest pressures.	acre	1
E328107R	SOIL QUALITY DEGRADATION	Compaction	X							Resource conserving crop rotation to improve soil compaction	Establish a Resource Conserving Crop Rotation. Rotation must include AT LEAST one resource conserving crop as determined by the State Conservationist in a minimum three year crop rotation. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plan pest pressures.	acre	1
E328134I	DEGRADED PLANT CONDITION	Excessive Plant Pest Pressure	X							Improved resource conserving crop rotation to relieve plant pest pressure	Improve an existing Resource Conserving Crop Rotation. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plan pest pressures.	acre	1
E328134R	DEGRADED PLANT CONDITION	Excessive Plant Pest Pressure	X							Resource conserving crop rotation to relieve plant pest pressure	Establish a Resource Conserving Crop Rotation. Rotation must include AT LEAST one resource conserving crop as determined by the State Conservationist in a minimum three year crop rotation. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plan pest pressures.	acre	1
E328136Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food	X							Leave standing grain crops unharvested to benefit wildlife food sources	Implement a crop rotation which allows a portion of grain crops to be left in fields un-harvested to provide food and cover for wildlife during winter months.	acre	1

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E328137Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter	X							Leave standing grain crops unharvested to benefit wildlife cover and shelter	Implement a crop rotation which allows a portion of grain crops to be left in fields un-harvested to provide food and cover for wildlife during winter months.	acre	1
E329101Z	SOIL EROSION	Sheet and Rill Erosion	X							No till to reduce water erosion	Establish no till system to reduce sheet and rill erosion soil loss. Field(s) must have a soil loss at or below the soil tolerance (T) level for water erosion for the crop rotation and a Soil Tillage Intensity Rating (STIR) of no greater than 10 for each crop in the planned rotation. The current NRCS wind and water erosion prediction technologies must be used to calculate soil loss and STIR.	acre	1
E329106Z	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X							No till system to increase soil health and soil organic matter content	Establish a no till system to increase soil health and soil organic matter content. Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 20. The crop rotation must achieve a soil conditioning index (SCI) of zero or higher. The current NRCS wind and water erosion prediction technologies must be used to document STIR and SCI calculations. Residue shall not be burned, grazed, or harvested.	acre	1
E329114Z	INSUFFICIENT WATER	Inefficient Use of Irrigation Water	X							No till to increase plant-available moisture: irrigation water	Establish a no till system to increase plant-available moisture. Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 20. The current NRCS wind and water erosion prediction technologies must be used to document STIR calculations. Maintain a minimum 60 percent surface residue cover throughout the year to reduce evaporation from the soil surface.	acre	1
E329115Z	INSUFFICIENT WATER	Inefficient Moisture Management	X							No till to increase plant-available moisture: moisture management	Establish a no till system to increase plant-available moisture. Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 20. The current NRCS wind and water erosion prediction technologies must be used to document STIR calculations. Maintain a minimum 60 percent surface residue cover throughout the year to reduce evaporation from the soil surface.	acre	1
E329128Z	AIR QUALITY IMPACTS	Emissions of Particulate Matter (PM) and PM Precursors	X							No till to reduce tillage induced particulate matter	Establish no till system to reduce tillage induced particulate matter. Field(s) must have a soil loss at or below the soil tolerance (T) level for the crop rotation and a Soil Tillage Intensity Rating (STIR) of no greater than 10 for each crop in the planned rotation. The current NRCS wind and water erosion prediction technologies must be used to document soil loss and STIR calculations.	acre	1
E329144Z	INEFFICIENT ENERGY USE	Farming/Ranching Practices and Field Operations	X							No till to reduce energy	Establish a no till system which reduces total energy consumption associated with field operations by at least 25% compared to current tillage system (benchmark). Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 20. The current NRCS wind and water erosion prediction technologies must be used to document STIR calculations and energy consumption.	acre	1
E340101Z	SOIL EROSION	Sheet and Rill Erosion	X	X						Cover crop to reduce water erosion	Cover crop added to current crop rotation to reduce soil erosion from water to below soil tolerance (T) level. Cover crops grown during critical erosion period(s). Species are selected that will have physical characteristics to provide adequate erosion protection.	acre	1
E340106Z1	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X	X						Intensive cover cropping to increase soil health and soil organic matter content	Implementation of cover crop mix to provide soil coverage during ALL non-crop production periods in an annual crop rotation. Cover crop shall not be harvested or burned. Planned crop rotation including cover crops and associated management activities must achieve a soil conditioning index (SCI) of zero or higher. The current NRCS wind and water erosion prediction technologies must be used to document SCI calculations.	acre	1
E340106Z2	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X	X						Use of multi-species cover crops to improve soil health and increase soil organic matter	Implement a multi-species cover crop to add diversity and increase biomass production to improve soil health and increased soil organic matter. Cover crop mix must include a minimum of 4 different species. The cover crop mix will increase diversity of the crop rotation by including crop types currently missing, e.g. Cool Season Grass (CSG), Cool Season Broadleaves (CSB), Warm Season Grasses (WSG), Warm Season Broadleaves (WSB).	acre	1

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E340106Z3	SOIL QUALITY DEGRADATION	Organic Matter Depletion		X						Intensive cover cropping (orchard or vineyard floor) to increase soil health and soil organic matter content	Implementation of cover crops to provide orchard or vineyard floor coverage throughout the year. Cover crop shall not be harvested, grazed, or burned. Planned cover crop management activities must achieve a soil conditioning index (SCI) of zero or higher and produce a positive trend in the Organic Matter (OM) subfactor over the life of the crop rotation. The current NRCS wind and water erosion prediction technologies must be used to document SCI calculations.	acre	1
E340106Z4	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X							Use of soil health assessment to assist with development of cover crop mix to improve soil health and increase soil organic matter	Use of a soil health assessment to evaluate impact of current conservation crop rotation in addressing soil organic matter depletion (primary assessment made in Year 1). Soil health assessment results and client's objectives will be utilized to determine a multi-species cover crop mix that will be added to the crop rotation. During Year 3 a follow up assessment will be completed to allow time for the addition of a cover crop to increased soil organic matter.	acre	1
E340107Z	SOIL QUALITY DEGRADATION	Compaction	X	X						Cover crop to minimize soil compaction	Establish a cover crop mix that includes plants with both fibrous root and deep rooted systems. Fibrous to treat and prevent both near surface (0-4") and deep (>4") soil compaction and deep rooted to break up deep compacted soils. Cover crop shall not be harvested, grazed, or burned.	acre	1
E340118Z	WATER QUALITY DEGRADATION	Nutrients in Surface Water	X	X						Cover crop to reduce water quality degradation by utilizing excess soil nutrients-surface water	Establish a cover crop mix to take up excess soil nutrients. Select cover crop species for their ability to effectively utilize nutrients. Terminate the cover crop as late as practical to maximize plant biomass production and nutrient uptake. Cover crop shall not be harvested, grazed, or burned.	acre	1
E340119Z	WATER QUALITY DEGRADATION	Nutrients in Ground Water	X							Cover crop to reduce water quality degradation by utilizing excess soil nutrients-ground water	Establish a cover crop mix to take up excess soil nutrients. Select cover crop species for their ability to effectively utilize nutrients. Terminate the cover crop as late as practical to maximize plant biomass production and nutrient uptake. Cover crop shall not be harvested, grazed, or burned.	acre	1
E340134Z	DEGRADED PLANT CONDITION	Excessive Plant Pest Pressure	X	X						Cover crop to suppress excessive weed pressures and break pest cycles	Establish a cover crop mix to suppress excessive weed pressures and break pest cycles. Select cover crop species for their life cycles, growth habits, and other biological, chemical and/or physical characteristics. Select cover crop species that do not harbor pests or diseases of subsequent crops in the rotation. Cover crop shall not be harvested, grazed, or burned.	acre	1
E345101Z	SOIL EROSION	Sheet and Rill Erosion	X							Reduced tillage to reduce water erosion	Establish a reduced tillage system to reduce sheet and rill erosion soil loss. Field(s) must have a soil loss at or below the soil tolerance (T) level for water erosion for the crop rotation and a Soil Tillage Intensity Rating (STIR) of no greater than 40 for each crop in the planned rotation. The current NRCS wind and water erosion prediction technologies must be used to calculate soil loss and STIR.	acre	1
E345106Z	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X							Reduced tillage to increase soil health and soil organic matter content	Establish a reduced till system to increase soil health and soil organic matter content. Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 80. The crop rotation must achieve a soil conditioning index (SCI) of zero or higher and produce a positive trend in the Organic Matter (OM) subfactor over the life of the crop rotation. The current NRCS wind and water erosion prediction technologies must be used to document STIR and SCI calculations. Residue shall not be burned, grazed, or harvested.	acre	1
E345114Z	INSUFFICIENT WATER	Inefficient Use of Irrigation Water	X							Reduced tillage to increase plant-available moisture: irrigation water	Establish a reduced till system to increase plant-available moisture. Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 80. The current NRCS wind and water erosion prediction technologies must be used to document STIR calculations. Maintain a minimum 60 percent surface residue cover throughout the year to reduce evaporation from the soil surface.	acre	1
E345115Z	INSUFFICIENT WATER	Inefficient Moisture Management	X							Reduced tillage to increase plant-available moisture: moisture management	Establish a reduced till system to increase plant-available moisture. Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 80. The current NRCS wind and water erosion prediction technologies must be used to document STIR calculations. Maintain a minimum 60 percent surface residue cover throughout the year to reduce evaporation from the soil surface.	acre	1

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E345128Z	AIR QUALITY IMPACTS	Emissions of Particulate Matter (PM) and PM Precursors	X							Reduced tillage to reduce tillage induced particulate matter	Establish a reduced tillage system to reduce tillage induced particulate matter. Field(s) must have a soil loss at or below the soil tolerance (T) level for the crop rotation and a Soil Tillage Intensity Rating (STIR) of no greater than 40 for each crop in the planned rotation. The current NRCS wind and water erosion prediction technologies must be used to document soil loss and STIR calculations.	acre	1
E345144Z	INEFFICIENT ENERGY USE	Farming/Ranching Practices and Field Operations	X							Reduced tillage to reduce energy use	Establish a reduced tillage system which reduces total energy consumption associated with field operations by at least 25% compared to conventional tillage systems (benchmark). Each crop in the crop rotation shall have a Soil Tillage Intensity Rating (STIR) of no greater than 80. The current NRCS wind and water erosion prediction technologies must be used to document STIR calculations and energy consumption. <State lists will be prepared providing conventional system benchmark energy values and reduced tillage system values for those systems using at least 25% less energy>	acre	1
E374144Z1	INEFFICIENT ENERGY USE	Farming/Ranching Practices and Field Operations	X	X	X			X	X	Install variable frequency drive(s) on pump(s)	Install Variable Frequency Drive(s) (CPS 533 Pumping Plant) with the correct sensors, on all pumps indicated in the energy audit.	no	10
E374144Z2	INEFFICIENT ENERGY USE	Farming/Ranching Practices and Field Operations	X	X	X			X	X	Switch fuel source for pump motor(s)	Switch fuel source for the pump motor(s) indicated in the audit to a renewable source (wind, solar, geothermal, etc..). (CPS 533 Pumping Plant)	no	10
E382136Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food			X	X				Incorporating "wildlife friendly" fencing for connectivity of wildlife food resources.	Retrofitting or constructing fences that provide a means to control movement of animals, people, and vehicles, but minimizes wildlife movement impacts.	ft	20
E386101Z	SOIL EROSION	Sheet and Rill Erosion	X	X				X		Enhanced field borders to reduce water induced erosion along the edge(s) of a field	Enhance existing field borders to a width of at least 30 feet in width and establish a single specie or mixture of species that provide a dense ground cover along the edge(s) of the field.	acre	10
E386106Z	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X	X				X		Enhanced field borders to increase carbon storage along the edge(s) of the field	Enhance existing field borders to a width of at least 30 feet in width and establish a mixture of species that provide a dense rooting system and high above ground biomass cover along the edge(s) of the field.	acre	10
E386128Z	AIR QUALITY IMPACTS	Emissions of Particulate Matter (PM) and PM Precursors	X	X				X		Enhanced field borders to decrease particulate emissions along the edge(s) of the field	Enhance existing field borders to a width of at least 30 feet in width and establish a mixture of species that provide a dense ground cover and a height of at least 2 feet along the edge(s) of the field.	acre	10
E386136Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food	X	X				X		Enhanced field border to provide wildlife food for pollinators along the edge(s) of a field	Enhance existing field borders to a width of at least 40 feet in width and establish a mixture of species that provide pollinator food and cover along the edge(s) of the field.	acre	10
E386137Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter	X	X				X		Enhanced field border to provide wildlife cover or shelter along the edge(s) of a field	Enhance existing field borders to a width of at least 40 feet in width and establish a mixture of species that provide wildlife food and cover along the edge(s) of the field.	acre	10
E386139Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Habitat Continuity (Space)	X	X				X		Enhanced field border to provide wildlife habitat continuity along the edge(s) of a field	Enhance existing field borders to a width of at least 40 feet in width and establish a mixture of species that provide wildlife food and cover along the edge(s) of the field to connect to adjacent wildlife habitat.	acre	10
E391118Z	WATER QUALITY DEGRADATION	Nutrients in Surface Water	X	X			X	X		Increase riparian forest buffer width for nutrient reduction	Where an existing forested riparian area is located along a river, stream, pond, lake, or other waterbody, increase the width of the buffer in order to allow a greater percentage of nutrient removal from surface and subsurface flows.	acre	15
E391126Z	WATER QUALITY DEGRADATION	Excessive Sediment in Surface Water	X	X			X	X	X	Increase riparian forest buffer width to reduce sediment loading	Where an existing forested riparian area is located along a river, stream, pond, lake, or other waterbody, increase the width of the buffer in order to allow a greater percentage of sediment removal from surface flows.	acre	15
E391127Z	WATER QUALITY DEGRADATION	Elevated Water Temperature	X	X	X	X	X	X	X	Increase stream shading for stream temperature reduction	Riparian area tree canopy cover density is increased and the extent of the forested riparian area is increased to provide greater stream shading.	acre	15

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E391136Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food	X	X	X	X	X	X	X	Increase riparian forest buffer width to enhance wildlife habitat	Where an existing riparian forest buffer is located along a river, stream, pond, lake, or other waterbody, increase the diversity of native species, control invasive species, install fencing and relocate equipment operations, trails, and livestock to increase the functional width of the buffer.	acre	15
E393118Z	WATER QUALITY DEGRADATION	Nutrients in Surface Water	X	X				X		Extend existing filter strip to reduce excess nutrients in surface water	Extend existing filter strips for water quality protection (reduce excess nutrients in surface water). Extend the existing buffer for a total of 60 feet or more to enhance water quality functions. The extended buffers must be composed of at least 5 species of non-noxious, wildlife friendly grasses and/or perennial forbs best suited to site conditions. Include species that provide pollinator food and habitat where possible.	acre	10
E393122Z	WATER QUALITY DEGRADATION	Excess Pathogens and Chemicals from Manure, Bio-solids or Compost Applications in Surface Water	X	X				X		Extend existing filter strip to reduce excess pathogens and chemicals in surface water	Extend existing filter strips for water quality protection (reduce excess pathogens and chemicals from manure, bio-solids or compost applications in surface waters). Extend the existing buffer for a total of 60 feet or more to enhance water quality functions. The extended buffers must be composed of at least 5 species of non-noxious, wildlife friendly grasses and/or perennial forbs best suited to site conditions. Include species that provide pollinator food and habitat where possible.	acre	10
E393126Z	WATER QUALITY DEGRADATION	Excessive Sediment in Surface Water	X	X				X	X	Extend existing filter strip to reduce excess sediment in surface water	Extend existing filter strips for water quality protection (reduce excess sediment in surface waters). Extend the existing buffer for a total of 60 feet or more to enhance water quality functions. The extended buffers must be composed of at least 5 species of non-noxious, wildlife friendly grasses and/or perennial forbs best suited to site conditions. Include species that provide pollinator food and habitat where possible.	acre	10
E395137X	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter	X	X	X	X	X	X		Stream habitat improvement through placement of woody biomass	Flexible placement of wood (unanchored/unpinned) in small, 1st and 2nd order streams to improve stream habitat conditions for aquatic species and natural stream processes.	acre	5
E399137X	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter	X	X	X	X	X	X	X	Fishpond management for native aquatic and terrestrial species	Pond rehabilitation, buffer, and watershed management actions are taken to improve habitat for native species of fish, amphibians, and shorebirds.	acre	1
E449114Z1	INSUFFICIENT WATER	Inefficient Use of Irrigation Water	X	X	X					Advanced IWM--Soil moisture is monitored, recorded, and used in decision making	Advanced irrigation water management using soil moisture monitoring (one sensor per 40 acres or more) with data loggers. Record keeping is such that a daily water balance is calculated, and future irrigations forecast.	acre	1
E449114Z2	INSUFFICIENT WATER	Inefficient Use of Irrigation Water	X	X	X					Advanced IWM--Weather is monitored, recorded and used in decision making. Actual evapotranspiration is calculated and used in forecasting future irrigation	Advanced irrigation water management using on-site weather measurements to calculate real-time evapotranspiration and forecast future water use by plants. Record keeping is such that a daily water balance is calculated and future irrigations forecast.	acre	1
E449114Z3	INSUFFICIENT WATER	Inefficient Use of Irrigation Water	X	X	X					Complete pumping plant evaluation for all pumps on a farm to determine the potential to install a variable frequency drive.	On branching systems, or pumps that service multiple fields, or multiple pumps, install a Variable Frequency Drive motor controller(s) if recommended in the pump test and the simple payback in terms of energy savings is less than 10 years.	no	1
E449144Z	INEFFICIENT ENERGY USE	Farming/Ranching Practices and Field Operations	X	X	X			X		Complete pumping plant evaluation for all pumps on a farm.	Rehabilitate/replace/reconfigure all pumps that have the potential to perform 10% more efficiently as identified in the pump test.	no	1
E472118Z	WATER QUALITY DEGRADATION	Nutrients in Surface Water	X	X	X	X	X	X	X	Manage livestock access to streams, ditches, and other waterbodies to reduce nutrients in surface water	Installation of structures and implementation of grazing management actions that restrict livestock access to streams, ditches, and other waterbodies in order to reduce nutrient loading to surface waters.	ft	10
E472122Z	WATER QUALITY DEGRADATION	Excess Pathogens and Chemicals from Manure, Bio-solids or Compost Applications in Surface Water	X	X	X	X	X	X	X	Manage livestock access to streams, ditches, and other waterbodies to reduce pathogens in surface water	Installation of structures and implementation of grazing management actions that restrict livestock access to streams, ditches, and other waterbodies in order to reduce the introduction of pathogens to surface waters.	ft	10

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Enhancement Code	Resource Concern	Resource Concern Cause	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Range	Forest	Associated Ag Land	Farmstead	Enhancement Name	Enhancement Description	Units	Lifespan
E484106Z	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X							Mulching to improve soil health	Implement a crop rotation which utilizes mulch and addresses all four principle components of soil health: increases diversity of the cropping system; maintains residue throughout the year; keeps a living root; and minimizes soil chemical, physical and biological disturbance. Plant-based mulching materials will be applied at least once during the rotation. The rotation will include at least 4 different crop and/or cover crop types (crop types include cool season grass, warm season grass, cool season broadleaf, warm season broadleaf) grown in a sequence that will produce a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation, as determined by the Soil Conditioning Index (SCI). The current NRCS wind and water erosion prediction technologies must be used to document the rotation and SCI calculations.	acre	1
E512101Z1	SOIL EROSION	Sheet and Rill Erosion	X	X						Cropland conversion to grass-based agriculture to reduce water erosion	Conversion of cropped land to grass-based agriculture. Mixtures of perennial grasses, forbs, and/or legume species are established on cropland where annually-seeded cash crops have been grown.	acre	5
E512101Z2	SOIL EROSION	Sheet and Rill Erosion			X					Forage and biomass planting for water erosion to improve soil health	Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production that can provide for reduced soil erosion, improving soil health.	acre	5
E512106Z1	SOIL QUALITY DEGRADATION	Organic Matter Depletion	X	X						Cropland conversion to grass-based agriculture for soil organic matter improvement	Conversion of cropped land to grass-based agriculture. Mixtures of perennial grasses, forbs, and/or legume species are established on cropland where annually-seeded cash crops have been grown.	acre	5
E512106Z2	SOIL QUALITY DEGRADATION	Organic Matter Depletion			X					Forage plantings that can help increase organic matter in depleted soils	Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production that can help improve soil quality of depleted sites through increase or conservation of the organic matter in the soil.	acre	5
E512126Z	WATER QUALITY DEGRADATION	Excessive Sediment in Surface Water	X	X						Cropland conversion to grass-based agriculture to reduce sediment loading	Conversion of cropped land to grass-based agriculture. Mixtures of perennial grasses, forbs, and/or legume species are established on cropland where annually-seeded cash crops have been grown.	acre	5
E512132Z1	DEGRADED PLANT CONDITION	Undesirable Plant Productivity and Health	X	X						Cropland conversion to grass-based agriculture to improve plant condition	Conversion of cropped land to grass-based agriculture. Mixtures of perennial grasses, forbs, and/or legume species are established on cropland where annually-seeded cash crops have been grown.	acre	5
E512132Z2	DEGRADED PLANT CONDITION	Undesirable Plant Productivity and Health			X					Native grasses or legumes in forage base to improve plant productivity and health	Establishing adapted and/or compatible species, varieties, or cultivars of perennial, herbaceous species that can provide the structure and composition needed to enhance livestock and wildlife habitat, particularly when targeted forage supply and quality, cover, and shelter are not available in other pastures.	acre	5
E512133Z1	DEGRADED PLANT CONDITION	Inadequate Structure and Composition			X			X		Native grasses or legumes in forage base to improve plant community structure and composition	Establishing adapted and/or compatible species, varieties, or cultivars of perennial, herbaceous species that can provide the structure and composition needed to enhance livestock and wildlife habitat, particularly when targeted forage supply and quality, cover, and shelter are not available in other pastures.	acre	5
E512133Z2	DEGRADED PLANT CONDITION	Inadequate Structure and Composition			X			X		Forage plantings that enhance bird habitat (structure and composition)	Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production that can provide cover and shelter components of bird habitat.	acre	5
E512136Z1	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food			X					Establish pollinator and/or beneficial insect food habitat	Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species that can provide nectar for pollinators and forage and other habitat values for wildlife and livestock, particularly at times when targeted nectar, forage supply and quality, cover, and shelter are not available in other pastures.	acre	5
E512136Z2	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food			X					Native grass or legumes in forage base to provide wildlife food	Establishing adapted and/or compatible species, varieties, or cultivars of perennial, herbaceous species that can provide the structure and composition needed to enhance livestock and wildlife habitat, particularly when targeted forage supply and quality, cover, and shelter are not available in other pastures.	acre	5
E512137Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter			X					Forage plantings that enhance bird habitat (cover and shelter)	Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production that can provide cover and shelter components of bird habitat.	acre	5

Activity List For Participants

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E512139Z1	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Habitat Continuity (Space)			X			X	X	Establish wildlife corridors to provide habitat continuity	Establishing adapted and/or compatible species, varieties, or cultivars of perennial, herbaceous species that can provide cover needed for wildlife species of concern to move from food/cover/water sources to other food/cover/water sources as needed for their life cycles, and/or to enhance the utility of underused wildlife habitat areas.	acre	5
E512139Z2	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Habitat Continuity (Space)			X			X	X	Establish pollinator and/or beneficial insect habitat continuity (space)	Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species that can provide nectar for pollinators and forage and other habitat values for wildlife and livestock, particularly at times when targeted nectar, forage supply and quality, cover, and shelter are not available in other pastures.	acre	5
E512139Z3	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Habitat Continuity (Space)			X			X	X	Establish Monarch butterfly habitat in pastures	Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species that can provide nectar for Monarch butterflies and forage and other habitat values for wildlife and livestock, particularly at times when targeted nectar, forage supply and quality, cover, and shelter are not available in other pastures.	acre	5
E512140Z	LIVESTOCK PRODUCTION LIMITATION	Inadequate Feed and Forage		X	X			X		Native grasses or legumes in forage base	Establishing adapted and/or compatible species, varieties, or cultivars of perennial, herbaceous species that can provide the structure and composition needed to enhance livestock and wildlife habitat, particularly when targeted forage supply and quality, cover, and shelter are not available in other pastures.	acre	5
E528104Z	SOIL EROSION	Classic Gully Erosion			X	X				Grazing management that protects sensitive areas from gully erosion	Grazing management employed will provide cover and density needed in the watershed in order to protect sensitive areas such as sinkholes, streams, highly erodible areas, or locations with plants that cannot tolerate defoliation.	acre	1
E528105Z	SOIL EROSION	Streambank, Shoreline, Water Conveyance Channels			X	X				Prescribed grazing that improves or maintains riparian and watershed function-erosion	Grazing management employed will provide cover and density needed in the watershed in order to reduce runoff, improve infiltration, provide for above ground water filtration and sustain applicable fish and wildlife species habitat.	acre	1
E528118Z1	WATER QUALITY DEGRADATION	Nutrients in Surface Water			X					Prescribed grazing on pastureland that maintains/improves riparian and watershed function impairment from nutrients.	Grazing management employed will provide cover and density needed in the watershed in order to reduce runoff, improve infiltration, provide for above ground water filtration and sustain applicable fish and wildlife species habitat.	acre	1
E528119Z	WATER QUALITY DEGRADATION	Nutrients in Ground Water			X	X				Grazing management that protects sensitive areas-ground water from nutrients	Grazing management employed will provide cover and density needed in the watershed in order to protect sensitive areas such as sinkholes, streams, highly erodible areas, or locations with plants that cannot tolerate defoliation.	acre	1
E528122Z	WATER QUALITY DEGRADATION	Excess Pathogens and Chemicals from Manure, Bio-solids or Compost Applications in Surface Water			X					Prescribed grazing on pastureland that maintains/improves riparian and watershed function impairment from pathogens/chemicals.	Grazing management employed will provide cover and density needed in the watershed in order to reduce runoff, improve infiltration, provide for above ground water filtration and sustain applicable fish and wildlife species habitat.	acre	1
E528126Z	WATER QUALITY DEGRADATION	Excessive Sediment in Surface Water			X					Prescribed grazing on pastureland that maintains/improves riparian and watershed function through minimizing sediment in surface water.	Grazing management employed will provide cover and density needed in the watershed in order to reduce runoff, improve infiltration, provide for above ground water filtration and sustain applicable fish and wildlife species habitat.	acre	1
E528132Z1	DEGRADED PLANT CONDITION	Undesirable Plant Productivity and Health			X					Improved grazing management for plant productivity and health through monitoring activities	Managing the harvest of vegetation with grazing and/or browsing animals as adjusted when following recommendations of a Certified Forage and Grassland Professional, Certified Range Management Consultant, or Certified Professional in Range Management, generated through pasture condition scoring (PCS).	acre	1
E528132Z2	DEGRADED PLANT CONDITION	Undesirable Plant Productivity and Health			X					Stockpiling cool season forage to improve plant productivity and health	Grazing management employed to stop grazing events of selected paddock(s) to allow pasture forages to grow to maximum vegetative biomass accumulation before the end of the growing season.	acre	1
E528133Z1	DEGRADED PLANT CONDITION	Inadequate Structure and Composition			X			X		Stockpiling cool season forage to improve structure and composition.	Grazing management employed will stop grazing events of selected paddock(s) to allow pasture forages to grow to maximum vegetative biomass accumulation before the end of the growing season.	acre	1

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E528133Z2	DEGRADED PLANT CONDITION	Inadequate Structure and Composition			X	X		X		Grazing management for improving quantity and quality of plant structure and composition for wildlife	Managing the harvest of vegetation with grazing and/or browsing animals for the purpose of improving or maintaining the structure and composition of the plant community that is available for wildlife.	acre	1
E528136Z1	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food			X	X				Grazing management for improving quantity and quality of food for wildlife	Grazing management employed will provide plant structure, density and diversity needed for the desired wildlife species of concern.	acre	1
E528137Z1	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter			X	X				Grazing management for improving quantity and quality of cover and shelter for wildlife	Grazing management employed will provide plant structure, density and diversity needed for the desired wildlife species of concern.	acre	1
E528137Z2	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter			X	X				Incorporating wildlife refuge areas in contingency plans for prescribed grazing where pastureland is the predominant land use, for wildlife cover and shelter.	A prescribed grazing plan that includes 18 month (or longer) deferment of a pasture that consists of native grasses and/or legumes and/or perennial forbs for the purpose of meeting the needs for drought/disaster contingency plans that will also provide wildlife habitat for a period of time.	acre	1
E528140Z1	LIVESTOCK PRODUCTION LIMITATION	Inadequate Feed and Forage			X	X		X		Maintaining quantity and quality of forage for animal health and productivity	Managing the harvest of vegetation with grazing and/or browsing animals for the purposes of maintaining desired pasture composition/plant vigor and improving/maintaining quantity and quality of forage for the animals' health and productivity.	acre	1
E578139X	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Habitat Continuity (Space)	X	X		X	X	X	X	Stream crossing elimination	Existing stream crossings on an operation are consolidated into fewer crossings in order to reduce impacts to stream habitat.	no	10
E590118X	WATER QUALITY DEGRADATION	Nutrients in Surface Water	X	X						Reduce risks of nutrient losses to surface water by utilizing precision agriculture technologies to plan and apply nutrients	Utilize precision application technology and techniques to reduce risk of nutrients in surface water by reducing total amount of applied and reducing the potential for delivery of nutrients into water bodies. Precision agriculture technology is utilized to plan and apply nutrients to improve nutrient use efficiency and reduce risk of nutrient losses.	acre	1
E590118Z	WATER QUALITY DEGRADATION	Nutrients in Surface Water	X	X						Improving nutrient uptake efficiency and reducing risk of nutrient losses to surface water	Nutrient management encompasses managing the amount, source, placement, and timing of the application of plant nutrients and soil amendments. Nutrients are currently being applied on the farm based on the 4R nutrient stewardship principles. Enhanced nutrient use efficiency strategies or technologies are utilized to improve nutrient use efficiency and reduce risk of nutrient losses.	acre	1
E590119Z	WATER QUALITY DEGRADATION	Nutrients in Ground Water	X	X						Improving nutrient uptake efficiency and reducing risk of nutrient losses to groundwater	Nutrient management encompasses managing the amount, source, placement, and timing of the application of plant nutrients and soil amendments. Nutrients are currently being applied on the farm based on the 4R nutrient stewardship principles. Enhanced nutrient use efficiency strategies or technologies are utilized to improve nutrient use efficiency and reduce risk of nutrient losses.	acre	1
E590130Z	AIR QUALITY IMPACTS	Emission of Greenhouse Gases (GHGs)	X	X						Improving nutrient uptake efficiency and reducing risks to air quality – emissions of greenhouse gases (GHGs)	Nutrient management encompasses managing the amount, source, placement, and timing of the application of plant nutrients and soil amendments. Nutrients are currently being applied on the farm based on the 4R nutrient stewardship principles. Enhanced nutrient use efficiency strategies or technologies are utilized to improve nutrient use efficiency and reduce risks to air quality by reducing emissions of Greenhouse Gases (GHGs).	acre	1
E595116X	WATER QUALITY DEGRADATION	Pesticides in Surface Water	X	X						Reduce risk of pesticides in surface water by utilizing precision pesticide application techniques	Utilize precision application techniques to reduce risk of pesticides in surface water by reducing total amount of chemical applied and reducing the potential for delivery of chemicals into water bodies.	acre	1
E595116Z	WATER QUALITY DEGRADATION	Pesticides in Surface Water	X	X						Reduce risk of pesticides in surface water by utilizing IPM PAMS techniques	Utilize integrated pest management (IPM) prevent, avoidance, monitoring, and suppression (PAMS) techniques to reduce risk of pesticides in surface water and reducing the potential for delivery of chemicals into water bodies.	acre	1
E595129Z	AIR QUALITY IMPACTS	Emissions of Ozone Precursors	X	X						Reduce ozone precursor emissions related to pesticides by utilizing IPM PAMS techniques.	Utilize integrated pest management (IPM) prevent, avoidance, monitoring, and suppression (PAMS) techniques to reduce ozone precursor emissions related to pesticides.	acre	1

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E612101Z	SOIL EROSION	Sheet and Rill Erosion	X	X						Cropland conversion to trees for long term water erosion control	Conversion of cropland to trees for long term erosion control and improvement of water quality. Trees are established on cropland where annually-seeded cash crops have been grown.	acre	15
E612126Z	WATER QUALITY DEGRADATION	Excessive Sediment in Surface Water	X	X						Cropland conversion to trees for long term improvement of water quality	Conversion of cropland to trees for long term erosion control and improvement of water quality. Trees are established on cropland where annually-seeded cash crops have been grown.	acre	15
E612130Z	AIR QUALITY IMPACTS	Emission of Greenhouse Gases (GHGs)	X	X	X	X	X	X	X	Planting for high carbon sequestration rate	Plant tree species and use stocking levels for higher growth to increase the rate of carbon sequestration (capture). Use species with a longer life span as well as relatively fast growth, and species suitable for durable manufactured products. Increase stocking levels in forests that are not fully stocked. Implement afforestation on appropriate open lands.	acre	15
E612132Z	DEGRADED PLANT CONDITION	Undesirable Plant Productivity and Health				X	X	X		Establishing tree/shrub species to restore native plant communities.	Establish trees and/or shrubs to restore elements of plant diversity that have been lost through past diseases or improper management. For example, disease-resistant varieties of elm and chestnut can be established to restore the ecological functions of American elm and American chestnut. At the stand level, past forest management may have eliminated certain native tree species. Restoring stand-level diversity and function addresses a wide array of resource concerns and strengthens ongoing management activities. This enhancement improves a forest that is already in good condition by increasing plant diversity, and improving health and vigor through adding plants with resistance to disease, pests, or other local hazards. Additional benefits include contributing to carbon storage, and providing diversity in wildlife habitat and food sources.	acre	15
E612133X1	DEGRADED PLANT CONDITION	Inadequate Structure and Composition			X	X	X	X	X	Adding food-producing trees and shrubs to existing plantings	Plant food-producing trees and shrubs for wildlife or human consumption within windbreaks, alley cropping, multi-story cropping, silvopasture systems, and/or riparian forest buffers.	acre	15
E612133X2	DEGRADED PLANT CONDITION	Inadequate Structure and Composition			X	X	X	X	X	Cultural plantings	Plant trees and shrubs that are of cultural significance, such as those species utilized by Tribes in traditional practices, medicinal plants, species used in basket-making, etc. (e.g., paper birch, slippery elm, witch hazel).	acre	15
E612133X3	DEGRADED PLANT CONDITION	Inadequate Structure and Composition					X	X	X	Sugarbush management	Establish or maintain species diversity in a sugarbush to enhance pollinator and wildlife needs. Maintain at least 20% of basal area in species other than sugar maple (Acer saccharum) to provide species diversity. Half of the trees that are not sugar maples (10%) will be mast producing species (hard or soft mass). Use maple tree tapping guidelines that minimize tree damage.	acre	15
E612136Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food	X	X	X	X	X	X	X	Tree/shrub planting for wildlife food	Tree or shrub planting to enhance habitat for native wildlife. A minimum of five tree or shrub species will be used; they will be species that provide food and/or cover for identified wildlife species.	acre	15
E612137Z	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter	X	X	X	X	X	X	X	Tree/shrub planting for wildlife cover	Tree or shrub planting to enhance habitat for native wildlife. A minimum of five tree or shrub species will be used; they will be species that provide food and/or cover for identified wildlife species.	acre	15
E647136Z3	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food	X							Establish and maintenance of moist soil vegetation on cropland edges to increase wildlife food sources and habitat diversity	The wetter or more water saturated portions of cropland fields such as areas adjacent to field drains, have the potential to produce a significant amount of moist soil plants which are a tremendously valuable source of forage and cover for many waterfowl, shorebird and wading bird species, especially during a period of time when such plants may be limited. Under normal cropland production, the native vegetation is restricted on these sites through mechanical and/or chemical control. These maintained moist soil plants also will provide filtering and improve water quality.	acre	1
E647137Z2	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter	X							Establish and maintenance of moist soil vegetation on cropland edges to increase wildlife cover, shelter and habitat diversity	The wetter or more water saturated portions of cropland fields such as areas adjacent to field drains, have the potential to produce a significant amount of moist soil plants which are a tremendously valuable source of forage and cover for many waterfowl, shorebird and wading bird species, especially during a period of time when such plants may be limited. Under normal cropland production, the native vegetation is restricted on these sites through mechanical and/or chemical control. These maintained moist soil plants also will provide filtering and improve water quality.	acre	1

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E647139Z1	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Habitat Continuity (Space)	X							Establish and maintain wildlife habitat continuity by providing early successional, naturally occurring vegetation in ditches and ditch bank borders	This enhancement is to encourage the establishment of early successional, naturally occurring vegetation in ditches, side slope and bank borders to provide cover, critical nesting and brood rearing habitat as well as filtering overland flow and improving water quality. Ditches perform the critical function of removing water from agricultural lands. Allowing naturally occurring vegetation to develop along ditches, including side slopes, banks and borders, will help provide food and cover for wildlife while enhancing aquatic habitat and improving water quality. Ditches and ditch borders provide a foundation that supports a diverse wildlife community including Northern Bobwhite (<i>Colinus virginianus</i>) and other birds preferring early successional cover. Rabbits, furbearers, amphibians and many other species that inhabit agriculture areas will use this vegetative cover. These areas can also provide critical nesting habitat for the Mottled Duck (<i>Anas fulvigula</i>).	acre	1
E666106Z2	SOIL QUALITY DEGRADATION	Organic Matter Depletion					X			Maintaining and improving forest soil quality	Adopts guidelines for maintaining and improving soil quality on sites where forest management activities are practiced. These guidelines will increase soil organic matter content, improve nutrient cycling, and increase infiltration and retention of precipitation. Avoiding soil compaction will allow for greater root development and tree growth, limit windthrow, and reduce drought stress. Increasing carbon storage on site will maintain the soil microbial community and provide wildlife benefits.	acre	10
E666107Z	SOIL QUALITY DEGRADATION	Compaction					X			Maintaining and improving forest soil quality by limiting compaction	Adopts guidelines for maintaining and improving soil quality on sites where forest management activities are practiced. These guidelines will increase soil organic matter content, improve nutrient cycling, and increase infiltration and retention of precipitation. Avoiding soil compaction will allow for greater root development and tree growth, limit windthrow, and reduce drought stress. Increasing carbon storage on site will maintain the soil microbial community and provide wildlife benefits.	acre	10
E666115Z2	INSUFFICIENT WATER	Inefficient Moisture Management					X			Enhance development of the forest understory to improve site moisture.	Forest stand improvement to manage the structure and composition of overstory and understory vegetation so that additional moisture is captured and filtered through the vegetation and soil. Managing the understory vegetation will increase available water to the plants, minimize run-off and erosion, and improve water quality.	acre	10
E666118Z	WATER QUALITY DEGRADATION	Nutrients in Surface Water					X			Enhance development of the forest understory to capture nutrients in surface water.	Forest stand improvement to manage the structure and composition of overstory and understory vegetation so that additional moisture is captured and filtered through the vegetation and soil, thus minimizing nutrient movement in surface water. Managing the understory vegetation will increase available water to the plants, minimize run-off and erosion, and improve water quality.	acre	10
E666119Z	WATER QUALITY DEGRADATION	Nutrients in Ground Water					X			Enhance development of the forest understory to capture nutrients and limit their movement into ground water.	Forest stand improvement to manage the structure and composition of overstory and understory vegetation so that additional moisture is captured and filtered through the vegetation and soil, thus minimizing nutrient loss through ground water. Managing the understory vegetation will increase available water to the plants, minimize run-off and erosion, and improve water quality.	acre	10

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E666130Z	AIR QUALITY IMPACTS	Emission of Greenhouse Gases (GHGs)					X	X	X	Increase on-site carbon storage	Utilize forest management techniques to maintain and increase on-site carbon storage. These include, but are not limited to, applying uneven-aged management, using longer rotations, retaining cavity/den trees, snags, and down woody debris, and protecting or increasing soil organic material.	acre	10
E666132Z1	DEGRADED PLANT CONDITION	Undesirable Plant Productivity and Health					X	X	X	Crop tree management for mast production	Forest stand improvement using crop tree management techniques to increase mast production	acre	10
E666132Z2	DEGRADED PLANT CONDITION	Undesirable Plant Productivity and Health					X			Reduce forest stand density to improve a degraded plant community.	Open pine or conifer management reduces the number of trees per acre while still maintaining the stand as forest land. It restores elements of stand structure that were formerly created by fire on sites where it is not currently feasible to conduct prescribed burning at the intensity needed to open the canopy. The open stand condition allows a significant amount of sunlight to reach the forest floor and stimulate understory vegetation. The initial treatment creates a stand structure that allows prescribed burning to be applied to limit redevelopment of the woody component of the understory and maintain open conditions. The vegetation management, and wide spacing between trees or clumps of trees, provides visual appeal, reduces the risk of wildfire, and provides wildlife habitat for many at-risk and listed wildlife species.	acre	10
E666133Z1	DEGRADED PLANT CONDITION	Inadequate Structure and Composition					X	X	X	Creating structural diversity with patch openings	Forest stand improvement that creates patch openings. Size and shape of patches will be based on characteristic natural wind disturbances, which will vary geographically and by forest type.	acre	10
E666133X	DEGRADED PLANT CONDITION	Inadequate Structure and Composition					X			Forest Stand Improvement to restore structure and composition in degraded hardwood stands	Hardwood forestland has been subject to poor logging practices ("high-grading") for decades. Without professional forestry assistance the best species and individual trees are removed, often before maturity ("diameter-limit cutting"), leaving the poorest species and individual trees to regenerate the stand. Reversing this process requires cutting or killing poor quality trees while retaining any desirable species that might still be present. A combination of 3 silvicultural methods are applied: crop tree release, group selection (all trees removed from an area 0.25 to 1.0 acre in size) and small clear-cuts (all trees removed from an area 1-3 acres in size).	acre	10
E666134Z	DEGRADED PLANT CONDITION	Excessive Plant Pest Pressure					X			Enhance development of the forest understory to create conditions resistant to pests.	Forest stand improvement that manages the structure and composition of overstory and understory vegetation to reduce vulnerability to damage by insects and diseases of forest trees. Managing the understory vegetation will also reduce the risk of wildfire, and promote development of herbaceous plants that benefit wildlife.	acre	10
E666136Z1	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food					X			Reduce forest density and manage understory along roads to improve wildlife food sources.	Opening the tree canopy along roads ("daylighting") allows more sunlight to reach the forest floor and promotes the growth of herbaceous plants. The resulting condition is more visually appealing for users of the roadway, and improves wildlife habitat and food sources for many wildlife species.	acre	10

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E666136Z2	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food					X			Reduce forest stand density to improve wildlife food sources.	Open pine or conifer management reduces the number of trees per acre while still maintaining the stand as forest land. It restores elements of wildlife habitat that formerly resulted from fire, on sites where it is not currently feasible to conduct prescribed burning. The open stand condition allows a significant amount of sunlight to reach the forest floor and stimulate understory vegetation. The initial treatment creates a stand structure that allows prescribed burning to be applied, where feasible, to limit redevelopment of the woody component of the understory and maintain open conditions. The vegetation management, and wide spacing between trees or clumps of trees, provides visual appeal, reduces the risk of wildfire, and provides wildlife habitat for many at-risk and listed wildlife species.	acre	10
E666136Z3	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Food					X			Create patch openings to enhance wildlife food sources and availability.	Forest stand improvement that creates patch openings. Size, shape, and arrangement of patches will be based on natural features, and emulate patches that would result from natural disturbance regimes of wind or fire, varying geographically and by forest type. The treatment will create diversity in stand composition and structure, and enhance wildlife food availability.	acre	10
E666137Z1	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter					X	X	X	Snags, den trees, and coarse woody debris for wildlife habitat	Improve wildlife habitat through creation and retention of snags, den trees, forest stand structural diversity, and coarse woody debris on the forest floor, to provide cover/shelter for native wildlife species.	acre	10
E666137Z2	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter					X	X	X	Summer roosting habitat for native forest-dwelling bat species	Creates new potential roost trees within upland and riparian forests to achieve desired summer habitat for forest dwelling bat species.	acre	10
E666137Z3	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter					X	X	X	Increase diversity in pine plantation monocultures	Creates small openings to provide diversity in pine plantations, which are typically monocultures and inhospitable to wildlife. Small openings are one-half (0.5) to three (3) acres in size. The cleared area will have the vegetation removed through harvesting, mulching, or other means compatible with the site.	acre	10
E666137Z6	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter					X			Create patch openings to enhance wildlife cover and shelter.	Forest stand improvement that creates patch openings. Size, shape, and arrangement of patches will be based on natural features, and emulate patches that would result from natural disturbance regimes of wind or fire, varying geographically and by forest type. The treatment will create diversity in stand composition and structure, and enhance the availability of wildlife food and cover.	acre	10

Activity List For Participants

Enhancement Code	Resource Concern	Resource Concern Cause	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Range	Forest	Associated Ag Land	Farmstead	Enhancement Name	Enhancement Description	Units	Lifespan
E666137Z7	FISH and WILDLIFE-INADEQUATE HABITAT	Inadequate Habitat-Cover/Shelter					X			Enhance development of the forest understory to provide wildlife cover and shelter.	Forest stand improvement that manages the structure and composition of overstory and understory vegetation to improve the quantity and quality of wildlife cover and shelter. Reducing the number of trees per acre provides canopy openings that allow sunlight to reach the forest floor and promote the growth of herbaceous plants, improving wildlife shelter and cover in the forest understory. The treatment also creates conditions that facilitate the use of prescribed burning as a follow-up practice to maintain wildlife shelter and cover.	acre	10

Activity List For Participants

Bundle Code	Eligible Land Uses							Bundle Name	Bundle Description	Units	Lifespan
	Crop (Annual and Perennial)	Pasture	Range	Forest	Associated Ag Land	Farmstead					
B000BFF1	X	X	X	X	X	X	X	Buffer Bundle#1	Extend existing Buffers to address water quality degradation, fish/wildlife inadequate habitat, and/or air quality impacts. Adopt E393118Z and E327136Z1 as well as one of the following enhancements: E612130Z, E612136Z.	acre	5
B000BFF2	X	X	X	X	X	X	X	Buffer Bundle#2	Extend existing Buffers to address water quality degradation, fish/wildlife inadequate habitat, and/or air quality impacts. Adopt E393126Z and E327137Z as well as one of the following: E612130Z, E612136Z.	acre	5
B000CPL1	X	X	X	X	X	X	X	Crop Bundle#1 - Precision Ag, No till	Address water quality degradation, air quality, and fish/wildlife inadequate habitat plus an option on soil erosion or soil quality degradation by adopting E595116X, E590118X, E329128Z, and E328137Z as well as one of the following : E340101Z, E340102Z, or E340107Z.	acre	1
B000CPL2	X	X	X	X	X	X	X	Crop Bundle#2 - Precision Ag, Reduced till	Address water quality degradation, air quality, and fish/wildlife inadequate habitat plus an option on soil erosion or soil quality degradation. Adopt E595116X, E590118X, E345128Z, and E328137Z as well as one of the following: E340101Z, E340102Z, or E340107Z.	acre	1
B000CPL3	X	X	X	X	X	X	X	Crop Bundle#3 - Soil health rotation, No till	Address soil quality degradation, insufficient water, water quality degradation, and fish/wildlife inadequate habitat. Adopt E328106Z1, E329115Z, E595116X, E590118X, and E327136Z1.	acre	1
B000CPL4	X	X	X	X	X	X	X	Crop Bundle#4 - Soil health rotation, Reduced till	Address soil quality degradation, insufficient water, water quality degradation, and fish/wildlife inadequate habitat, Adopt E328106Z1, E345115Z, E595116X, E590118X, and E327136Z1.	acre	1
B000CPL5	X	X	X	X	X	X	X	Crop Bundle#5 - Soil Health Assessment, No till	Address soil quality degradation, insufficient water, water quality degradation, and fish/wildlife inadequate habitat. Adopt E328106Z2, E329115Z, E595116Z, E590118Z, and E327136Z1.	acre	1
B000CPL6	X	X	X	X	X	X	X	Crop Bundle#6 - Soil Health Assessment, Reduced till	Address soil quality degradation, insufficient water, water quality degradation, and fish/wildlife inadequate habitat. Adopt E328106Z2, E345115Z, E595116Z, E590118Z, and E327136Z1.	acre	1
B000CPL7	X	X	X	X	X	X	X	Crop Bundle#7 - Soil Health -"Organic"	Address soil quality degradation, water quality degradation, and fish/wildlife inadequate habitat. Adopt E484106Z, E595116Z, E590118Z, E393126Z, and E612136Z.	acre	1
B000CPL8	X	X	X	X	X	X	X	Crop Bundle#8 - "Organic", Water erosion	Address soil erosion, soil quality degradation, and water quality degradation plus an option on fish/wildlife inadequate habitat. Adopt E340101Z, E328106Z2, E345106Z, and E590118Z as well as one of the following: E327136Z1, E327137Z , or E595116Z.	acre	1
B000FST1	X	X	X	X	X	X	X	Forest Bundle#1	Address forest management on sites that are not adapted to natural fire disturbances. Addresses resource concerns air quality impacts, degraded plant condition and fish/wildlife inadequate habitat. Adopt E666130Z, E666132Z, E666137Z1, E666137Z2, E612137Z.	acre	10
B000MRB1	X	X	X	X	X	X	X	MRBI Bundle#1 - Irrigated Cropland	Address soil erosion, insufficient water, and water quality degradation. Adopt E340101Z and E449114Z2 as well as one of the following: E595116X or E595116Z, and one of the following: E590118X or E590118Z.	acre	1
B000MRB2	X	X	X	X	X	X	X	MRBI Bundle#2 - Non-Irrigated Cropland #1	Address soil erosion, soil quality degradation, and water quality degradation. Adopt E340101Z and E345106Z as well as one of the following: E590118X or E590118Z, and one of the following: E595116X or E595116Z.	acre	1

Activity List For Participants

Bundle Code	Eligible Land Uses							Bundle Name	Bundle Description	Units	Lifespan
	Crop (Annual and Perennial)	Pasture	Range	Forest	Associated Ag Land	Farmstead					
B000MRB3	X	X	X	X	X	X	X	MRBI Bundle#3 - Non-Irrigated Cropland #2	Address soil erosion, soil quality degradation, and water quality degradation. Adopt E340101Z and E328106Z1 as well as one of the following: E590118X or E590118Z, and one of the following: E595116X or E595116Z.	acre	1
B000MRB4	X	X	X	X	X	X	X	MRBI Bundle#4 - Cropland with Water Bodies, No till	Address soil erosion, soil quality degradation, and water quality degradation. Adopt E340101Z, E329106Z, E595116Z, E590118Z and one of the following optional enhancements E391118Z, E391126Z, E390118Z, E390126Z, E393118Z, or E393126Z.	acre	1
B000MRB5	X	X	X	X	X	X	X	MRBI Bundle#5 - Cropland with Water Bodies, Reduced till	Address soil erosion, soil quality degradation, and water quality degradation. Adopt E340101Z, E345106Z, E595116Z, E590118Z and one of the following optional enhancements: E391118Z, E391126Z, E390118Z, E390126Z, E393118Z, or E393126Z.	acre	1
B000MRB6	X	X	X	X	X	X	X	MRBI Bundle#6 - Pastureland	Address soil quality degradation, water quality degradation, and fish/wildlife inadequate habitat plus an option on soil erosion. Adopt E512106Z2, E472118Z, and one of the following optional enhancements: E528105Z or E528118Z1, and one of the following optional enhancements: E390136Z or E391136Z.	acre	1
B000OGL1	X	X	X	X	X	X	X	Ogallala Bundle#1	Address insufficient water, water quality degradation, and inefficient energy use plus an option on soil quality degradation. Adopt E329114Z, E449114Z2, E449144Z, and one of the following optional enhancements: E340106Z2, E340118Z, or E340119Z, as well as one of the following optional enhancements: E590118X, E590118Z, E590119Z.	acre	1
B000OGL2	X	X	X	X	X	X	X	Ogallala Bundle#2	Address insufficient water, water quality degradation, and inefficient energy use plus an option on soil quality degradation. Adopt E345114Z, E449114Z2, E449144Z, and one of the following optional enhancements: E340106Z2, E340118Z, or E340119Z, and one of the following optional enhancements: E590118X, E590118Z, or E590119Z.	acre	1
B000PST1	X	X	X	X	X	X	X	Pasture Bundle#1 - Organic	Address water quality degradation, degraded plant condition, and fish/wildlife inadequate habitat. Adopt E472118Z, E528132Z1, E512136Z1, and one of the following optional enhancements: E528118Z1 or E315134Z.	acre	1
B000PST2	X	X	X	X	X	X	X	Pasture Bundle#2	Address soil quality degradation, water quality degradation, and degraded plant condition plus an option on fish/wildlife inadequate habitat. Adopt E512106Z2, E528126Z, E528132Z1, E528132Z2, and one of the following optional enhancements: E315132Z, E512132Z2, or E381137Z.	acre	1

Activity List For Participants

Practice Code	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Range	Forest	Associated Ag Land	Farmstead	Practice Name	Units	lifespan
315			X	X	X	X	X	Herbaceous Weed Control	ac	5
324	X	X						Deep Tillage	ac	1
327	X	X			X	X	X	Conservation Cover	ac	5
328	X							Conservation Crop Rotation	ac	1
329	X							Residue and Tillage Management, No Till	ac	1
340	X	X						Cover Crop	ac	1
342	X	X	X	X	X	X	X	Critical Area Planting	ac	10
345	X							Residue and Tillage management, Reduced till	ac	1
374	X	X	X		X	X	X	Farmstead Energy Improvement	no	10
380	X	X		X		X		Windbreak/Shelterbelt Establishment	ft	15
382			X	X				Fence	ft	20
386	X	X				X		Field Border	ac	10
391	X	X	X	X	X	X	X	Riparian Forest Buffer	ac	15
393	X	X				X	X	Filter Strip	ac	10
395	X	X	X	X	X	X	X	Stream Habitat Improvement and Management	ac	5
396	X	X		X		X	X	Aquatic Organism Passage	mi	5
410	X	X				X		Grade Stabilization Structure	no	15
412	X	X				X	X	Grassed Waterway	ac	10
422	X	X				X		Hedgerow	ft	15
430	X							Irrigation Pipeline	ft	20
441					X			Irrigation System, Microirrigation	ac	15
449	X	X	X			X		Irrigation Water Management	ac	1
472	X	X	X	X	X	X	X	Access Control	ac	10
484	X							Mulching	ac	1
490					X			Tree/Shrub Site Preparation	ac	1
512	X	X	X			X	X	Forage and Biomass Planting	ac	5
528			X	X	X	X		Prescribed Grazing	ac	1
533	X							Pumping Plant	no	15
558						X	X	Roof Runoff Structure	no	15
561							X	Heavy Use Area Protection	sq ft	10
578	X	X		X	X	X	X	Stream Crossing	no	10
587	X							Structure for Water Control	no	20
590	X	X	X		X			Nutrient Management	ac	1
595	X	X		X	X		X	Integrated Pest Management	ac	1
606						X		Subsurface Drain	ft	20
612	X	X	X	X	X	X	X	Tree/Shrub Establishment	ac	15
614			X	X		X		Watering Facility	no	10
644	X	X	X	X	X	X	X	Wetland Wildlife Habitat Management	ac	1
645	X	X	X	X	X	X	X	Upland Wildlife Habitat Management	ac	1
647	X	X	X	X	X	X	X	Early Successional Habitat Development/Management	ac	1
654	X	X	X	X		X	X	Road/Trail/Landing Closure and Treatment	ft	10
655					X			Forest Trails and Landings	ft	5
660	X	X	X	X	X	X	X	Tree/Shrub Pruning	ac	10
666					X	X	X	Forest Stand Improvement	ac	10