

FY 2023 IRA CSP Enhancements

Code	Resource Concern	Resource Concern Cause	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Forest	Associated Ag Land	Farmstead	Full Enhancement Name	Enhancement Description	Units	Enhancement Lifespan	Max years enh. can be contracted	Suitable for Land Use Conversion
E327A	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X		X	X	X	Conservation cover 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	1	NA
E327B	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X			X	X	Establish Monarch butterfly habitat	Seed or plug milkweed (<i>Asclepias</i> spp.), and high-value monarch butterfly nectar plants on marginal cropland, field borders, contour buffer strips, and similar areas.	acre	5	1	NA
E328E	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability	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	5	NA
E328F	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability	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	5	NA
E328G	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability	X						Crop rotation on recently converted CRP grass/legume cover for soil organic matter improvement	Crop rotation on acres converted, no more than 2 years prior, from CRP grass/legume cover to annual crops. Diverse rotation with living roots and residue cover throughout year and minimal disturbance. Enhancement not applicable on hayland.	acre	1	5	NA
E328N	SOIL	Soil Quality Limitations	X						Intercropping to improve soil health	This enhancement involves the use of intercropping principles (i.e., growing two or more crops in close proximity to each other during part or all of their life cycles) to promote interactions that improve soil health, plant health, reduce inputs via increased biodiversity and contribute to pest management. This enhancement cannot be used for annual hay or silage crops. It is for grain/seed/vegetable production only.	acre	1	5	N/A
E328O	SOIL, PLANTS	Sheet and Rill Erosion; Wind Erosion; Organic Matter Depletion; Compaction; Plant Pest Pressure; Soil Organism Habitat Loss or Degradation; Aggregate Instability	X						Perennial grain crop conservation rotation	Establish a perennial grain crop as part of a rotation with two other crops. The crop rotation will reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and reduce plant pest pressures.	acre	1	5	N/A
E329A	SOIL	Sheet and Rill Erosion; Wind Erosion	X						No till to reduce soil erosion	Establish no till system to reduce sheet and rill and wind erosion soil loss. Field(s) must have a soil loss at or below the soil tolerance (T) level for water and wind 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	5	NA
E329B	AIR	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	5	NA

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E329C	WATER	Inefficient Irrigation Water Use; Naturally Available Moisture Use	X						No till to increase plant-available moisture	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	5	NA
E329D	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability	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	5	NA
E329E	ENERGY	Energy Efficiency of 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	5	NA
E340A	SOIL	Sheet and Rill Erosion; Wind Erosion	X	X					Cover crop to reduce soil erosion	Cover crop added to current crop rotation to reduce soil erosion from water and wind 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	5	NA
E340B	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability	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	5	NA
E340C	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability	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 increase 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	5	NA
E340D	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability		X					Intensive orchard/vineyard floor cover cropping to increase soil health	Implement orchard or vineyard floor cover crops. Cover crop shall not be harvested, grazed, or burned. Must achieve a soil conditioning index of zero or higher and produce a positive trend in the Organic Matter subfactor over the life of the rotation.	acre	1	5	NA
E340F	SOIL	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	5	NA
E340G	WATER	Nutrients Transported to Surface Water; Nutrients Transported to Groundwater	X	X					Cover crop to reduce water quality degradation by utilizing excess soil nutrients	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	5	NA
E340H	PLANT	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	5	NA
E340I	SOIL	Compaction	X						Using cover crops for biological strip till	Establish alternating strips of cover crops in which one strip acts as a biological strip-tiller and the adjacent strip promotes soil health with high residue cover crops. This will facilitate planting of the subsequent cash crop into the biologically strip-tilled row without the need for mechanical disturbance.	acre	1	5	NA
E345A	SOIL	Sheet and Rill Erosion; Wind Erosion	X						Reduced tillage to reduce soil erosion	Establish a reduced tillage system to reduce soil loss. Field(s) must have a soil loss at or below the soil tolerance (T) level for water and wind 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	5	NA

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E345B	AIR	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	5	NA
E345C	WATER	Inefficient Irrigation Water Use; Naturally Available Moisture Use	X						Reduced tillage to increase plant-available moisture	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	5	NA
E345D	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability	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	5	NA
E345E	ENERGY	Energy Efficiency of 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.	acre	1	5	NA
E386A	SOIL	Sheet and Rill Erosion; Wind Erosion	X	X			X		Enhanced field borders to reduce soil erosion along the edge(s) of a field	Enhance existing field borders to a width of at least 30 feet and establish a single species or mixture of species that provide a dense ground cover along the edge(s) of the field.	acre	10	1	NA
E386B	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability	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 and establish a single species or mixture of species that provide a dense ground cover and dense rooting system along the edge(s) of the field.	acre	10	1	NA
E386C	AIR	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 40 feet and establish a mixture of species that decrease the particulate emissions along the edge(s) of the field.	acre	10	1	NA
E386D	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X			X		Enhanced field borders to increase food for pollinators along the edge(s) of a field	Enhance existing field borders to a width of at least 40 feet and establish a mixture of species that provide food for pollinators along the edge(s) of the field.	acre	10	1	NA
E386E	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X			X		Enhanced field borders to increase wildlife food and habitat along the edge(s) of a field	Enhance existing field borders to a width of at least 40 feet and establish a mixture of species that provide wildlife food and habitat along the edge(s) of the field. The extended field border will also provide enhanced wildlife habitat continuity.	acre	10	1	NA
E390A	WATER	Nutrients Transported to Surface Water; Sediment Transported to Surface Water	X	X					Increase riparian herbaceous cover width for sediment and nutrient reduction	Where an existing herbaceous riparian buffer 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 and nutrient removal from surface and subsurface flows.	acre	5	1	NA
E390B	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X	X		X	X	Increase riparian herbaceous cover width to enhance wildlife habitat	Where an existing herbaceous riparian 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, and increase the width of the buffer.	acre	5	1	NA
E391A	WATER	Nutrients Transported to Surface Water; Sediment Transported to Surface Water	X	X			X		Increase riparian forest buffer width for sediment and 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 sediment and nutrient removal from surface and subsurface flows.	acre	15	1	NA
E391B	WATER	Elevated Water Temperature	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	1	NA
E391C	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	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	1	NA

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E393A	WATER	Nutrients Transported to Surface Water; Pathogens and Chemicals from Manure, Bio-solids or Compost Applications Transported to Surface Water	X	X			X		Extend existing filter strip to reduce water quality impacts	Extend existing filter strips for water quality protection. 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	1	NA
E412A	WATER	Sediment Transported to Surface Water	X	X					Enhance a grassed waterway	Enhance grassed waterways for water quality protection (reduce excess sediment in surface waters). This is done by either changing the waterway size, protecting the current waterway, or improving the infiltration of the watershed of the grassed waterway to protect the waterway.	acre	10	1	NA
E420A	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X		X	X	X	Establish pollinator habitat	Seed or plug nectar and pollen producing plants to establish or improve pollinator habitat. These areas may include, but are not limited to, field borders, vegetative barriers, contour buffer strips, shelterbelts, hedgerows, windbreaks, conservation cover, and riparian forest and herbaceous buffers.	acre	5	1	NA
E420B	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X			X	X	Establish monarch butterfly habitat	Seed or plug milkweed (Asclepias spp.) and high-value monarch butterfly nectar plants to establish or improve monarch habitat. These areas may include, but are not limited to, field borders, vegetative barriers, contour buffer strips, shelterbelts, hedgerows, windbreaks, conservation cover, and riparian forest and herbaceous buffers.	acre	5	1	NA
E484A	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability	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 crops and/or cover crops 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	5	NA
E484B	AIR	Emissions of Particulate Matter (PM) and PM Precursors		X					Reduce particulate matter emissions by using orchard or vineyard generated woody materials as mulch	Reduce particulate matter emissions by using orchard or vineyard generated woody materials as mulch. At least 90% of all woody materials are to be used as mulch on the operation. An exception may be made when it is determined that infected material must be burned to preserve crop health.	acre	1	5	NA
E484C	PLANTS	Plant Pest Pressure	X	X					Mulching with natural materials in specialty crops for weed control	Application of straw mulch or other state approved natural material (such as wood chips, compost, green chop, dry hay or sawdust) for weed control in specialty crops.	Acre	1	5	NA
E512A	SOIL	Sheet and Rill Erosion; Wind Erosion	X	X					Cropland conversion to grass-based agriculture to reduce soil erosion	Conversion of cropped land to grass-based agriculture to reduce soil erosion. Mixtures of perennial grasses, forbs, and legume species are established on cropland where annually-seeded cash crops have been grown.	acre	5	1	YES
E512B	SOIL	Sheet and Rill Erosion			X				Forage plantings that 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 provide for reduced soil erosion, improving soil health.	acre	5	1	NA
E512C	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability	X	X					Cropland conversion to grass 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	1	YES
E512D	SOIL	Organic Matter Depletion	X	X	X				Forage plantings that 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	1	NA
E512E	PLANT	Plant Productivity and Health	X	X					Forage and biomass planting that produces feedstock for biofuels or energy production.	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	1	YES
E512I	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates			X		X	X	Establish pollinator and/or beneficial insect and/or monarch habitat	Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species that can provide nectar for Monarch butterflies and/or 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	1	NA

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E512J	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates			X		X	X	Establish wildlife corridors to provide habitat continuity or access to water	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	1	NA
E512L	ANIMALS	Feed and Forage Imbalance			X		X		Diversifying forage base with interseeding forbs and legumes to increase pasture quality	Establishing adapted and/or compatible species, varieties, or cultivars of perennial, herbaceous species that increases the diversity to enhance livestock, forage supply and quality not available in other pastures.	acre	5	1	NA
E512M	PLANTS AND ANIMALS	Plant Structure and Composition, Terrestrial Habitat for Wildlife and Invertebrates			X		X		Establishing native grass or legumes to improve the plant community	Establishing adapted and/or compatible species, varieties or cultivars species suitable for pasture, hay or biomass production that can provide cover and shelter or structure and composition for wildlife	acre	5	1	NA
E528A	ANIMALS	Feed and Forage Imbalance			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 following the recommendations of a qualifying professional, as detailed in the documentation and implementation requirements.	acre	1	5	NA
E528D	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates			X	X			Grazing management for improving quantity and quality of food or cover and shelter for wildlife	Grazing management employed will provide the plant structure, density and diversity needed for improving the quantity and quality of cover, shelter and food for the desired wildlife species of concern.	acre	1	5	NA
E528E	PLANTS	Plant Structure and Composition, Terrestrial Habitat for Wildlife and Invertebrates			X	X	X		Improved grazing management for enhanced plant structure and composition for wildlife	Managing the harvest of vegetation with grazing and/or browsing animals for the purpose of improving the quantity and quality of the structure and composition of the plant community that is available for wildlife.	acre	1	5	NA
E528F	PLANTS	Plant Productivity and Health, Plant Structure and Composition	X	X	X		X		Stockpiling cool season forage to improve structure and composition or 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	5	NA
E528G	PLANTS	Plant Productivity and Health			X				Improved grazing management on pasture for plant productivity and health with monitoring activities	Managing the harvest of vegetation with grazing and/or browsing animals as adjusted when following recommendations of a qualifying professional, as detailed in the enhancement criteria, generated through pasture condition scoring (PCS).	acre	1	5	NA
E528H	WATER	Elevated Water Temperature			x	x			Prescribed grazing to improve/maintain riparian and watershed function-elevated water temperature	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	5	NA
E528I	WATER	Nutrients transported to surface water, Nutrients transported to ground water			X				Grazing management that protects sensitive areas -surface or 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	5	NA
E528J	WATER	Nutrients transported to surface water, Pathogens and chemicals from manure, bio-solids or compost applications transported to surface water, Sediment transported to surface water			x				Prescribed grazing on pastureland that improves riparian and watershed function.	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	5	NA
E528L	SOIL	Bank erosion from streams, shorelines or 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	5	NA
E528M	SOIL	Classic Gully Erosion			X				Grazing management that protects sensitive areas from gully erosion	Grazing management employed will provide vegetative cover and density needed in the watershed in order to protect sensitive areas such as sinkholes, streams, highly erodible areas, or locations that cannot tolerate plant defoliation.	acre	1	5	NA

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E528O	ANIMAL, PLANT	Feed and Forage Imbalance, Plant productivity and health			X				Clipping mature forages to set back vegetative growth for improved forage quality	Plant maturity is the most important factor that determines forage quality. Timely clipping through mowing, swathing or some other mechanical cutting will occur on grazing lands after plants mature. This enhancement will promote increased forage palatability by setting forages that have matured back to a vegetative state for improved grazing management and forage quality.	acre	1	5	NA
E528P	SOIL, WATER	Pathogens and chemicals from manure, bio-solids or compost applications transported to surface water, Nutrients transported to surface water, Organic Matter Depletion	X	X	X				Implementing Bale or Swath Grazing to increase organic matter and reduce nutrients in surface water	Improve organic matter, aggregate stability and soil organism habitat in the soil by leaving the biomass harvested from the field on site for animal use, or supplementing organic matter needs with off-field forages. Grazing harvested forages in this manner, will help to incorporate organic matter, feed and diversify the soil microbiome, build better aggregation and increase soil health and critical functions such as infiltration, nutrient cycling, and weather resilience. Forages should be placed evenly throughout the field, but can be concentrated in areas where particular concerns, such as bare ground, need to be remedied. Decisions of forage placement must take into account areas that would be sensitive to such activity such as protecting surface waters from nutrients or steep slopes from erosion.	acre	1	5	NA
E528R	PLANTS	Plant Productivity and Health, Plant Structure and Composition			X				Management Intensive Rotational Grazing	Management intensive, multi-paddock grazing system where livestock are regularly and systematically moved to fresh forage to optimize quantity and quality of forage growth, improve manure distribution, improve wildlife cover, and improve soil health.	acre	1	5	NA
E528S	SOIL	Organic Matter Depletion			X				Soil Health Improvements on Pasture	Use of soil health assessment to evaluate impact of planned grazing in addressing organic current conservation crop rotation in addressing soil organic matter depletion, soil organism habitat and aggregate instability. Laboratory soil health tests will be completed in year 1 and year 4 of the contract. Planned modifications to the pasture forages and/or management system will be made to the benchmark grazing system to address concerns from the assessments. During sample collection, Pasture Condition Score (PSC) or Determining Indicators of Pasture Health (DIPH) assessment will be completed for the sample area.	acre	1	5	
E533C	AIR	Energy Efficiency of Equipment and Facilities	X	X	X		X	X	Install variable frequency drive(s) on pump(s)	Install Variable Frequency Drive(s) (VFD) on Pumping Plant (Conservation Practice Standard CPS 533) with the correct sensors, on all pumps indicated in the evaluation.	No	15	1	NA
E533D	ENERGY	Energy Efficiency of Equipment and Facilities	X	X	X		X	X	Switch fuel source for pumps	Switch the fuel source for the pump motor(s) to an on-farm renewable source (wind, solar, geothermal, etc.)	No	15	1	NA
E590A	WATER; AIR	Nutrients Transported to Surface Water; Nutrients Transported to Ground Water; Emission of Greenhouse Gases (GHGs)	X	X					Improving nutrient uptake efficiency and reducing risk of nutrient losses	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 to surface and groundwater and reduce risks to air quality by reducing emissions of greenhouse gases (GHGs).	acre	1	5	NA
E590B	WATER	Nutrients Transported to Surface Water; Nutrients Transported to Ground Water	X	X					Reduce risks of nutrient loss to surface water by utilizing precision agriculture technologies	Precision application technology and techniques are utilized to plan and apply nutrients to improve nutrient use efficiency and reduce risk of nutrient losses.	acre	1	5	NA
E590C	WATER	Nutrients Transported to Surface Water; Nutrients Transported to Ground Water			X				Improving nutrient uptake efficiency and reducing risk of nutrient losses on pasture	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 on pasture.	acre	1	5	NA
E590D	WATER	Nutrients Transported to Surface Water; Nutrients Transported to Ground Water	X	X					Reduce risks of nutrient losses to surface and groundwater by increasing setback awareness via precision technology	Utilize precision technology to increase Soil/Groundwater Setbacks & Associated Application Rate Restrictions (SGS&AARR) implementation during nutrient application by providing precise, real-time location information (geo-located) in the field to the equipment operator. While operating nutrient application equipment, the operator's location is continually updated and displayed on an integrated, in-cab or add-on GPS-enabled device visible to the operator at all times to reduce the risk of nutrient application in setback and/or sensitive areas. This allows the equipment operator to manually turn off or steer equipment to avoid applying nutrients in setback or sensitive areas.	acre	1	5	N/A

FY 2023 IRA CSP Enhancements

Code	Resource Concern	Resource Concern Cause	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Forest	Associated Ag Land	Farmstead	Full Enhancement Name	Enhancement Description	Units	Enhancement Lifespan	Max years enh. can be contracted	Suitable for Land Use Conversion
E612B	AIR	Emission of Greenhouse Gases (GHGs)				X			Planting for high carbon sequestration rate	Plant tree species and/or shrubs to sequester and store carbon. Forest stands will be managed for longer rotations and/or enhanced composition diversity to improve carbon storage.	acre	15	1	YES
E612C	PLANTS, ANIMALS	Plant Productivity and Health; Plant Structure and Composition Terrestrial Habitat for Wildlife and Invertebrates				X			Establishing tree/shrub species to restore native plant communities	Establish trees and/or shrubs to restore elements of plant communities and diversity that have been lost. Restoring stand-level diversity and function improves health and vigor through planting resilient and/or resistant native plant communities. Additional benefits include providing diversity in wildlife habitat and forage.	acre	15	1	NA
E612G	PLANTS, ANIMALS	Plant Structure and Composition Terrestrial Habitat for Wildlife and Invertebrates				X	X		Tree/shrub planting for wildlife food	Tree/shrub planting will provide the plant diversity, structure, and composition needed to enhance habitat and forage for identified wildlife species.	acre	15	1	YES
E645B	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X	X	X	X	X	Manage existing shrub thickets to provide adequate shelter for wildlife	Existing shrub thickets provide an instant and important cover for wildlife. Various wildlife species may use shrubs as winter/thermal cover, summer shade, roosting, or as escape cover from predators. Proper management ensures that these shrubs will continue to provide the desired benefits for the local wildlife. A combination of herbicide treatments, cutting and trimming branches, and removal of other competing vegetation will occur. An eligible existing shrub thicket needs to have a canopy cover of 750 square feet, with an end goal of expanding to 1500 square feet. Any existing shrub thicket (not hand planted within the last 5 years) are eligible for this enhancement. Shrub thickets found within fence rows may now be very wide, but still meet the 750 square feet. are eligible.	Acre	1	1	NA
E645C	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X	X	X	X	X	Edge feathering for wildlife cover	Selected trees are cut, and brush clipped along the border between a wooded area and a grassland, cropland, or idle land, creating a dense woody cover of interlocking branches at ground level. The feathered edge will be an average of 30 feet wide and a minimum of 50 feet long, resulting in an area of 1500 square feet. The width of the strip will vary to follow topographic features and to create a wavy border; the design will also consider aesthetics. Vegetative composition and cover will vary within the edge, ranging from areas with no trees and shrubs to areas with scattered trees and extensive shrub cover. The variation in vegetation structure along with variable width of the edge will create feathering. The edge may include shrub plantings for wildlife food and aesthetics.	Acre	1	1	NA
E666A	SOIL, AIR	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability; Compaction; Emission of Greenhouse Gases (GHGs);				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	1	NA
E666D	PLANT, ANIMAL, WATER	Plant Pest Pressure; Terrestrial Habitat for Wildlife and Invertebrates; Naturally Available Moisture Use; Nutrients Transported to Surface Water; Nutrients Transported to Ground Water;				X			Forest management to enhance understory vegetation	This enhancement provides for management of the understory vegetation in a forested area by mechanical, chemical, and/or manual methods to improve the plant species mix and the health of the residual vegetation. Managing the understory vegetation increases available water to the plants, minimizes runoff and erosion, and improves water quality. An adequately stocked forest provides inputs of leaves, needles, and woody twigs and stems to the forest floor, adding to soil organic matter and contributing to forest soil health. Desirable tree species and understory vegetation, with spacing that allows ground cover to develop, will allow moisture to infiltrate and be stored in the soil, releasing moisture over longer periods of time.	acre	10	1	NA

FY 2023 IRA CSP Enhancements

Code	Resource Concern	Resource Concern Cause	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Forest	Associated Ag Land	Farmstead	Full Enhancement Name	Enhancement Description	Units	Enhancement Lifespan	Max years enh. can be contracted	Suitable for Land Use Conversion
E666E	PLANT	Wildfire Hazard from Biomass Accumulation				X			Reduce height of the forest understory to limit wildfire risk	Forest stand improvement that manages forest structure to reduce the risk of wildfire, and creates conditions that facilitate prescribed burning. The fire risk reduction is accomplished by reducing the height of the woody understory and midstory, creating space between the ground cover and the tree canopy. This enhancement provides for management of the understory vegetation in a forested area, using mechanical, chemical or manual methods to improve the plant species mix and the health of the residual vegetation, and reduce the risk of wildfire. In appropriate stands, the treatment creates conditions that favor prescribed burning. Forest stand improvement (FSI) activities are used to remove trees of undesirable species, form, quality, condition, or growth rate. The quantity and quality of forest for wildlife and/or timber production will be increased by manipulating stand density and structure. These treatments can also reduce wildfire hazards, improve forest health, restore natural plant communities, and achieve or maintain a desired native understory plant community for soil health, wildlife, grazing, and/or browsing.	acre	10	1	NA
E666F	PLANT, ANIMAL	Plant Productivity and Health; Terrestrial Habitat for Wildlife and Invertebrates				X			Reduce forest stand density to create open stand structure	Reducing forest stand density creates open forest conditions with a low basal area which promotes the health and vigor of the residual trees. The open stand structure allows a significant amount of sunlight to reach the forest floor and stimulates the growth of understory vegetation. Understory vegetation management, along with the wide spacing between trees or clumps of trees, provides visual appeal, lowers the risk of wildfire, and provides habitat for many at-risk and listed wildlife species. The enhancement creates conditions that facilitate a follow-up treatment with prescribed burning.	acre	10	1	NA
E666H	SOIL, AIR	Emission of Greenhouse Gases (GHGs), Organic Matter Depletion				X	X	X	Increase on-site carbon storage	Use 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	1	NA
E666I	PLANT, ANIMAL	Plant Productivity and Health; Terrestrial Habitat for Wildlife and Invertebrates				X	X	X	Crop tree management for mast production	Forest stand improvement using crop tree management techniques to increase mast production	acre	10	1	NA
E666J	PLANT, ANIMAL	Plant Productivity and Health; Plant Structure and Composition; Terrestrial Habitat for Wildlife and Invertebrates				X	X		Facilitating oak forest regeneration	Facilitate oak regeneration following a forest stand improvement treatment for natural oak regeneration (i.e., a regeneration cut). After a regeneration cut, oaks in the seedling and sapling stages are often out-competed by invasive brush and undesirable tree and shrub species. This enhancement will release seedling and sapling oaks from competing invasive plants and other undesirable species, and thin stump sprouts. A forester will monitor site conditions, treat competition, protect seedlings, and recommend additional follow-up treatments as needed. The enhancement protects investments in oak regeneration by providing for follow-up activities that require the expertise of a professional forester.	acre	10	2	No
E666K	PLANT, ANIMAL	Plant Structure and Composition; Terrestrial Habitat for Wildlife and Invertebrates				X	X	X	Creating structural diversity with patch openings	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, and by tree species desired from natural regeneration. The treatment will create diversity in stand composition and structure, increase pest resistance, and enhance wildlife food availability. Openings may provide regeneration sites and restore natural plant communities, and achieve or maintain a desired understory plant community for wildlife habitat.	acre	10	1	NA
E666L	PLANT, ANIMAL	Plant Structure and Composition, Terrestrial Habitat for Wildlife and Invertebrates				X			Forest Stand Improvement to rehabilitate 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	1	NA

FY 2023 IRA CSP Enhancements

Code	Resource Concern	Resource Concern Cause	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Forest	Associated Ag Land	Farmstead	Full Enhancement Name	Enhancement Description	Units	Enhancement Lifespan	Max years enh. can be contracted	Suitable for Land Use Conversion
E666P	ANIMAL	Terrestrial Habitat for Wildlife and Invertebrates				X	X	X	Summer roosting habitat for native forest-dwelling bat species	Create new potential roost trees within upland and riparian forests to achieve desired summer habitat for forest-dwelling bat species.	acre	10	1	NA
E666R	ANIMAL	Terrestrial Habitat for Wildlife and Invertebrates				X	X	X	Forest songbird habitat maintenance	Adopts guidelines and methods developed by the Forest Bird Initiative of the Vermont Audubon Society, to preserve habitat features following a forest stand improvement treatment designed to create habitat for a suite of forest-dwelling neotropical migratory songbirds. It includes developing or updating a forest management plan, inspecting and tending forest habitat, and monitoring bird populations. It protects investments in habitat creation by providing for follow-up activities that require the expertise of a professional forester or biologist. This enhancement is appropriate for states in the Atlantic Flyway and the Upper Midwest.	acre	10	5	NA

FY 2023 IRA CSP Practices

Practice Code	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Forest	Associated Ag Land	Farmstead	Practice Name	Units	lifespan	Suitable for Land Use Conversion
311	X	X					Alley Cropping	ac	15	
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	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	X	Windbreak/Shelterbelt Establishment	ft	15	
386	X	X			X		Field Border	ac	10	
390	X	X	X		X	X	Riparian Herbaceous Cover	ac	5	
391	X	X	X	X	X	X	Riparian Forest Buffer	ac	15	
393	X	X			X	X	Filter Strip	ac	10	
412	X	X	X		X	X	Grassed Waterway	ac	10	
420	X	X	X	X	X	X	Wildlife Habitat Planting	ac	5	
422	X	X			X		Hedgerow	ft	15	
449	X	X	X	X	X	X	Irrigation Water Management	ac	1	
484	X	X	X	X	X	X	Mulching	ac	1	
512	X	X	X		X	X	Pasture and Hay Planting	ac	5	YES
528	X	X	X	X	X		Prescribed Grazing	ac	1	
590	X	X	X				Nutrient Management	ac	1	
612	X	X	X	X	X	X	Tree/Shrub Establishment	ac	15	YES
645	X	X	X	X	X	X	Upland Wildlife Habitat Management	ac	1	
666				X	X	X	Forest Stand Improvement	ac	10	

FY 2023 IRA CSP Bundles

Bundle Code	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Forest	Associated Ag Land	Farmstead	Bundle Name	Bundle Description (Bundles are NOT suitable for Voluntary Land Use Conversion)	Units	Enhancement Lifespan	Max years enh. can be contracted
B000BFF1	X	X			X		Buffer Bundle #1	Extend existing Buffers to address water quality degradation, fish/wildlife inadequate habitat, degraded plant condition plus an option for air quality impacts. Adopt E393A, E327A or E420A, and E612D as well as one of the following enhancements: E612B, E612G. This bundle will be applied one time and the enhancements maintained for their lifespan.	acre	15	1
B000CPL24	X						Crop Bundle #24 – Cropland Soil Health Management System	Addresses soil health, water quality (or water quality and air quality), and either soil erosion, soil compaction, or plant pest pressure resource concerns. Adopt E329D, E328F, E590A or E590B, and E340A or E340F or E340H. This bundle may be applied multiple times.	acre	1	5
B000CPL25	X						Crop Bundle 25 - Climate Smart Advanced Soil Health	Improve crop land soil health by increasing plant diversity and minimizing soil disturbance.	acre	1	5

FY 2023 IRA CSP Supplemental Activities

Code	Resource Concern	Resource Concern Category	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Forest	Associated Ag Land	Farmstead	Supplemental Payment Name	Supplemental Payment Description (NOT suitable for Voluntary Land Use Conversion)	Units	Enhancement Lifespan	Max years enh. can be contracted
E328A	SOIL, PLANTS	Sheet and Rill Erosion; Wind Erosion; Organic Matter Depletion; Compaction; Plant Pest Pressure; Soil Organism Habitat Loss or Degradation; Aggregate Instability	X						Supplemental Payment - Resource conserving crop rotation	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 plant pest pressures.	acre	1	5
E328B	PLANTS	Sheet and Rill Erosion; Wind Erosion; Organic Matter Depletion; Compaction; Plant Pest Pressure; Soil Organism Habitat Loss or Degradation; Aggregate Instability	X						Supplemental Payment - Improved resource conserving crop rotation	Improve an existing Resource Conserving Crop Rotation. Must enrich an existing rotation which already includes 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 plant pest pressures.	acre	1	5