FY 2023 Program Enhancement Activity List

Legend
Green: Updated Existing Enhancements
Blue: New FY 2023 Enhancements

Code	Resource Concern	Resource Concern Cause	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Range	Forest	Associated Ag Land	Farmstead	Full Enhancement Name	Enhancement Description	Units	Enhancement Lifespan	Max years enh. can be contracted	State Supplemental information Required ++	Suitable for Land Use Conversion	*Changes from 2022 to 2023. *Highlighted blocks delineate new activities. *Red font indicates revisions made.	North Dakota Sideboards
E314A	PLANTS, ANIMALS	Plant Structure and Composition, Plant Pest Pressure; Terrestrial Habitat for Wildlife and Invertebrates			X	X	X	X		Brush management to improve wildlife habitat	Brush management is employed to create a desired plant community, consistent with the related ecological site steady state, which will maintain or enhance the wildlife habitat desired for the identified wildlife species. It will be designed to provide plant structure, density and diversity needed to meet those habitat objectives. This enhancement does not apply to removal of woody vegetation by prescribed fire or removal of woody vegetation to facilitate a land use change.	acre	10	5	State WHEG for species of concern	NA		Native shrubs are not eligible for treatment with this enhancement. Must meet Brush Management 314 Standard and Specifications. Utilize Ecological Site Descriptions to identify appropriate locations and percentages of brush to set as post-treatment targets. The ND State Wildlife Action Plan does not identify brush management targets to provide specific wildlife habitats for Species of Conservation Concern, therefore, it is unnecessary to choose a particular wildlife species to plan for. Can only be scheduled once per site.
E315A	PLANTS, ANIMALS	Plant Productivity and Health, Plant Structure and Composition, Plant Pest Pressure			X	X	X	X		Herbaceous weed treatment to create desired plant communities consistent with the ecological site	Mechanical, chemical, or biological, herbaceous weed treatment will be used to control targeted, herbaceous weeds to create, release, or restore desired plant communities that are consistent with achievable, ecological site, steady state descriptions.	acre	5	5	Reproduction and other life-cycle requirements of target recorded wildlife and pollinator species	NA	*Added animals as a resource concern because of terrestrial wildlife component. added terminology "wildlife and/or pollinator species" under criteria. *Added the term "weed" species and reworded the 4th bullet under criteria. *Under Implementation Requirements deleted "map of treated areas" because it was a repeated statement and payment scenario description included the term "spot" herbaceous weed treatment.	Can only be scheduled once on eligbible land. Herbaceous weeds list for CSP 315 Enhancements: • Leafy spurge (Euphorbia esula) • Orange hawkweed (Hieracium aurantiacum) • Purple loosestrife (Lythrum salicaria) • St. Johnswort (Hypericum perforatum) • Thistle, Canada (Cirsium arvense) • Thistle, plumeless (Carduus acanthoides) • Toadflax, Dalmatian (Linaria dalmatica) • Yellow starthistle (Centaurea solstitialis) • Baby's breath (Gypsophila paniculata) • Chamomile, false (Matricaria recutita) perforatum) • Common mullein (Verbascum Thapsus) • Downy brome (Bromus tectorum) • Halogeton (Halogeton glomeratus) • Houndstongue (Cynoglossum officinale) • Knapweed, spotted (Centaurea stoebe) • Kochia (Bassia prostrata) • Narrowleaf hawksbeard (Crepis tectorum) • Palmer amaranth (Amaranthus palmeri) • Saltcedar (Tamarix spp.) • Thistle, bull (Cirsium vulgare) • Thistle, musk (Carduus nutans) • Thistle, Scotch (Onopordum acannthium) • Toadflax, yellow (Linaria vulgaris) • Absinth wormwood (Artemisia absinthium) • Black henbane (Hyoscyamus niger) • Chamomile, scentless (Tripleurospermum • Common tansy (Tanacetum vulgare) • Field bindweed (Convolvulus arvensis) • Hoary cress (Cardaria draba) • Knapweed, Russian (Acroptilon repens) • Knapweed, Diffuse (Centaurea diffusa)

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E328C	SOIL	Sheet and Rill Erosion, Wind Erosion	X							Conservation crop rotation on recently converted CRP grass/legume cover	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 and wind 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	5		NA		Cropping system soil loss must be at "T" or less. When a cover crop is planned the cover crop will consist of a mixture of at least 2 species and must be a full-season planting; ie. in place of another crop in the rotation. Cover crops planted after harvest do not meet the rotation criteria.
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	List of high residue crops. State guidance of options to maximize living root systems in local climate and cropping systems. Determine available growing days and period of no growth, such as frozen periods in the north.	NA		Cropping system soil loss must be at or below "T". When evaluating the existing rotation where a cover crop is used, the cover crop must be a full-season planting to meet the criteria of a different crop. Planned rotation will have a Crop Diversity Index score of at least 2.50. Failed cash crops do not qualify as a cover crop, nor do insured crops planted with the intent to be harvested. When a cover crop is planned, the cover crop will consist of a mixture of at least 2 species, with a majority composed of the needed crop type to add required rotation diversity and must be a full-season planting; ie. in place of another crop in the rotation. Cover crops planted after harvest do not meet the rotation criteria. The cover crop cannot be harvested, baled or grazed. Payments will be completed on the acreage of the system. IE: If adding wheat and field peas to a current soybean corn rotation, payments will be completed on all four crops.

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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		Cropping system soil loss must be at or below "T". When evaluating the existing rotation where a cover crop is used, the cover crop must be a full-season planting to meet the criteria of a different crop. When a cover crop is planned, the cover crop will consist of a mixture of at least 2 species and must be a full-season planting; ie. in place of another crop in the rotation. Cover crops planted after harvest do not meet the rotation criteria. Failed cash crops do not qualify as a cover crop nor do insured crops planted with the intent to be harvested. The cover crop cannot be harvested, baled or grazed. Payments will be completed on the acreage of the system. IE: If adding wheat and field peas to a current soybean corn rotation, payments will be completed on all four crops. Not compatible with E340E
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	List of high residue crops. State guidance of options to maximize living root systems in local climate and cropping systems. Determine available growing days and period of no growth, such as frozen periods in the north.	NA		Cropping system soil loss must be at or below "T". When a cover crop is planned, the cover crop will consist of a mixture of at least 2 species, with a majority composed of the needed crop type to add required rotation diversity and must be a full-season planting; ie. in place of another crop in the rotation. Cover crops planted after harvest do not meet the rotation criteria. The cover crop cannot be harvested, baled or grazed. Payments will be limited to the acres of converted CRP. Average growing season length (days), from NORTH DAKOTA TOPOGRAPHIC, CLIMATIC, AND AGRICULTURAL OVERVIEW,By John W. Enz, January 16, 2003 > Northwest -115 days > Southwest - 120 days > North Central - 110 days > South Central - 130 days > Northeast - 110 days > Southeast - 130 days

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E328H	SOIL	Concentration of Salts and other Chemicals	X							Conservation crop rotation to reduce the concentration of salts	Implement a crop rotation to reduce the concentration of salts and other chemicals from saline seeps. The rotation should include at least 3 crops and/or cover crops grown in a sequence in the recharge areas of saline seeps that have rooting depths and water requirements adequate to fully utilize all available soil water. Do not use summer fallow. Use an approved water balance procedure to determine crop selection and sequence. Select crops with a tolerance to salinity levels that match the salinity of the discharge area. (See state lists)	acre	1	5	List of salt tolerant crops with rooting depths and water requirements adequate to use all available soil water.	NA		Cropping system soil loss must be at or below "T". When evaluating the existing rotation where a cover crop is used, the cover crop must be a full-season planting to meet the criteria of different crop. Planned rotation will have a Crop Intensity Index score of: 1.5 or greater for Western ND or 1.75 or greater for Central and Eastern ND. When a cover crop is planned, the cover crop will consist of a mixture of at least 2 species, with a majority composed of the needed crop type to meet the required water use and must be a full-season planting; ie. in place of another crop in the rotation. Cover crops planted after harvest do not meet the rotation criteria. The cover crop cannot be harvested, baled or grazed.
E328J	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X							Improved crop rotation to provide benefits to pollinators	Improve the existing crop rotation by adding pollinator friendly crops into the rotation. The crop rotation shall include a minimum of three different crops in a minimum five year crop rotation. Each year, the pollinator friendly crop will be planted on a minimum of 5% of cropland acres contained within the agricultural operation. Use of insecticides is limited for the pollinator friendly crop.	acre	1	5	State list of pollinator friendly crops.	NA		
E328L	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X							Leaving tall crop residue for wildlife	Fields may be harvested but must leave crop residue standing a minimum of 14 inches. Residue will be left through winter and into spring, providing valuable winter cover and forage for wildlife spanning late summer and through the following winter.	acre	1	5	States list of eligible crops and dates stubble must remain undisturbed.	NA		Eligible crops are small grain cereals harvested with stripper header. Tall crop stubble will be undisturbed and maintained until the normal seeding dates for the subsequent crop. Post-harvest planted cover crops and fall-seeded cash crops are not permitted on fields designated for E328L.
E328M	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X							Diversify crop rotation with canola or sunflower to benefit pollinators	Add canola or sunflower to existing crop rotation on minimum of 5% of cropland acres each year. No systemic pesticides allowed. Only pesticide application on canola or sunflower during pre-bloom and bloom following integrated pest management and industry best management practices.	acre	1	5	State list of pollinator friendly crops.	NA		Existing crop rotations that include canola or sunflower are not eligible. NRCS will review and document the latest four years of the producer's FSA crop history data to determine if the existing crop rotation includes canola or sunflower. Only pay the acres where canola/sunflower will be planted each year.

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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		Relay intercropping is not a viable option for ND. Payments will be made on acres seeded to two or more crops simultaneously in the same field.Participants are strongly encouraged to check with their crop insurance to avoid violating policies.
E328P	SOIL, WATER	Nutrients Transported to Surface Water	x							Low Nitrogen Requirement Annual Crop Rotation	Design a planned annual crop rotation which requires less average annual nitrogen fertilizer than the current (benchmark) crop rotation.	acre	1	5		N/A	New Enhancement for FY-23.	Payments will be made on acres seeded to low nitrogen requirement crops in planned rotation replacing high nitrogen requirement crops in benchmark rotation.
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		Must be making a change in management. ie going from a hoe opener to a single disc opener, strip till to single disc. Payments will be made on the acres of the system. Once enhancement is planned/applied to a field it must be maintained for the remainder of the contract.
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		Must be making a change in management. ie going from a hoe opener to a single disc opener, strip till to single disc. Payments will be made on the acres of the system. Once enhancement is planned/applied to a field it must be maintained for the remainder of the contract.

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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		Payments will be made on the acres of the system. Once enhancement is planned/applied to a field it must be maintained for the remainder of the contract.
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		Payments will be made on the acres of the system. Once enhancement is planned/applied to a field it must be maintained for the remainder of the contract.
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		Payments will be made on the acres in the contract selected for 25% reduction in energy consumption. Once enhancement is planned/applied to a field it must be maintained for the remainder of the contract.
E338A	PLANTS	Plant Pest Pressure, Wildfire Hazard from Biomass Accumulation			X	X	X			Strategically planned, patch burning for grazing distribution and wildlife habitat	Patch burn grazing is the application of prescribed fires on portions of an identified grazing unit at different times of the year. Patch burn grazing allows grazing animals to select where they want to graze creating a mosaic of vegetation structures and diversity that will maintain or enhance the wildlife habitat desired for the identified wildlife species and maintain livestock production.	acre	1	5	Define different burn seasons. State WHEG for species of concern. State specific criteria to the National Conservation Practice Standard (CPS 338) and/or CPS 338 job sheet.	NA		

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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	List of approved cover crop species for water or wind erosion protection. Guidance document on local climates and cropping systems.	NA		Failed cash crops do not qualify as a cover crop nor do insured crops planted with the intent to be harvested. Refer to the ND CPA-340 Cover Crop worksheet for NDAWN average first frost dates (28° F) for the area. Plan cover crop seeding to allow at least 4 weeks growth prior to the average first frost date (28° F). Broadcast application of cover crops, including; aerial, ground spreader (air or mechanical) application without incorporation of the cover crop into the soil is not allowed. Producer will supply a map of where the cover crop was planted and a picture of growth.
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	List of approved cover crop species. Guidance document on local climates and cropping systems.	NA		The cover crop will consist of a mixture of at least 3 species, composed of the needed crop types to address the soil organic matter resource concern. Cover crops must be full season. Cover Crop cannot be burned, harvested, baled, or grazed Broadcast application of cover crops, including; aerial, ground spreader (air or mechanical) application without incorporation of the cover crop into the soil is not allowed.
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	List of approved cover crop species. Guidance document on local climates and cropping systems.	NA		A Prescribed Grazing System (528) will be developed / implemented to include grass lands and field where cover crops will be grazed. (See above, additional criteria when livestock are included). The cover crop will be a mixture of at least 4 species, with a majority composed of the needed crop types to include the 4 crop types (warm and cool season grasses and broadleaf plants) and address the soil organic matter resource concern. Cover crops must be full season. Planned rotation will have a Crop Diversity Index score of at least 2.50. Failed cash crops do not qualify as a cover crop, nor do insured crops planted with the intent to be harvested. Cover crops cannot be burned, harvested, or baled. Broadcast application of cover crops, including; aerial, ground spreader (air or mechanical) application without incorporation of the cover crop into the soil is not allowed.
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	List of approved cover crop species. Guidance document on local climates and cropping systems.	NA		Rarely used in ND. Contact State Agronomist when planning this enhancement. Broadcast application of cover crops, including; aerial, ground spreader (air or mechanical) application without incorporation of the cover crop into the soil is not allowed.

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E340E	SOIL	Organic Matter Depletion; Soil Organism Habitat Loss or Degradation; Aggregate Instability	X							Use of soil health assessment to assist with development of cover crop mix to improve soil health	Soil health assessment (year 1) to evaluate current crop rotation in addressing soil organic matter depletion. Results are utilized to select a multi-species cover crop mix to add to the current crop rotation. Follow up assessment completed (year 3).	acre	1	5	List of approved cover crop species. Guidance document on local climates and cropping systems.	NA		A Prescribed Grazing System (528) will be developed / implemented to include grass lands and field where cover crops will be grazed. (See above, additional criteria when livestock are included). The cover crop will be a mixture of at least 4 species, with a majority composed of the species needed to address the soil organic matter resource concern and must be a full-season planting; ie. in place of another crop in the rotation. Cover crops planted after harvest do not meet the rotation criteria. Cover crops must be full season. Planned rotation will have a Crop Diversity Index score of at least 2.50. Failed cash crops do not qualify as a cover crop, nor do insured crops planted with the intent to be harvested. Cover crops cannot be burned, harvested, or baled. Broadcast application of cover crops, including; aerial, ground spreader (air or mechanical) application without incorporation of the cover crop into the soil is not allowed.
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	List of approved cover crop species for soil compaction reduction. Guidance document on local climates and cropping systems.	NA		Use the procedure provided in the Cropland In-Field Soil Health Assessment Guide for indentifying penetration resistance (compaction) to determine if compaction in a resource concern, prior to application of cover crops. Areas where the evaluations are taken will be documented (GPS or other mapping) so the procedure can be repeated after cover crops have been applied to determine if the resource concern has been addressed/improved. The cover crop will consist of a mixture of at least 2 species (one fibrous and one deep-rooted), with a majority composed of the needed crop types to address the compaction resource concern and must be a full-season planting; ie. in place of another crop in the rotation to provide sufficient plant / root development to alleviate compaction. Cover crops must be full season. Cover crops cannot be burned, harvested, baled or grazed. Broadcast application of cover crops, including; aerial, ground spreader (air or mechanical) application without incorporation of the cover crop into the soil is not allowed.
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	List of approved cover crop species for excess nutrient uptake. Guidance document on local climates and cropping systems.	NA		The cover crop will consist of a mixture of at least 2 species, composed of the needed crop types to address the excess nutrient / water quality resource concern. Refer to the ND CPA-340 Cover Crop worksheet for NDAWN average first frost dates (28^{o} F) for the area. Plan cover crop seeding to allow at least 4 weeks growth prior to the average first frost date (28^{o} F). Broadcast application of cover crops, including; aerial, ground spreader (air or mechanical) application without incorporation of the cover crop into the soil is not allowed. Producer will supply a map of where the cover crop was planted and a picture of growth.
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	List of approved cover crop species for weed suppression and that do not harbor pests or diseases. Guidance document on local climates and cropping systems.	NA		The identified pest(s) of concern will be documented in the case file. The cover crop will be composed of the needed crop types to address the identified pest management resource concern(s). Refer to the ND CPA-340 Cover Crop worksheet for NDAWN average first frost dates (28^{o} F) for the area. Plan cover crop seeding to allow at least 4 weeks growth prior to the average first frost date (28^{o} F). Broadcast application of cover crops, including; aerial, ground spreader (air or mechanical) application without incorporation of the cover crop into the soil is not allowed. Producer will supply a map of where the cover crop was planted and a picture of growth.

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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		Must be making a change in management. Payments will be made on the acres in the system. Once enhancement is planned/applied to a field it must be maintained for the remainder of the contract.
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		Must be making a change in management. Payments will be made on the acres in the system. Once enhancement is planned/applied to a field it must be maintained for the remainder of the contract.
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		Must be making a change in management. Payments will be made on the acres in the system. Once enhancement is planned/applied to a field it must be maintained for the remainder of the contract.
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		Must be making a change in management. Payments will be made on the acres in the contract selected for 25% reduction in energy consumption. Once enhancement is planned/applied to a field it must be maintained for the remainder of the contract.

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E382A	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates			X	X	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	1	State job sheet to record animal species of concern and wildlife movement modifications/specifications. WHEG for species of concern.	NA		The fence addressed by this enhancement must meet 382 Fence Specifications from corner brace to corner brace for the reach including hazards to wildlife. The portion of that reach posing a threat to wildlife, must be addressed with wildlife friendly fencing techniques.
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		
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	List of plants suitable for pollinator habitat which emphasize as many native species as practical. WHEG for species of concern.	NA		Minimum existing average field border width must be 30 ft meeting ND specs. Enhanced field border will be 100 ft min. and a 150 ft. max. width. Trees and shrubs not applicable. No maintenance/management allowed from April 15 to August 1. Practice 386 must not be scheduled on the same foot print as the enhancement.
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	List of wildlife friendly grasses, forbs, shrubs, and trees. WHEG for species of concern.	NA		Minimum existing average field border width must be 30 ft meeting ND specs. Enhanced field border will be 100 ft min. and a 150 ft. max. width. Trees and shrubs not applicable. No maintenance/management allowed from April 15 to August 1. Practice 386 must not be scheduled on the same foot print as the enhancement.
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	List of plant species with stiff stems and high stem density that are adapted to the duration of saturation and inundation of the site.	NA		150 ft. max. width "A" list native species
E390B	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	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	List of wildlife friendly grasses, forbs, and legumes. WHEG for species of concern.	NA		150 ft. max. width. Need to meet practice standard and specifications for 390, 528 and 645.
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	List of wildlife friendly grasses, forbs, shrubs, and trees.	NA		150 ft. max. width Native woody species only--no conifers.

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E391C	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	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	1	List of wildlife friendly grasses, forbs, shrubs, and trees. WHEG for species of concern.	NA		150 ft. max. width. Native woody species only--no conifers. Not applicable on rangeland.
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	List of wildlife friendly grasses and perennial forbs.	NA		150 ft. max. width Trees and shrubs not applicable. Need to meet practice standard and specifications for 393. Minimum existing average buffer width must be 35 ft. The minimum width will be 100 feet or 30 percent of the geomorphic floodplain whichever is less, but not less than 60 feet.
E395A	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	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	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		

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E449A	WATER	Inefficient Irrigation Water Use	X	X	X			X	X	Complete pumping plant evaluation for water savings	Evaluation of all pumping plants to determine the potential to rehabilitate/replace/reconfigure pump performance to improve water delivery efficiency 10% or more.	No	1	1		NA	*Unit changed from acre to number. *Scenario Feature Measure changed to "Each pump evaluated." This change is more equitable for all farms, including urban and small farms. *E449A is for Water resource concern to improve water delivery. *E533B is the enhancement to use for the Energy resource concern to evaluate if a VFD will reduce energy use. *As a result, the evaluation for VFDs and the Energy resource concern are removed from the E449A enhancement.	1. Use of this enhancement is restricted to systems where the installation of a Variable Frequency Drive (VFD) has a reasonable potential for water savings. Either of two situations are considered to have potential: 1) the system consists of multiple irrigation delivery sites operating from a single pump or 2) the system has Variable Rate Irrigation (VRI) currently installed. 2. The NRCS Irrigation Water Requirements software, with ND datafiles, will be utilized to develop peak consumptive use requirements for crops in the rotation. Based on the flow rate determined necessary for PCU, adjusted if needed by water permit allocation, system hydraulics will be run in order for accurate pumping plant evaluation. NRCS engineers will assist the service provider in these steps, if requested. 3. The producer is required to hire a qualified service provider, with appropriate testing equipment, to complete an evaluation of the pumping plant performance and efficiency using the Nebraska Irrigation Pumping Plant Performance Criteria and as described in NEH Part 623, Chapter 8, Appendix A. As of 2018, NDSU Extension is no longer staffed to provide this service. A full and complete report must be completed by the service provider, including the ND-ENG-533E Pumping Plant Evaluation Form and should include: • Age and condition of the components of the irrigation system and pumping plant • Water levels during pumping • A field developed pump curve • Pump and engine speed (rpm) • Actual Pump Plant Performance versus the Nebraska Performance Criteria • Actual pump efficiency versus the Manufacturer Published efficiency • Recommendation for improvements to the overall system efficiency • Estimate of energy savings if improvements are implemented 4. An Irrigation Water Management Plan will be prepared, utilizing either the Basic or Intermediate versions of the ND NRCS IWM Plan templates. NRCS engineers will assist the service provider, if requested. Note that this enhancement does not cover implementation of Advanced IWM. Utilize enhancement E449B in that case.

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E449C	WATER	Inefficient Irrigation Water Use	X	X	X					Advanced Automated IWM – Year 2-5, soil moisture monitoring	Advanced automated irrigation water management using soil moisture or water level monitoring (installed as per IWM plan) with data loggers.	acre	1	5		NA		1. This enhancement may be used in either of the following circumstances: in conjunction with E449D, or as a follow up to an EQIP contract that included implementation of IWM, Advanced. 2. ND NRCS will develop a site specific Irrigation Water Management Plan prior to implementation, utilizing the ND IWM Template, which includes guidance to the producer on sensor placement, weather station placement, and record keeping. Alternatively, the producer may provide an IWM Plan developed by a ND P.E., subject to a functional review and approval by NRCS. 3. Flow meters are required to be installed as necessary to accurately account for the quantity of water applied to each individual field. If meters are not tied into the pivot panel for automatic recording, the producer will be required to keep side records for each individual application. 4. Sensors must include a data logger that records daily soil moisture levels, at multiple depths, and transmits information electronically to the operator in real time. Acceptable sensor types include Time Domain Transmissivity, Capacitance Sensors, Tensiometers, or Granular Matrix Sensors. 5. A weather station is required unless an active NDAWN station is located within 5 miles of the irrigated field. 6. At the completion of each irrigation season prior to the end of the calendar year, NRCS and the producer will complete at technical evaluation of IWM utilizing the ND IWM Certification Tool. If a subscription service can provide comparable date (daily record of irrigation, rainfall, soil moisture), in an alternate format, that will be considered an acceptable substitute for documentation. *All end of the season consultations require 449 JAA

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E449D	WATER	Inefficient Irrigation Water Use	X	X	X					Advanced Automated IWM – Year 1, Equipment and soil moisture or water level monitoring	Installing and monitoring soil moisture or water leveling equipment for advanced automated irrigation water management	acre	1	1		NA		1. ND NRCS will develop a site specific Irrigation Water Management Plan prior to implementation, utilizing the ND IWM Template, which includes guidance to the producer on sensor placement, weather station placement, and record keeping. Alternatively, the producer may provide an IWM Plan developed by a ND P.E., subject to a functional review and approval by NRCS. 2. Flow meters are required to be installed as necessary to accurately account for the quantity of water applied to each individual field. If meters are not tied into the pivot panel for automatic recording, the producer will be required to keep side records for each individual application. 3. Sensors must include a data logger that records daily soil moisture levels, at multiple depths, and transmits information electronically to the operator in real time. Acceptable sensor types include Time Domain Transmissivity, Capacitance Sensors, Tensiometers, or Granular Matrix Sensors. 4. A weather station is required unless an active NDAWN station is located within 5 miles of the irrigated field. 5. At the completion of first irrigation season, prior to the end of the calendar year, NRCS and the producer will complete a technical evaluation of IWM utilizing the ND IWM Certification Tool. If a subscription service can provide comparable data (daily record of irrigation, rainfall, soil moisture), in an alternate format, that will be considered an acceptable substitute. *All planning, review,and/or end of the season evaluations require 449 JAA
E449F	WATER	Inefficient Irrigation Water Use	X	X	X					Intermediate IWM— Year 1, Equipment with Soil or Water Level monitoring	This activity involves monitoring soil moisture or water levels within a irrigated field for intermediate irrigation water management include installation of equipment year 1.	acre	1	1		NA		1. This enhancement may be used in either of the following circumstances: in conjunction with E449H, or as a follow up to an EQIP contract that included implementation of IWM, Advanced. 2. ND NRCS will develop a site specific Intermediate Irrigation Water Management Plan prior to implementation, utilizing the ND IWM Template, which includes guidance to the roducer on sensor placement, weather station placement, and record keeping. Alternatively, the producer may provide an IWM Plan developed by a ND P.E., subject to a functional review and approval by NRCS. 3. Flow meters are required to be installed as necessary to accurately account for the quantity of water applied to each individual field. If meters are not tied into the pivot panel for automatic recording, the producer will be required to keep side records for each individual application. 4. Soil moisture readings are required,at depth intervals as outlined in the IWM plan. Acceptable sensor types include Time Domain Transmissivity, Capacitance Sensors, Tensiometers, or Graveac matrix sensors. 5. The producer will complete checkbook documentation through the irrigation season, utilizing one of the options listed in the Intermediate IWM Plan. 6. At the completion of each irrigation season prior to the end of the calendar year, NRCS and the producer will complete a technical evaluation of IWM utilizing the ND IWM Certification Tool. *All end of the season consultations require 449 JAA

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E449H	WATER	Inefficient Irrigation Water Use	X	X						Intermediate IWM— Years 2 -5, using soil moisture or water level monitoring	Monitoring soil moisture or water levels within an irrigated field for implementing an intermediate irrigation water management plan using soil moisture data to facilitate management decisions.	acre	1	5		NA		1. This enhancement may be used in either of the following circumstances: in conjunction with E449F, or as a follow up to an EQIP contract that included implementation of IWM, Advanced. 2. ND NRCS will develop a site specific Intermediate Irrigation Water Management Plan prior to implementation, utilizing the ND IWM Template, which includes guidance to the producer on sensor placement, weather station placement, and record keeping. Alternatively, the producer may provide an IWM Plan developed by a ND P.E., subject to a functional review and approval by NRCS. 3. Flow meters are required to be installed as necessary to accurately account for the quantity of water applied to each individual field. If meters are not tied into the pivot panel for automatic recording, the producer will be required to keep side records for each individual application. 4. Soil moisture readings are required,at depth intervals as outlined in the IWM plan. Acceptable sensor types include Time Domain Transmissivity, Capacitance Sensors, Tensiometers, or Graveac matrix sensors. 5. The producer will complete checkbook documentation through the irrigation season, utilizing one of the options listed in the Intermediate IWM Plan. 6. At the completion of each irrigation season prior to the end of the calendar year, NRCS and the producer will complete a technical evaluation of IWM utilizing the ND IWM Certification Tool. *All end of the season consultations require 449 JAA
E472A	WATER	Nutrients transported to surface water, Pathogens and chemicals from manure, bio-solids or compost applications transported to surface water	X	X	X	X	X	X	X	Manage livestock access to waterbodies to reduce nutrients or pathogens to surface water	Installation of structures and implementation of grazing management actions that restrict livestock access to waterbodies in order to reduce nutrient loading or reduce the introduction of pathogens from manure, bio-solids or compost to surface waters.	ft.	10	1		NA		Must meet 528

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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	List of mulching materials with a carbon to nitrogen ratio (C:N) less than 30:1.	NA		Cropping system soil loss must be at or below "T".
E511A	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X	X	X				Harvest of crops (hay or small grains) using measures that allow desired species to flush or escape	Harvest of crops (hay or small grains) using conservation measures that allow desired species to flush or escape. (For species list see State Wildlife Action Plan for species list) Conservation measures include timing of harvest, idling land during the nesting or fawning period, and applying harvest techniques that reduce mortality to wildlife.	acre	1	5	List of wildlife species of concern. State Cooperative Extension Service (CES) recommendations for forage harvest based on stage of maturity, moisture content, length of cut, stubble height and harvest interval. Primary nesting seasons for upland species. WHEG for species of interest.	NA		Ground nesting birds are the target for this enhancement. Primary Nesting Season is April 15 - August 1. ND WHEG specifically excludes grass/legume in rotation from being evaluated with the Herbaceous habitat tab. Therefore, perennial crop (intent to maintain 4 years or less) and annual crop will both be evaluated in the Crop tab. Annual crops harvested for grain are not eligible. Perennial crop must be harvested with at least 4" stubble. Annual crop for forage must be harvested with at least 8" stubble.
E511B	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X	X	X				Forage harvest management that helps maintain wildlife habitat cover, shelter or continuity	The timely cutting and removal of forages from the field as hay, green chop, or ensilage in such a way, and in time frames, to optimize both forage yield/quality and wildlife cover and shelter and/or continuity between otherwise disconnected habitats.	acre	1	5	List of wildlife species of concern. WHEG for species of concern that includes cover and shelter requirements. Cooperative Extension Service recommendations for proper stubble heights to avoid winterkill of forage species in cold climates. Appropriate harvest schedules, cover patterns, and minimum plant heights to provide suitable habitat for the specified wildlife species.	NA		Perennial hayland will be evaluated with the Herbaceous habitat tab of the WHEG. Perennial crop (intent to maintain for 4 years or less) or annual crop will be evaluated with the Crop tab of the WHEG. Annual crops harvested for grain are not eligible. Perennial hayland and perennial crop must be harvested with at least 4" stubble. Annual crop for forage must be harvested with at least 8" stubble.

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E511C	ANIMALS, PLANTS	Feed and Forage, Plant Productivity and Health, Structure and Composition		X	X					Forage testing for improved harvesting methods and hay quality	Dry hay forage samples are collected and analyzed following LGU procedures. Analysis results are kept and used to improve harvest decisions to guide forage supplementation of on-farm livestock to meet nutritional needs and improve health and productivity.	each	1	5	State Cooperative Extension Service (CES) recommendations for forage harvest based on stage of maturity, moisture content, length of cut, stubble height and harvest interval, etc. and State Cooperative Extension Service (CES) forage nutritional requirements for livestock classes.	NA		For sampling protocol and methods please visit NDSU Extension's Sampling Feeds and Testing for Nutritional Value website linked below: https://www.ndsu.edu/agriculture/sites/default/files/2022-08/as1064.pdf A coring bore should be used to collect bale samples. A minimum of 7 cores are required per test. Testing will occur in bales from the same field, do not mix samples from bales that originate from other fields. For operations that only take 1 cutting per year are not eligible for this enhancement.
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	*Activity Sheet edited to include new terminology "Pasture and Hay Planting" instead of previous "Forage and Biomass Planting" name.	Must meet 512, 528 (if grazing), or 511 (if haying). Please refer to 512 Forage and Biomass Planting Conservation Practice Specification. For soils with a Forage Suitability Rating of "Not Suited"use Conservation Practice Specification 550. Native legumes will be used in those instances where 550 CPS is applied.
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	State specific planting rates, methods and dates. Livestock exclusion requirements. List of noxious plants List of persistent species that can tolerate close grazing and/or trampling	YES	*Activity Sheet edited to include new terminology "Pasture and Hay Planting" instead of previous "Forage and Biomass Planting" name.	
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	State specific planting rates, methods and dates. Livestock exclusion requirements.	NA	*Activity Sheet edited to include new terminology "Pasture and Hay Planting" instead of previous "Forage and Biomass Planting" name.	
E528A	ANIMALS	Feed and Forage Imbalance			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 following the recommendations of a qualifying professional, as detailed in the documentation and implementation requirements.	acre	1	5	Deferment (non-grazing period less than one year) and/or rest (non-grazing period equal or greater than one year) needed for critical periods of plant needs (such as post-planting or renovation, severe drought, etc.).	NA	*Activity Sheet edited to include statement for the new TSP protocol regarding DIA 159.	Must meet 528. Recommend: Participant to provide name of certified professional they are working with. For the most up to date list of Certified Range Management Consultants or Certified Professional in Range Management please call SRM at 303-986-3309 or email info@rangelands.org.

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E528D	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates			X	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	WHEG for species of concern.	NA		Must meet 528.
E528E	PLANTS	Plant Structure and Composition, Terrestrial Habitat for Wildlife and Invertebrates			X	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	WHEG for wildlife species of concern.	NA		Must meet 528.
E528H	WATER	Elevated Water Temperature			x	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		Must meet 528.
E528I	WATER	Nutrients transported to surface water, Nutrients transported to ground water			X	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		Must meet 528.
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		Must meet 528.
E528L	SOIL	Bank erosion from streams, shorelines or water conveyance channels			X	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		Must meet 528.
E528M	SOIL	Classic Gully Erosion			X	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		Must meet 528.

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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	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	State supplemental guidance may be necessary to recommend feeding rates, duration in paddocks and spacing between bales.	NA		• Rangeland land-use ineligible for this enhancement. • Do not feed within 300 feet of perennial and intermittent streams, drainage ways, field ditches, or open water. • Do not feed on slopes that drain directly into surface water. • This enhancement is ineligible within existing feeding areas. • This enhancement is meant to move the feeding event around the designated feeding area, feeding on one spot (without moving the feeding event around) will not meet the scope of this enhancement. • Do not plan consecutive years on the same designated feeding area. • Designated feeding areas that were bale or swath grazed during the prior year are ineligible. • Do not feed pastures seeded to native species, as this will likely cause plant mortality and increase competition from exotic cool-season grasses. • Calculations on page 3 must be completed to justify duration of feeding and to justify the size of the designated feeding area. • For more information on planning this enhancement please see the following links: o https://www.ag.ndsu.edu/publications/livestock/alternative-winterfeeding-strategies-for-beef-cattle-management
E528Q	ANIMALS	Feed and Forage Imbalance	X	X	X	X	X	X	X	Use of body condition scoring for livestock on a monthly basis to keep track of herd health	Body condition scoring (BCS) serves as a useful management tool to monitor livestock performance with respect to current and recent feeding or grazing programs. Body condition scoring is a numeric scoring system, producers can use to consistently evaluate animals' estimated body energy reserves through degree of fatness. This information can be used to adjust nutritional strategies to reach optimal BCS. Since body condition is closely associated with reproductive performance as well as feed efficiency, monitoring body condition can help producers reach production goals and increase the operation's bottom line. Knowledge and understanding of BCS will assist producers to adjust a supplemental feeding program to maintain animal health and nutrition on a-monthly-basis.	acre	1	5	Local land grant university BCS sheets	NA		

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E528R	PLANTS	Plant Productivity and Health, Plant Structure and Composition			X	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	Implementation Requirements that reduce pasture/paddock size while increasing stock density to maximize forage growth, quantity and quality; improve manure distribution; increase carbon sequestration, improve wildlife cover and protect soil from erosion.	NA		Must meet 528
E533B	ENERGY	-Energy Efficiency of Equipment and Facilities	X	X	X			X	X	Complete pumping plant evaluation for energy savings	Evaluation of all pumping plants to determine the potential to rehabilitate/replace/reconfigure pump performance to reduce energy use. Evaluate to determine if a Variable Frequency Drive motor controller(s) will reduce energy use and is feasible.	No	1	1		NA	*Unit changed from acre to number. *Scenario Feature Measure changed to "Each pump evaluated." This change is more equitable for all farms, including urban and small farms. *E449A is for the Water resource concern to improve water delivery. *E533B is the enhancement to use for the Energy resource concern to evaluate if a VFD will reduce energy use. *As a result, the improve water delivery efficiency is removed and replaced with reduce energy use. The evaluation for a VFD is revised to reduce energy use and feasibility for the 533B Enhancement.	1. Use of this enhancement is restricted to systems where the installation of a Variable Frequency Drive (VFD) has a reasonable potential for water savings. Either of two situations are considered to have potential: - The irrigation system consists of multiple irrigation delivery points operating from a single pump. This includes systems where multiple pumps supply multiple irrigation systems. - The irrigation system has Variable Rate Irrigation (VRI) currently installed. These situations do not have potential for energy savings through a VFD: - Single pump to a single system. - Multiple pumps to a single system that does not have VRI installed on it. 2. ND NRCS will develop target flow rate/TOH performance requirements for the pump, in order for the system to deliver peak consumptive use requirements of the crops in the rotation. In addition, ND NRCS will prepare an IWM Plan (Basic or Intermediate) utilizing the ND IWM Template. No record keeping or follow up is required for IWM under this enhancement. ND NRCS will communicate flow/TOH performance requirements to the service provider hired by the producer, as well as ensuring the service provider is clear on requirements of the evaluation. 3. The producer is required to hire a qualified service provider, with appropriate testing equipment, to complete an evaluation of the pumping plant performance and efficiency using the Nebraska Irrigation Pumping Plant Performance Criteria and as described in NEH Part 623, Chapter 8, Appendix A. As of 2018, NDSU Extension is no longer staffed to provide this service. A full and complete report must be completed by the service provider, including the ND-ENG-533E Pumping Plant Evaluation Form and should include: - Age and condition of the components of the irrigation system and pumping plant - Water levels during pumping - A field developed pump curve - Pump and engine speed (rpm) - Actual Pump Plant Performance versus the Nebraska Performance Criteria - Actual pump efficiency versus the Manufacturer Published efficiency - Recommendation for improvements to the overall system efficiency - Estimate of energy savings if improvements are implemented 4. The VFD evaluation may be done by the service provider, or by a NRCS engineer utilizing the CNTC Variable Speed Drive Economic Calculator worksheet. Note that this enhancement does not cover

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																		implementation of Advanced IWM - utilize enhancements E449114Z8 and E449114Z7 for that separately. 'Development of /WM plan, pump requirements, and review/approval of pump test and VFD evaluation appropriateJAA {449, 442, 443, 533). 5. ND NRCS will develop a site specific Irrigation Water Management Plan prior to implementation, utilizing the ND IWM Template, which includes guidance to the producer on sensor placement, weather station placement, and record keeping. Alternatively, the producer may provide an IWM Plan developed by a ND P.E., subject to a functional review and approval by NRCS. 6. Flow meters are required to be installed as necessary to accurately account for the quantity of water applied to each individual field. If meters are not tied into the pivot panel for automatic recording, the producer will be required to keep side records for each individual application. 7. Sensors must include a data logger that records daily soil moisture levels, at multiple depths, and transmits information electronically to the operator in real time. Acceptable sensor types include, Time Domain Transmissivity, Capacitance Sensors, Tensiometers, or Granular Matrix Sensors. 8. A weather station is required unless an active NDAWN station is located within 5 miles of the irrigated field. 9. At the completion of first irrigation season, prior to the end of the calendar year, NRCS and the producer will complete a technical evaluation of IWM utilizing the ND IWM Certification Tool. If a subscription service can provide comparable data (daily record of irrigation, rainfall, soil moisture), in an alternate format, that will be considered an acceptable substitute. *All planning, review,and/or end of the season evaluations require 449 JAA
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	*New Enhancement for FY-23. *Replaced E374A with E533C as CPS 533 is the base practice for this enhancement. *Unit changed from horsepower to number. *Scenario Feature Measure changed to “Each pump modified.” This change is more equitable for all farms, including urban and small farms. *Added labor and pickup truck components to payment scenario. *Changed criteria from a Type 2 energy audit to a pumping plant evaluation.	Enhancement may only be contracted if a Type 2 ASABE S612 Energy Audit has been completed which identifies the need for a VFD on the system and payback within the practice lifespan. A qualified energy auditor must complete the audit and an NRCS engineer with JAA must complete a functional review/ Audit may be funded under CSP E533B, EQIP CEMA 228, or funded by the producer out of pocket. NRCS engineers may complete design of the VFD after the audit is completed.
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	*New Enhancement for FY-23. *Replaced E374B with E533D as CPS 533 is the base practice for this enhancement. *Unit changed from horsepower to number. *Scenario Feature Measure changed to “Each pump modified.” This change is more equitable for all farms, including urban and small farms. *Changed criteria from a Type 2 energy audit to an evaluation of the current operating conditions of the existing pump. In the description, added that the renewable source is from an on-farm source.	NRCS employees may design solar or wind powered pumps up to 30 gpm capacity. Designs for larger capacity wind or solar pumps and all geothermal pumps must be completed by a North Dakota licensed Professional Engineer

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E550B	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	X		X				Range planting for improving forage, browse, or cover for wildlife	Establishment of adapted perennial or self-sustaining vegetation such as grasses, forbs, legumes, shrubs and trees for the purpose of improving forage, browse, or cover for wildlife on areas that have been degraded beyond recovery via ecological principles, or old crop fields and pastures devoid of desirable, native rangeland species that fit within an ecological site description steady state.	acre	5	1	List of suitable plant species. List of intended wildlife species (this may include such target species as rangeland birds, ungulates, pollinator insects and non-pollinator insects such as Monarch butterfly as geographically and ecologically relevant). WHEG for species of concern.	NA		This enhancement is only applicable on existing, annually planted cropland. Adequate seedbed preparation cannot be achieved to replant existing, heavily degraded grassland or hayland within the timeframe of the enhancement. Practice 550 must identify a resource concern, but does not need to be erosion related. Practice 550 must be scheduled concurrently with enhancement as enhancement doesn't cover full seeding cost.
E578A	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X	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	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	List of nitrogen or phosphorous EEF products recommended by state Land Grant University (LGU) and concurred with by NRCS. Documentation of LGU and/or laboratory guidelines for interpretations of the results and appropriate nutrient adjustments based on in-season plant tissue sampling and analysis.	NA	*Revised to provide clearer guidance on the use of Enhanced Efficiency Fertilizers (EEFs).	Applicable to all activities listed above. Producer must have a current soil test (no more than 3 years old) within application of the product/strategy. The total amount of nutrients applied shall not exceed the rates recommended by the "Land Grant University" (LGU) based on soil testing information and reasonable, established yield goals. If you have used any of the above strategies on more than 50% of your acres you are ineligible to use that strategy. Following are sideboards specific to each of the activities listed above. USE OF ENHANCED EFFICIENCY FERTILIZERS: Enhanced efficiency phorphus fertilizer are not applicable in North Dakota. Applied enhanced efficiency nitrogen products must contain one or more of the following materials as the active ingredient/material from the urease and / or nitrification inhibitors lists below: UREASE INHIBITORS: • Ammonium thiosulfate • NBPT -N-(n-butyl) thiophosphoric triamide NITRIFICATION INHIBITORS: • IBDU (isobutylidene diurea) • DCD - dicyandiamide • Nitrapyrin PSNT OPTION: • No additional sideboards, see documentation requirements. TISSUE TESTING: • For in-season stalk/tissue testing on crops with NDSU recommendations to adjust in-season nitrogen applications. • Does not include Late season corn stalk testing. NUTRIENT PLACEMENT: All phosphorus fertilizer, regardless of form, will be injected at least 3 inches deep below the soil surface, and/or phosphorus applied as a starter fertilizer during the planting operation will be placed in a band 2 inches to the side and 2 inches below the crop seed (commonly referred to as"2x2" placement).
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	*Revised adding "geo-referenced" to the Criteria.	Must be making a change if they have already done 590 in the past. Going from practice 590 basic precision to E590B is not a change in management. If the practices is needed you can only use basic 590 NM scenario and E590B on the same acres.
E595B	WATER, AIR	Pesticides Transported to Surface Water; Emissions of Ozone Precursors Pesticides	X	X	X					Reduce risk of pesticides in water and air by utilizing IPM PAMS techniques	Utilize integrated pest management (IPM) prevent, avoidance, monitoring, and suppression (PAMS) techniques to reduce risk of pesticides in water and air. Reduce the potential for delivery of chemicals into water or ozone precursor emissions.	acre	1	5		NA	*Added Pasture as a Land Use *Added requirements to complete activity on Pasture Land Use.	Required that participant provide the IPM plan, pesticide risk mitigation activities and precision pesticide application technology to be used.

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E595G	ANIMALS	Plant Pest Pressure	X	X						Reduce resistance risk by utilizing PAMS techniques	Utilize integrated pest management (IPM) prevention, avoidance, monitoring, and suppression (PAMS) techniques to reduce pesticide resistance and address plant pest pressure.	acre	1	5		No	New Enhancement for FY-23.	
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	Additional criteria to supplement CPS 612. List of tree species that meet requirements for high rates of carbon sequestration and are suitable for the geographic location.	YES	*Applicable land use limited to Forest. *Description revised to align with enhancement activities. *Clarified activities needed to increase carbon sequestration. *Payment scenario revised to supplemental tree planting on 5 acres, machine planting replaced with hand planting.	Minimum size 5 acres. Smaller acres can be approved by State ES staff. Limited to the following Ecological Sites: Upland Hardwood Forest, Steep-sided Wooded Draw, and Flat Bottom Wooded Draw. Species must be native to the Ecological Site. Must meet ND 612 Specification "For All Purposes" and "For Forest Products and Carbon Sequestration" criteria.
E612E	PLANTS	Plant Structure and Composition					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	1	Additional criteria to supplement CPS 612. State list of suitable woody plants for cultural uses.	NA	*Removed Pasture and Range land uses. *Clarified activities needed to implement the enhancement.	Minimum size for this enhancement is 0.5 acres. Rarely used in North Dakota. Contact ND Forest Service for information. The planting must meet the ND 612 Specification "For all Purposes" criteria.
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	Additional criteria to supplement CPS 612. List of trees and shrubs important for wildlife food. WHEG for species of concern.	YES	*Removed Crop, Pasture, Range, and Farmstead land uses. * Description and guide sheet revised to clarify enhancement requirements and activities. *Removed foregone income from the Payment Scenario.	Minimum size for this enhancement is 1 acre. See Tree and Shrub Characteristics for wildlife attributes in FOTG, 75% or more must be rated Y or M for Wildlife Food. Must meet Standard and Specification for 612. Minimum 7 rows with at least 5 species.
E647C	ANIMALS	Terrestrial Habitat for Wildlife and Invertebrates	X							Maintain most soil vegetation on cropland edges to enhance waterfowl and shorebird habitat	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	5	1	Wildlife Habitat Evaluation Guide (WHEG) to assess habitat condition, both existing and planned score	NA		Allow native, volunteer hydrophtic vegetation to grow on temporary or seasonal wetlands which are normally cropped. To meet the size requirement, each enrolled area must be at least ¼ acre. Areas not normally cropped are not eligible, however, if the cropped perimeter exceeds ¼ acre, that portion may be enrolled.This enhancement must be installed by the third year of the contract. This enhancement is only scheduled once per location and must be maintained for the life of the contract. Wetlands will not be flooded with tile discharge water. Early fall manipulation by light disking, burning, mowing or rolling is not allowed in ND. Consult a biologist for WHEG evaluation.

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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	Any required state specific additions to CPS 666.	NA		Rarely Used in ND

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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	Any required state specific additions to CPS 666. Guidelines for species and species groups to determine spacing, density, size-class distribution, number of trees, and amount of understory species to be retained.	NA		
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	Any required state specific additions to CPS 666. Guidelines for species and species groups to determine spacing, density, size-class distribution, number of trees, and amount of understory species to be retained.	NA		Must develop Forest Stewardship Plan with North Dakota Forest Service. Limited to Pine Forest Area of Western North Dakota.

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E666G	PLANT, ANIMAL	Wildfire Hazard from Biomass Accumulation; Terrestrial Habitat for Wildlife and Invertebrates					X			Reduce forest density and manage understory along roads to limit wildfire risk and improve habitat	Opening the tree canopy along roads ("daylighting"), and providing space between ground vegetation and tree crowns minimizes the spread of wildfires that often start along roads, and improves wildlife habitat and food sources for many species. Some trees near a forest road are removed through harvesting, cutting, mulching, or another option available at the site, with the objective of creating a partially open forest canopy bordering the road. A semi-open canopy allows more sunlight to reach the forest floor to promote herbaceous understory plants, and reduces maintenance needs by allowing moisture to evaporate from roads. The reduced canopy and herbaceous understory limit woodland fuel buildup and reduce fire intensity.	acre	10	1	Any required state specific additions to CPS 666. Guidelines for species and species groups to determine spacing, density, size-class distribution, number of trees, and amount of understory species to be retained. Nesting season for ground nesting birds.	NA		Must develop Forest Stewardship Plan with North Dakota Forest Service. Limited to Pine Forest Area of Western North Dakota.
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	Any required state specific additions to CPS 666.	NA	*Criteria shifted from revising a forest management plan to implementing forest management activities to increase on-site carbon storage. *Payment scenarios revised to align with forest management activities.	

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Blue: New FY 2023 Enhancements

Code	Resource Concern	Resource Concern Cause	Crop (Annual and Mixed)	Crop (Perennial)	Pasture	Range	Forest	Associated Ag Land	Farmstead	Full Enhancement Name	Enhancement Description	Units	Enhancement Lifespan	Max years enh. can be contracted	State Supplemental information Required ++	Suitable for Land Use Conversion	*Changes from 2022 to 2023. *Highlighted blocks delineate new activities. *Red font indicates revisions made.	North Dakota Sideboards
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	Any required state specific additions to CPS 666.	NA		Must develop Forest Stewardship Plan with North Dakota Forest Service

FY 2023 CSP Activity List
Bundles - Not suitable for Voluntary Land Use Conversion

Legend
Green: Updated Existing Bundle
Blue: New Bundle for FY2023

Bundle Code	Crop (Annual and	Crop (Perennial)	Pasture	Range	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	Information States need to Develop Prior to Signup
B000CPL10	X							YEAR 1 Irrigated Cropland (MRBI/Ogallala)	Addresses water quality degradation, insufficient water, soil erosion, and inefficient energy resource concerns. Adopt E590A, E449D, E449A, and E340A. This bundle will be applied one time and the enhancements maintained for their lifespan.	acre	1	1	See specific component enhancements.
B000CPL11	X							YEAR 2+ Irrigated Cropland (MRBI/Ogallala)	Addresses water quality degradation, insufficient water, and soil erosion resource concerns. Adopt E590A, E449C, and E340A. This bundle may be applied multiple times.	acre	1	4	See specific component enhancements.
B000CPL12	X							Non-Irrigated Precision Ag (MRBI)	Addresses water quality degradation, soil quality, and soil erosion resource concerns. Adopt E590B, E595A, E340A, and E329D or E345D. This bundle may be applied multiple times.	acre	1	5	See specific component enhancements.
B000CPL13	X							Non-Irrigated Cropland (MRBI)	Addresses water quality degradation, soil quality, and soil erosion resource concerns. Adopt E590A, E595B, and E340A. This bundle may be applied multiple times.	acre	1	5	See specific component enhancements.
B000CPL14	X							YEAR 1 Irrigated Precision Ag Cropland (MRBI)	Addresses water quality degradation, insufficient water, soil erosion, and inefficient energy resource concerns. Adopt E590B, E449D, E449A, and E340A. This bundle will be applied one time and the enhancements maintained for their lifespan.	acre	1	1	See specific component enhancements.
B000CPL15	X							YEAR 2+ Irrigated Precision Ag Cropland (MRBI)	Addresses water quality degradation, insufficient water, and soil erosion resource concerns. Adopt E590B, E449C, and E340A. This bundle may be applied multiple times.	acre	1	4	See specific component enhancements.
B000CPL16	X							Non-Irrigated Cropland with Water Bodies (MRBI)	Addresses water quality degradation, soil erosion, and soil quality resource concerns. Adopt E590A, E595B, E340A, E329D or E345D, and E390A or E393A. This bundle may be applied multiple times.	acre	1	5	See specific component enhancements.
B000CPL17	X							Non-Irrigated Cropland with Water Bodies Riparian Forest Buffer (MRBI)	Addresses water quality degradation, soil erosion, and soil quality resource concerns. Adopt E590A, E595B, E340A, E329D or E345D, and E391A. This bundle may be applied multiple times.	acre	1	5	See specific component enhancements.
B000CPL18	X							Crop Bundle #18 - Precision Ag	Addresses water quality degradation, fish and wildlife inadequate habitat, air quality impairment, and either soil erosion or soil quality degradation resource concerns. Adopt E595A, E590B, E328D, E329A or E345A, and E340A or E340C. This bundle may be applied multiple times.	acre	1	5	See specific component enhancements.
B000CPL23	X							Crop Bundle #23 – Pheasant and quail habitat	Addresses wildlife habitat, either water quality or air quality, and either soil health or plant pest pressure resource concerns. Adopt E393A or E386C or E390A, E340C or E340H or E386B, E328D or E328L, and E645B or E612G or E386E or E328K or E328J or E511A. This bundle may be applied multiple times.	acre	1	5	See specific component enhancements.
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	See specific component enhancements.

FY 2023 CSP Activity List
Bundles - Not suitable for Voluntary Land Use Conversion

Legend
Green: Updated Existing Bundle
Blue: New Bundle for FY2023

Bundle Code	Crop (Annual and	Crop (Perennial)	Pasture	Range	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	Information States need to Develop Prior to Signup
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	See specific component enhancements.
B000GRZ2			X	X				Grazing Bundle 2 - Range and Pasture	The participant will implement site specific strategies applied to range or pasture through the following enhancements: E472A, E382A, and E580A. This bundle will be applied one time and the enhancements maintained for their lifespan in order to address water quality degradation, fish and wildlife inadequate habitat, and soil erosion resource concerns.	acre	20	1	See specific component enhancements.
B000GRZ3			X	X				Grazing Bundle 3 - Range and Pasture	The participant will implement site specific strategies applied to range or pasture through the following enhancements: E472A, E390B, and E580A. This bundle will be applied one time and the enhancements maintained for their lifespan in order to address water quality degradation, fish and wildlife inadequate habitat, and soil erosion resource concerns.	acre	20	1	See specific component enhancements.