Project Implementation Plan SFY23-25

Delaware River WRAPS

WRAPS Coordinator: Ted Hinton

Grant Start: July 1, 2022
Grant End: December 31, 2025
Total Allocation: $495,000

This WRAPS Implementation PIP will help accomplish the long-term goals established in Kansas' Nonpoint Source Management Plan Goals including:

1. No lake, river, stream or wetland has a violation of Kansas Surface Water Quality Standards due to nonpoint sources of pollutants and all designated uses are fully supported;
2. Kansas surface and ground water are protected from all nonpoint pollutant sources through the use of recommended water quality best management practices.
3. Reducing the levels of phosphorus, nitrogen, and sediment that adversely affect the water quality of Kansas lakes, rivers, streams and wetlands

	Year 1	Year 2	Year 3
Personnel/Fringe	$65,800	$68,400	$71,100
Admin/Indirect	$16,500	$16,500	$16,500
Travel/Supplies	$12,500	$13,200	$13,500
Strategy Implementation/BMPs	$71,400	$66,300	$63,300
Total:	$166,200	$164,400	$164,400

Estimated Load Reductions	
Phosphorus	11,435 lbs.
Nitrogen	21,955 lbs.
Sediment	6,151 tons

Strategy and Goals	Funding	Load Reductions		
		Phosphorus (lbs)	Nitrogen (lbs)	Sediment (tons)
Soil Health and Cover Crops Implement soil health related BMPs in the Delaware River priority upland, buffer, and floodplain areas to achieve load reductions in accordance with TMDLs for nitrogen, phosphorous, and sediment loading. BMPs to be implemented: • Cover Crops (2850 acres)	$90,000	4,493	8,980	3,481
Nutrient Reduction and Green Infrastructure Implement Nutrient Management and Green Infrastructure BMPs to	$40,000	3,560	5,822	2,637

reduce nutrient and sediment loads in 1000 acres of the Delaware River Cover Crops. The following BMPs will be completed by December 31, 2025: • 750 acres of nitrogen with rates calculated using the Haney Test • 600 acres of subsurface placed phosphorous fertilizer in lieu of broadcast/topdress application • 340 acres of continuous no-till • 50 acres of Buffer • 50 acres of Pollinator Habitat				
Livestock Management BMPs Livestock BMPs in the Grasshopper Creek, Elk Creek, and Spring Creek watersheds to reduce E. coli contamination in the Delaware watershed. Acres/number of BMPs to be completed by December 31, 2025: • Alternative water sources - 3 • Alternative feeding sites - 3 • Alternative shelter sites - 3 • Cover crops – alternative grazing – 600 acres	$41,000	3,382	7,153	33
General BMPs General BMPs to help fund projects listed in the above strategies as needed.	$30,000	N/A	N/A	N/A

Project Information

Project Title

Delaware River WRAPS Implementation SFY23-25

This WRAPS Implementation PIP will help accomplish the long-term goals established in Kansas' Nonpoint Source Management Plan including:

1. No lake, river, stream, or wetland has a violation of Kansas Surface Water Quality Standards due to nonpoint sources of pollutants and all designated uses are fully supported.
2. Kansas surface and ground water are protected from all nonpoint pollutant sources using recommended water quality best management practices.
3. Kansas Water Plan objectives are achieved by:
    a. Reducing the levels of pathogens, biochemical oxygen demand, dissolved solids, metals, nutrients, pesticides, and sediment that adversely affect the water quality of Kansas lakes, rivers, streams, and wetlands.
    b. Reducing the levels of dissolved solids, metals, nitrates, and volatile organic chemicals that adversely affect the quality of Kansas ground water.
    c. Maintaining water quality conditions for unimpaired waters at a level equal to or better than existing conditions.

Contact Information

Enter Sponsoring Organization Information

Sponsoring Organization Name

Glacial Hills Resource Conservation and Development Region, Inc.

Street Address

334 2nd Street

City, State, Zip

Wetmore, Kansas 66550

Sponsor Taxpayer ID (FEIN)

48-1103964

Signature Authority Name

Gary Satter

Signature Authority Email

gary.satter@glacialhillsrcd.com

Signature Authority Phone Number

785-608-8801

Enter project contact information

Name

Gary Satter

Street Address

334 2nd Street

City, State, Zip

Wetmore, Kansas 66550

Phone Number

785-608-8801

Email

gary.satter@glacialhillsrcd.com

Project Overview

List the HUC12s that are included in this project.

102701030101, 0102, 0103, 0104, 0105, 0106, 0107, 0108, 0109, 0110, 102701030201, 0202, 0203, 0204, 0205, 102701030301, 0302, 0303, 0304, 0305, 0306, 0307, 0308, 102701030401, 0402, 0403, 0404, 0405, 0406, 0407, 0408, 102701030501, 0502, 0503, 0504, 0505, 0506, 0507, 0508

Will a public water supply system be impacted by the project?

☒Yes
☐No

If yes, please enter the impacted public supplies.

City of Circleville, City of Denison, City of Everest, City of Goff, City of Holton, City of Horton, Jackson County RWD 3, Jefferson County RWD 10, Jefferson County RWD 11, Jefferson County RWD 3, Jefferson County RWD 7, Jefferson County RWD 9, Lakeside Village Improvement District, City of Muscotah, Nemaha County RWD 4, City of Netawaka, City of Oskaloosa, City of Ozawkie, City of Perry, City of Powhattan, Public Wholesale Watershed 18, City of Valley Falls, City of Wetmore, City of Whiting, City of Willis

Describe the project history.

The Delaware River Watershed Restoration and Protection Strategy (WRAPS) was started in 2005 with a Development WRAPS grant provided to Glacial Hills Resource Conservation and Development (RC&D), sponsor of the project. An assessment and planning grant was received in 2006 to continue the process. A formal Stakeholder Leadership Team was formed in April 2007, and the Delaware River

WRAPS Plan was completed in May 2007, approved in August 2011, and was updated in 2021. This submission if for the State of Kansas Fiscal Year 23-25. Many information and education projects have been completed including a website, brochures, teacher workshops, watershed tours and streambank stabilization workshops. Many partners have made the Delaware River WRAPS project successful including county conservation districts, county Extension offices, NRCS, Kansas Rural Center, Kansas Forest Service, K -State watershed specialist, Kansas Water Office, Kansas Dept. of Agriculture Division of Conservation, U.S. Corps of Engineers, and many others. The project started applying best management practices on cropland and rangeland in 2009 to address the water quality issues of sedimentation, bacteria, and nutrients. This 3-year project implementation plan will implement years 13, 14, and 15 of the watershed plan.

Ongoing efforts have been to reduce water quality impairment loading to streams through cropland and livestock BMPs in targeted areas of the watershed. The WRAPS program has implemented and demonstrated a small-scale streambank stabilization practice in the Delaware watershed, and another is to be implemented in Spring 2022. The WRAPS project has conducted outreach to livestock producers in the Grasshopper watershed, to determine willingness to demonstrate livestock management on adjacent cropland, with the intent to remove cattle from the riparian areas.

The WRAPS project has implemented strategies to increase adoption of soil health principles, cover crops, and nutrient management.

Enter the project start date (MM/DD/YYYY)

07/01/2022

Enter the project end date (MM/DD/YYYY)

12/31/2025

Describe your Stakeholder Leadership Team (SLT),

The Delaware River WRAPS has eight SLT members comprised of area landowners and farmers. Responsible for restoration and protection of the watershed rests primarily in the hands of local stakeholders. In cooperation with these local stakeholders, federal and state agencies provide technical and financial assistance for educational activities and BMP implementation. The SLT has identified specific goals to achieve watershed improvement; it is believed that implementation of the BMPs as well as financial incentives and cost-share programs will, over time, lead to decreases in surface and ground water impairments.

The watershed goals of the Delaware River Watershed SLT are to:

- reduce the amount of nutrients flowing into the Delaware River and, ultimately, Lake Perry.
- reduce the amount of sediment entering the Delaware River and, ultimately, Lake Perry.
- protect and restore streambanks along the mainstem of the Delaware River.
- protect and restore water quality throughout the watershed
- educate the watershed community about water quality practices and benefits.

Accomplishing these goals will involve both an educational component as well as the implementation of BMPs on cropland, livestock, and streambank areas. Efforts will focus on

targeted areas in the Delaware River Watershed to achieve the greatest water quality improvement at a minimal cost.

SLT Members: List the name, role, affiliation, and email for each SLT member.

- Henry Hill- producer/landowner, hillfarm91@yahoo.com
- V. Dean Wenger- producer/landowner, vdwbw@yahoo.com
- Kelsey Pagel- producer/landowner, kelseypagel13@gmail.com
- Wayne Niehues- producer/landowner, waniehues@yahoo.com
- David Royer- producer/landowner, royerdku@yahoo.com
- Kerry Bruning- agricultural landowner, kerrybruning@gmail.com
- Because of recent resignations we have two SLT spots to fill

Project Scope

Describe the TMDLs and/or water quality impairments directly addressed in this project.

Eutrophication in Perry Lake (TMDL), Total Phosphorous in the Delaware River near Half Mound (TMDL), Sediment in all riparian areas, E. coli in the Delaware River near Half Mound (TMDL).

Please describe how this watershed has been assessed. This will include aerial assessments, soil and water tests, survey data, land use cover, and any other important information.

In 2010, the Department of Biological and Agricultural Engineering (BAE) at Kansas State University used the ArcGIS interface of ArcSWAT (Soil & Water Assessment Tool) to estimate annual average pollutant loadings for the Delaware River Watershed. This version used spatially distributed data on topography, soils, land cover, land management, and weather to predict water, sediment, nutrient, and pesticide yields. A modeled watershed is divided into sub-watersheds which are modeled as having non-uniform slope; uniform climatic conditions are determined from the nearest weather station. They are further subdivided into lumped, non-spatial hydrologic response units (HRUs) consisting of all areas within the sub-watershed having similar soil, land use, and slope characteristics. The use of HRUs allows slope, soil, and land-use heterogeneity to be simulated within each sub-watershed but ignores pollutant attenuation between the source area and stream and limits spatial representation of wetlands, buffers, and other BMPs within a sub-watershed.

Since the SWAT model generated extremely low soil erosion rate estimates, stakeholders involved in targeting decisions asked KDHE to create a cross-referencing tool using observable data to check results of the SWAT model. This Cropland/Slope Analysis factored the percentage of cropland in all HUC 12s with land slope to estimate soil erosion potential from cropland on a HUC 12 basis. Land slope was used along with total cropland acres because the soils' degree of incline (slope) is a significant factor in soil erosion. The risk of erosion and generation of pollutant-carrying runoff increases as the slope of the land increases. A land slope of 4% or more was used as the slope factor since most fields defined as highly erodible land by USDA in northeast Kansas have a slope of 4% or more.

KDHE has analyzed aerial images and determined areas of interest for BMP targeting to include livestock areas near stream segments as well as cropland.

Budget

Personnel			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	$61,000	$40,667	$101,667
Year 2	$63,500	$42,333	$105,833
Year 3	$66,000	$44,000	$110,000
Total Requested	$190,500	$127,000	$317,500
Description	Salary for WRAPS Coordinator, match from SLT time donations		

Fringe			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	$4,800	$	$4,800
Year 2	$4,900	$	$4,900
Year 3	$5,100	$	$5,100
Total Requested	$14,800	$	$14,800
Description	Employer matching share of employment taxes on employee salary		

Travel			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	$4,000	$	$4,000
Year 2	$4,700	$	$4,200
Year 3	$5,000	$	$4,500
Total Requested	$13,700	$	$12,700
Description	Travel for WRAPS Coordinator		

Supplies			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	$8,500	$	$8,500
Year 2	$8,500	$	$8,500
Year 3	$8,500	$	$8,500
Total Requested	$25,500	$	$25,500
Description	Haney soil tests, mycorrhizal fungi inoculant, administrative items		

BMP/Strategy Funding			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	$71,400	$76,245	$146,445
Year 2	$66,300	$74,378	$141,778
Year 3	$63,300	$72,377	$136,777
Total Requested	$201,000	$223,000	$425,000
Description	WRAPS share of BMP implementation with landowners. Match is landowners share of BMP implementation cost.		

Contractual Services			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	$	$	$
Year 2	$	$	$
Year 3	$	$	$
Total Requested	$	$	$
Description			

Other			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	$	$	$
Year 2	$	$	$
Year 3	$	$	$
Total Requested	$	$	$
Description			

Indirect			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	$16,500	$	$16,500
Year 2	$16,500	$	$16,500
Year 3	$16,500	$	$16,500
Total Requested	$49,500	$	$49,500
Description	Grant administration and bookkeeping expenses		

WRAPS Strategic Planning

General Plan Implementation

For implementing Years 13, 14, and 15 of the approved Delaware River WRAPS 9-Element Watershed Plan, the load reduction goals are 1,069,803 pounds of nitrogen, 216,057 pounds of phosphorus, and 20,439 tons of sediment. The strategies in this project implementation plan will achieve load reductions of 21,955 pounds of nitrogen, 11,435 pounds of phosphorus, and 6,151 tons of sediment for Years 13, 14, and 15. The below strategies will focus on one or more specific impairments identified in the 9-Element Watershed Plan. As this grant does not provide enough funding to fully implement the identified best management practices from the plan, project coordinators will partner with various other natural resource programs to leverage resources for the implementation of such practices. These programs include but are not limited to county conservation districts state cost share programs, Natural Resources Conservation Service (NRCS) programs, Kansas Dept. of Wildlife and Parks, Farm Service Agency, municipalities, and other nonprofit organizations.

Practices implemented beyond the following strategies will focus on the improvement of soil health, watershed hydrology, and the mitigation of impairments identified in the 9-Element Watershed Plan. These practices could include Buffers, Cover Crops, No-Till, Permanent Vegetation, and Subsurface Fertilizer Application.

What are the resources that you will need for General Plan Implementation?

The financial resources needed for implementation are as outlined above and totaling $201,000 for three-years. In addition to the financial resources outlined in each strategy below, $10,000 each year will be allocated to general BMPs. Technical resources may include assistance from NRCS EQIP and Conservation Districts.

Strategy One

Provide a general summary of Strategy One

Strategy #1 – Soil Health and Cover Crops: Implement soil health related BMPs in the Delaware River priority upland, buffer, and floodplain areas to achieve load reductions in accordance with TMDLs for nitrogen, phosphorous, and sediment loading. The HUC12s targeted include upland croplands, riparian corridors not less than ½ mile on each side of the stream or more than the 500-year floodplain in the HUC-12s of:
102701030101, 102701030102, 102701030103, 102701030104, 102701030105, 102701030106, 102701030107, 102701030108, 102701030109, 102701030110, 102701030201, 102701030202, 102701030203, 102701030204, 102701030205, 102701030301, 102701030302, 102701030303, 102701030304, 102701030305, 102701030306, 102701030307, 102701030308, 102701030401, 102701030402, 102701030403, 102701030404, 102701030405, 102701030406, 102701030407, 102701030408, 102701030501, 102701030502, 102701030503, 102701030504, 102701030505, 102701030506, 102701030507, and 102701030508.

What are the goals for this strategy?

The following BMPs are to be completed by December 31, 2025:
2850 acres of cover crops in priority areas

Scope	Year 1	Year 2	Year 3	Total
Cover Crops	1100 acres	950 acres	800 acres	2850 acres

Load Reductions	Nitrogen- lbs./yr.	Phosphorus- lbs./yr.	Sediment- tons/yr.
Cover Crops annually	2993	1498	1160
Total	8980 lbs.	4493 lbs.	3481 tons

Tactics and action steps

The Delaware River WRAPS program will provide:

- Cost share for cover crop seed
- Providing innovative equipment to facilitate service providers to implement timely overseeding utilizing Hagie ground rig application of cover crops
- Create a list of 25 prospective soil health adopters to target by December 31, 2022
- 25 one-on-one visits to fields hosting cooperators and prospective soil health adopters by December 31, 2025 (8.33/year)
- 4 Soil health meetings, workshops, and field days annually (4/year)
- Soil health facts and figures published in quarterly newsletters and on social media
    - Providing scientific and anecdotal data showing financial return on investment (ROI) for soil health practices (newsletters- 4/year, social media- 1/month)
    - Providing key benefits of soil health practices that may be easily quantified with ROI figures
- Evaluate and revise Hagie overseeding program to further penetration of overseeding cover crops in target areas (Annual evaluations done in conjunction with SLT & KDHE- 1/year)
- Develop relationships with entities that are willing to provide custom seeding services for cover crops behind the combine with a tractor and a drill to provide additional labor at harvest time, which is a time that labor is scarce for farmers (1 service provider by December 31, 2025)
- Investigate and provide a demonstration plot of cover crops utilizing an autonomous tractor pulling a grain drill to provide additional labor through technology at a time when labor is scarce for farmers (1 demonstration by December 31, 2025)

Key performance indicators for the tactics

Scope	Year 1	Year 2	Year 3	Total
Cover Crops	1100 acres	950 acres	800 acres	2850 acres

Activities and Reporting	Year 1	Year 2	Year 3
Prospective User List of 25 people	X	-	-
On-farm visits	9	8	8
Soil Health Meetings, Workshops, Demonstrations	4	4	4
Quarterly Newsletter	4	4	4
Social Media Posts	12	12	12
Hagie Program Evaluation and Revision	1	1	1
Source service provider for cover crop drilling	-	-	1
Provide demo plot for autonomously seeded cover crops	-	-	1
Load reduction reviews	1	1	1
Cost share acreage and funding reports	4	4	4
Soil health testing reports	1	1	1
Field visit reports	4	4	4
Attendance reports for workshops, field days, demos (averaging 20 producers per meeting)	4	4	4
Soil health adopter conversion reports	1	1	1

What are the resources that you will need and use to get the tactics done?

BMP Implementation	Year 1	Year 2	Year 3	Total
Cover Crops	$33000	$29000	$26000	$88000
I&E	$3000	$3000	$3000	$9000
Sources				
WRAPS	$31000	$30000	$29000	$90000
Leveraged (EQUIP and conservation district funds)	$5000	$2000	$0	$7000

Strategy Two

Provide a general summary of Strategy Two

Strategy #2 – Nutrient Reduction and Green Infrastructure: Implement Nutrient Management and Green Infrastructure BMPs to reduce nutrient and sediment loads in the Delaware River. The HUC12s targeted include upland croplands, riparian corridors no less than ½ mile radius or greater than the 500-year floodplain in the HUC-12s of:
102701030101, 102701030102, 102701030103, 102701030104, 102701030105, 102701030106, 102701030107, 102701030108, 102701030109, 102701030110, 102701030201, 102701030202, 102701030203, 102701030204, 102701030205, 102701030301, 102701030302, 102701030303, 102701030304, 102701030305, 102701030306, 102701030307, 102701030308, 102701030401, 102701030402, 102701030403, 102701030404, 102701030405, 102701030406, 102701030407, 102701030408, 102701030501, 102701030502, 102701030503, 102701030504, 102701030505, 102701030506, 102701030507, and 102701030508.

What are the goals for this strategy?

The following BMPs will be completed by December 31, 2025:

- 750 acres of nitrogen with rates calculated using the Haney Test
- 600 acres of subsurface placed phosphorous fertilizer in lieu of broadcast/topdress application
- 340 acres of continuous no-till
- 50 acres of Buffer
- 50 acres of Pollinator Habitat

Load Reductions	Nitrogen- lbs./yr.	Phosphorus- lbs./yr.	Sediment- tons/yr.
Haney N Recs	822	411	357
Subsurface P	672	336	293
No-till	1314	657	535
Buffers	1507	1078	726
Pollinator	1507	1078	726
Total	5822 lbs.	3560 lbs.	2637 tons

Tactics and action steps

- Incentivize use of Haney tests to optimize nitrogen fertilizer application rates
  - Enlist 9 producers (3/year) to utilize Haney tests to create nitrogen recommendations
  - Put in check strips with agronomic application rates to determine yield differences and input cost differences, to determine net loss/gain from Haney recommendations
- Pay producers cost share incentives for the subsoil placement of phosphorous fertilizer
- Pay producers cost share incentives to abandon tillage for continuous no-till practices
- Pay producers cost share incentives to install buffer strips
- Pay producers cost share incentives to install pollinator habitat

Key performance indicators for the tactics

Scope	Year 1	Year 2	Year 3
Haney Recommendations	4 producers	3 producers	2 producers
Subsurface P	250 acres	200 acres	150 acres
No-till	160 acres	100 acres	80 acres
Buffers	25 acres	15 acres	10 acres
Pollinator Habitat	25 acres	15 acres	10 acres

Activities and Reporting	Year 1	Year 2	Year 3
Soil Health Meetings, Workshops, Demos	4	4	4
Quarterly attendance reports on meetings, workshops, and demo	4	4	4
Quarterly Newsletter	4	4	4
Quarterly reports on field visits	4	4	4
Social Media Posts	12	12	12
Demo plot for Haney test comparisons	1	1	1
Haney vs. agronomic rate test strip reports	3	3	3
Soil health testing reports	1	1	1
Load reduction reviews	1	1	1
Soil health adopter conversion reports	1	1	1
Cost share acreage and funding reports	4	4	4
Attendance reports for workshops, field days, demos	4	4	4

What are the resources that you will need and use to get the tactics done?

BMP Implementation	Year 1	Year 2	Year 3	Total
Haney Recommendations	$750	$650	$500	$1,900
Subsurface P Application Cost	$6250	$5000	$3750	$15,000
No-till	$8000	$5000	$4000	$17,000
Buffer	$2500	$1500	$1000	$5,000
Pollinator habitat	$2500	$1500	$1000	$5,000
I&E	$3000	$3000	$3000	$9,000
Sources				
WRAPS	$16000	$13000	$11000	$40,000
Leveraged (EQUIP and Conservation District funds)	$7000	$3650	$2250	$12,900

Strategy Three

Provide a general summary of Strategy Three

Strategy #3 – Livestock Management BMPs: Livestock BMPs in the Grasshopper Creek, Elk Creek, and Spring Creek watersheds to reduce E. coli contamination in the Delaware watershed.

What are the goals for this strategy?

Quantities of BMPs and load reductions toward the strategy.

Acres/number of BMPs to be completed by December 31, 2025

- Alternative water sources - 3
- Alternative feeding sites - 3
- Alternative shelter sites - 3
- Cover crops – alternative grazing – 600 acres

	Nitrogen- lbs./yr.	Phosphorus – lbs./yr.	Sediment- tons/yr.
Alternative water sources	222	117	-
Relocate feeding sites	183	96	-
Relocate feeding pens	5019	2664	-
Cover crops – alternative grazing	1729	505	33
Totals	7153	3382	33

Tactics and action steps

Provide cost share to:

- Separate livestock from the tributaries of the Delaware River using watering/mineral/feeding points that are placed away from creeks and riparian areas, and utilizing fencing to do so when feasible (1/year)
    - Utilizing solar pumps to move ground/surface water to upland areas away from riparian areas when placing watering points
- Providing constructed wind shelter areas to relocate pasture feeding areas to keep cattle from congregating in riparian areas where trees/shelter are naturally occurring to make adoption of this strategy more likely and palatable with livestock producers (1/year)
- Relocate feeding pens away from riparian areas (1/year)
- Utilize cover crop program to provide forage in areas away from riparian areas so that they don't need to spend most of their time eating hay in close proximity to riparian areas (1/year)

Provide workshops and field days to demonstrate Livestock BMPs along with highly relevant livestock financial and operational management techniques to broaden the scope of the message we deliver to entice those who may be less in sync with our water quality management goals.

- Provide a workshop with Jim Gerrish, a retired grazing management expert (1/grant cycle)
- Provide workshops with Ranching For Profit, which provides holistic management planning (1/year)
    - including grazing management, profit center/financial management analysis
    - Ranching For Profit has a new experimental alliance with the Soil Health Academy/Understanding Ag to join forces in their education of livestock producers that combines their complementary knowledge bases and skill sets
    - Provide a small period for KSU Extension Specialist Will Boyer to speak, which should expand the base of livestock producers to which we reach with our water quality messages outside of our traditional base of stewardship-oriented livestock producers
- Field days demonstrating existing projects which have received cost share funds (1/year)

Key performance indicators for the tactics

- Annual reports for number of projects moving cattle away from riparian areas (1/year each for Grasshopper, Elk, and Straight Creek watersheds)
- Visits with producers regarding livestock BMPs (5/year each for Grasshopper, Elk, Straight Creek watersheds)
- Annual analysis of cover crop cost share project acres utilized by producers that have not adopted this set of BMPs prior to the expanded priority area in previous grant periods (1/year)
- Quarterly reports from Will Boyer regarding inquiries within the targeted priority areas outside of those forwarded to him via the WRAPS program (4/year)

Scope	Year 1	Year 2	Year 3
Off stream water for livestock separation from tributaries	1	1	1
Relocate feeding pens	1	1	1
Relocate pasture feeding sites	1	1	1
Alternative pasture feeding areas to include cover crop grazing in lieu of bale feeding in riparian corridors	200 ac.	200 ac.	200 ac.
E. coli CFUs reduction reviews	1	1	1
Gerrish grazing management workshop	-	-	1

Attendance reports for workshops, field days, demos	4	4	4	
Field days demonstrating existing livestock BMPs	1	1	1	

What are the resources that you will need and use to get the tactics done?

BMP Implementation	Year 1	Year 2	Year 3	Total
Alternative Water	$2,000	$2,000	$2,000	$6,000
Relocate feeding pens	$6,100	$5,000	$5,000	$16,100
Relocate pasture feeding sites	$1,500	$1,500	$1,500	$4,500
Cover crop grazing	$4,500	$4,500	$4,500	$13,500
I&E	$4,300	$4,300	$4,300	$12,900
WRAPS	$14,400	$13,300	$13,300	$41,000
Leveraged (NRCS and Conservation District funds)	$4,000	$4,000	$4,000	$12,000