Project Implementation Plan SFY23-25

Little Arkansas WRAPS

WRAPS Coordinator: Ron Graber

Grant Start: July 1, 2022
Grant End: December 31, 2025
Total Allocation: $450,000

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	$77,862	$79,030	$80,215
Admin/Indirect	$4,825	$4,825	$4,825
Contractual Services	$25,358	$23,490	$22,505
Travel/Supplies	$1,955	$2,655	$2,455
Strategy Implementation/BMPs	$40,000	$40,000	$40,000
Total:	$150,000	$150,000	$150,000

Estimated Load Reductions	
Phosphorus	4,016 lbs.
Nitrogen	7,664 lbs.
Sediment	1,892 tons

Strategy and Goals	Funding	Load Reductions		
		Phosphorus (lbs/yr)	Nitrogen (lbs/yr)	Sediment (tons/yr)
Implement soil health (primarily sediment) BMPs in the Turkey Creek sub-watershed. This Strategy is designed to improve the total phosphorus (TP), dissolved oxygen (DO), and total suspended solids (TSS) TMDL impairments in the Turkey Creek sub-watershed. • Buffers 600 acres • Conservation Crop Rotations 480 acres • Cover Crops 720 acres • No-till 480 acres	$39,000	2,686	5,051	1,892

• No-till & Crop Rotations 500 acres				
Implement 5 livestock related BMPs in the Turkey Creek sub-watershed and Sand Creek sub-watershed, moving 200 head away from streams. Efforts will be focused in riparian corridors. This Livestock strategy is designed to improve the *E. coli* and total phosphorus (TP) TMDL impairments in Turkey and Sand Creek sub-watersheds. BMPs include: cover crops for grazing, off-stream watering systems, relocate feeding sites and vegetative filter strips.	$45,000	898	1,692	N/A
Implement Atrazine related BMPs on 29,298 acres in the following areas: • Turkey Creek sub-watershed • Emma Creek sub-watershed • Sand Creek sub-watershed BMP implementation efforts will be focused in riparian corridors. This Strategy is designed to improve the Atrazine herbicide TMDL impairments in Turkey, Emma, Sand Creek sub-watersheds and is funded by the City of Wichita. BMPs include: incorporate Atrazine, reduced application, split application, terraces, waterways, use alternative herbicide/no Atrazine, use post emergence, and vegetative buffers.	N/A	N/A	N/A	N/A
implement Nutrient Management related BMPs on 1,440 acres in the Turkey Creek sub-watershed. The Strategy is designed to improve the Biology, Dissolved Oxygen (DO) and Total Phosphorus (TP) TMDL impairments in the Turkey Creek sub-watershed. BMPs include incorporating manure, livestock waste systems, nutrient management plans, and variable rate fertilizer and lime applications.	$36,000	432	921	N/A

Project Information

Project Title

Little Arkansas 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 through the use of 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

Kansas State University

Street Address

102 Anderson Hall

City, State, Zip

Manhattan, KS 66506

Sponsor Tax Payer ID (FEIN)

470771751

Signature Authority Name

Paul Lowe

Signature Authority Email

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Signature Authority Phone Number

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Enter project contact information

Name

Ron Graber

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City, State, Zip

Hutchinson, KS 67501

Phone Number

620-727-5665

Email

rgraber@k-state.edu

Project Overview

List the HUC12s that are included in this project.

The following sub-watersheds will be targeted for BMP implementation:

- Turkey Creek – 110300120204, 110300120205, 110300120206, 110300120207, 110300120208
- Sand Creek – 110300120405, 110300120406
- Emma Creek – 110300120401, 110300120402, 110300120403, 110300120404

Atrazine BMPs in Turkey, Sand, and Emma Creeks and Livestock BMPs in Turkey and Sand Creeks will be focused in riparian corridors.

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

☒Yes
☐No

If yes, please enter the impacted public supplies.

The following public water supply systems will be positively impacted by this project:
Bel Aire, City of
Buhler, City of
Burrton, City of
Camp Hawk
Canton, City of
Chisholm Creek Utility Authority
Countryview Mobile Home Park
Elyria Christian School
Galva, City of
Garden View Christian School

Goessel, City of
Halstead, City of
Harvey Co RWD 1
Harvey Co West Park East Well 2
Harvey Co West Park West Well 1
Hesston, City of
Hutchinson, City of
Inman, City of
Little River, City of
McPherson, City of
Medora Learning Center
Moundridge, City of
Newton, City of
North Newton, City of
Northstar RV Park And Mobile Home Community
Park City, City of
Public Wholesale WSD 17
Reno Co RWD 1
Reno Co Water District 8
Sedgwick, City of
Spring Lake Resort
Valley Center, City of
Wichita, City of

Describe the project history.

The Little Arkansas River Watershed group was established in 2001 when a group of concerned citizens established a proactive, voluntary, stakeholder leadership team (SLT). An EPA 9-Element WRAPS Plan was first written in 2004, then again in 2011, and the most recent WRAPS plan was written and approved in 2018.

Priority/targeted areas have changed throughout the years in the Little Arkansas River Watershed, but the focus has remained the same. The SLT has strived to focus efforts on the following two priority impairment issues since 2001: sediment and atrazine. Beginning in 2019, additional areas of focus were added to the project to include soil health, livestock and nutrient management. Progress has been made in these areas of focus, referred to as strategies.

<u>Previous 3-Year Grant Accomplishments</u>:
2019-2021. Ongoing. As of December 2021, the first two years of the current 3-year Little Arkansas River WRAPS program had reached 1,500 Kansas residents through 279 informational and educational events that were facilitated and/or attended by the WRAPS Coordinator. Twenty-nine (29) presentations, informational brochures, demonstrations and posters were presented during these 2 years in the watershed. Nearly 200 one-on-one and on-farm visits/consultations took place. Five (5) radio/TV interviews took place along-side ten (10) news articles, both of which reached a countless numbers of producers and watershed residents. An additional eight (8) Little Arkansas River WRAPS newsletters were sent out to watershed residents via USPS and email.

The WRAPS group has implemented 252 BMPs for 84 producers in the first 2-years of the current grant project. These BMPs have been implemented on 2,718 sediment acres and 35,766 atrazine acres. Load Reductions for these BMPs have not yet been figured by KDHE.

The livestock and nutrient management/soil health strategies required the development of new programs in 2019-2020, which led to BMP implementation beginning in 2021. As of December 2021, the Livestock Program has resulted in the implementation of five (5) livestock BMPs (1 landowner) to include the installation of 4 alternative watering systems, affecting 50 cattle pairs and 204 acres, as well as the planting of 163 acres of cover crops. The Nutrient Management program has resulted in the implementation of three (3) BMPs for three (3) different producers, affecting 612 acres.

Load reductions have not been figured for the 2019-2022 grant project as it will not be finalized until December 2022.

2016 – 2018. The previous 3-year Little Arkansas River WRAPS program reached nearly 4,000 Kansas residents through 179 water education events that were facilitated and /or attended. Forty-eight (8) presentations, informational brochures, demonstrations and posters were delivered or presented during these 3 years in the watershed. Over 125 one-on-one and on-farm visits/consultations took place. Four (4) radio/TV interviews took place along-side 13 news articles written regarding WRAPS-related water quality activities in the Little Arkansas River Watershed.

The Little Arkansas River Watershed WRAPS group managed to implement 574 BMPS during the last 3-year project period. Watershed Specialist and Rick Schlender, a Little Arkansas BMP technical service provider, met one-on-one with over 150 producers. From sign-up meetings and those one-on-one consultations listed above, over 35,000 acres had *new* BMPs implemented for sediment, and 47,789 acres of atrazine BMPs were implemented for over 141 producers. The sediment BMPs were funded by WRAPS funds and various cost share sources as well as producers themselves. The atrazine BMPs were funded 50% by the City of Wichita and 50% by the landowner or cost share. Load Reductions included: Atrazine - 1,899 pounds a.i., Sediment - 4,587 tons/year, Nitrogen - 22,061 pounds/year, and Phosphorus - 10,348 pounds/year.

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 Little Arkansas River Watershed SLT was first established in 2001 and they have been meeting regularly since 2002. The SLT is made up of landowners, agency personnel and representatives of private organizations. They are a very dedicated group representing many different diverse organizations. The SLT meets regularly every quarter in Moundridge, on the first Thursday of the month, starting at 7 am. Additional meetings are held as needed. When the group cannot met in person, they

meet via Zoom. All meetings of the SLT are advertised locally through Facebook and Twitter, as well as traditional letters and emails being sent out to announce meetings a month in advance. All meetings are open to the public. There are normally 15 to 30 attendees at each quarterly meeting. Ron Graber serves as the WRAPS Coordinator and staff person for the SLT. Graber sends out meeting notices, minutes, and sets the agenda. Each meeting includes the following: an update on current KDHE requirements, current priority areas, current impairment issues and progress, current funding, BMP implementation progress, and time is left for open discussion by the SLT regarding these topics or others. If decisions are required by the SLT, they are made by consensus.

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

The Little Arkansas River Watershed SLT members are listed below. This list includes local producers, agency personnel, project officers and management team members.

Last Name, First Name	Email, Role, Affiliation
Basore, Rich	rbasore@aol.com, Chair of Eagle Creek Drainage District, Landowner
Bergkamp, Joe	rgraber@ksu.edu, Stakeholder – Halstead, Landowner
Berndsen, John	John.berndesn@ks.usda.gov, McPherson County Technician (DOC), NRCS
Conley, Jeff	Jeff.conley@ksoutdoor.com, Stakeholder, Citizen
Flaming, Ryan	flaming@ksu.edu, Harvey County Extension Agent, Kansas State University
Flickner, Ray	rgflickner@msn.com, Stakeholder, Citizen
Harper, Frank	harper.farm@att.net, Stakeholder – Sedgwick, Landowner
Hecht, Joe	Joseph.hecht@ks.usda.gov, McPherson County District Conservationist, NRCS
Janzen, Ashley	Ashley.Janzen@ks.nacdnet.net, Harvey County District Manager, DOC
Lohrenz, Dwight	rgraber@ksu.edu, Stakeholder - Burrton, Landowner
Marston, Shad	smarston@ksu.edu, Extension Agent for McPherson County, KSU
Metzger, Susan	smetzger@k-state.edu, KCARE Director, Kansas State University
Rush, Barbara	barbara.rush@ks.nacdnet.ne, McPherson County Conservation District, DOC
Schielke, Amanda	aschielk@ksu.edu, Grant Writing/Reporting, Technical Assistance, KSU
Schlender, Erica	music.blush.88@gmail.com, Stakeholder, Citizen
Schlender, Rick	rschlen2@ksu.edu, Field Coordinator and Stakeholder, KSU
Schmidt, Dale	deschmidt12@gmail.com, Producer, Landowner
Schroeder, Don	rgraber@ksu.edu, Commissioner & Producer, Harvey County and Landowner
Sheshukov, Aleksey	ashesh@ksu.edu, Technical Assistance, Bio. and Ag. Engineering KSU
Shively, Baron	bdshive@sbcglobal.net, Stakeholder, McPherson Cons. Dist. Board, Citizen
Tomlinson, Peter	ptomlin@ksu.edu, Agronomy Associate Professor, KSU
Warner, Jay	rgraber@ksu.eu, Stakeholder – McPherson, Landowner
Wilkison, Reese	reese.wilkison@usda.gov, Harvey County District Conservationist, NRCS

Project Scope

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

The Little Arkansas River WRAPS project will address the following water quality impairments:

Category 4b Listed Impairment:

- **Atrazine – Turkey, Sand and Emma**
  The Atrazine Strategy prioritizes the Turkey, Sand, and Emma Creek sub-watersheds for BMP implementation.

TMDL Listed Impairments:

- **Biology – Turkey Creek sub-watershed**
  The Soil Health and Nutrient Management Strategies will address sediment and nutrient management BMP implementation in the Turkey Creek sub-watershed, both of which contribute to the Biology TMDL. Sand and Emma Creeks also have biology TMDLs.
- ***E. coli* Bacteria – Turkey and Sand Creek sub-watersheds**
  The Livestock Strategy will reduce bacteria in Turkey and Sand Creeks.
- **Dissolved Oxygen (DO) – Turkey and Sand Creek sub-watersheds**
  The Livestock Strategy will reduce TP, which is a major contributor to DO impairments, in Turkey and Sand Creeks. The Soil Health and Nutrient Management Strategies will also serve to implement BMPs that reduce nutrient loading by way of sediment loss, as well as excessive or incorrect nutrient application.
- **Total Phosphorus (TP) – Turkey and Sand Creek sub-watersheds**
  The Livestock Strategy will reduce TP in Turkey and Sand Creeks. The Soil Health and Nutrient Management Strategies will also serve to implement BMPs that reduce nutrients, including TP, from entering Turkey Creek.
- **Total Suspended Solids (TSS) – Turkey Creek**
  The Soil Health Strategy will serve to implement BMPs that reduce sediment from entering nearby water segments, which contributes to TSS.

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.

The Little Arkansas River Watershed has been assessed for impairments and BMP needs in several manners which are detailed in the 9-Element WRAPS plan, beginning on page 50. These assessments include: Conservation Innovation Grant (CIG) mapping through ArcSWAT, aerial assessments performed by KDHE, windshield surveys for tillage and soil erosion. Most recently, in the Fall of 2021, a drive-by windshield assessment was completed in the Turkey Creek sub-watershed, assessing livestock operations and possible BMP needs.

Little Arkansas River WRAPS

Budget

Personnel			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	**$58,986**	**$13,953**	**$72,939**
Year 2	**$59,871**	**$14,162**	**$74,033**
Year 3	**$60,769**	**$14,374**	**$75,143**
Total Requested	**$179,626**	**$42,489**	**$222,115**
Description	**Grant Funds: Ron Graber, Watershed Specialist - .75 FTE Matching of salary by: S. Metzger, KCARE Director, .05 FTE and A. Schielke, Extension Assistant, - .15 FTE**		

Fringe			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	**$18,876**	**$4,465**	**$23,341**
Year 2	**$19,159**	**$4,532**	**$23,691**
Year 3	**$19,446**	**$4,600**	**$24,046**
Total Requested	**$57,481**	**$13,597**	**$71,078**
Description	**Fringe benefits are calculated at the University established rate of 32% of salary for Unclassified Employees. Match includes fringe benefits paid for A. Schielke and S. Metzger by K State.**		

Travel			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	**$500**	**$1,000**	**$1,500**
Year 2	**$1,200**	**$1,000**	**$2,200**
Year 3	**$1,000**	**$1,000**	**$2,000**
Total Requested	**$2,700**	**$3,000**	**$5,700**
Description	**Travel costs for Mr. Graber around his watershed and also to state-wide meetings such as the Governor's Conference on the Future of Water in Kansas, Kansas Livestock Association, etc. Matching will be provided by KCARE to supplement Mr. Graber's travel to conferences.**		

Supplies			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	**$1,455**	**$0**	**$1,455**
Year 2	**$1,455**	**$0**	**$1,455**
Year 3	**$1,455**	**$0**	**$1,455**
Total Requested	**$4,365**	**$0**	**$4,365**
Description	**$100 per month for fuel used by Mr. Graber in his state vehicle to travel around the watershed and to other state meetings and events. The balance is for miscellaneous supplies needed by Mr. Graber for project use.**		

BMP/Strategy Funding			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	**$40,000**	**$23,180**	**$63,180**
Year 2	**$40,000**	**$20,286**	**$60,286**
Year 3	**$40,000**	**$18,578**	**$58,578**
Total Requested	**$120,000**	**$62,044**	**$182,044**
Description	**Payments made to producers in the watershed for implementing BMPs, funding for workshops and other outreach. Matching will come from funds provided by the City of Wichita, though the McPherson County Conservation District, or may also come from individual producers.**		

Contractual Services			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	**$25,358**	**$3,142**	**$28,500**
Year 2	**$23,490**	**$5,010**	**$28,500**
Year 3	**$22,505**	**$5,995**	**$28,500**
Total Requested	**$71,353**	**$14,147**	**$85,500**
Description	**Service agreement with Rick Schlender, who assists Mr. Graber with producers/BMP projects. Additional funding for Mr. Schlender will come from another source that will allow him to work at the same level of effort as past Little Ark projects.**		

Other			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	**$280**	**$0**	**$280**
Year 2	**$280**	**$0**	**$280**
Year 3	**$280**	**$0**	**$280**
Total Requested	**$840**	**$0**	**$840**
Description	**Cell phone, mi-fi, postage, copies, etc. for project use.**		

Indirect			
Budget Line	**Grant Request**	**Match**	**Total**
Year 1	**$4,545**	**$54,260**	**$58,805**
Year 2	**$4,545**	**$55,010**	**$59,555**
Year 3	**$4,545**	**$55,453**	**$59,998**
Total Requested	**$13,635**	**$164,723**	**$178,358**
Description	**Grant administration costs. Grant request is based on 10% allowed IDC for EPA 319 funds, based on $50,000 from that funding. Matching is unrecovered IDC on grant funds and KSU funds based on KSU's negotiated indirect cost rate for public service activities.**		

General Plan Implementation

This project will be implementing Years 13, 14, and 15 of the original approved Little Arkansas River WRAPS 9-Element Watershed Plan, written in 2011. The load reduction goals of these years of the plan are 59,952 pounds of nitrogen, 22,602 pounds of phosphorus, and 21,898 tons of sediment. There are four (4) strategies that will be utilized to achieve project goals by focusing on one or more specific water impairments identified in the 9-Element Watershed Plan. These Strategies are:

1. Soil Health
2. Livestock
3. Atrazine
4. Nutrient Management

The strategies will work to achieve the following load reductions by the end of the 3-year project:

- 5,972 pounds of Nitrogen (Cropland BMPs - Soil Health and Nutrient Management Strategies),
- 7,078 pounds of Phosphorus (Cropland and Livestock BMP - Soil Health, Livestock and Nutrient Management Strategies),
- 1,892 tons of Sediment (Cropland BMPs - Soil Health Strategy) and
- 1,291 lbs a.i (Cropland BMPs - Atrazine Strategy).

As this grant does not provide enough funding to fully implement the identified best management practices from the WRAPS 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 Department of Wildlife and Parks, Farm Service Agency, municipalities (specifically the City of Wichita), and other nonprofit organizations.

General BMPs implemented beyond the below 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 will be the same practices outlined in the strategies below, however, they may be outside of the targeted area listed. Areas outside of those targeted will only receive WRAPS funds for BMP implementation if the area is considered of high priority due to stream proximity and pollution loading potential. An amendment may be required to work outside of targeted areas, this amendment will be an agreement between the KDHE project officer and the WRAPS group.

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

The following resources will be utilized when available:

- KDHE: State Water Plan/EPA 319 WRAPS Funds
- City of Wichita: Atrazine and Off-site BMP Programs, and Information and Education (I&E) funding
- K-State, KCARE: Kansas Watershed Specialist program technical assistance and coordination
- NRCS: EQIP funding
- DOC: NPS program funding

Strategy One – SOIL HEALTH

Provide a general summary of Strategy One

The Little Arkansas River WRAPS program will implement soil health (primarily sediment) BMPs in the following HUC 12 areas:

- Turkey Creek sub-watershed, HUC 12s: 110300120204, 205, 206, 207, and 208

This Soil Health Strategy is designed to improve the total phosphorus (TP), dissolved oxygen (DO), and total suspended solids (TSS) TMDL impairments in the Turkey Creek sub-watershed. Expected results include improved, and ultimately delisted TP and TSS impairments in the Turkey Creek sub-watershed.

What are the goals for this strategy?

Goal: Implement sediment BMPs on 2,780 acres. This implementation will lead to the following load reductions at the end of the 3-year project:

- **5,051 lbs nitrogen**
- **2,686 lbs phosphorus, and**
- **1,892 tons of sediment.**

BMPs include: buffers, conservation crop rotations, conservation tillage, cover crops, and no-till

The Soil Health Strategy will work toward the implementation of sediment BMPs which will reduce erosion and sediment runoff during high rainfall events, keeping sediment out of the water and on the crop field. Targeting crop fields along riparian corridor areas will have the most positive impact on the creek's water quality.

Sediment BMPs will be implemented in the following area(s):

- Turkey Creek – This part of the Soil Health Strategy will focus on increasing the adoption of sediment BMPs in the Turkey Creek sub-watershed in HUC's: 110300120204, 205, 206, 207, and 208. Special emphasis will be on implementing BMPs in 206 and 207.

  Goal: Implement sediment BMPs on 760 acres per year. This implementation rate will result in the following load reductions: 1,321 lbs of nitrogen, 714 lbs of phosphorus, and 503 tons of sediment per year.

  An additional 500 acres within the 3-year project period will be implemented in connection to the Offsite BMP Program, utilizing City of Wichita funds. The Offsite BMP Program's 500 acres will result in the following load reductions: 1,088 lbs of nitrogen, 544 lbs of phosphorus, and 383 tons of sediment.

Implementation and load reduction details are in the table below.

Soil Health Strategy BMP Implementation and Load Reductions

Strategy Area: Sediment BMPs

BMP	Acres/Year	N (lbs)	P (lbs)	Sediment (tons)
Buffers	200	249	178	114
Conservation Crop Rotations	160	120	60	47

Conservation Tillage	0	0	0	0
Cover Crops	240	562	281	201
No-till	160	390	195	141
Total/Year	760	1,321	714	503

Strategy Area: Offsite Sediment BMP Program, Determined by the CoW

BMP	Acres	N (lbs)	P (lbs)	Sediment (tons)
No-till & Crop Rotations	500	1,088	544	383
Total/ 3-Years	500	1,088	544	383
3-Year Total for all	2,780	5,051	2,686	1,892

Tactics and action steps

To make the program successful, the following tactics/action steps will be taken to achieve the goals mentioned in the table above concerning BMP implementation acreage and load reductions.

- Quarterly Little Arkansas River WRAPS Newsletter, Every year: February, May, August, November
    - USPS and Email - Reach 400 Watershed Residents and stakeholders.
    - Goal: Hear from at least 3 stakeholders/newsletter with inquiries regarding the program.
- Utilize social media, TV/news, radio, etc. to market the programs, events, and sign-up periods. On-going, As-needed
    - Reach an unknown watershed resident population.
    - Goal: Hear back from at least 3 stakeholders/month from these communication events.
- pH Field Tour, Summer 2022
    - Flickner will host tour, Little Ark WRAPS will collaborate and offer extra session to discuss all WRAPS programs.
    - Goal: Get 2 producers interested in one of the WRAPS incentive programs.
- No-till Cover Crop 1/2 Day Field Tour, Summer 2023
    - Will host tour and again, take time to introduce and market each of the Little Arkansas River Watershed WRAPS program.
    - Goal: Get 2 producers interested in one of the WRAPS incentive programs.
- Field Tour, Summer 2024
    - Main topic unknown at this time. Will be on something relevant and fresh at that time. Will host tour and again, take time to introduce and market each of the Little Arkansas River Watershed WRAPS program.
    - Goal: Get 2 producers interested in one of the WRAPS incentive programs.
- Program Brochures will be created, Annually
    - The brochure will have past BMP numbers, load reductions achieved for each WRAPS program.
    - Goal: Marketing material for the Little Arkansas River WRAPS Program.
- Communicate with the Religious Leaders, On-going
    - Turkey Creek is home to a religious group that is set in doing things the way they have historically been done.

    - Goal: Make headway with the religious leaders on the importance of BMPs and our program. Get at least one producer from the church to sign-up for one of our programs.
- Collaborate with the Harvey CCD to have the WRAPS program marketed in their newsletters, Twice a year
    - Goal: Get 3 producers to reach out to the WRAPS program.
- Continue Tillage, Erosion and Crop Pattern Surveys in McPherson and Harvey counties, Spring and Fall each year
    - Goal: Analyze data to give an assessment of BMP needs in the area.
- Analyze Tillage Survey from 2021 in Turkey Creeks HUC's 206 and 207 Summer 2022
    - Goal: Determine BMP needs in those priority areas.
- Consult and coffee Every Summer or Winter
    - Goal: Get 3 producers on board to learn about BMPs.
- One-on-one consultations with producers, On-going
    - Goal: Meet with 5-10 producers each year and get them signed-up for sediment BMPs (or other when deemed high priority). Offsite BMP program funds can be utlized when applicable.
- Utilize the interseeder for cover crops, Summer each year
    - Goal: Report cover crop acreage as soil saved.
- Meet with the CoW for Offsite BMP program updates Quarterly
    - Goal: Obtain updates on program, both urban and rural acres.
- Meet with the CoW to renew contract/MOU for the Offsite BMP Program, February each year
    - Goal: Get more rural acres available for sediment BMP implementation.
- Develop updated Offsite BMP Program brochure Annually
    - Trisha Moore will provide the program update information and Melissa Harvey will develop the brochure.
    - Goal: Marketing material

Key performance indicators for the tactics

The anticipated results listed in the table above for each action step taken will be used as an indicator of progress and success within the program.

The table above is representative of action items for all 3 years of this project proposal. The anticipated key performance indicators for all 3 years include:

- 12 producers will contact the WRAPS group with interest in the program as a direct result of attending one of the Little Arkansas River WRAPS facilitated educational events.
- 12 producers will be interested in signing up to implement sediment BMPs from attending a WRAPS facilitated education event.
- 15-30 producers signed up for sediment BMP implementation from one-on-one constulations.
- Determining BMP needs based on tillage surveys.
- Update marketing materials to include annual WRAPS program brochures/fact sheets, 12 newsletters (reaching at least 400 watershed residents), annual Offsite BMP Program brochures and more.

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

To be a viable program, each program will obviously need producers willing to implement BMPs in the targeted area. As mentioned above, these producers will be found during field days, program sign ups, SLT members sharing their names, neighbor recommendations, on-site visits, drive-by assessments, newsletters, direct mailings, etc. In addition, the following resources will be utilized:

Sediment BMP Implementation will take place utilizing the following resources:

- Funding:
  - WRAPS – $13,000 per year = $39,000 total for 3-year project
    Payments will be made to producers by McPherson County Conservation District, through KCARE.
  - CoW: Offsite BMP Program –the total dollar amount varies from year to year based on acreage made available by the City. The CoW of Wichita paid out $3,200 in 2020 and 2021, so that *may* indicate what the program can depend on in the future, but there is no guarantee. BMPs are paid at roughly $40 per acre under this program. *Payments will come through K-State Bio & Ag Engineering.*
- Technical Assistance and Producer Contacts: Ron Graber and Rick Schlender will coordinate the program and will contact the producers in the targeted areas.
- Hagie-Montag Interseeder for cover crops
- Administration (education and reporting activities): Amanda Schielke, Melissa Harvey and Trisha Moore (Offsite BMP Program)
- Other contact and funding resources may include: NRCS EQIP and DOC NPS through Harvey and McPherson County Conservation Districts
- Other Resources: CoW provides education and administration funding which will be utilized to market the WRAPS and soil health program and educate watershed residents and stakeholders. The administration funding helps fund Mr. Rick Schlender who provides technical assistance, education and program sign opportunites to producers.

Strategy Two – LIVESTOCK

Provide a general summary of Strategy Two

The Little Arkansas River WRAPS program will implement livestock related BMPs in the following HUC 12 areas:

- Turkey Creek sub-watershed: 110300120204, 205, 206, 207, and 208
- Sand Creek sub-watershed: 1103001202405 and 406

Efforts will be focused in riparian corridors. This Livestock strategy is designed to improve the *E. coli* and total phosphorus (TP) TMDL impairments in Turkey and Sand Creek sub-watersheds. Expected results include improved, and ultimately delisted *E. coli* and TP impairments in the Turkey and Sand Creek. Any TP improvements made in the sub-watersheds will also positively impact their respective dissolved oxygen (DO) TMDL impairments.

What are the goals for this strategy?

Goal: Implement five (5) livestock BMP projects. If this strategy is implemented as planned, the following goal will be met:

- **1,095 lbs of phosphorus reduced.**

BMPs include: cover crops for grazing, off-stream watering systems, relocate feeding sites and vegetative filter strips

Livestock BMPs will be implemented in the Turkey and Sand Creek sub-watersheds.

1. Turkey Creek – This part of the Livestock Strategy will focus on increasing the adoption of livestock BMPs in the Turkey Creek sub-watershed in HUC's: 110300120204, 205, 206, 207, and 208. Riparian Corrdior areas in these HUC's will be targeted and given priority for funding. *Implementation details are in the table below.*

   Turkey Creek Goal: Implement two (2) livestock project by the end of this 3-year project. The total reductions of this 3-year project will be 730 lbs phosphorus in the Turkey Creek sub-watershed.

2. Sand Creek – This part of the Livestock Strategy will focus on increasing the adoption of livestock BMPs in the Sand Creek sub-watershed in HUC's: 110300120405 and 406. Riparian Corrdior areas in these HUC's will be targeted and given priority for funding. *Implementation details are in the table below.*

   Sand Creek Goal: Implement one (1) livestock project by the end of this 3-year project. This implementation equates to 365 lbs of phosphorus load reduction in the Sand Creek sub-watershed.

Implementation and load reduction details were derived from the approved WRAPS Plan are in the table below.

Livestock BMP Implementation and Load Reductions

	Animal Units	# of Projects	N (lbs)	P (lbs)
Turkey Creek	120	3	940	499
Sand	80	2	752	399

Creek				
3-Year Total	200	5	1,692	898

Tactics and action steps

The livestock program will offer a reimbursement on completed practices up to 70%. It has been more difficult to get producers on board with livestock BMPs. We believe there are a few reasons for this: 1) costs, livestock BMPs are traditionally expensive, and 2) livestock producers seem to prefer staying off the radar, they don't necessarily want the state to know what is going on with their personal business. There are very few larger livestock operations in the area, most are around 50 head or less.

To make the program successful, the following tactics/action steps will be taken to achieve the goals mentioned in the table above concerning BMP implementation acreage and load reductions.

Encompasses both Goal Areas: Turkey Creek and Sand Creek

- Quarterly Little Arkansas River WRAPS Newsletter Every year: February, May, August, November
    - USPS and Email - Reach 400 Watershed Residents and stakeholders.
    - Goal: Hear from at least 3 stakeholders/newsletter with inquiries regarding the program.
- Utilize social media, TV/news, radio, etc. to market the programs, events, and sign-up periods. On-going, As-needed
    - Reach an unknown watershed resident population.
    - Goal: Hear back from at least 3 stakeholders/month from these communication events.
- pH Field Tour Summer 2022
    - Flickner will host tour, Little Ark WRAPS will collaborate and offer extra session to discuss all WRAPS programs, including Livestock.
    - Goal: Get 3 producers interested in one of the RWPS incentive programs.
- No-till Cover Crop 1/2 Day Field Tour Summer 2023
    - Will host tour and again, take time to introduce and market each of the Little Arkansas River Watershed WRAPS program, including livestock.
    - Goal: Get 3 producers interested in one of the WRAPS incentive programs.
- Field Tour Summer 2024
    - Main topic unknown at this time. Will be on something relevant and fresh at that time. Will host tour and again, take time to introduce and market each of the Little Arkansas River Watershed WRAPS program, including Livestock.
    - Goal: Get 3 producers interested in one of the WRAPS incentive programs.
- Program Brochures will be created Annually
    - The brochure will have past BMP numbers, load reductions achieved for each WRAPS program.
    - Goal: Marketing material for the Little Arkansas River WRAPS Program.
- Collaborate with the Harvey CCD to have the WRAPS program marketed in their newsletters. Twice a year
    - Goal: Get 3 producers to reach out to the WRAPS program.
- Winter Field Day with Livestock Producers December 2022-January 2023

    - Goal: Get at least 10 livestock producers from Turkey and Sand Creek sub-watersheds to attend.
- Follow-up with all producers that attended the Winter Field Day March 2023
    - Goal: Get at least one producer on board with livestock BMP implementation program.
- Develop the Waste Management System program March 2023
    - Identify financial benefit to sell.
    - What incentive will WRAPS provide?
    - Education to sellers and buyers.
    - Need to market it.
    - Need producers willing to sell manure.
    - Goal: Create a program. Draw interest to the program with fertilizer costs so high right now.
- Water Monitoring Spring 2023
    - Goal: Establish a baseline before project installation. WRAPs will fund.
- Water Monitoring Following BMP implementation
    - Goal: Compare results to pre-BMP analysis. WRAPS will fund.

Turkey Creek

- Continue to send personalized letters to the 15 producers in Turkey Creek that were determined y the drive-by assessment in the Winter of 2021. October 2022
    - Goal: Hear back from at least 2 of them. Specifically the two with winter feeding operations (backgrounders): producer on Arrowhead with ~100 head and the other with less than 300 head.
- Get Shad Marsten involved with the two winter feeding producers if no contact can be made. They may be familiar with him. December 2022
    - Goal: Get an introduction and foot in the door with these two producers.
- On-on-one contacts with the two producers March 2023
    - Goal: Talk to them about BMP alternatives for their livestock.
- Continue to work with Greg Georing on livestock projects he may have. On-going
    - Goering has a great area for field days and several BMPs that can be used for education.
    - Goal: Sign-up one individual from Georing education events.
- Offer a Consult and Coffee for livestock producers in Turkey Creek. September 2022
    - Goal: Get at least 3 producers on-site to discuss available BMPs.
- Communicate with the Religious Leaders On-going
    - Turkey Creek is home to a religious group that is set in doing things the way they have historically been done.
    - Goal: Make headway with the religious leaders on the importance of BMPs and our program. Get at least one producer from the church to sign-up for one of our programs.
- Follow-up with Consult and Coffee producers personally. October 2022
    - This could be a phone call or on-site visit if they are up for it!
    - Goal: Get a producer signed up for BMPs!

Sand Creek

- Get with NRCS and area stakeholders to get an idea of some livestock producers that may need BMPs. September 2022
    - Goal: Get a list of Sand Creek Livestock Producers started as possible contacts.

- Driving assessment of livestock facilities in Sand Creek sub-watershed. (This has been done for Turkey in previous grant project.) October 2022
    - Goal: Get a list of producers in need of livestock BMP implementation in Sand Creek.
- Reach out to the producers found by drive-by assessment and NRCS/stakeholder's word of mouth by letter. November 2022
    - This is to open the door to conversation.
    - Goal: Get 1-2 producers to respond to the letter.
- Send another letter reaching out to the producers. March 2023
    - Goal: Get 1-2 producers tot respond to the letter on their own.
- Offer a Consult and Coffee for livestock producers in Sand Creek. April 2023
    - Goal: Get at least 4 producers on-site to discuss available BMPs.
- Follow-up with Consult and Coffee producers personally. May 2023
    - This could be a phone call or on-site visit if they are up for it!
    - Goal: Get a producer signed up for BMPs!

Key performance indicators for the tactics

The anticipated results listed in the table above for each action step taken will be used as an indicator of progress and success within the program.

The table above is representative of action items for all 3 years of this project proposal. The anticipated key performance indicators for all 3 years include:

- 12 producers will contact the WRAPS group with interest in the program as a direct result of attending one of the Little Arkansas River WRAPS facilitated educational events.
- 12 producers will be interested in signing up for BMPs from attending a WRAPS facilitated education event.
- Assess the Sand Creek sub-watershed and create a list of livestock producers.
- Get 10 producers to attend the Winter Livestock Meeting in 2022-2023.
- Meet with at least 7 producers on-site or at a Consult and Coffee to stir up interest in BMP implementation.
- Improve relations with religious leaders in the Turkey Creek sub-wateshed.
- Capture and analyze water samples taken before and after livestock BMP implementation for at least one project.
- Update marketing materials to include annual WRAPS program brochures/fact sheets, 12 newsletters (reaching at least 400 watershed residents), annual livestock BMP brochures and more.

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

To be a viable program, there is a need for producers in Turkey and Sand Creeks sub-watersheds willing to implement BMPs. These producers will be found during field days, program sign ups, SLT members sharing their names, neighbor recommendations, on-site visits, drive-by assessments, newsletters, direct mailings, etc. In addition, the following resources will be utilized:

- Funding:
  - WRAPS Funds - $15,000 ($10,000 Turkey and $5,000 Sand) per year = $45,000 total for 3-year project
    Payments made to producers by McPherson County Conservation District, through KCARE.
- Technical Assistance: Ron Graber, WRAPS Coordinator/Watershed Specialist and Rick Schlender will coordinate the program and will contact producers in the targeted areas.
- Administration (education and reporting activities): Amanda Schielke
- Other contact and funding resources may include: Harvey (Sand) and McPherson (Turkey) County Conservation Districts and NRCS
- Other Resources: CoW provides education and administration funding which will be utilized to market the WRAPS and Livestock program and educate watershed residents and stakeholders. The administration funding helps fund Mr. Rick Schlender who provides technical assistance, education and program sign opportunites to producers.

Strategy Three – ATRAZINE

Provide a general summary of Strategy Three

The Atrazine BMP program is funded solely by the City of Wichita (CoW) and began in 2006. The Little Arkansas River WRAPS program will implement Atrazine related BMPs in the following HUC 12 areas:

- Turkey Creek sub-watershed: 110300120204, 205, 206, 207, and 208
- Emma Creek sub-watershed: 110300120401, 402, 403, and 404
- Sand Creek sub-watershed: 110300120405 and 406

BMP implementation efforts will be focused in riparian corridors.

This Atrazine Strategy is designed to improve the Atrazine herbicide TMDL impairments in Turkey, Emma, Sand Creek sub-watersheds. Expected results include improved, and ultimately delisted Atrazine impairments in the three sub-watersheds. Any Atrazine BMP implementation in the sub-watersheds will also positively impact their respective biology/sediment TMDL impairments.

What are the goals for this strategy?

Goal: Implement Atrazine herbicide BMPs on 29,298 acres. This implementation will lead to a reduction of 1,291 lbs a.i. at the end of the 3-year project.

BMPs include: incorporate Atrazine, reduced application, split application, terraces, waterways, use alternative herbicide/no Atrazine, use post emergence, and vegetative buffers

The Atrazine Strategy will implement Atrazine herbicide BMP practices on 9,766 acres per year, resulting in a load reduction of 430 lbs a.i. of atrazine each year of the project. *The BMP adoption and load reduction expectations are based on the 2020 and 2021 years of funding made available to the Watershed. These numbers could change based on any fluctuations in annual funding provided by the CoW.*

Implementation project numbers and associated load reductions were derived from the approved WRAPS Plan.

Implementation and load reduction details are in the table below.

Atrazine BMP Implementation and Load Reductions

BMP	Acres/Year	Atrazine Load Reduction (lbs ai.i.)
Incoportate Atrazine	247	13
Reduced Application	3,709	83
Split Application	247	5
Teraces and Waterways	618	14
Use Alternative Herbicide/ No Atrazine	3,709	278
Use Post Emergence	618	23
Vegetative Buffers	618	14
Total/Year	9,766	430
3-Year Total	29,298	1,291

BMPs, acres implemented, and load reductions were derived from the WRAPS Plan, pages 66-69.

Tactics and action steps

The Atrazine program is a 1-year incentive program. A given dollar amount per acre, per practice, is provided to the producer to try a new atrazine BMP on their cropland. The goal of this program is to reduce atrazine loading and to educate producers. The incentive program works to demonstrate to the producer, first-hand, the benefits of atrazine BMPs. This program has been so successful that sign-ups come easy, mostly by word of mouth, when one producer tells his neighbor how successful the program is on their property. It has been found that once a producer tries these BMPs, 90% of them continue the BMP, well after the incentive program has ended.

To make the program successful, the following tactics/action steps will be taken to achieve the goals mentioned in the table above concerning BMP implementation acreage and load reductions.

- Quarterly Little Arkansas River WRAPS Newsletter, Every year: February, May, August, November
    - USPS and Email - Reach 400 Watershed Residents and stakeholders.
    - Goal: Hear from at least 3 stakeholders/newsletter with inquiries regarding the program.
- Utilize social media, TV/news, radio, etc. to market the programs, events, and sign-up periods. On-going, As-needed
    - Reach an unknown watershed resident population.
    - Goal: Hear back from at least 5 stakeholders/month from these communication events.
- pH Field Tour Summer 2022
    - Flickner will host tour, Little Ark WRAPS will collaborate and offer extra session to discuss all WRAPS programs, including Atrazine.
    - Goal: Get 3 producers interested in one of the RWPS incentive programs.
- No-till Cover Crop 1/2 Day Field Tour Summer 2023
    - Will host tour and again, take time to introduce and market each of the Little Arkansas River Watershed WRAPS program, including Atrazine.
    - Goal: Get 3 producers interested in one of the WRAPS incentive programs.
- Field Tour Summer 2024
    - Main topic unknown at this time. Will be on something relevant and fresh at that time. Will host tour and again, take time to introduce and market each of the Little Arkansas River Watershed WRAPS program, including Atrazine.
    - Goal: Get 3 producers interested in one of the WRAPS incentive programs.
- Program Brochures will be created, Annually
    - The brochure will have past BMP numbers, load reductions achieved for each WRAPS program.
    - Goal: Marketing material for the Little Arkansas River WRAPS Program.
- Collaborate with the Harvey CCD to have the WRAPS program marketed in their newsletters Twice a year
    - Goal: Get 3 producers to reach out to the WRAPS program.
- Communicate with the Religious Leaders, On-going
    - Turkey Creek is home to a religious group that is set in doing things the way they have historically been done.
    - Goal: Make headway with the religious leaders on the importance of BMPs and our program. Get at least one producer from the church to sign-up for one of our programs.
- One-on-one consultations Every Fall

- Meet with 120 producers to discuss atrazine program sign-up.
- Goal: Based on past numbers, it is expected that at least 90% of these producers will sign-up for implementation.

- Meet with the CoW Spring and Fall each year
  - Update the City on current sign-ups and discuss future of the program. The City also provides $15,000 in I&E funds for watershed education.
  - Goal: Continue building relationship with the CoW and continue Atrazine program.

Key performance indicators for the tactics

The anticipated results listed in the table above for each action step taken will be used as an indicator of progress and success within the program.

The table above is representative of action items for all 3 years of this project proposal. The anticipated key performance indicators for all 3 years include:

- 11 producers will contact the WRAPS group with interest in the program as a direct result of attending one of the Little Arkansas River WRAPS facilitated educational events.
- 9 producers will be interested in signing up for Atrazine BMPs from attending a WRAPS facilitated education event.
- Meet with roughly 120 producers on-site, expecting 90% of them to sign-up for the Atrazine BMP program.
- Improve relations with religious leaders and get one signed up for the Atrazine BMP program.
- Update marketing materials to include annual WRAPS program brochures/fact sheets, 12 newsletters (reaching at least 400 watershed residents), annual Atrazine BMP reports/brochures and more.

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

To be a viable program, there is a need for producers in Turkey, Emma, and Sand Creeks sub-watersheds willing to change the way they apply Atrazine and implement BMPs. These producers will be found during field days, program sign ups, SLT members sharing their names, neighbor recommendations, on-site visits, drive-by assessments, newsletters, direct mailings, etc. In addition, the following resources will be utilized:

- Funding:
  - The City of Wichita funds the Atrazine program - $80,000
    This funding amount is based on recent year contributions.* Payments are made to producers by the McPherson County Conservation District, through KCARE.

    **The CoW funds the Atrazine program annually. The City also provides additional information and education (I&E) funding to the WRAPS group annually. Each year, a MOU is developed between the CoW and the McPherson County Conservation District outlining Atrazine BMP implementation and education budgets. Therefore, implementation and load reduction goals may fluctuate based on funds made available.*
- Technical Assistance: Ron Graber, WRAPS Coordinator/Watershed Specialist and Rick Schlender will coordinate the program and will contact producers in the targeted areas.

- Administration (education and reporting activities): Amanda Schielke
- Other contact and funding resources may include: Harvey and McPherson County Conservation Districts and NRCS
- Other Resources: CoW provides $22,500 in additional funding for education and administration funding*.
    - The education funds ($15,000) will be utilized to market the WRAPS and Atrazine program and educate watershed residents and stakeholders. The education funds provided by the CoW can be utilized anywhere in the watershed to provide education to its residents, producers and stakeholders. These funds are not just available for Atrazine education. They can be used to market the WRAPS Program and all its programs, focusing on implementation in priority areas but offering education to all areas of the watershed. In the past, these funds have been used for newsletter mailings, field days, workshops, etc.
    - The administration funds ($7,500) will be utilized to provide additional salary for Mr. Rick Schlender to offset that which is provided by KDHE and KCARE through this project. Mr. Schender performs the following tasks for this project:
        - Contacts and consults landowners and producers in the targeted areas. Schlender educates them on BMP practices and WRAPS program dollars that are available associated with those practices.
        - Offers group and private program sign up sessions for cost share programs.
        - Liason to the McPherson County Conservation District manager and in charge of making sure payments get sent out to the producers once implementation has taken place.
        - Responsible for fund allocation for the 3-year project. This requires extensive book keeping so that funds are not over, or under, allocated throughout the project.
        - Reports all BMPs and funds allocated to the WRAPS team twice a year, or more often as needed for their reporting.
        - Spends several days each year working with the WRAPS Coordinator on tillage surveys in Harvey and McPherson counties.
        - Attends all Little Arkansas River WRAPS SLT, project management team meetings, conference calls, etc. throughout the project period.
        - Presents BMP implementation to the WRAPS SLT at each SLT meeting held throughout the year. This includes a power point presentation with figures portraying BMPs implemented and dollar amounts spent.
        - Schlender is responsible for all his own expenses associated with the tasks mentioned above to include: vehicle use, gas, computer, cell phone, etc.

Strategy Four: NUTRIENT MANAGEMENT

Provide a general summary of Strategy One

The Little Arkansas River WRAPS program will implement Nutrient Management related BMPs in the following HUC 12 areas:

- Turkey Creek sub-watershed, HUC 12s: 110300120204, 205, 206, 207, and 208

The Nutrient Management Strategy is designed to improve the Biology, Dissolved Oxygen (DO) and Total Phosphorus (TP) TMDL impairments in the Turkey Creek sub-watershed. Expected results include improved, and ultimately delisted TP impairments in the Turkey Creek sub-watershed.

What are the goals for this strategy?

Goal: Implement nutrient management BMPs on 1,440 acres. This implementation will lead to the following load reductions at the end of the 3-year project:

- **921 lbs nitrogen and**
- **432 lbs phosphorus.**

BMPs include: incorporate manure, livestock waste management systems, develop nutrient management plans that will apply variable rate lime and fertilizers

The Nutrient Management Strategy will focus on proper nutrient needs and application as improper nutrient management can result in excessive nutrient levels, often resulting in TMDL listings.

Nutrient Management BMPs will be implemented in the following area(s):

- Turkey Creek – The Nutrient Management Strategy will focus on increasing the adoption of nutrient BMPs in the Turkey Creek sub-watershed in HUC's: 110300120204, 205, 206, 207, and 208. Special emphasis will be on implementing BMPs in 208.

  Goal: Implement Nutrient Management BMPs on 480 acres per year. This implementation rate will result in the following load reductions: 307 lbs of nitrogen and 144 lbs of phosphorus per year.

- Additional implementation *may* take place in the Sand Creek sub-watershed, HUC's 110300120405 and 406 as well, if funding is made available and deemed in a high priority area.

Implementation and load reduction details are in the table below.

Nutrient Management Strategy BMP Implementation and Load Reductions

BMP	Acres/Year	Nitrogen (lbs)*	Phosphorus (lbs)*
Incorporate Manure	40	34	17
Livestock Waste System	40	TBD*	TBD*
Nutrient Management Plans	400 (3 plans)	273	137
Variable Rate Fertilizer Application (acres accounted for under NMP)	400	TBD*	TBD*
Variable Rate Lime Application (acres accounted for under NMP)	400	TBD*	TBD*
Total/Year	480	307	144

3-Year Total for all Implementation	1,440	921	432

*TBD - To Be Determined. These load reductions will be figured specific to the implementation area, taking into account field specifics determined by the grid sampling.

Tactics and action steps

The Nutrient Management program has two levels:

- Level 1: Basic Nutrient Management (NM) program
  The Basic NM program is for eligible producers who have not done intensive soil sampling and variable rate application on a piece of ground that they farm. The Basic NM program will ask producers to provide a 2.5-acre grid sample analysis from the soil lab. This report should include, at a minimum, analyses of the following: Organic Matter (OM), pH, Buffer pH, Phosphate (P), and Potassium (K). This part of the program pays producers up to $10.00 per acre. Producers will be asked to apply lime to achieve a 5.8 pH level based on grid sample results. This part of the program pays producers up to $8.00 per ton of lime applied. Producers will also need to address P and K needs, using variable rate application. Utilizing the grid sample analysis, producers must follow K-State Research and Extension's most recent fertilizer recommendations for P and K application, currently publication MF 2586. The Basic NMP program will be a 1-year program, then the producer may be eligible for the Advanced NM program.

- Level 2: Advanced Nutrient Management (NM) program
  The Advanced NM program is for those producers who have already done intensive soil sampling and variable rate application on their cropland. The Advanced NM program will provide producers with assistance in taking calibrated yield data and utilize GIS software to plug in P and K nutrient removal numbers to determine the rate of application required. This will give the producer a variable rate map for nutrient application during the growing season. This will be a 3-year program with participants eligible to receive payment each year.

To make the program successful, the following tactics/action steps will be taken to achieve the goals mentioned in the table above concerning BMP implementation acreage and load reductions.

- Quarterly Little Arkansas River WRAPS Newsletter, Every year: February, May, August, November
  - USPS and Email - Reach 400 Watershed Residents and stakeholders.
  - Goal: Hear from at least 3 stakeholders/newsletter with inquiries regarding the program.
- Utilize social media, TV/news, radio, etc. to market the programs, events, and sign-up periods, On-going, As-needed
  - Reach an unknown watershed resident population.
  - Goal: Hear back from at least 3 stakeholders/month from these communication events.
- pH Field Tour Summer 2022
  - Flickner will host tour, Little Ark WRAPS will collaborate and offer extra session to discuss all WRAPS programs.
  - Goal: Get 3 producers interested in one of the RWPS incentive programs.
- No-till Cover Crop 1/2 Day Field Tour Summer 2023

    - Will host tour and again, take time to introduce and market each of the Little Arkansas River Watershed WRAPS program.
    - Goal: Get 3 producers interested in one of the WRAPS incentive programs.
- Field Tour Summer 2024
    - Main topic unknown at this time. Will be on something relevant and fresh at that time. Will host tour and again, take time to introduce and market each of the Little Arkansas River Watershed WRAPS program.
    - Goal: Get 3 producers interested in one of the WRAPS incentive programs.
- Program Brochures will be created, Annually
    - The brochure will have past BMP numbers, load reductions achieved for each WRAPS program.
    - Goal: Marketing material for the Little Arkansas River WRAPS Program.
- Communicate with the Religious Leaders, On-going
    - Turkey Creek is home to a religious group that is set in doing things the way they have historically been done.
    - Goal: Make headway with the religious leaders on the importance of BMPs and our program. Get at least one producer from the church to sign-up for one of our programs.
- Collaborate with the Harvey CCD to have the WRAPS program marketed in their newsletters, Twice a year
    - Goal: Get 3 producers to reach out to the WRAPS program.
- Develop the Waste Management System program, March 2023
    - Identify financial benefit to sell.
    - What incentive will WRAPS provide?
    - Education to sellers and buyers.
    - Need to market it.
    - Need producers willing to sell manure.
    - Goal: Create a program. Draw interest to the program with fertilizer costs so high right now.
- One-on-one consultations with producers Fall 2022/Spring 2023
    - Goal: Sign up 400 acres for grid sampling
- Grid Samples Fall of each year
    - Goal: Determine variable rates for Lime and fertilizer.
- Develop Nutrient Management Plans Winter of each year
    - Goal: Each producer will have a nutrient management plan developed and follow the variable rates presented by the grid sampling.
- Utilize the interseeder for cover crops, Summer each year
    - Goal: Report cover crop acreage under General BMP/Sediment category.
- Series of Haney Soil Tests Fall of each year
    - Fund 20 tests for producers that are implementing nutrient management practices. Tests should be ran before variable application, during growing season and following the season. Tests run $50 each and can be sent to American Ag Lab or Ward Lab.
    - Goal: Analyze the benefits of nutrient management planning and variable rate applications. Look for success stories to market program further.

Key performance indicators for the tactics

The anticipated results listed in the table above for each action step taken will be used as an indicator of progress and success within the program.

The table above is representative of action items for all 3 years of this project proposal. The anticipated key performance indicators for all 3 years include:

- 6 producers will contact the WRAPS group with interest in the program as a direct result of attending one of the Little Arkansas River WRAPS facilitated educational events.
- 9 producers will be interested in signing up for nutrient management BMPs from attending a WRAPS facilitated education event.
- Meet with roughly 120 producers on-site, expecting 90% of them to sign-up for the nutrient management BMP program.
- Improve relations with religious leaders and get one signed up for the nutrient management program.
- Develop a waste management program in conjunction with the livestock strategy and pilot on 40 acres.
- Sign-up 400 acres for grid-sampling and use that to determine variable rate for lime and fertilizer.
- Develop 3 nutrient management plans.
- Update marketing materials to include annual WRAPS program brochures/fact sheets, 12 newsletters (reaching at least 400 watershed residents), annual nutrient management BMP reports/brochures and more.

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

To be a viable program, each program will obviously need producers willing to implement BMPs in the targeted area. As mentioned above, these producers will be found during field days, program sign ups, SLT members sharing their names, neighbor recommendations, on-site visits, drive-by assessments, newsletters, direct mailings, etc. In addition, the following resources will be utilized:

Nutrient Management BMP Implementation will take place utilizing the following resources:

- Funding:
  - WRAPS – $12,000 per year = $36,000 total for 3-year project
    Payments will be made to producers by McPherson County Conservation District, through KCARE.
- Technical Assistance and Producer Contacts: Ron Graber and Rick Schlender will coordinate the program and will contact the producers in the targeted areas.
- Soil Testing: Haney, Ward Lab in Nebraska. *This may change if found cheaper elsewhere during the course of the project*.
- Administration (education and reporting activities): Amanda Schielke
- Other contact and funding resources may include: NRCS EQIP and DOC NPS through Harvey and McPherson County Conservation District.
- Other Resources: CoW provides education and administration funding which will be utilized to market the WRAPS and nutrient management program and educate watershed residents and stakeholders. The administration funding helps fund Mr. Rick Schlender who provides technical assistance, education and program sign opportunites to producers.