SECTION 319 NONPOINT SOURCE POLLUTION CONTROL PROGRAM

WATERSHED PROJECT FINAL REPORT

Lower James River Implementation Project – Segment 2

Sponsor

James River Water Development District

David Kringen

July 2012

This project was conducted in cooperation with the State of South Dakota and the United States Environmental Protection Agency, Region 8

EXECUTIVE SUMMARY

PROJECT TITLE: Lower James River Implementation Project – Segment 2

SECTION 319 GRANT NUMBERS: 9998185-09, 08, 07, 03

PROJECT START DATE: 30 Jun 2009 PROJECT COMPLETION DATE: 31 Jul 2012

FUNDING:

Funding Sources	Original	Additional Amended	Actual Expenditures
EPA 319	$390,000	$219,778	$534,944.43
State	$100,000	$128,198	$141,852.43
Federal	$290,000	$103,105	$112,988.02
Local	$264,174	$280,696	$355,519.96
Total:	$1,044,174	$731,777	$1,145,304.84

GRANT AMENDMENTS: 4

SUMMARY OF ACCOMPLISHMENTS

The goal of the Lower James River Implementation Project is to restore and protect the water quality of the James River and its watershed. In order to obtain this goal, the Lower James Project began to implement the installation of Best Management Practices (BMPs) during Segment 2 that targets sources of sediment, nutrients, and fecal coliform bacteria, and continue an education and information outreach campaign that began during the Lower James River Implementation Project, Segment 1.

The James River Water Development District is the sponsor of the watershed project. The initial Segment 2 project grant became effective June 4, 2009. With amendments and additional funding, project Segment 2 continued through July 31, 2012. The objectives of the project (summarized) were:

1. Install Best Management Practices in critical areas to reduce sediment, nutrient, and fecal coliform bacteria loadings to the Lower James River.
2. Provide BMP and project information to 5,000 watershed residents, landowners, and members of stakeholder organizations to inform them on project activities and BMP installation, and maintain local support and involvement.
3. Monitor progress and project management to evaluate project water quality changes, attain project goals, and meet required administrative and reporting procedures.

BMPs installed under Objective 1 included practices such as seeding of perennial vegetation on crop ground, wetland restoration, grassed waterways, filter strips, animal waste management systems (AWMS), grazing plans, riparian exclusion, and shoreline stabilization.

Information and education activities under Objective 2 included newsletter, newspaper articles, mass mailings, public meetings, and project updates and presentations. Examples can be found in Appendix B of this report.

For Objective 3, project progress and expenses were documented using the online SD NPS Project Management System (or BMP Expense Tracker). Grants Reporting & Tracking System (GRTS) reports were completed either on an annual or semi-annual basis showing target/milestone progress and project status. Severe drought conditions in the Midwest prohibited any opportunities for water quality sampling in 2012.

Based on the STEPL and Feed Lot Grazing (FLGR) computer-modeled nutrient reduction estimates, a phosphorus reduction of 8,245.3 lbs/yr were realized from project activities implemented through July 2012. Nitrogen and sediment reductions were estimated at 36,905.1 lbs/yr and 633.3 tons/yr respectively. The majority of the N and P load reductions were accomplished primarily through improvements to feeding operations within the Lower James River watershed, while sediment reductions came primarily from riparian management.

Because STEPL and FLGR estimates are on-site reductions and not necessarily delivered reductions, it is difficult to estimate a percent reduction delivered to the James River from BMP installation. Future water quality sampling and/or an update to the AnnAGNPS computer model may help determine if designated beneficial uses and water quality targets are being met.

During the spring of 2010, it was decided to merge the Firesteel Creek/Lake Mitchell Watershed Implementation Project with the Lower James River Implementation Project, sponsored by the James River Water Development District. A resolution dated June 2010 was submitted by the Davison Conservation District (Firesteel Creek project sponsor) de-obligating the remaining balance of 319 funds, which was then transferred to the Lower James project. BMP implementation has continued in the Firesteel Creek/Lake Mitchell watershed through the Lower James project. Targets and milestones for certain products were amended because of the merger, and are highlighted in this report.

ACKNOWLEDGEMENTS

The Lower James River Implementation Project sponsor would like to thank all those involved in Segment 2 of the watershed restoration effort. The efforts of all those involved from the following organizations is greatly appreciated, and has been essential to the success of the project.

James River Water Development District (JRWDD)

United States Environmental Protection Agency (EPA)

South Dakota Department of Environment and Natural Resources (SD DENR)

United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS)

United States Department of Agriculture Farm Service Agency (USDA FSA)

South Dakota Game, Fish & Parks

The City of Mitchell

Pheasants Forever

Local farmers, ranchers, and landowners

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INTRODUCTION

The Lower James River watershed lies entirely within the Level III Ecoregion of the Northern Glaciated Plains in southeastern South Dakota. The watershed encompasses 2,558,800 acres within the 12 counties of Aurora, Bon Homme, Davison, Douglas, Hanson, Hutchinson, Jerauld, Kingsbury, McCook, Miner, Sanborn, and Yankton (Figure 1). The Lower James River Watershed, Hydraulic Unit 10160011, begins just south of Huron and flows southward, converging with the Missouri River at the City of Yankton. The James River is a perennial stream with its tributaries ranging from intermittent to perennial. The streams in the watershed contribute loadings of pathogens, nutrients, and suspended solids related to snowmelt or rainfall events. The headwaters of the James River begin in North Dakota flowing through the communities of New Rockford and Oakes, North Dakota. The River then crosses the state line into South Dakota and flows southward near Aberdeen and Huron, entering the Lower James Watershed just south of Huron.

The James River basin has a sub-humid, continental climate characterized by pronounced season differences in temperature, precipitation, and other climatic variables. Temperature varies from the northern to the southern end of the basin. High mean temperatures are slightly cooler in the northern region of the basin with Mitchell having a high mean temperature in July of 86.4 degrees Fahrenheit and a low mean temperature in January of 4.4 degrees Fahrenheit. Yankton, at the southern end of the watershed, has a high mean temperature in July of 89.1 degrees Fahrenheit and a low mean temperature in January of 6.4 degrees Fahrenheit.

There are approximately 29 incorporated cities and 30 unincorporated towns, villages, and populated centers within the Lower James River watershed area. The city of Mitchell at the north end of the watershed has the largest population with 15,254 residents. The second largest city is Yankton with a population of 14,454. The population of the watershed is rural in nature with 20,773 residents listed as rural not living on farms, 6,208 as rural living on farms, and 16,111 as urban (USDA-NRI 2009). Table 1 lists the cities with populations of over 500 in the watershed. Many of these municipalities have discharge permits.

Table 1. Cities With a Population of Over 500 in the Lower James River Basin.

City	County	Population
Mitchell	Davison	15,254
Yankton	Yankton	14,454
Parkston	Hutchinson	1,508
Freeman	Hutchinson	1,306
Wessington Springs	Jerauld	956
Scotland	Bon Homme	841
Plankinton	Aurora	707
Woonsocket	Sanborn	655
Tripp	Hutchinson	647
Alexandria	Hanson	615
Menno	Hutchinson	608

U.S. Census Bureau 2010 Census

Predominant soils within the lower James River watershed consist of deep, well drained, and moderately well drained, nearly level, loamy, and silty soils and have a mesic temperature regime. They formed in glacial till on the uplands, loamy soils over sand and gravel on the outwash plains, and clayey and silty soils formed in alluvium on the floodplains and low terraces. The soils have medium to high fertility and moderated to high organic matter content. The available water capacity is high and permeability is moderate to moderately slow. Runoff is slow to medium, and the hazard of erosion is slight; however, the drainage patterns are better defined adjacent to tributaries.

The dominant land use is cultivated cropland comprised of corn, soybeans, grain sorghum, and sunflowers. Cropland productivity is largely ranked as good. Areas not suitable for row crop farming are utilized as pasture, range, and hay land. The use limitations of the soils for crops are slight, which results in a large percentage of the watershed being used for intensive crop production (Figure 2). Maintaining fertility and tilth is the main concern of management; however, this results in the application of chemicals, fertilizers, and animal manures. While the lower James basin is well suited to farming, it has resulted in the impairment of waterbodies where land uses are not managed well to reduce pollution.

Figure 1. Lower James Watershed Basin HU 10160011.

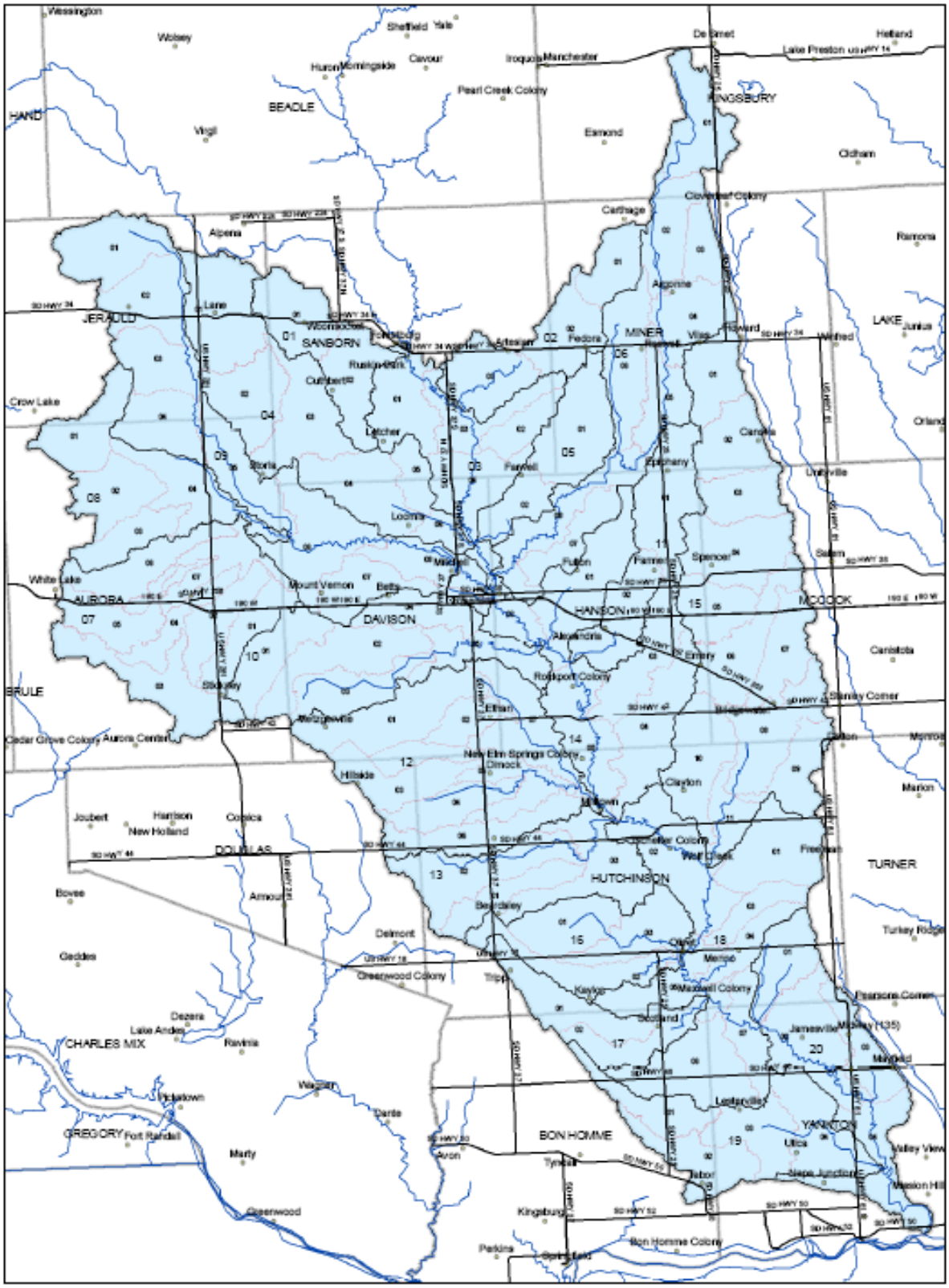
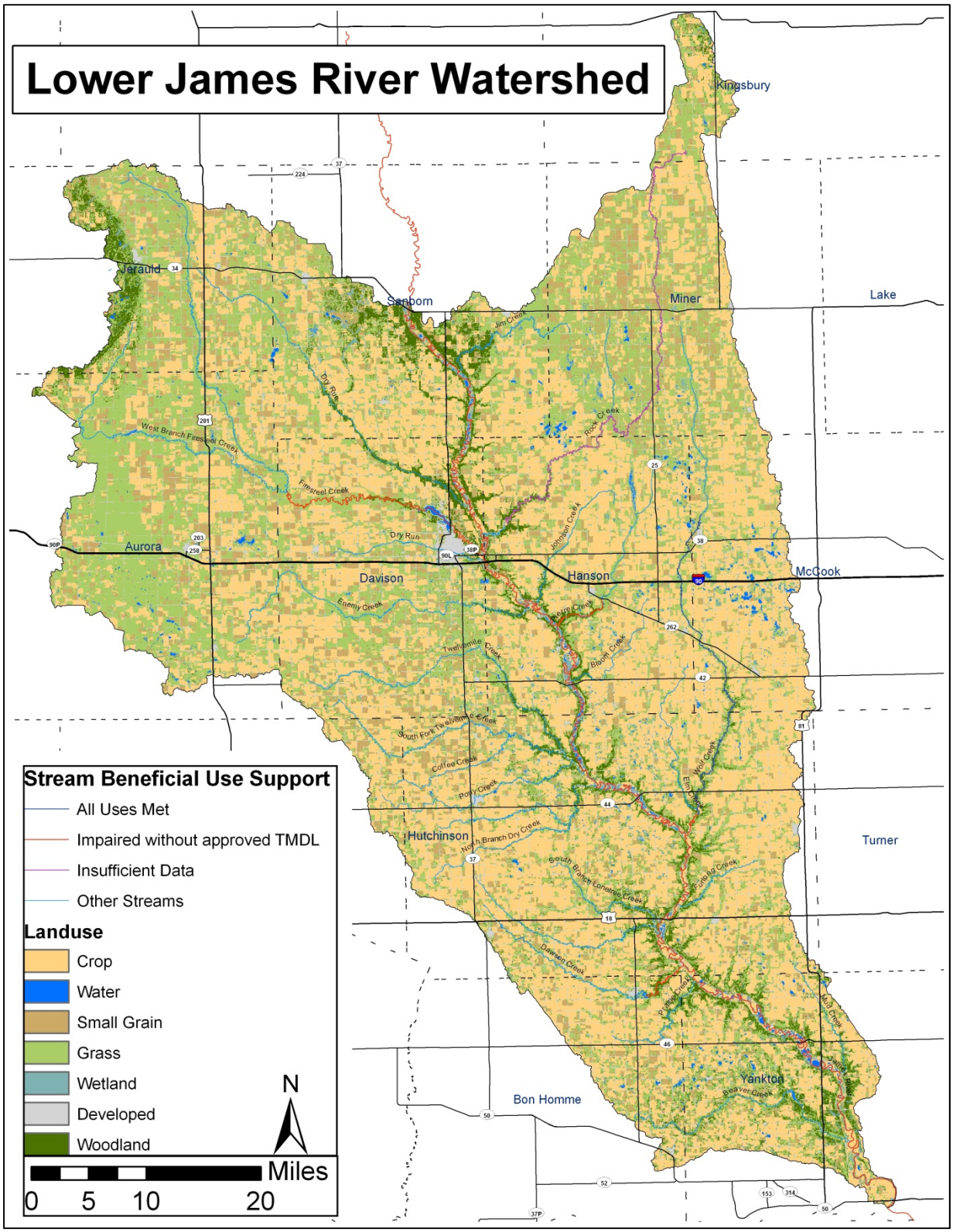


Figure 2. Land Use Map for the Lower James River Watershed.



The overall objective of the implementation project is to restore and protect the water quality of the Lower James River and its watershed; specifically to reduce sediments, nutrients, and fecal coliform bacteria loadings to the stream. Field investigations and analysis have found water quality characteristic that have exceeded EPA standards with dissolved oxygen, biological demand oxygen, total coliform bacteria, fecal coliform bacteria, total suspended solids, total phosphorous, nitrogen, and total alkalinity.

The beneficial uses of streams, lakes, and reservoirs in the lower James River as listed by SD-DENR Integrated Report for 2010 are listed in Table 2, James River Beneficial Uses for Targeted Project Water Bodies.

Table 2. Beneficial Uses for Targeted Water Bodies.

Water Body	From	To	Beneficial Uses	County
Beaver Lake - L2			6,7,8,9	Yankton
Dawson Creek -R1	James River	Lake Henry	6,8,9,10	Bon Homme
Enemy Creek	Enemy Creek	S18-T103N-R60W	6,8	Davison
Enemy Creek - North Fork	Enemy Creek	S36-T103N-R61W	6,8	Davison
Firesteel Creek -R3	James River	Confluence with West Fork Firesteel Creek	1,4,8,9,10	Davison
James River -R16	Sand Creek	Interstate 90	5,8,9,10	Sanborn
James River -R7	Interstate 90	Yankton County Line	5,8,9,10	Hutchinson
James River -R8	Yankton County Line	Missouri River	5,8,9,10	Yankton
Lake Hanson -L16			6,7,8,9	Hanson
Lake Mitchell -L22			1,4,7,8,10	Davison
Menno Lake -L20			5,7,8,9	Hutchinson
Pierre Creek -R20	James River	S11-T102N-R58W	8,9,10	Hanson
Rock Creek -R21	S9-T103N-R59W	Headwaters	9,10	Miner
Twin Lakes -L35			5,7,8,9	Sanborn
Wilmarth Lake -L37			4,7,8,9	Aurora
Wolf Creek -R27	Wolf Creek Colony	S5-T103N-R56W	6,8,9,10	McCook
Wolf Creek -R29	Wolf Creek Colony	Mouth	6,8,9,10	Hutchinson

From *2010 South Dakota Integrated Report for Surface Water Quality Assessment*.

Numerical Key to Beneficial Uses listed in Table 2:

(1) Domestic water supply waters;
(2) Coldwater permanent fish life propagation waters;
(3) Coldwater marginal fish life propagation waters;
(4) Warm water permanent fish life propagation waters;
(5) Warm water semi-permanent fish life propagation waters;
(6) Warm water marginal fish life propagation waters;
(7) Immersion recreation waters;
(8) Limited contact recreation waters;

(9) Fish and wildlife propagation, recreation, and stock watering waters;
(10) Irrigation waters; and
(11) Commerce and industry waters.

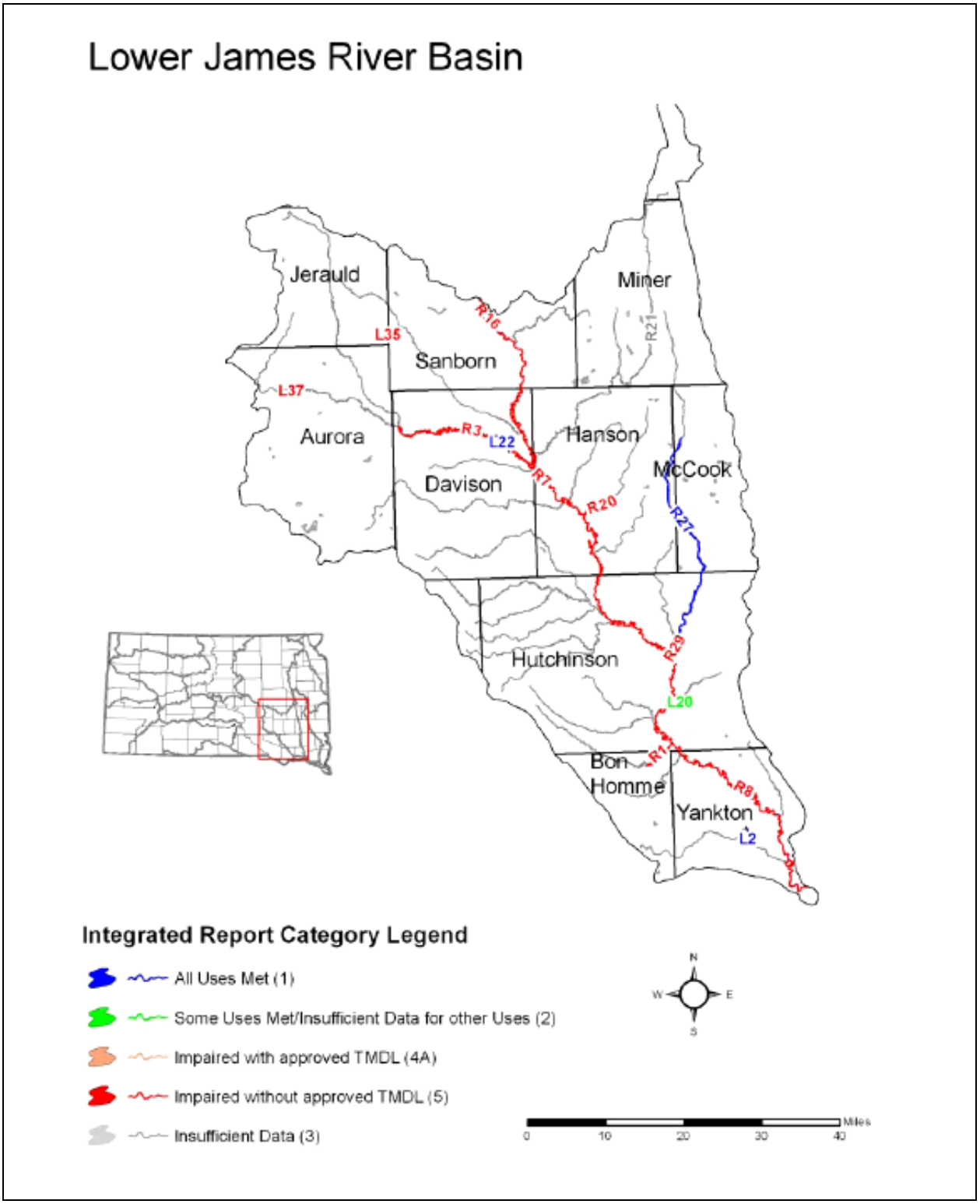
The *2010 South Dakota Integrated Report for Surface Water Quality Assessment* lists the impaired water bodies with the beneficial uses impaired and the cause for the impairment; shown in Table 3. The location of the impaired water bodies are shown in Figure 3.

Table 3. Lower James River Water Bodies Listed as Impaired, on the 303(d) and Priority List, and Their Source of Impairment.

Water Body – Map ID	Assessment Unit Identification (AUID)	Beneficial Use Impaired	Listed Cause
Dawson Creek – R1	SD-JA-R-DAWSON_01	Limited Contact Recreation (8)	Fecal Coliform *Escherichia coli*
Firesteel Creek - R3	SD-JA-R-FIRESTEEL_01	Domestic Water Supply (1) Limited Contact Recreation (8)	Total Dissolved Solids *Escherichia coli*
James River - R16	SD-JA-R-JAMES_09	Warmwater Semi-Permanent Fish Life (5)	Total Suspended Solids
James River - R7	SD-JA-R-JAMES_10	Warmwater Semi-Permanent Fish Life (5)	Total Suspended Solids
James River - R8	SD-JA-R-JAMES_11	Warmwater Semi-Permanent Fish Life (5)	Total Suspended Solids
		Limited Contact Recreation (8)	Fecal Coliform *Escherichia coli*
Pierre Creek - R20	SD-JA-R-PIERRE_01	Limited Contact Recreation (8)	Fecal Coliform *Escherichia coli*
Twin Lakes - L35	SD-JA-L-TWIN_01	Immersion Recreation (7) Limited Contact Recreation (8) Warmwater Permanent Fish Life (4)	Chlorophyll-*a* Chlorophyll-*a* Chlorophyll-*a*
Wilmarth Lake - L37	SD-JA-L-WILMARTH_01	Immersion Recreation (7) Limited Contact Recreation (8) Warmwater Permanent Fish Life (4)	Chlorophyll-*a* Chlorophyll-*a* Chlorophyll-*a*
Wolf Creek - R29	SD-JA-R-WOLF_02	Warmwater Marginal Fish Life (6)	Total Suspended Solids

From *2010 South Dakota Integrated Report for Surface Water Quality Assessment*

Figure 3. Impaired Water Bodies Within the Lower James River Basin



PROJECT GOALS, OBJECTIVES, AND ACCOMPLISHMENTS

The goal of the Lower James River Implementation Project is to restore and protect the water quality of the James River and its watershed. Objectives used to reach this goal include:

Objective 1. Install Best Management Practices (BMPs) in critical areas to reduce sediment, nutrient, and fecal coliform bacteria loadings to the Lower James River.

Task 1. Plan and implement riparian area BMPs. Provide assistance to landowners with installation of priority BMPs on riparian area cropland and grasslands in the watershed that reduce fecal coliform bacteria, nutrient, and sediment loadings. BMPs will be installed with landowner investments along with USDA programs (EQIP/CRP/WHIP) and 319 funds. Funds from the 319 grant for BMP planning and implementation will be targeted to critical cells associated with riparian areas identified in the watershed assessment and towards BMPs where other cost-share is not available.

In 2009, the state of South Dakota, through the SD Department of Game, Fish & Parks (SD GFP), began a partnership with USDA to establish the Conservation Reserve Enhancement Program (CREP). The program seeks to enroll 100,000 acres of eligible cropland or marginal pastureland in 10 to 15 year contracts within the James River watershed by providing an additional annual payment equal to 40% of the weighted-average rental rate for acres enrolled in CREP issued by USDA. The program also allows public hunting access to those acres enrolled into the CREP program. The project aims to restore the hydrology and upland buffers of prairie pothole wetlands and establish permanent vegetation along drainages leading into the James River. The primary goals of the project are to improve water quality, soil erosion, flood control, and to enhance wildlife habitat through the establishment of permanent vegetative cover. Approved conservation practices under CREP include the following:

- CP4D (Permanent Wildlife Habitat) - cropland only
- CP10 (Vegetative Cover-Grass-Already Established) - cropland only
- CP21 (Filter Strips) - cropland only
- CP22 (Riparian Buffer) – cropland & marginal pastureland
- CP23 (Wetland Restoration, 100 Year Floodplain) – cropland only
- CP23A (Wetland Restoration, Non-Floodplain) – cropland only
- CP29 (Marginal Pastureland Wildlife Habitat Buffer) – cropland & marginal pastureland
- CP30 (Marginal Pastureland Wetland Buffer) – cropland & marginal pastureland
- CP37 (Duck Nesting Habitat Initiative) – cropland only

Product 1: 340 acres of riparian cropland benefited from BMP installation by landowners (amended product from Firesteel Creek project merger).

BMPs installed by landowner will include filter strips, diversions, seedings, wetland restorations, and grassed waterways on 250 acres of riparian area cultivated cropland to reduce nutrient and sediment loading.

Accomplishment: BMPs implemented under Product 1 (filter strips, grassed waterways, etc.) typically are installed through the USDA CRP, CREP, and EQIP programs. There were no 319 funds set aside for this product.

Table 4. Grassed Waterways (NRCS Practice Standard 412) Applied on Cropland During Segment 2 Project Period.

No.	County	Assessment Unit Identification (AUID)	Acres
1	Aurora	SD-JA-L-WILMARTH_01	2.6
2	Aurora	SD-JA-R-JAMES_10	0.4
3	Douglas	SD-JA-R-JAMES_10	2.5
4	McCook	SD-JA-R-WOLF_02	0.9
5	Yankton	SD-JA-R-JAMES_11	0.7
TOTALS			7.1

JAMES_10 = I-90 to Yankton County line
JAMES_11 = Yankton County Line to Missouri River mouth

Table 5. Filter Strips (NRCS Practice Standard 393) Applied on Cropland During Segment 2 Project Period.

No.	County	Assessment Unit Identification (AUID)	Acres
1	Aurora	SD-JA-R-JAMES_10	2.3
2	Aurora	SD-JA-R-JAMES_10	6.3
3	Aurora	SD-JA-R-JAMES_10	4.2
4	Aurora	SD-JA-R-JAMES_10	3.0
5	Davison	SD-JA-R-FIRESTEEL_01	3.2
6	Hutchinson	SD-JA-R-JAMES_10	16.8
TOTALS			35.8

Load reduction estimates for Product 1 can be seen in Table 10.

Product 2: Grassland Management Systems installed on 5,175 acres of grasslands (amended Product from Firesteel Creek project merger).

Grassland management systems will be designed and installed on 5,000 acres of riparian grasslands to reduce fecal coliform, nutrient, and sediment loading. Technical assistance for system planning will be requested from the SD Grassland Management and Planning Project and project Natural Resources Conservation Service (NRCS) field offices. BMPs will be implemented using funds from federal programs (EQIP, Continuous CRP), landowners, and 319 funds. BMPs planned to be installed include: livestock exclusion, land use agreements, planned grazing systems, fencing, pipelines, tanks, ponds, stream bank stabilization, and rural water hook-ups. Use of 319 funds to implement grazing system BMPs will be targeted to riparian grasslands along the James River and its major

tributaries and to riparian areas identified as critical cells during the assessment, and where other sources of cost-share are not available.

Accomplishment: The James River Riparian Area Management (RAM) Program is meant to provide an incentive for producers to establish buffer strips in the hope of improving water quality in the creeks and streams within the James River watershed. The program is intended to compliment the USDA Continuous CRP buffer program by making it possible to enroll areas into the RAM program beyond the maximum average width that CRP offers, or other areas that may not be eligible for CRP. Funding for the RAM program comes from EPA 319 as well as other local funding such as the James River Water Development District, the City of Mitchell, and producer match.

During Segment 2 of the Lower James River Implementation Project, 983.1 acres of riparian pasture/rangeland were enrolled for livestock exclusion using stand-alone CRP contracts or combined with the RAM program (Table 6). CRP exclusion practices under Product 2 include those that are thought to benefit water quality the most by being immediately adjacent and parallel to streams, lakes, or other permanent water bodies. Those practices include, but are not limited to:

- CP22 (Riparian Buffer)
- CP29 (Marginal Pastureland – Wildlife Habitat Buffer)
- CP30 (Marginal Pastureland – Wetland Buffer)

Table 6. CRP and RAM Acres Applied on Pasture/Rangeland During Segment 2 Project Period.

No.	County	Assessment Unit Identification (AUID)	CRP	RAM	OTHER	Totals
1	Bon Homme	SD-JA-L-BEAVER_01	27.1	-	-	27.1
2	Bon Homme	SD-JA-L-BEAVER_01	59.5	15.8	-	75.3
3	Bon Homme	SD-JA-R-DAWSON_01	25.7	35.5	-	61.2
4	Davison	SD-JA-R-FIRESTEEL_01	18.4	9.0	-	27.4
5	Davison	SD-JA-R-FIRESTEEL_01	5.6	13.2	-	18.8
6	Davison	SD-JA-R-JAMES_10	18.6	-	-	18.6
7	Hanson	SD-JA-R-JAMES_09	20.6	-	-	20.6
8	Hanson	SD-JA-R-JAMES_09	22.8	-	-	22.8
9	Hanson	SD-JA-R-JAMES_09	2.6	-	-	2.6
10	Hanson	SD-JA-R-JAMES_10	3.5	-	-	3.5
11	Hanson	SD-JA-R-JAMES_10	17.8	-	-	17.8
12	Hanson	SD-JA-R-JAMES_10	10.0	-	-	10.0
13	Hanson	SD-JA-R-JAMES_10	6.0	-	-	6.0
14	Hanson	SD-JA-R-PIERRE_01	20.4	53.3	-	73.7
15	Hanson	SD-JA-R-ROCK_01	40.0	68.9	-	108.9
16	Hutchinson	SD-JA-R-JAMES_10	18.0	8.5	13.5	40.0
17	Hutchinson	SD-JA-R-JAMES_10	31.8	-	-	31.8
18	Hutchinson	SD-JA-R-JAMES_10	15.0	-	-	15.0
19	Hutchinson	SD-JA-R-JAMES_10	34.3	-	-	34.3

20	Hutchinson	SD-JA-R-JAMES_10	4.1	-	-	4.1
21	Hutchinson	SD-JA-R-JAMES_10	8.1	-	-	8.1
22	Hutchinson	SD-JA-R-JAMES_11	31.7	-	-	31.7
23	Hutchinson	SD-JA-R-WOLF_01	8.4	-	-	8.4
24	Hutchinson	SD-JA-R-WOLF_01	37.9	-	-	37.9
25	Yankton	SD-JA-L-BEAVER_01	28.7	62.1	-	90.8
26	Yankton	SD-JA-L-BEAVER_01	15.8	10.8	-	26.6
27	Yankton	SD-JA-L-BEAVER_01	23.9	11.5	-	35.4
28	Yankton	SD-JA-R-JAMES_11	35.4	89.3	-	124.7
TOTALS			591.7	377.9	13.5	983.1

Table 7 contains the total acres of pasture/rangeland that were reported as improved within the watershed boundary during the project period through different NRCS programs. Improved acres are reported using the term “prescribed grazing”; which is generally defined as a rotational grazing system which ensures that livestock forage demand is balanced with forage supply, has planned periods of growing season rest within grazing units, and season-of-use is alternated between years.

Table 7. Prescribed Grazing Acres Reported During Segment 2 Project Period.

No.	County	Assessment Unit Identification (AUID)	Acres
1	Aurora	SD-JA-R-JAMES_10	664.4
2	Aurora	SD-JA-R-JAMES_10	295.1
3	Aurora	SD-JA-R-JAMES_10	347.0
4	Aurora	SD-JA-R-JAMES_10	1,232.2
5	Davison	SD-JA-R-JAMES_10	345.8
6	Davison	SD-JA-R-JAMES_10	263.3
7	Davison	SD-JA-R-FIRESTEEL_01	290.1
8	Davison	SD-JA-R-JAMES_09	159.6
9	Hanson	SD-JA-R-JAMES_10	198.5
10	Hanson	SD-JA-R-JAMES_10	158.5
11	Hanson	SD-JA-R-JAMES_10	276.0
12	Hanson	SD-JA-R-PIERRE_01	225.7
13	Miner	SD-JA-R-JAMES_09	147.0
		SD-JA-R-WOLF_01	138.4
		SD-JA-R-WOLF_02	376.6
14	Sanborn	SD-JA-R-JAMES_09	140.6
TOTALS			5,258.8

Load reduction estimates for Product 2 can be seen in Table 10.

Task 2. Provide assistance to landowners to implement animal waste management systems (AWMS).

- Complete six (6) animal waste management system feasibility studies
- Complete the design and installation of four (4) animal waste management systems
- Complete four (4) nutrient management plans (NMP)

Product 3: Six (6) plans for AWMS developed using feasibility studies.
Four (4) AWMS installed to include four NMP

Assistance will be provided using the services of private consultants and/or the Ag Nutrient Management Team to complete feasibility studies based on a priority evaluation and ranking by the project steering committee. The feasibility studies, AWMS installation, and NMPs will be from this project, landowner contributions, USDA cost-share programs (EQIP), and other state support such as the Consolidated Water Facilities Construction Program. The cost of needed cultural resources surveys will be borne by the primary project funder, and are part of the cost of an AWMS installation when they are this project's responsibility.

Accomplishment: During Segment 2, two (2) feasibility studies were completed by the NRCS Agricultural Nutrient Management Team for feeding areas within the Lower James River watershed. The first study was completed in 2011 for a feeding area in the Twelve Mile Creek watershed in Hanson County and the other was completed in 2012 for a facility in the Dawson Creek watershed in Bon Homme County. The feasibility study that was completed for the producer in the Twelve Mile Creek watershed resulted in a design for a 999 animal unit (AU) AWMS. An EQIP contract was preapproved in 2012; however, the producer deferred construction of the AWMS at this time.

Construction

During the Segment 2 project period, two (2) AWMS were constructed along with one (1) clean water diversion along a small feeding operation. Construction of the first AWMS near the headwaters of Twelve Mile Creek in Douglas County resulted from a feasibility study that was completed during the Segment 1 portion of the Lower James project. Construction on the second AWMS began in the spring of 2012 and is scheduled to be completed by late summer/early fall near Dawson Creek in Bon Homme County.

Other notable projects included the installation of a clean water diversion (CWD) designed to divert water from passing through a producer's feedlot in FY10. The CWD is meant to reduce sediment, nutrients, and fecal coliform bacteria entering a nearby tributary along Beaver Creek in Yankton County.

Table 8. Product 3 Implementation During Segment 2 Project Period.

Type of Operation	County	Watershed	Assessment Unit Identification (AUID)	Feasibility Study	Result
Beef	Yankton	Beaver Creek	SD-JA-L-BEAVER_01	N/A	CWD for 50 AU in FY10 (Seg 2)
Beef	Douglas	Twelve Mile Creek	SD-JA-R-JAMES_10	Yes (Seg 1)	AWMS for 999 AU in FY11 (Seg 2)
Beef	Bon Homme	Dawson Creek	SD-JA-R-DAWSON_01	Yes (Seg 2)	AWMS for 999 AU in FY12 (Seg 2)
Beef	Hanson	Twelve Mile Creek	SD-JA-R-JAMES_10	Yes (Seg 2)	Deferred

Load reduction estimates for Product 3 can be seen in Table 10.

Task 3. Restore 1985 LF of shoreline along Lake Mitchell to protect the shoreline from erosion (amended Task and Product from Firesteel Creek project merger).

Product 4: Shoreline Stabilization

Implement BMPs to restore 1985 LF of shoreline on Lake Mitchell to control sediment loading from shoreline erosion. Gabions installed on Lake Mitchell during the 1980s are failing because of water level fluctuations during freezing and thawing. An inspection report by the NRCS national engineering staff determined the failure to be related to the lifespan of the wire on the gabions.

Accomplishment: The Lake Mitchell Campground shoreline stabilization project, completed in 2011, was the latest effort by the City of Mitchell to replace the failed rock and wire baskets (gabions) that were installed around the lake in the 1980s. Approximately 650 linear feet of shoreline was stabilized near the campground through a Clean Water State Revolving Fund - Non Point Source loan.

Objective 2. Provide BMP and project information to 5,000 watershed residents, landowners, and members of stakeholder organizations to inform them on project activities and BMP installation, and maintain local support and involvement.

Task 4. Complete an outreach and information campaign.

Assistance will be provided to the James River Water Development District and project partners to develop and implement an outreach/information campaign that informs project residents of opportunities for involvement in the project and the project progress. Priority activities planned include a minimum of one newsletter each year and maintenance of the

web site with current project information. Project staff will partner with area media to complete news releases, and be available to partner organizations for presentations on project activities.

Product 5: Newsletters and web site maintenance

Accomplishment: A number of different methods were used for Information & Education outreach efforts during Segment 2; examples of which can be seen in Appendix B of this report. The Appendix includes newsletters, newspaper articles, mass mailing flyers and brochures, public meeting notices, etc. which have been used during Segment 2. Also in Appendix B is the text for a radio advertisement that was created and broadcast in April 2012 for the watershed project. Over 80 promotions were broadcast over the course of one month on Mitchell's most listened to radio station, with listenership in 14 counties.

In addition, project personnel have made dozens of contacts through on-site visits with landowners, and have met regularly with partners such as the different NRCS offices and staff within the watershed to keep them abreast of opportunities that may be available.

In February 2012, the James River Water Development District switched their web development company and a new web site was constructed. The Lower James River Implementation Project is currently developing a link on the JRWDD webpage for public access to watershed project information.

Objective 3. Monitoring progress and project management to evaluate project water quality changes to attain project goals and meet required administrative and reporting procedures (monitoring and project progress reports).

Task 5. Monitoring water quality through water sampling related to BMP installation and after storm events to assess changes in water quality from BMPs and from the initial watershed assessment sampling. Project staff will collect water samples related to installation of animal waste systems to evaluate before and after water quality changes and related to storm events at the outlets of creeks (Pierre, Dawson, and Wolf, etc.) for testing at the State Lab. Testing will be completed related to total suspended solids, fecal coliform bacteria, and E. Coli. Sampling will be completed utilizing technical assistance from the SD DENR and following procedures established in the "Standard Operating Procedures for Field Samplers, Volumes I & II, Tributary and In-Lake Sampling Techniques," State of SD, 2005.

Product 6. Water quality monitoring to monitor project impacts

Accomplishment: Extreme drought conditions in the Midwest limited opportunities for water quality sampling in 2012. EPA 319 dollars set aside for this product will be transferred into Segment 3 of the watershed project.

Task 6. Prepare and submit reports using the prescribed format(s) as required by the project sponsor and partners.

Product 7: Semi-annual and annual GRTS reports, monthly and final project reports.

The reports are to include:

1. Semi-annual (April) and annual (October) reports
   The semi-annual and annual reports will be submitted to DENR in a format that meets the GRTS reporting requirements. The reports will include information on:
   - estimated load reductions for BMPs installed utilizing AnnAGNPS and STEPL models,
   - locations and land use where BMPs have been installed and/or utilizing a GIS layered land use location mapping system,
   - narrative description of project activities, and
   - a planned versus accomplished milestone comparison.
2. Monthly progress reports to the project sponsor and co-sponsors. These reports will be submitted electronically or by attendance at sponsor meetings.
3. Final Report. The final report, prepared following the format provided by DENR, will include a narrative summary of progress toward reaching project goals and objectives to improve water quality in the Lower James River Watershed, milestone and budget comparison pictures of project activities, and maps showing the location of completed BMPs. AnnAGNPS, STEPL, and GIS will be used to estimate project load reduction accomplishments and current land use status in the watershed.

Accomplishment: Completed.

Project progress and expenses were documented using the on-line SD NPS Project Management System (aka BMP Expense Tracker). Grants Reporting and Tracking System (GRTS) reports were completed either on an annual or semi-annual basis showing target/milestone progress and nutrient load reductions.

PLANNED AND ACTUAL MILESTONES

Table 9. Segment 2 Planned Versus Completed Project Activities.

Objective/Task/Product	Planned	Actual
Objective 1. BMP installation		
Task 1. Riparian Area BMPs		
Prod. 1. Cropland BMP	340 ac.	43 ac.
Prod. 2. Grassland BMP	5,175 ac.	6,242 ac.
Task 2. Animal Waste Mgt. Systems		
Prod. 3. Feasibility Studies	6	2
AWMS installation w/ NMP	4	3
Task 3. Lake Mitchell BMP		
Prod. 4. Shoreline Stabilization	1985 LF	650 LF
Objective 2. Public Information Campaign		
Task 4. I & E Activities		
Prod. 5. Newsletters & Web Site Development		
Web site maintenance	1	in progress
Newsletter	2	2
Objective 3. Project Monitoring		
Task 5. WQ Monitoring		
Prod. 6. WQ Monitoring	14 samples	0
Task 6. Project Reporting		
Prod. 7. Prepare and submit reports		
Semi-annual reports	4	4
Annual report	2	2
Final report	1	1
Firesteel Creek Final Report	1	1
Monthly reports	25	25

MONITORING RESULTS

Table 10. Load Reduction Summary by Product.

Product	N Reduction (lbs/yr)	P Reduction (lbs/yr)	Sediment Reduction (tons/yr)	Fecal Load Reduction (CFU)
Prod. 1. Riparian Cropland	199.8	61.5	39.6	-
Prod. 2. Grassland Management	11,479.9	2,420.4	555.5	4.89E+13
Prod. 3. AWMS	25,225.4	5,763.4	38.2	6.57E+12
Prod. 4. Shoreline Stabilization	-	-	-	-
TOTALS	36,905.1	8,245.3	633.3	5.54E+13

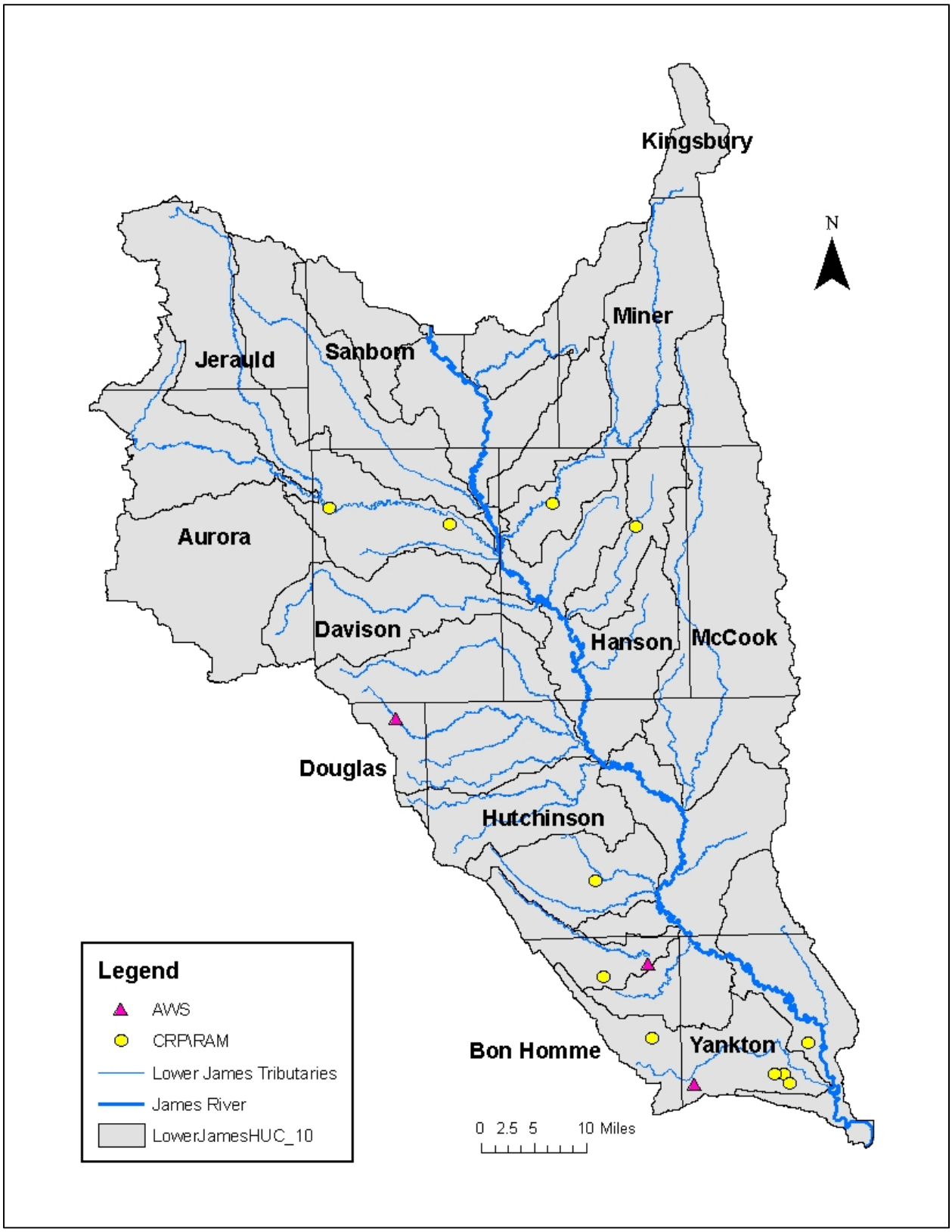
Load reduction estimates come from the STEPL (Spreadsheet Tool for the Estimation of Pollutant Load v. 4.0) and FLGR (Feedlot Grazing) computer models. Nitrogen and phosphorus reduction estimates come from STEPL while sediment and fecal load reductions are generated from the LFGR model. Load estimates are on-site reductions and not necessarily delivered reductions.

Table 11. Load Reduction Summary by Assessment Unit Identification (AUID).

AUID	N Reduction (lbs/yr)	P Reduction (lbs/yr)	Sediment Reduction (tons/yr)	Fecal Load Reduction (CFU)
SD-JA-L-BEAVER_01	1,575.9	885.8	93.9	2.93E+13
SD-JA-R-DAWSON_01	12,144.0	2,889.2	44.0	1.00E+13
SD-JA-R-FIRESTEEL_01	653.0	144.1	25.3	2.30E+12
SD-JA-R-JAMES_09	765.9	101.9	45.0	-
SD-JA-R-JAMES_10	19,252.6	3,770.6	286.7	3.93E+12
SD-JA-R-JAMES_11	658.5	139.2	50.7	4.55E+12
SD-JA-R-PIERRE_01	593.0	139.3	28.8	2.93E+12
SD-JA-R-ROCK_01	433.5	69.0	15.7	2.42E+12
SD-JA-L-WILMARTH_01	13.3	4.3	2.8	-
SD-JA-R-WOLF_01	316.1	43.5	19.4	-
SD-JA-R-WOLF_02	499.3	58.4	21.0	-
TOTALS	36,905.1	8,245.3	633.3	5.54E+13

Because the Lower James Watershed Project was not directly involved with every pasture/rangeland exclusion practice in Table 6 via the RAM program, the project was not able to gather certain information such as the number of animal units that were to be excluded and their duration on each land tract. Therefore, the project was not able to estimate the additional N, P, sediment, and fecal load reductions that come from livestock exclusion that can supplement the reductions from the filter strip itself.

Figure 4. Project BMP Locations.



COORDINATION EFFORTS

The James River Water Development District served as the main sponsor of the watershed project. District staff includes a district manager, a co-manager/CFO, and a project coordinator supervised by a Board of Directors. The district coordinated project activities, reported on progress, vouched for grant funds, and provided record keeping services. Coordination efforts with other agencies are described below.

STATE AGENCIES

South Dakota Department of Environment and Natural Resources (SD DENR), Clean Water Act Section 319 and Consolidated Water Facilities Construction Program (CWFCP). CWFCP grant used for the construction of animal waste management systems within the Lower James River watershed.

South Dakota Game, Fish & Parks (SD GF&P) for technical and financial assistance for the James River Watershed Conservation Reserve Enhancement Program (CREP).

USDA

USDA Natural Resources Conservation Service (NRCS) and Farm Service Agency (FSA) for technical and financial assistance for BMP installation through the Conservation Reserve Program (CRP) and the Environmental Quality Incentive Program (EQIP)

South Dakota Nutrient Management Team. Nutrient management planning and design assistance for animal waste management systems. Team funded through NRCS and the South Dakota Association of Conservation Districts (SDACD).

OTHER FEDERAL

US Environmental Protection Agency (EPA) Clean Water Act Section 319 grants awarded through SDDENR for project personnel, I & E activities, and BMP installation.

OTHER

South Dakota Association of Conservation Districts (SDACD) for financial assistance for the SD Nutrient Management Team.

City of Mitchell for financial assistance towards BMP installation, in-lake activities, and shoreline stabilization projects within the Firesteel Creek/Lake Mitchell subwatershed.

Pheasants Forever for technical assistance for the James River Watershed Conservation Reserve Enhancement Program (CREP).

Landowners/operators who participated by contributing in-kind and cash match through the installation of watershed BMPs.

ASPECTS OF THE PROJECT THAT DID NOT WORK WELL

With land values and commodity prices continuing to climb to record highs over the last several years, land that may have once been either dedicated to conservation or set aside because of poor return is now being put in production. Conservation practices placed on crop ground (grassed waterways, filter strips, etc.) have become almost non-existent due to corn and soybean pricing while drought may also be playing a role in producer's reluctance to set aside pasture/rangeland. Convincing landowners to set aside agricultural land is becoming an increasingly hard sell for conservation-minded groups and agencies under current circumstances.

RESULTS AND FUTURE ACTIVITY RECOMMENDATIONS

Based on the STEPL computer-modeled nutrient reduction estimates, a phosphorus reduction of 8,245.3 lbs/yr were realized from project activities implemented through July 2012. Nitrogen and sediment reductions were estimated at 36,905.1 lbs/yr and 633.3 tons/yr respectively. The N and P load reductions were accomplished primarily through improvements to feeding operations within the lower James River watershed, while sediment reductions came primarily from riparian management.

In July 2012, the James River Water Development District approved $50,000 to initiate the JRWDD Enhanced CRP Program in hopes of improving water quality in creeks and streams within the James River Watershed. The program consists of a one-time, up-front payment equal to 40% of the overall CRP base-rate payment for certain Continuous CRP practices. The CP practices eligible for the 40% incentive payment include:

- CP8A (Grassed Waterway)
- CP21 (Filter Strip)
- CP22 (Riparian Buffer)
- CP29 (Marginal Pastureland – Wildlife Habitat Buffer)
- CP30 (Marginal Pastureland – Wetland Buffer)

Unlike CREP, the JRWDD Enhanced CRP program does not allow public hunting access. While early in its inception, the program has received favorable response from NRCS personnel throughout the James River basin and it is hoped this will become a popular program.

LITERATURE CITED

SD DENR 2010. The 2010 South Dakota Integrated Report for Surface Water Quality Assessment. Pierre, SD.

APPENDIX A

EPA 319 PROJECT BUDGETS

Lower James River Implementation Project – Segment 2. Initial budget.

ITEM	Year 1 2009-10	Year 2 2010-11	Total	319-EPA	USDA EQIP/WHIP/CRP	LOCAL	State CWFCF, etc.	JRWDD
Personnel Support								
Project Coordinator/Project Staff (1.5 FTE)	$47,840	$49,920	$97,760	$60,000				$37,760
Payroll Tax	$3,660	$3,819	$7,479	$4,875				$2,604
Health Insurance (Dental only)	$1,175	$1,175	$2,350	$2,350				
Workman's Comp.	$795	$795	$1,590	$1,590				
Unemployment Insurance								
Retirement (6.5%)	$3,110	$3,245	$6,355	$6,355				
Supplies/Equipment:								
Office Supplies	$600	$600	$1,200	$1,200				
Postage	$100	$100	$200					$200
Cell Phone Service	$450	$450	$900					$900
Computer Support								
Computer Maintenance	$1,000	$1,000	$2,000					$2,000
Internet Service @ $20/month	$240	$240	$480	$480				
Office Space with furniture @ $100/sq.ft.@ $15/sq.ft./Year								
(FAX, copier, scanner, land line phone, included)	$1,500	$1,500	$3,000	$3,000				
Travel:								
Vehicle: Lease @ $300/mo. Fuel/Oil/Repairs @ $275/mo. Ins. @ $100/mo.	$5,075	$5,075	$10,150	$10,150				
Lodging/Meals/supplies: 10 per year @ $100 each	$1,000	$1,000	$2,000					$2,000
Administration:	$5,400	$5,400	$10,800					$10,800
Insurance: Board and Business	$850	$850	$1,700					$1,700
Subtotal: Personnel Support	**$72,795**	**$75,169**	**$147,964**	**$90,000**	**$0**	**$0**	**$0**	**$57,964**
Objective 1: Best Management Practice Implementation								
Task 1: Cropland/Grassland BMP Implementation								
Product 1: Cropland BMPs - 250 acres								
(Filter strips, waterways, diversions, seeding, wetland restoration)	$15,000	$15,000	$30,000		$15,000	$15,000		
Product 2: Grassland BMPs - 5,000 acres								
(Rotational grazing, water development, exclusion fence, etc.)	$100,000	$100,000	$200,000	$50,000	$125,000	$25,000		
Task 2: Animal Waste Management Systems (AWMS)								
Product 3: Livestock Nutrient Management Systems								
Feasibility Studies: 6 @ $19,000 each	$57,000	$57,000	$114,000	$85,500		$28,500		
System Construction: 4 @ $135,000 each	$135,000	$405,000	$540,000	$155,000	$150,000	$135,000	$100,000	
Nutrient Management Plans: 4 @ $2,500	$2,500	$7,500	$10,000	$7,500		$2,500		
Subtotal: BMP Implementation	**$309,500**	**$584,500**	**$894,000**	**$298,000**	**$290,000**	**$206,000**	**$100,000**	**$0**
Objective 2: Informational Outreach								
Task 3: Information Campaign (9000 contacted)								
Product 4: Newsletters & web site maintenance								
Newsletters: 2 @ $400/yr. and Web site maintenance 2 yrs. @ $250/yr.	$650	$650	$1,300	$1,090				$210
Subtotal: Informational Outreach	**$650**	**$650**	**$1,300**	**$1,090**	**$0**	**$0**	**$0**	**$210**
Objective 3: Project Monitoring and Reporting								
Task 4 : Water Quality Monitoring/Evaluation								
Product 5: 14 water quality samples/testing/evaluation @ $65 each	$260	$650	$910	$910				
Task 5: Project Reports for EPA, DENR, and Partners.								
Product 6: Semi-annual, annual, final, and monthly reports (24)								
Subtotal: Water Quality Sampling and Project Reports	**$260**	**$650**	**$910**	**$910**	**$0**	**$0**	**$0**	**$0**
Total Project Cost:	**$383,205**	**$660,969**	**$1,044,174**	**$390,000**	**$290,000**	**$206,000**	**$100,000**	**$58,174**
Match:								
Ineligible Match: Federal and/or Project Allocated			$290,000		$290,000			
Match: Project Totals For Match			$754,174	$390,000		$206,000	$100,000	$58,174
Match Percentages:				**52%**		**27%**	**13%**	**8%**

Lower James River Implementation Project – Segment 2. Fourth amendment budget.

ITEM	Year 1 2009-10	Year 2 2010-11	Year 3 2011-12	Total	319-EPA	City of Mitchell	USDA EQIP/WHIP/CRP	LOCAL Producers, CDs, etc.	State CWFCF, SRF, etc.	JRWDD
Personnel Support										
Project Coordinator/Project Staff (1.5 FTE)	$19,155	$88,913	$88,913	$196,981	$125,221					$71,760
Payroll Tax		$7,996	$8,156	$16,152	$10,548					$5,604
Health Insurance (Dental only)		$2,485	$2,485	$4,970	$4,970					
Workman's Comp.		$1,242	$1,243	$2,485	$2,485					
Unemployment Insurance										
Retirement (6.5%)		$7,455	$7,455	$14,910	$14,910					
Supplies/Equipment:										
Office Supplies	$121	$680	$802	$1,603	$1,604					
Postage		$100	$100	$200						$200
Cell Phone Service		$450	$450	$900						$900
Computer Support										
Computer Maintenance	$20	$980	$1,000	$2,000						$2,000
Internet Service @ $20/month	$60	$180	$240	$480	$480					
Office Space with furniture @ $100/sq.ft.@ $15/sq.ft./Year										
(FAX, copier, scanner, land line phone, included)	$500	$1,986	$2,487	$4,973	$4,973					
Travel:										
Vehicle: Lease @ $300/mo. Fuel/Oil/Repairs @ $275/mo. Ins. @ $100/mo.	$2,326	$3,839	$6,166	$12,331	$12,331					
Lease @ $300/mo, Fuel/Oil/Repairs @ $275/mo, Ins. @ $100/mo										
Lodging/Meals/supplies: 10 per year @ $100 each	$1,543	$1,957	$1,500	$5,000						$5,000
Administration:	$4,388	$9,456	$9,456	$23,300	$2,500					$20,800
Insurance: Board and Business		$850	$850	$1,700						$1,700
Project Natural Resource Specialist (benefits included)										
Office Supplies										
Office Space Rent (150sq ft x $13.80 per sq ft)										
Travel										
Administration										
Subtotal: Personnel Support	**$28,113**	**$128,569**	**$131,303**	**$287,985**	**$180,022**	**$0**	**$0**	**$0**	**$0**	**$107,964**
Objective 1: Best Management Practice Implementation										
Task 1: Cropland/Grassland BMP Implementation										
Product 1: Cropland BMPs - 340 acres										
(Filter strips, waterways, diversions, seeding, wetland restoration)		$20,000	$35,750	$55,750			$39,000	$15,000	$1,750	
Product 2: Riparian Management / BMPs - 5,175 acres										
(Land use agreements/easements, water development, streambank stabilization, fence, etc.)	49,093	214,339	214,340	477,772	185,543	55,249	$142,230	$73,625	$3,125	$18,000
Task 2: Animal Waste Management Systems (AWMS)										
Product 3: Livestock Nutrient Management Systems										
Feasibility Studies: 6 @ $19,000 each	$2,092	$43,320	$68,588	$114,000	$66,053	$6,743		$41,204		
System Construction: 5 @ $135,000 each		$322,500	$257,500	$580,000	$93,750	$53,257	$211,875	$121,118	$100,000	
Nutrient Management Plans: 4 @ $2,500		$5,000	$5,000	$10,000	$7,500			$2,500		
Task 3: Bank Stabilization										
Product 4: Bank Stabilization Lake Mitchell		$173,323		$173,323		$50,000.00			$123,323	
Subtotal: BMP Implementation	**$51,185**	**$778,482**	**$581,178**	**$1,410,845**	**$352,846**	**$165,249**	**$393,105**	**$253,447**	**$228,198**	**$18,000**
Objective 2: Informational Outreach										
Task 4: Information Campaign (9000 contacted)										
Product 5: Newsletters & web site maintenance										
Newsletters: 2 @ $400/yr. and Web site maintenance 2 yrs. @ $250/yr.		$650	$727	$1,377	$1,167					$210
Subtotal: Informational Outreach		**$650**	**$727**	**$1,377**	**$1,167**	**$0**	**$0**	**$0**	**$0**	**$210**
Objective 3: Project Monitoring and Reporting										
Task 5 : Water Quality Monitoring/Evaluation										
Product 6: 14 water quality samples/testing/evaluation @ $65 each		$260	$650	$910	$910					
Task 6: Project Reports for EPA, DENR, and Partners.										
Product 7: Semi-annual, annual, final, and monthly reports (33)										
Subtotal: Water Quality Sampling and Project Reports:		**$260**	**$650**	**$910**	**$910**		**$0**	**$0**	**$0**	**$0**
Total Project Cost:	**$79,298**	**$907,961**	**$713,858**	**$1,701,117**	**$534,944**	**$165,249**	**$393,105**	**$253,447**	**$228,198**	**$126,174**
Match:										
Ineligible Match: Federal and/or Project Allocated				$393,105			$393,105			
Match: Project Totals For Match				$1,308,012	$534,944	$165,249		$253,447	$228,198	$126,174
Match Percentages:					**41%**	**13%**		**19%**	**17%**	**10%**

APPENDIX B

INFORMATION & EDUCATION

Clean. Clear. Conservation.

Aurora County Conservation District

Clean.
Clear.
Conservation.

PO Box 277
Plankinton, SD 57368
District Phone: 605-942-7379
District Cell: 605-682-9668
NRCS: 605-942-7719 x 3
Fax: 605-942-7250
E-mail: auroracd@goldenwest.net

www.sdconservation.org

Lower/James River Implementation Project
721 West Havens
Mitchell, SD 57301

Changes come to Firesteel Watershed Project

While there are few certainties in life, one that comes to mind is that change is usually inevitable. And after more than 10 years as a stand-alone, independent program, a few of those inevitabilities have come to the Firesteel/Lake Mitchell Watershed Project. The project has recently been rolled into a larger Lower James River Implementation Project and has moved out of the USDA Service Center in Mitchell to a new location. New contact information is as follows:

David Kringen
Assistant TMDL Project Coordinator
Lower James River Implementation Project
West Havens Plaza
721 West Havens
Mitchell, SD 57301
605.990.5353
dkringen@mitchelltelecom.net

While the project has increased in scope, the Lower James staff will continue to work closely with Firesteel/ Lake Mitchell watershed landowners and operators to serve your conservation needs. Please feel free to contact myself or your local NRCS/Conservation District office to learn more about any technical and/or financial assistance we may be able to provide for the installation of conservation practices on your farm.

Conservation Stewardship Program (CSP)

By Heidi Rients

The 2008 Farm Bill authorized the Conservation Stewardship Program. Congress renamed and revamped the former Conservation Security Program to increase its availability and appeal to agricultural and forestry producers. The Conservation Stewardship Program is now available statewide through continuous sign-ups with announced cut-off application dates for ranking periods. The cutoff for the ranking period will be January 7, 2011.

Applying for CSP takes some prep work. A producer should have available all maps of land that they operate (owned and leased) to help the application process. Also, other information needed to complete the online Conservation Measurement Tool (CMT) is the producers' crop rotations, tillage practices, and information for other practices that are implemented in the field. Available in the office are copies of the questions needed to be answered for the CMT to help prepare for the application process.

NRCS administers CSP, a voluntary conservation program designed to encourage agricultural and forestry producers to adopt additional conservation activities and improve, maintain and manage existing practices.

Eligible lands include cropland, grassland, prairie, improved pastureland, rangeland, non-industrial private forestland - a new land use for the program - and agricultural land under the jurisdiction of an Indian tribe.

Producers interested in applying for CSP may learn more about the program at the following website: http://www.sd.nrcs.usda.gov/programs/CSP.html or stop in the office to pick up a copy of the CMT tool questions, CSP fact sheet, producer self screening to decide if the program is right for them, a list of the enhancements available to add to the application, and the CSP application.

Lower James River Implementation Project

West Havens Plaza
721 West Havens Avenue
Mitchell, SD 57301

Improving Riparian Corridors for Water Quality and Wildlife

A discussion on riparian management and potential opportunities for partnerships

Tuesday, February 15th, 2011
9:30 a.m.
West Havens Plaza
721 West Havens Avenue
Mitchell, SD 57301

Invited to attend:

SD Game, Fish & Parks
SD Department of Agriculture
Pheasants Forever, Pheasant Country Chapter
National Wild Turkey Federation, James River Gobblers Chapter
Ducks Unlimited
US Fish & Wildlife Service
Natural Resources Conservation Service
SD Department of Environment & Natural Resources
Lower James Resource Conservation & Development
City of Mitchell
Lake Mitchell Development Committee
Northern Prairies Land Trust
South Dakota Grasslands Coalition
Area Conservation Districts

Please **RSVP by January 31, 2010** to:

David Kringen, Assistant Project Coordinator
Lower James River Implementation Project
West Havens Plaza
721 West Havens Avenue
Mitchell, SD 57301
605.990.5353
dkringen@mitchelltelecom.net

Please include how many will be attending, and if you would like to reserve 10 – 15 minutes to discuss your organization's mission and conservation efforts as it relates to riparian areas. Microsoft Powerpoint will be available.

Study: Wolf Creek now 'very cloudy'

Ag runoff and bank stability cited for poor water quality

By ANNA JAUHOLA
The Daily Republic

A portion of Wolf Creek in Hutchinson County does not meet water quality standards, it was determined after the state performed a total maximum daily load (TMDL) study earlier this spring.

DOZARK

The total suspended solids in approximately 4 miles of the creek are higher than recommended, according to the study.

"At that point, we have to prepare a TMDL document that basically quantifies the load of suspended solids you can have," said Kris Dozark, environmental scientist with the South Dakota Department of Environmental and Natural Resources. "It's basically a limit of solids and maintains the beneficial uses."

Scientists like Dozark use studies to determine whether lakes or streams have impairments. Testing showed Wolf Creek was very cloudy, which lead the DENR to conduct a TMDL.

Officials said Wolf Creek is suffering due to agricultural runoff from row crop fields and grassland. Dozark said bank stability also plays a part in the stream's clarity and health.

Mostly, the creek supports warm water marginal fish propagation. Dozark described the stream as "not the greatest fish habitat around" and that officials expect occasional fish kills. The impaired nature of the stream will not affect anything except the fish propagation, Dozark said.

"It shouldn't affect the quality of water livestock are drinking," he said.

And it poses no risk to humans, either.

To prepare the TMDL, Dozark and other officials studied the entire Wolf Creek Watershed and found the affected mileage is just downstream of Highway 42.

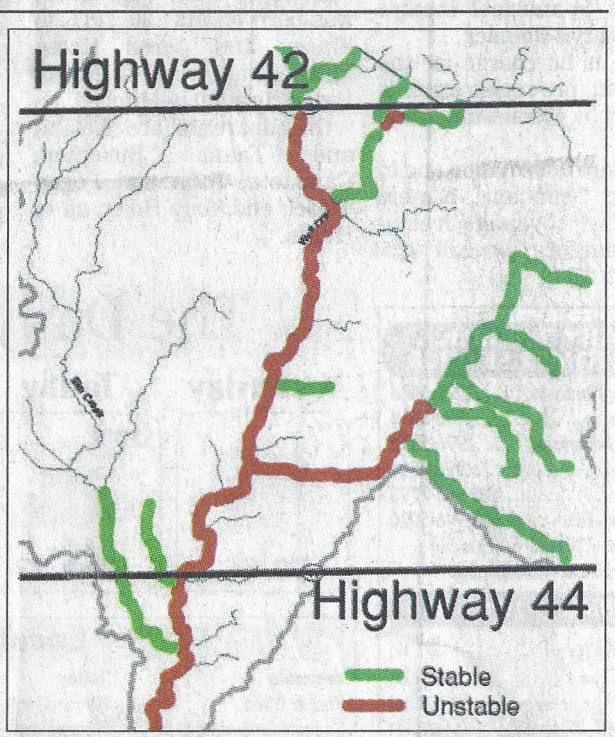
The impaired section of Wolf Creek has two water quality sites, which are monitors placed in the stream. The DENR collected samples at each site to analyze, which yielded poor results.

The DENR is also studying the entire Lower

See WOLF, Page 11

Chris Huber/Republic

This stretch of Wolf Creek, between state Highways 42 and 44 four miles southwest of Bridgewater, was deemed unstable after Hutchinson conducted a water quality test earlier this spring. Below, a map of the Wolf Creek Watershed.



WOLF

Continued from Page 1

James Watershed Assessment, including Dawson, Firesteel and Mud creeks.

A TMDL has been submitted to the Environmental Protection Agency for Dawson Creek, and the DENR is waiting for approval before implementation, Dozark said.

Any TMDL has to go through a 30-day public notice period, which gives the public a chance to read documents and send comments. During that same period, the DENR has to respond to any comments in print and attach those to the back of the TMDL.

The EPA takes one more look at the comments and either approves or disapproves the document.

"If they approve it, it's done and then goes into implementation phase," Dozark said.

Wolf Creek's TMDL is already in implementation stage, having completed some bacteria testing, he added, but other creeks in the area are still waiting.

In addition, approximately 340 acres in the Wolf Creek Watershed have been voluntarily placed in the Conservation Reserve Enhancement Program (CREP), according to the TMDL study. The program helps agricultural producers protect land by decreasing erosion, restoring wildlife habitat and protecting ground and surface water, according to the Farm Service Agency website.

CREP is a branch of the Conservation Reserve Program and is a partnership among tribal, state and federal governments and land owners.

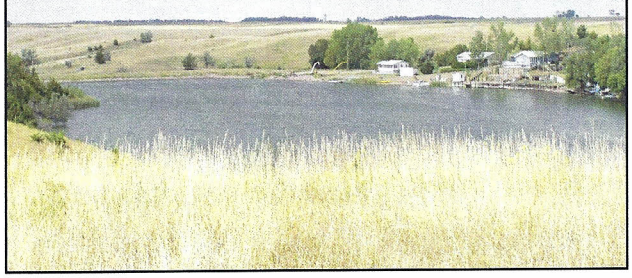
Particularly for situations like that on Wolf Creek, CREP addresses issues on local and national levels that affect water quality, loss threatened and endangered species' habitat, soil erosion and reduced fish habitat.

The TMDL project has been ongoing since 2005, when the James River Water Development District began planning the project, according to the TMDL document Dozark prepared.

James River Riparian Area Management Program

Restoring and protecting our water resources through locally led conservation

Grasslands Critical to Clean Water



James River Implementation Project
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LOWER JAMES RIVER IMPLEMENTATION PROJECT

Manure Management

LOWER JAMES RIVER IMPLEMENTATION PROJECT

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SOUTH DAKOTA NRCS AGRICULTURAL NUTRIENT MANAGEMENT TEAM

John Lentz
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Mitchell, SD 57301
Phone: 605.996.1564 Ext. 5
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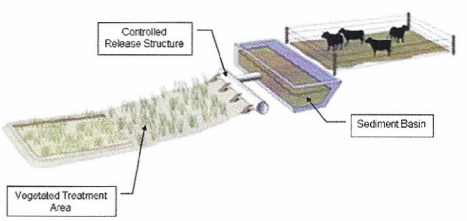
www.sd.nrcs.usda.gov/technical/Nutrient_Management.html

Animal feeding operations that do not properly contain and utilize their manure resources can have negative impacts on surface and ground water quality within the James River watershed. Bacteria contained in manure can enter surface waters via runoff and make those waters unsafe for recreation and drinking. Nutrients contained in the manure can also impair water quality.

The Environmental Quality Incentives Program (EQIP) is the principal program of the USDA Natural Resources Conservation Service (NRCS) for delivering financial assistance to private landowners interested in installing an Animal Waste Management System (AWMS) or other approved alternative. In addition to EQIP, funding may also be secured through the Lower James River Implementation Project to assist with overall project costs.

If you would like to discuss how improvements might be made to your feeding operation and learn more about the financial package that may be available to you, contact your local NRCS office to schedule an initial visit with NRCS and Lower James River project personnel.

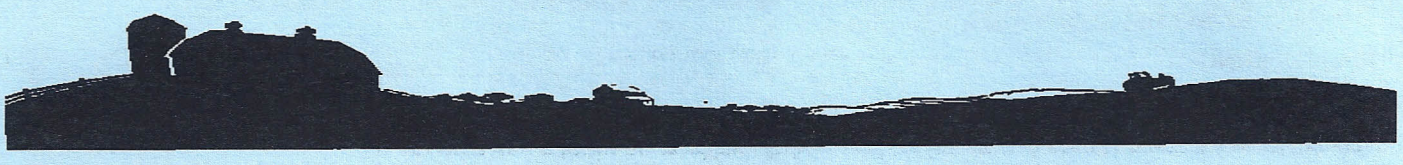


A Vegetative Treatment Area (VTA) can be an economical alternative to retention ponds for controlling runoff from a livestock facility.

February 2012

AURORA COUNTY CONSERVATION NEWS

Clean. Clear. Conservation. Volume 5 Issue 1



Inside this issue:

Comprehensive Nutrient Management Planning; Good for the Environment, Good for the Bottom Line!

A well thought out nutrient management plan can be a win-win for the environment and for producer's bottom line. A properly taken soil test is the first step in a comprehensive nutrient plan. It can ensure next year's crop receives the nutrients it needs for optimal yield and it can prevent an over-application of costly fertilizer which could potentially be lost to the environment.

Fall is an ideal time to collect soil samples, a regular series composite soil sample, which includes nitrogen, phosphorus, & potassium, typically costs less than $15/field. It is very important to soil sample at the correct depth – according to the current SDSU guideline for immobile nutrients such as phosphorus, potassium, and zinc, take a zero to six-inch sample. Take a 6-to 24-inch depth sample for mobile nutrients, such as nitrate-nitrogen, sulfur, and chloride. Once acquired, those samples should be dried, bagged, and labeled, so the lab can extract the appropriate nutrients. Although they are separate samples from two depths, this would equal one sample with one lab fee.

About 15 to 20 cores should be pulled randomly in an 80-acre field avoiding hills and draws to get a whole field composite. About one pint from each depth should be used as the composite sample. Soil samples should be kept cool or frozen until sent to the lab for analysis. Since a pound of soil is literally alive with millions of living microorganisms keeping the sample cold slows decomposition and further break down of organic matter which could give an erroneous nitrogen test result. Farmers using precision farming technology, such as variable rate spreaders, may want to take more extensive samples based on soils, topography, grid samples and other factors to set up zones which will provide a basis for a better prescription for those fields.

Another important step for livestock producers who use manure for part or all of their fertility program is to collect, analyze, and properly interpret manure tests. It is recommended that a manure test be taken at least annually from each manure source on the farm ie.. one test for solid feed lot manure, one test for liquid holding pond water, etc.... After a producer has several years worth of tests it will be much clearer what the actual value of their manure resource will be and application calculations can be fine tuned.

The NRCS Agricultural Nutrient Management Team (ANMT) can assist producers with the proper sampling methods and currently has a grant available to pay for manure testing if the producer is willing to develop a nutrient management plan on their operation. The team also has portable weight scales and is available to weigh and calibrate manure spreaders to help producers do a better job of nutrient application. With a realistic yield goal in mind, NRCS can calculate how much manure and/or commercial fertilizer will be needed to supply the fertility needs of next year's crop. By applying the correct nutrient rate producers can save money & decrease the risk of nutrients running off into surface water or leaching into groundwater. Producers should take into account all sources of nutrients to figure out their fertilizer recommendations including the legume credits, manure credits, soil test levels, and match those up with crop needs.

Improving and protecting water quality is something that everyone should be actively engaged in since it truly is fundamental to our survival and the future of our children. Producers with animal feeding operations (AFO) have a number of resources available to obtain technical and financial assistance if they wish to install a Comprehensive Nutrient Management Plan (CNMP). A CNMP includes such elements as Manure and Wastewater Handling & Storage, Nutrient Management, Record Keeping, Land Treatment Practices, and Feed Management. For producers with operations less than 1,000 Animal Units the NRCS ANMT can provide free engineering, soils, and agronomic assistance to design a CNMP for their operation.

The Environmental Quality Incentives Program (EQIP) is a USDA cost share program which provides financial incentives to implement a CNMP. A number of areas including the James River, Corsica Lake, & Platte Lake have special EPA 319 projects which can also provide some very good incentives for installing a CNMP. If you or your family intend to remain in the livestock business long term and you currently are in a situation where your operation may be impacting the water quality of a river, stream, lake, or aquifer it may be the right time to seek assistance from USDA to fix the resource concern and secure a sustainable operation for many generations to come.

More information is available through the Plankinton NRCS office or conservation district office or online at the comprehensive nutrient management planning page of the South Dakota NRCS Web site: http://www.sd.nrcs.usda.gov/technical/Nutrient_Management.html

SD conservation suffering amid ag boom, officials say

Input gathered at local meeting for statewide plan

By TOM LAWRENCE
The Daily Republic

High prices for farm commodities have farmers smiling, but those profits are having a negative impact on South Dakota's natural resources.

That reality was made clear during a meeting Wednesday evening at the Highland Conference Center in Mitchell to discuss the South Dakota Coordinated Plan for Natural Resources Conservation.

"We're getting too far away from some of the CRP (Conservation Reserve Program) programs," said Jim Lehi, manager of the Davison County Conservation District. "And the wetlands are disappearing."

Lehi said he doesn't blame farmers. With record corn prices and other high returns for ag products, farmers are planting land that was once set aside either for conservation reasons or because the return wasn't worth the investment.

He said there is little his agency can do other than ask people to be more aware of conservation.

"You can suggest," Lehi said. "It's ultimately up to the landowner what they want to do."

Across the state, land that has been used for pasture and rangeland is being farmed, according to staffers with HDR Engineering, of Sioux Falls, who conducted the meeting. The company was hired by the state to do so.

It was the sixth of seven meetings held in cities across

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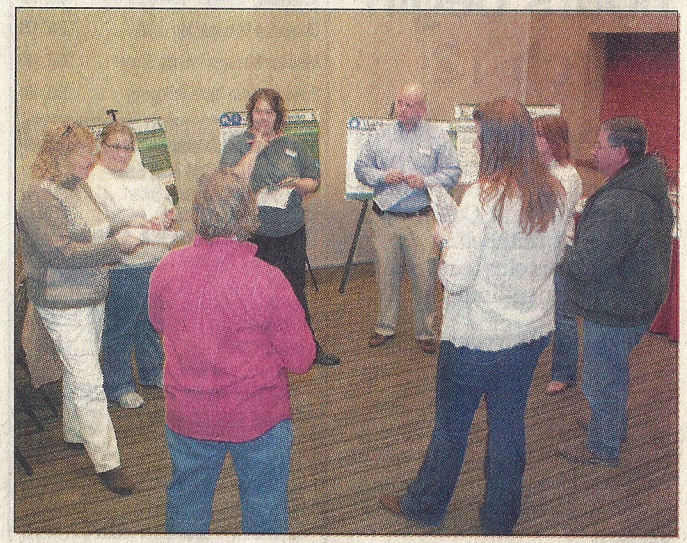

Tom Lawrence/Republic

Rebecca Baker and Mike Coleman, back center, lead a discussion on a state conservation plan during a meeting Wednesday night in Mitchell. A small gathering of people attended the meeting at the Highland Conference Center.

AG

Continued from Page A1

South Dakota to garner feedback on local and state conservation efforts and goals. Fewer than 10 people attended, and most were involved with area conservation districts.

Jill Rust, a staff biologist for HDR, said the same concerns are being raised at all the meetings. People are concerned that conservation, which has long had a high priority in the state, is being forgotten in a rush for profit.

The South Dakota Coordinated Plan for Natural Resources Conservation was first adopted in 1991. Initial goals were to reduce erosion, improve groundwater and overall water quality and bolster pasture and rangeland in the state.

Air quality, the protection of wildlife habitat and preserving wetlands were among the issues added to the goals in a 2007 revision of the plan. Increasing public awareness and raising money from outside sources were also included.

That plan is now updated every five years, and that's why these meetings are being held, according to Brian Scott, a natural resource specialist for the South Dakota Department of Agriculture, which oversees the conservation program. The state wants to learn if people feel the 2007 goals were met, and what programs should be implemented in the future.

Changes in agricultural methods, new uses for agricultural products, and improved understanding of conservation benefits and methods

SCOTT

were the primary forces in efforts to revise and expand previous plans.

The grant program issues $500,000 to districts in the state annually. Originally, the state wanted to set aside up to $1.2 million for the program, Scott said.

In fact, the money, which came from state gas tax revenue, never topped $900,000, he said.

In 2011, the Legislature decided to sever the program's ties with the gas tax, Scott said, and decided to give it a flat $500,000.

A revolving loan program also provides money for projects in the district. It has 15 outstanding loans totaling more than $104,000 and $70,000 in available money.

The Davison Conservation District does not have any outstanding loans but has received some grant money in the past, Lehi said.

It usually receives $15,000 to $20,000 for a three-year program, he said.

Dave Kringen, a James River Water Development District employee, attended Wednesday's meeting to see if any dollars were available for the Lower James River Implementation Project.

Kringen said he and colleague Dave Bartel, who is also the acting director of the JRWDD, are working to improve water quality in the region.

They work with feedlot owners to reduce the flow of nutrients into the river, and encourage farmers to place buffer strips between their land and the river.

The project sought $634,000 for 2012 but received $281,000, Kringen said.

The money comes from a federal program that is passed through the state. He said he hopes to access some grant money from the state conservation program.

Scott said the ultimate goal is to combine the money allocated to the districts with other state programs, federal dollars and money from private conservation agencies.

Rolled together, they can fund larger projects that might impact more than one conservation district, he said.

There are 69 conservation districts in South Dakota. Some counties contain two districts while some districts encompass two or more counties.

Wade Strand is the chairman of the Davison County Conservation District. He leads a five-member board, the members of which are elected to four-year terms.

Bruce Haines, of Mitchell, is the vice chairman, and other board members are Paul Hetland, of Mitchell, Lewis Bainbridge, of Ethan, and Darwin Kreth, of Mount Vernon.

All five seats will be up for election on the Nov. 6 ballot. Normally, the seats are filled on a rotating basis, but appointments to the board have compelled all five to be up for grabs this year.

Lehi said tree plantings, native grass seedings and site preparation continue to provide the majority of the work for the district.

Lehi said this year marks the 75th anniversary of conservation districts in the state. He said he'd like to come up with an idea to mark their impact.

"I haven't come up with a good idea yet," Lehi said.

The State Conservation Commission is governed by a nine-member citizen commission. Its members are appointed by the governor and represent farming, water development districts, the tree industry, and the South Dakota Municipal League. There is one at-large member.

Current members are:

- Farmers: Gerald Thaden, of Marvin, Alan Vedvei, of Lake Preston, Tom Wolles, of Colton, David Fischbach, of Faith.
- Tree industry: Wayne Bunge, of Rapid City, and Charlie Moe, of Rosebud.
- Water development districts: Tom Glover, of Burke.
- Municipal League: Aaron Kiesz, of Aberdeen.
- At-large: Doug Hansen, of Webster.

For more information or to submit comments, go to www.coordinatedplanfornaturalresourcesconservation.com, or send them to Bill Smith, South Dakota Department of Agriculture, Division of Resource Conservation and Forestry, 523 E Capitol Ave., Pierre, S.D. 57501-3182.

Lower James River Watershed

Five Year Strategic Plan Meeting

Wednesday, June 27th, 2012
10:00 a.m.

West Havens Plaza
721 West Havens Avenue
Mitchell, SD 57301

The 5-year strategic plan is the new guidance document for watershed-based, water quality projects. The document will be used as both a guide and as the basis for future funding efforts. Please consider attending and have a voice in the future of the Lower James River Implementation Project.

Please RSVP by Friday, June 22

Dave Kringen, Project Coordinator
Lower James River Implementation Project
dkringen@mitchelltelecom.net
(605) 990-5353

Watershed meeting focuses on goals in difficult era

By TOM LAWRENCE
The Daily Republic

Dave Kringen is a realist facing a less-than-ideal situation.

Kringen, the project coordinator for the Lower James River Implementation Project, said he knows feedlot runoff and other agriculture-related programs are causing problems with the watershed.

But he said all he and others can do is ask producers to try to lessen the runoff.

"Basically it comes down to feedlot improvements in areas immediately adjacent to the streams and the rivers," Kringen said. "It's a volunteer project. It's ultimately up to the producer if it's a good fit for his farm or his operation.

"Things, well, they are what they are. The way commodity prices are and land values, it's tough to com-

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WATERSHED

Continued from Page A2

pete," he said. "We do the best we can."

Kringen led a five-year strategic planning meeting for the Lower James River Watershed in Mitchell Wednesday. James River Water Development District Manager Dave Bartel, representatives of the National Conservation Service and a representative of a consulting firm who wrote a report on the watershed also attended.

The federal Environmental Protection Agency urged that agencies set goals and targets to improve watersheds, Kringen said.

"We were kind of the guinea pig for it, the lower Jim," he said.

Kringen said ag producers will be advised of best management practices to reduce runoff.

"We can encourage them, certainly," he said.

"We've got priority feeding areas. Some feedlots are worse than others."

Kringen said he and the agencies involved can contact the producers and offer assistance and advice.

But it's getting more difficult to get the message out.

Money authorized by the federal Clean Water Act to promote watershed restoration has been reduced, and other dollars dedicated to the effort are scarce as well.

"We need to use our dollars as widely as possible," he said.

The report studied Wednesday is a draft that will be reviewed by the South Dakota Department of Natural Resources, Kringen said.

He said he hopes to persuade feedlot owners and others in the ag business to care more about the environment and to willingly create less problems for it.

"I think there's certainly room for improvement," Kringen said.

Board pumps money into James River plan

Funding offered to CRP landowners to keep cattle away from waterway

By ANNA JAUHOLA
The Daily Republic

YANKTON — The James River Water Development District board approved $50,000 Tuesday for further enhancements to the Conservation Reserve Program.


BARTEL

Producers have two years to apply for funding through the district's program to improve the condition of creeks, streams and rivers.

"What I'm trying to do here is to bait the hook a little more to encourage producers to fence off these creeks and get cattle out of the creeks," said Dave Bartel, interim director of the district. He and the board members met at the Best Western Kelly Inn in Yankton.

The James River Water Development District promotes conservation, development and proper management of water resources and provides technical, organizational and financial assistance to perspective and existing projects. Funds are collected from taxpayers in the district, which includes Brown, Marshall, Spink, Beadle, Sanborn, Hanson, Davison, Hutchinson and Yankton counties, and portions of Aurora and Miner counties along the

See RIVER, Page A6


Chris Huber/Republic

Cattle stand in the water and on the bank of the James River on Tuesday near 243rd Street north of Mitchell.

RIVER

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James River from the North Dakota border to Yankton.

Bartel said he's working to implement the CRP enhancement program from Beadle County north to Brown and Marshall counties.

The program has been working well going toward the south from Sanborn County to Yankton County, but needs a boost to move forward north.

"I was told there was no money and no need to do implementation to go north," Bartel said. "I think there is a need and there's good work in Beadle County all the way to Brown County."

The funding is meant to entice producers to fence off waterways and help pay for watering systems for pastures.

The district board will approve funding requests up to 40 percent of the total cost of a project, Bartel said.

"We pay our share of that up front and NRCS (the Natural Resources Conservation Service) would monitor that the CRP program is run correctly," Bartel said.

CRP is a voluntary federal program to help "establish long-term, resource conserving covers on eligible farmland," according to the Farm Service Agency website. Grazing and haying is allowed on these lands with permission in an original or amended contract.

The James River Water Development District enhances the program by providing funding for producers to fence off waterways and install watering systems in pastures to prevent livestock from polluting the waterways.

Dave Kringen, total maximum daily loads (TMDL) project coordinator for the district, said the enhanced CRP program is similar to the Conservation Reserve Enhancement Program on the James River. But this program will not allow for public access.

"This is strictly a water quality practice," Kringen said.

"That would make it more popular if it doesn't create public access," said Gary Boomsma, board director. "Maybe this is the incentive or bump producers need to take a look at the program."

Bartel said he hopes this takes hold and helps Beadle, Brown, Spink and Marshall counties implement more plans to protect waterways and improve the water quality.

"This is our attempt to make a difference going north," he said. "We need to do something for those northern counties to get those streams to start healing."

In other business, the board:

■ Approved a $67,002 cash request from Kringen to implement phase three of a TMDL project, which is working toward improving water quality in waterways in the district. The board also authorized district staff to provide in-kind work needed on the project.

■ Approved a request for $12,000 to replace an earthen dam that washed out in Capital Township in Hutchinson County. Landowner Ron Guthmiller estimated the total cost of the project is $24,000.

■ Approved $10,492 to help Beadle County pay for the repair to a diversion dam's auxiliary spillway.

■ Approved $26,025 to help Beadle County pay for engineering costs already incurred for a 150,000-gallon water storage tank.

■ Approved $26,025 to help the city of Huron pay for engineering costs for a 500,000-gallon water tower, which will serve the Dakota Provision turkey byproducts plant in Huron.

■ Approved $1,425 to repair nine berm breaches in Brown County, which will prevent flooding on County Roads 18 and 13.

■ Approved $5,307.97 to repair a berm breach east of Columbia. The county will install a 30-inch culvert, which will protect County Road 11 from flooding, a main road leading to Columbia.