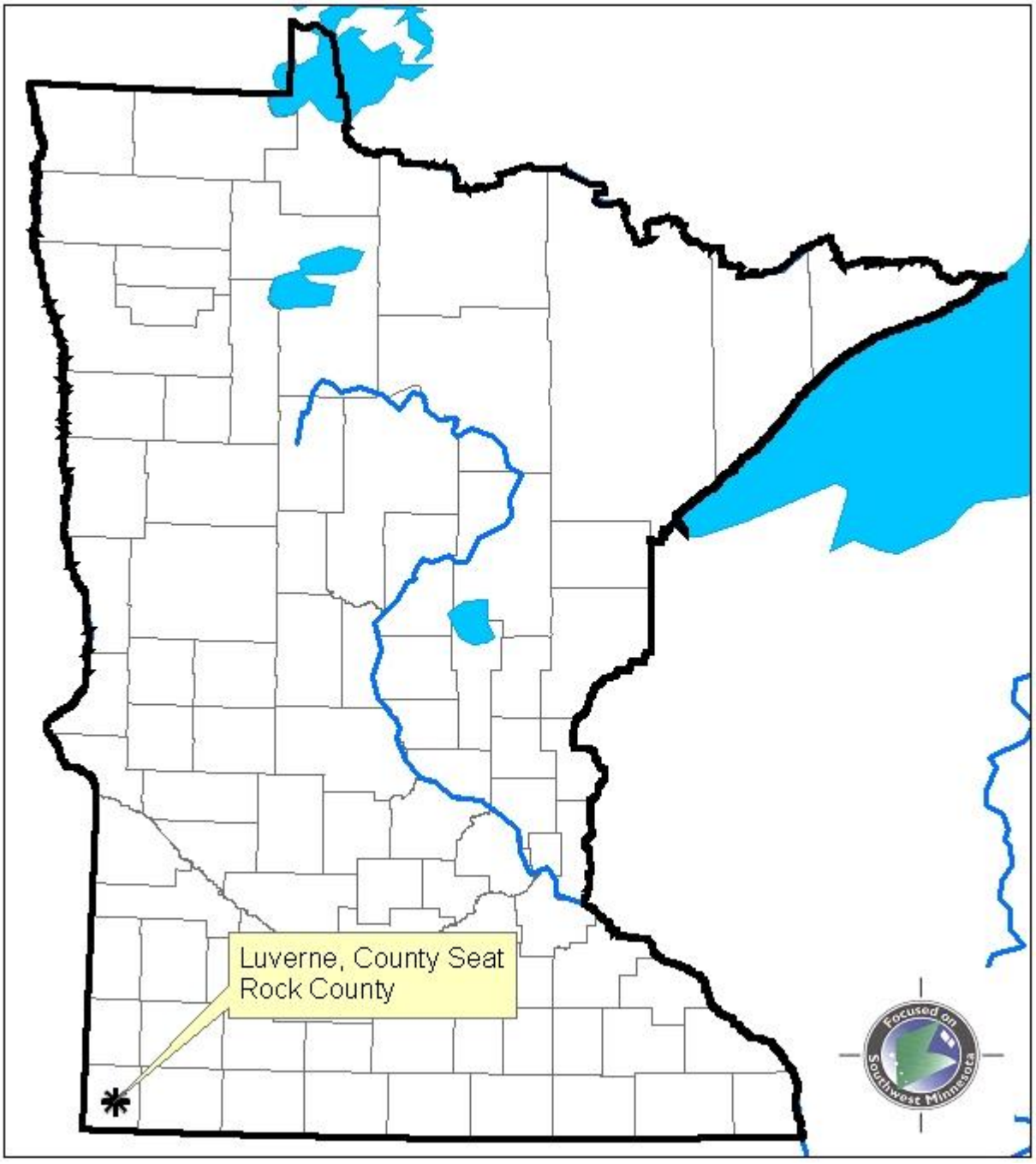
ROCK COUNTY WATER PLAN

A 10-year plan with a 5-year amendment to transition to One Wateshed/One Plan.

September 2017

Prepared for the Rock County Water Plan Task Force
By Rock County SWCD/Land Management Office



ROCK COUNTY WATER PLAN
A 10-year water management plan with a 5-year amendment to transition to One Watershed/One Plan.
September 2017

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For additional information on water management in Rock County, Minnesota, contact:

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A. Executive Summary

Rock County, population 9,600, is located in the southwestern corner of Minnesota, adjacent to Pipestone, Murray, and Nobles counties, and the states of Iowa and South Dakota. The City of Luverne (pop 4,677) is the county seat. Rock County is a typical prairie environment, and unique to Minnesota in that it lies completely within the Missouri River basin. As part of the Big Sioux River Basin, the county is divided into two major watershed units **(see attached map**). The Big Sioux watershed consists of approximately 130,800 acres, including the Split Rock Creek and Beaver Creek minor watershed. The Rock River watershed consists of about 175,800 acres, including the Kanaranzi-Little Rock minor watershed. The two major watersheds are similar geologically, with the same soil types, slopes and erosion areas.

A.1 Purpose & Introduction

The Rock County Water Plan is intended to identify existing and potential water issues in the context of watershed units and groundwater systems, informing specific implementation actions to achieve goals for sound hydrological management of water and related resources.

Requirements of a local water plan are set forth in current state statute (M.S. 103B.311, Subd. 4.). The plan must address management of water, effective environmental protection, and efficient resource management, and must be consistent with local water management plans prepared by counties and watershed management organizations wholly or partially within a single watershed unit or ground water systems. This Water Plan is a five-year management plan that will guide Rock County till the Missouri River Watershed One Watershed One Plan has been completed.

This is an amendment to the third edition of a local water management plan for Rock County. On January 19, 2016 the Rock County Board of Commissioners passed a resolution to amend the Comprehensive Local Water Management Plan. In order to better coordinate the water planning efforts of the Missouri River Watershed One Watershed One Plan process and the WRAPS process the County Board sent a letter to the Board of Soil and Water Resources on March 1, 2016 requesting a one year extension and the allowance to develop a five year amendment to the current plan rather than a 10 year water plan. The Board of Soil and Water Resources granted approval of the extension and amendment on May 2, 2016. The plan amendment was completed by Douglas Bos of the Rock County SWCD/ Land Management Office, with assistance from the Rock County Water Planning Advisory Committee, in 2017.

This amendment serves as a supplemental resource to the original plan with an attempt to balance the requirements of each water management organization to achieve a useful, strategic document that is easily understandable and useful for decision makers and residents of Rock County. It is intended to describe a vision for the future which protects and preserves our precious water resources of Rock County until the Missouri River Watershed One Watershed/One Plan is complete

Input to the Rock County Water Plan Amendment was provided by the Rock County Water Plan Task Force along with the Rock SWCD Board. Task Force membership at the time of Plan development has included:

Douglas Bos – Rock County SWCD/Land Mgt
Stan Williamson – Rock County Commissioner
Josh Ossefoort – SWCD Supervisor
Al Lais – City of Luverne Public Works
Brent Hoffman – Rock County Rural Water
Kurt Halfmann – Natural Resources Conservation Service
George Shurr – Rock County Landowner
Kevin Barnhart –Swine Placement Specialist
Justin Decker – Agronomist
Doug Goodrich – Board of Soil and Water Resources

Major accomplishments under Rock County's previous water management plans included:

Priority Concern #1 -Protect Ground Water Quality and Supply

- Provided technical assistance and guidance in developing and updating Well Head Protection Plans for Rock County Rural Water and the City of Luverne.
- Applied for and received a $150,000 grant from Minnesota Department of Ag to offer incentive payments to producers in the highly vulnerable areas of the Wellhead Protection Area to utilize improved nitrogen management practices.
- Partnered with Minnesota Department of Ag and Health along with Pipestone County to hire a Water Resources specialist to focus on promoting best management practices for better nitrogen management in the Wellhead Protection Areas.
- Participated in the Minnesota Department of Ag Targeted Township nitrate well sampling program. Sampled 132 private wells for nitrate levels in 7 townships with coarse textured soils.
- Are assisting the Minnesota Geological Survey with developing a county geological survey to better understand water resources in the county.
- Provided cost share for sealing 78 abandoned wells.
- Utilized MDA grant funds to provide additional funds for well sealing and cover crops.
- Provide services to collect and dispose of household hazardous waste and waste ag pesticides.

Priority Concern #2- Feedlot Program Management

- Completed a Level III Feedlot Inventory on all Rock County Feedlots.
- Provided technical assistance, cost share dollars and low interest money to correct water quality concerns for the 100-plus feedlots.
- Addressed runoff issues on 136 feedlots utilizing $580,733.00 of State Cost Share and $1,588,500.00 of USDA's Environmental Quality Incentive Program.

- Obtained funding to house an Engineer to assist in feedlot corrections, stream bank stabilization, rain gardens and other Best Management Practices
- Obtained an EPA 319 Grant from MPCA - $150,000 in funding for a Rock River Manure Management Grant.
    - $50,000 Incentives for utilizing liquid manure application meters
    - $27,500 Incentives for manure management planning
    - $5,000 Incentives for calibration of solid manure spreaders
    - Hosted a Manure Application and Demonstration field day.
- Coordinated annual Commercial Animal Waste Technician Re-certification workshops.
- Reviewed 310 manure management plans for land application of manure from feedlots.
- Conducted 450 feedlot compliance inspections and 109 construction inspections.

Priority Concern #3- Non-conforming Individual Septic Treatment Systems

- Obtained a Clean Water Legacy grant to assist 15 low income households with replacement of their failing septic systems.
- Applied for and received low interest funding from the Clean Water Partnership for replacing 27 failing septic systems in the Rock River Watershed.
- Utilized Minnesota Department of Ag's low interest Best Management Practices money to replace 36 failing septic systems.
- Inspected and permitted installation for a total of 143 septic systems to replace failing septic systems.

Priority Concern #4- Protect Surface Water Quality

- Facilitated a TMDL Assessment on the Rock River water quality impairments.
- Established a citizen Advisory Group, Technical Assistance group to assist with developing a TMDL implementation plan addressing the impairments of the Rock River.
- Developed and passed a resolution that requires a rod width grass buffer on each side, 3 to 1 side slopes and 4'or less bottom width for any watercourses that are cleaned out.
- Established two websites; one to educate and inform county residents about services provided by Rock County SWCD/Land Management and the other to promote and educate landowners on the Rock River Watershed TMDL process and implementation efforts.
- Partnered with the City of Luverne to design and install 6 rain gardens.
- Designed and installed 34 major stream bank stabilization projects and two stream crossings with USFWS and Clean Water Legacy funding.
- Received three Surface Water Assessment grants to sample various points on major streams in the county.
- Conducted intensive water sampling on 9 main tributaries to the Rock River with a 319 grant.

- Monthly sample 5 surface water points and 2 tile water points in the county to monitor water quality.
- Secured funding and facilitated removal of low head dam in City of Luverne.
- Applied for and received Clean Water Legacy dollars and Emergency Watershed Protection dollars to partner with the City of Luverne in stabilizing stream banks adjacent to and also leveling and capping of an old landfill site along the Rock River that contained high levels of heavy metals and other pollutants.
- Applied for and received two Clean Water grants to condition State LiDAR data to be able to prioritize catchment areas with high erosion potential and address pollution delivery to our impaired streams.
- Partnered with Minnesota Department of Ag on a $200,000.00 grant to utilize the conditioned LiDAR data to target these priority catchments with the highest potential for erosion, contact landowners of these properties and promote installation of conservation practices to address the erosion.
- Requested and received 1.7 million dollars of Flood Relief funding to repair existing conservation practices and install new conservation practices such as grass waterways, water and sediment control basins and terraces.
- Utilized $248,000 of state cost share dollars to assist producers with installing conservation practices.
- Promoted and provided technical assistance to install thousands of feet of terraces, hundreds of waterways, and numerous sediment basins.
- Hired an additional technician to provide initial planning and design on conservation projects.
- Participated with MPCA and member counties in the Missouri River Basin watershed to complete a Watershed Restoration and Protection Project (WRAPS).
- Applied for and received a One Watershed/One Plan Clean Water Legacy grant to develop a comprehensive water plan to cover all land within the Missouri River Basin Watershed.
- Provided cost share and technical assistance to plant thousands of trees in shelter belts and wildlife plantings.
- Partnered with US Fish and Wildlife along with Nobles and Pipestone counties to utilize a 1.1 million dollar grant to remove 2 low head dams and excavate 50 old stream oxbows to create Topeka Shiner Habitat for the endangered species.
- Utilized CREP technician to send out 49 proposals to landowners that owned possible sites for CRP/RIM and hosted a news conference highlighting those that participated.
- Facilitated the enrollment of 13 RIM projects for wildlife habitat and water quality.
- Mapped buffer needs and provided information to producers needing to add buffers along perennial streams.
- Designed and established 3 Native Buffer Projects – removal of invasive species and seeded to native prairie plantings

- 2 RIM Easement projects were enhanced with biodiversity inclusion.
- 20 acres of Pheasant Habitat Improvement were established through MnDNR program on private lands.
- Reviewed 1185 wetland impact applications to verify compliance with the Minnesota Wetland Conservation Act.
- Provided funding to the Prairie Ecology bus to provide recycling education to local schools.
- Participated in the area Environmental Fair held annually to educate 5th and 6th grade students on conservation related topics.
- Purchased a no-till drill to seed waterways, terraces and buffers with grass as well as seeding native grass plantings on RIM and CRP groun

A.1.a Public Input Requests and Informational Meetings

1/19/16	County Board Mtg on Resolution to amend the current plan.
3/01/16	County Board sent a request to BWSR to extend current plan one year and develop a 5 year amendment to direct water resource planning until the Missouri River Watershed One Watershed/One Plan is developed.
5/02/16	BWSR Board approves the one year extension and five year amendment.
11/22/16	Letters were sent requesting input on priority concerns from State Agencies.
12/14/16	Task Force and Public Meeting on Priority Concerns
00/00/17	Public Hearing / Rock County Commissioners meeting on Draft Water Plan.

A.1.b Plan Adoption and Amendment

Upon approval of this plan by the Minnesota Board of Water and Soil Resources (BWSR), Rock County has up to 120 days to pass an Adoption and Implementation Resolution. After final adoption, the plan may be amended in a similar process, by petitioning the BWSR Board, scheduling a public hearing, and sending notice to the required parties.

A.2 Description of Priority Concerns

The Priority Concerns listed below were selected by the Water Plan Task Force members by consensus, after carefully reviewing submitted concerns and comments.

Priority Concern 1. Protect ground water quality and supply.

Rock County's shallow aquifers demand vigilance in protecting groundwater quality and supply. Particular concerns include well head protection, abandoned wells, and future water supply.

Priority Concern 2. Feedlot Program management

Nutrient management plans are an important tool in preventing water quality issues. As well, controlling feedlot runoff can prevent problems before they happen.

Priority Concern 3. Non-conforming Individual Septic Treatment Systems

Rock County has many dispersed farm and non-farm residences in un-sewered areas. While the County has helped many property owners replace their older individual septic treatment systems, there is a great need and demand to continue upgrading systems.

Priority Concern 4. Protect surface water quality.

Soil erosion is a continual challenge for an agricultural community. TMDL standards, and Wetlands and Endangered Species, are regulatory challenges that none the less demand current action.

A.3 Summary of Goals, Actions, and Projected Costs

Goals and Actions were selected to reflect address priority concerns, with a focus on principles of sound hydrological management.

Priority Concern 1. Protect ground water quality and supply.

Goals include protecting public water supplies and underground aquifers from contamination, and to ensure adequate water supplies for future growth and development.

Implementation actions include providing technical assistance for Well Head Protection, partnering with neighboring counties to hire a water resources specialist to educate the public and raise awareness of issues. This position would also coordinate local work groups to address high nitrates in public wellhead areas as well as targeted areas identified by the MDA Targeted Township Nitrate Testing Program. Other actions would include assisting Minnesota Geological Services in developing a County Geological Survey to aid in addressing drinking water issues, reviewing ordinances for effectiveness, developing a list of abandoned wells, cost-share sealing 100 wells, and working with water suppliers on long-term goals.

Projected costs would include $10,000 annually for the water resources specialist, yearly costs for public education, $1000 for advertising and $500 per well sealed, as well as annual in-kind services.

Priority Concern 2. Feedlot Program management

Goals include ensuring all feedlots meet standards for nutrient management plans and other state statutory requirements.

Implementation actions include verifying nutrient management plans, providing information on plan development, and providing assistance in correcting problems.

Projected costs would include $5,000-$200,000 per feedlot for technical and engineering assistance and cost-share for corrections, as well as annual in-kind services.

Priority Concern 3. Non-conforming Individual Septic Treatment Systems

Goals include bringing non-conforming ISTS systems into compliance.

Implementation actions include developing an ordinance to require upgrades at property transfer, developing an ISTS inventory in DWSMA and shoreland areas, and providing financial assistance to encourage replacement of systems.

Projected costs would include $9,000-$15,000 per septic replaced, $10,000 to develop an ISTS inventory, as well as annual in-kind services.

Priority Concern 4. Protect surface water quality.

Goals include preventing future contamination of surface waters, developing a plan to address TMDL limits, and addressing needs for wildlife habitat.

Implementation actions include targeting conservation practice placement by utilizing conditioned LiDAR data to prioritize catchments with the highest potential for erosion and delivery of pollutants to TMDL listed impaired waters. The MPCA Watershed Restoration and Prioritization process will also aid in targeting conservation practice placement. Conservation practice technicians will survey, design, layout and verify conservation practices. Other actions will include reviewing storm water permits and ordinances, providing public education and outreach, participating in TMDL planning, continuing yearly water samples, and coordinating wetland determinations

Projected costs would include $50,000 annually for the conservation practice targeting, $100,000 annually for technicians, as well as annual in-kind services.

A.4 Consistency with Local, State and Regional Plans

Rock County Land Management Office administers Rock County's land use and zoning plans and ordinances. This helps to maintain consistency between this plan and those documents. No other plans were received for review.

A.5 Summary of Recommended Amendments to Other Plans and Official Controls

No specific amendments are recommended at this time. It would be recommended to incorporate data from this plan into other local plans and controls when they are updated.

B. Priority Concerns

B.1 Identification of Priority Concerns

Priority Concerns for local water management were selected by Water Plan Task Force members after reviewing the concerns submitted by state and local agencies and other stakeholders. (See *Priority Concerns Scoping Document* appended.)

Local water management concerns and comments were received from:

- Martin Township (Rock County)

- Nobles County
- Minnesota Board of Water and Soil Resources
- Minnesota Department of Agriculture
- Minnesota Department of Health
- Minnesota Department of Natural Resources
- Minnesota Pollution Control Agency
- NRCS

A summary of concerns was presented at the public input meeting and discussed. Staff then reviewed and refined focused Priority Concerns for Task Force consideration. After further discussion, the Task Force members selected the Priority Concerns by consensus.

B.2 Assessment of Priority Concerns

Rock County consists of eight incorporated cities, two unincorporated communities, and 12 townships on 310,400 acres of land and water area. The Minnesota State Demographic Center estimates that there are 9,601 residents in the County as of 2015, 0.6% more than the 9541 people counted in the year 2005 US Census and 2.0% less than the 9,806 counted in 1990. Although total population has declined, it appears to have stabilized and the number of households is growing. In 2000, the US Census counted 3,843 households in the County. In 2015, the Demographic Center shows a 2.2% expansion to 3,931 households. The largest number of new households are estimated in the largest cities, Luverne and Hills.

Rock County Water Plan

Population

Civil Division	2005 Population	2015 Population
Battle Plain Twsp	243	192
Beaver Creek City	246	291
Beaver Creek Twsp	366	390
Clinton Twsp	261	275
Denver Twsp	213	165
Hardwick City	199	191
Hills City	555	687
Jasper City (part)	74	56
Kanaranzi Twsp	297	245
Kenneth City	54	61
Luverne City	4596	4707
Luverne Twsp	490	486
Magnolia City	204	215
Magnolia Twsp	238	211
Martin Twsp	432	397
Mound Twsp	248	234
Rose Dell Twsp	214	205
Springwater Twsp	256	265
Steen City	173	185
Vienna Twsp	182	143
Rock County	9541	9601

Source: Minnesota State Demographic Center

Agriculture is the primary economic driver in the county, with some small manufacturers and processors located in the cities. The Minnesota Land Management Information Center (LMIC) found that about 85% of the land area in Rock County was cultivated (Land Use/Land Cover 1988-1990, **see map attached**). Interstate 90 runs

east-west across the county, connecting to Interstate 29 at Sioux Falls, SD, the nearest metropolitan area. US Highway 75 runs north-south, as does MN State Highway 23. I-90 crosses the Rock River at Luverne, and Beaver Creek just west of the City of Beaver Creek. BNSF Railway has a main line that runs through the county on its way between Willmar, Minn. and Sioux City, Iowa. The Minnesota Southern Railway short line runs from the Union Pacific at Worthington through Luverne where it crosses the Rock River. The short line connects to the BNSF, which crosses Beaver Creek near the community of Manley.

Rock County derives its name from the red Sioux Quartzite of Precambrian Age, which outcrops just north of Luverne and at several locations in the northern half of the county. This quartzite underlies the entire county at varying depths to over 400 feet. A younger Cretaceous bedrock overlies the Sioux Quartzite in eastern and southern Rock County. Glacial Till covers bedrock in most places, with wind-blown loess covering that from one-ten feet. The land form is gently rolling with elevations ranging from 1780'-1370' above sea level. Normal annual precipitation is approximately 26-27" per year; although in 2005, Rock County recorded a 33" average annual precipitation level.

Priority Concern 1. Protect ground water quality and supply.

Groundwater is generally drawn from three aquifers—unconsolidated glacial-drift deposits, the Sioux Quartzite, and the Cretaceous bedrock aquifer. In the glacial drift, well depths range from 30-240 feet and yield 25 to 500 gallons per minute, with generally good water. The Sioux Quartzite wells range 120-1300' deep and yield 5-100 gallons per minute; commonly hard water with large sulfate concentration. Wells drawing on the Cretaceous are commonly 300-400' and yield 5-25 gallons per minute, and do not typically meet recommended standards for drinking water. The water quality in many individual wells is known to have deteriorated over the years, quite often high in nitrates and sulfur **(see attached map**). Details on historic groundwater supply are available in previous editions of this water plan.

a. Well Head Protection

The City of Luverne (CL) and Rock County Rural Water (RCRW) both have Well Head Protection Plans in place, adopted in July 2004 and in June 2003 respectively. Both have completed updates with RCRW currently in an update process. Other public water suppliers are considering developing wellhead protection plans.

The City has two Drinking Water Supply Management Areas (DWSMA) delineated, north and south of the city **(see attached maps)**. The City has a permitted capacity of 600 million gallons per year; however, due to well closures and withdrawal limits, only has a current capacity to pump 365 million gallons.

The RCRW DWSMA is located farther south of Luverne, in Clinton and Kanaranzi townships. RCRW has permitted capacity of 300 million gallons. An expansion is under consideration, dependent on study of potential environmental effects.

The City of Luverne and RCRW draw water from surficial aquifers of the Rock River valley. Ground-water flow in the aquifer is integrally linked to flow in the Rock River. Water sampling in the 1990s indicated that 25-40% of water from these wells comes from the river, demonstrating the importance of protecting recharge area and surface runoff. Additional details on the 1990s sampling are available in the previous edition of this water plan. Both public water suppliers have connected to the Lewis and Clark water supply pipeline to supplement additional water to meet demand.

Both public wellhead areas' aquifers are shallow and located below coarse textured soil making them very susceptible to influence of nearby land use practices. Nitrate levels in some of the western wells in the Rock County Rural Water wellhead area are exceeding the drinking water standard of 10 ppm with test results as high as 22 ppm of nitrate.

Rock County is currently assisting Minnesota Geological Services in locating and verifying existing well data on 679 wells. This data will be utilized to create a County Geological Survey. The survey will guide future decisions and work plans that will assist in addressing groundwater sensitive area issues as well as possible new well locations.

b. Abandoned Wells

New wells drilled today have an established permitting process, which allows the public to track well locations and characteristics. However, there are an unknown number of wells put in place since settlement that continue to provide pathways for potential pollutants to reach the county's aquifers. Established farmstead sites are often abandoned as agricultural operations consolidate into larger units and rural resident choose different home locations. Each of these sites typically has a well that needs to be correctly sealed and abandoned. As well, users who hook to rural water systems need to decommission their existing wells. Rock County has worked for many years with landowners to assure that abandoned wells are properly sealed, avoiding a potential source for groundwater contamination. There continues to be a strong demand for cost share assistance to assist with sealing abandoned wells.

Rock County Water Plan
Wells Sealed

	Number
2007	13
2008	13
2009	10
2010	11
2011	16
2012	29
2013	5
2014	20
2015	11
2016	18
	146

Source: Rock County SWCD/Land Mgt

c. Future Water Supply

With the poor quality of groundwater outside the glacial drift aquifers, the rural water system will be an increasingly important asset for communities, livestock producers and rural residents **(see attached maps)**. The Rock County Rural Water System currently provides service to a broad area covering the southern two-thirds of the county. Lincoln-Pipestone Rural Water System (LPRWS) provides service in the northern part of the county. It is important for the County to work with cities and rural water suppliers to assure a sustainable quality and quantity of water far into the future.

The City of Luverne, RCRW and Lincoln-Pipestone are members of the Lewis & Clark Rural Water System (L&CRWS), which currently provides treated water from the Missouri River to the Sioux Falls area, Northwestern Iowa and Southwestern Minnesota. L&CRWS is using a series of wells outside Vermillion, SD, to tap into aquifers near the Missouri. Both public Water Suppliers in Rock County are now connected to the L&CRWS to meet water supply demands.

Priority Concern 2. Feedlot Program management

The overall number of farms in Rock County has been declining to stable, similar to trends across southwestern Minnesota. Fewer farms have cattle, hogs or sheep; however, those who continue in livestock production have many more animals on their farms as shown in the table on the right. The number of cattle recorded in the 2012 US Census of Agriculture shows the largest increase with 56% more cattle in the county followed by an increase in the number of hogs and pigs by more than 30%. All of these animals create a fair amount of manure which must be safely managed. The number of rural households is also projected to grow in some townships, potentially leading to future land use conflicts with feedlots and manure management.

Rock County Water Plan

Census of Agriculture

	2002	2012
Number of Farms	721	689
Land in Farms (acres)	299,090	280,537
Average Size of Farms (acres)	415	407
Farms with Irrigated Land	10	19
Farms with Cattle	346	420
Cattle and Calves Inventory	52,201	81,438
Farms with Hogs	138	95
Hogs and Pigs Inventory	221,382	291,435
Farms with Sheep	36	23
Sheep and Lambs Inventory	1,759	2354

Source: USDA National Agricultural Statistics Service

a. Nutrient Management

Nutrient management programs are intended to prevent and mitigate non-point nutrient contamination of water and soil resources. This is particularly important in the DWSMAs, as the Rock River's demonstrated sensitivity and rapid infiltration rates mean today's nitrates may well show up in tomorrow's well water. Technical assistance from county staff can help farm operators understand the variety of rules and regulations, which can be confusing and seemingly contradictory. While larger operations are required to develop formal management plans, more modest feedlots can also benefit from the same sound scientific management principles.

b. Feedlot Runoff

There are currently 600 registered feedlots in Rock County, spread fairly evenly across the townships **(see attached map)**. Feedlot expansion continues yearly especially in the last six years as the chart on the right shows. Any feedlot expansion or new feedlot sites must meet the Minnesota Pollution Control Agency Feedlot rules. It is easier to stop potential pollution at a fixed source than to try to mitigate non-point problems downstream. Rock County has been successful working with feedlot owners to correct issues, and local demand for assistance is expected to continue.

Rock County Water Plan

Feedlot Construction

Permits Issued	Number
2007	10
2008	8
2009	1
2010	4
2011	12
2012	16
2013	11
2014	15
2015	19
2016	15
	111

Source: Rock County SWCD/Land Mgt

Priority Concern 3. Non-conforming Individual Septic Treatment Systems

All of the incorporated cities in Rock County are served by sanitary sewer systems, except Kenneth, which has a group septic system. The City of Luverne also is served by a storm sewer system, which discharges into the Rock River. People living in un-sewered areas of the county also have waste that must be treated, typically by Individual Septic Treatment Systems (ISTS) **(see attached map**).

a. ISTS

New septic systems must be installed to current practices and standards (Minnesota Statutes Chapter 7080). However, there are still many systems throughout the county which do not conform. A number of counties in the area require that facilities be updated on property transfer, which would catch currently unsafe systems and help prevent future problems. Rock County has been successful working with individual property owners to correct non-conforming systems, and local demand for assistance is expected to continue. The table below lists the new septic systems installed in Rock County and includes both replacement septic systems and septic systems serving new sites with replacement systems being a higher percentage of the systems.

Rock County Water Plan

Septic Permits Issued

	Number
2007	39
2008	25
2009	24
2010	29
2011	22
2012	25
2013	25
2014	32
2015	18
2016	17
	256

Source: Rock County SWCD/Land Mgt

Priority Concern 4. Protect surface water quality.

Rock County has less surface water than many counties in the Land of 10,000 Lakes. The quality of those surface waters is no less important here **(see attached map**). If anything, it is more important to safeguard these few waters, as there is no extra to spare.

a. Soil Erosion

Soil erosion not only degrades the fertility of farm land, but also contributes to the degradation of stream water quality. Simple conservation practices, such as grass waterways, terraces, and sediment basins, can substantially reduce the impacts of soil erosion on surface waters and wetlands. While there can be some control of ditch bank erosion by installing sufficient side slopes and other methods, meandering prairie streams contribute to their own impairment where stream banks are undercut. Rock County has been successful working with individual property owners to adopt Best Management Practices to reduce erosion, and local demand for assistance is expected to continue.

Changing weather such as extreme storm events will have to be considered in future plans and actions for erosion and sediment control. This will include in-field storage of storm water in the form of conservation practices such as basins, terraces, waterways, wetland restoration as well as tile drainage management.

Rock County utilizes Geospatial Information System tools such as LiDAR to target catchments or drainage areas with higher propensity of erosion for conservation practice prioritization as well as best placement for in field water storage practices.

b. TMDLs

The federal Clean Water Act requires states to adopt water quality standards. For each pollutant that causes a waterway to exceed these standards, the Act requires the state to conduct a study of Total Maximum Daily Load (TMDL). The Missouri River Basin Watershed Restoration and Prioritization Project has identified point and non-point sources of these pollutants. MPCA and other agencies are working to reduce impairments in these waters **(see attached map**). Rock County will partner with neighboring counties in the Missouri River Basin to address the impaired waters by developing a watershed based Comprehensive Water Plan. In Rock County, the 2014 impaired waters list includes:

Streams

Reach Name	Reach Description	River AUID	HUC - 8 Name	Affected Designated Use	Pollutant or Stressor	Year Listed	TMDL Status
Ash Creek	Unnamed creek to Unnamed creek	10170204-539	Rock River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
					Fishes bioassessments		Required

Reach Name	Reach Description	River AUID	HUC - 8 Name	Affected Designated Use	Pollutant or Stressor	Year Listed	TMDL Status
Beaver Creek	Headwaters to Little Beaver Creek	10170203-521	Lower Big Sioux River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
Beaver Creek	Little Beaver Creek to MN/SD border	10170203-522	Lower Big Sioux River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
					Fishes bioassessments		Required
					Turbidity	2010	Required
				Aquatic Recreation	Escherichia coli		Required
Blood Run	Unnamed creek to MN/SD border	10170203-555	Lower Big Sioux River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
Elk Creek	Headwaters to Rock River	10170204-519	Rock River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
					Fishes bioassessments		Required
					Turbidity	2006	Approved
				Aquatic Recreation	Escherichia coli	2014	Required
Kanaranzi Creek	Norwegian Creek to MN/IA border	10170204-517	Rock River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
					Fishes bioassessments		Required
					Turbidity	2010	Required
				Aquatic Recreation	Escherichia coli		Required
Mound Creek	Unnamed creek to T103 R45W S24, east line	10170204-551	Rock River	Aquatic Recreation	Escherichia coli	2014	Required
Mud Creek	Headwaters to MN/IA border	10170204-525	Rock River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
					Fishes bioassessments		Required
					Turbidity	2008	Required
				Aquatic Recreation	Escherichia coli	2014	Required

Reach Name	Reach Description	River AUID	HUC - 8 Name	Affected Designated Use	Pollutant or Stressor	Year Listed	TMDL Status
Pipestone Creek	MN/SD border to Split Rock Creek (Rock County)	10170203-505	Lower Big Sioux River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
					Fishes bioassessments		Required
				Aquatic Recreation	Escherichia coli		Required
Rock River	Champepadan Creek to Elk Creek	10170204-509	Rock River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
					Fishes bioassessments		Required
					Turbidity	2006	Approved
Rock River	Elk Creek to MN/IA border	10170204-501	Rock River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
					Fishes bioassessments		Required
					Turbidity	2002	Approved
				Aquatic Recreation	Fecal Coliform	1994	Approved
Rock River	Poplar Creek to Unnamed creek	10170204-506	Rock River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
					Fishes bioassessments		Required
					Turbidity		Required
				Aquatic Recreation	Escherichia coli		Required
Rock River	Unnamed creek to Champepadan Creek	10170204-508	Rock River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
					Fishes bioassessments		Required
					Turbidity		Required
				Aquatic Recreation	Escherichia coli		Required
Split Rock Creek	Pipestone Creek to MN/SD border	10170203-512	Lower Big Sioux River	Aquatic Life	Fishes bioassessments	2014	Required
					Nutrient/ eutrophication biological indicators	2016	Required
					Turbidity	2010	Required
				Aquatic Recreation	Escherichia coli	2014	Required

Reach Name	Reach Description	River AUID	HUC - 8 Name	Affected Designated Use	Pollutant or Stressor	Year Listed	TMDL Status
Split Rock Creek	Split Rock Lk to Pipestone Creek	10170203-507	Lower Big Sioux River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
					Dissolved oxygen	1994	Required
					Fishes bioassessments	2014	Required
Unnamed creek	Headwaters to Rock River	10170204-521	Rock River	Aquatic Recreation	Escherichia coli	2014	Required
Unnamed creek	Unnamed creek to Rock River	10170204-545	Rock River	Aquatic Recreation	Escherichia coli	2014	Required
Unnamed creek	Unnamed creek to Unnamed creek	10170204-571	Rock River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
Unnamed creek	Unnamed creek to Unnamed creek	10170203-553	Lower Big Sioux River	Aquatic Life	Fishes bioassessments	2014	Required
					Aquatic macroinvertebrate bioassessments		Required
Unnamed creek	Unnamed creek to Unnamed creek	10170203-538	Lower Big Sioux River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required
Unnamed creek	Unnamed creek to Unnamed creek	10170204-572	Rock River	Aquatic Life	Aquatic macroinvertebrate bioassessments	2014	Required

c. Wetlands and Endangered Species

Wetlands and other natural resources provide important habitat for wildlife, in addition to storing water on the landscape, protecting waterways and aquifer recharge areas, on public and private lands **(see attached map**).

Rock County lies outside of the prairie pothole region of Minnesota. Most of the wetlands in the county have been classified under Riverine and Palustrine systems, mostly stream segments, old oxbows, and the well-defined system of drainage ways that occur in the county **(see attached map)**. The majority of the naturally occurring wetland basins in the county have been drained.

Several rare plant and animal species are known to occur in Rock County, such as the Western prairie fringed orchid *(Platanthera praeclara*), listed as a federal Threatened species. Recently, there have been well-publicized instances where public and private projects in the region have encountered issues with habitat protection for the Topeka Shiner (*Notropis Topeka*) minnow **(see attached map)**. These fish reach about 3 inches in length, and inhabit the winding gravel streams and pools of the Missouri River watershed. The Topeka Shiner was listed as an federal endangered species in 1998. In 2004, the US Fish and Wildlife Service designated 836 miles of streams in Iowa, Minnesota and Nebraska as Critical Habitat for the Topeka Shiner, including 257 stream miles in Rock County. Policy and procedures for habitat protection will likely continue to demand attention.

B.3 Goals and Objectives to Address Priority Concerns

Goals and Objectives for local water management were selected and confirmed for this amendment by the Task Force after review and assessment of priority concerns.

Priority Concern 1. Protect ground water quality and supply.

a. Well Head Protection

Goal 1a: Protect public water supplies from contamination by agricultural production activities and industrial sources.

Objective 1a.1: Assist Public Water Suppliers and provide technical assistance to Well Head Protection committees that have developed or are in the process of developing a Well Head Protection Plan with a Drinking Water Supply Management Area.

Objective 1a.2: Educate producers on the significance of a Well Head Protection Area.

Objective 1a.3: Target eligible producers for promoting CREP and CRP by mailings and direct contacts in the WHPAs.

Objective 1a.4: Ensure zoning requirements protect WHPA's.

Objective 1a.5: Target Well Sealing in DWSMA and leverage financing for cost share from local and state sources.

Objective 1a. 6: Partner with area counties in hiring a Water Resources Specialist to work with agronomists and landowners in promotion of best management practices in sensitive groundwater areas.

Objective 1a. 7: Assist Minnesota Geological Service in developing a County Geological Atlas.

b. Abandoned Wells

Goal 1b: Prevent contamination of underground aquifers from land use practices through open abandoned wells.

Objective 1b.1: Promote and educate county residents on the importance of sealing wells.

Objective 1b.2: Offer a cost share program to encourage 100 residents to seal their abandoned wells.

c. Future Water Supply

Goal 1c: To make sure that the residents of Rock County have adequate water supplies to allow for future economic growth and development.

Objective 1c.1: Develop water supply plans.

Objective 1c.2: Promote conservation through education programs.

Objective 1c.3: Continue to support well exploration, interconnection possibilities and the Lewis and Clark water project.

Priority Concern 2. Feedlot Program management.

a. Nutrient Management

Goal 2a: To ensure all feedlots that are required to and those in the DWSMA have developed and follow a nutrient management plan.

Objective 2a.1: Work with feedlots >300 AU's that do not have a nutrient management plan.

Objective 2a.2: Educate producers that want to write their own plans in development and implementation of their plans.

Objective 2a.3: Train agronomists and crop consultants in nutrient management planning to provide services for those wanting to hire the planning.

b. Feedlot Runoff

Goal 2b: Have all feedlots in the County in compliance with MN Statute 7020 standards.

Objective 2b.1: Assist any producers that have been identified as having a pollution problem in making corrections.

Objective 2b.2: Ensure that future expansions are constructed in compliance with State regulations

Priority Concern 3. Non-conforming Individual Septic Treatment Systems.

a. ISTS

Goal 3a: Bring all nonconforming Individual Septic Treatment Systems into compliance with Minnesota Statutes Chapter 7080.

Objective 3a.1: Require upgrades of failing systems at property transfer.

Objective 3a.2: Develop an inventory of septic systems in the DWSMA and shore-land areas.

Objective 3a.3: Replace 100 failing Individual Septic Treatment Systems.

Priority Concern 4. Protect surface water quality.

a. Soil Erosion

Goal 4a: Prevent future contamination of surface waters from land use practices and correct the impaired stream reaches.

Objective 4a.1: Provide technical assistance to 50 producers interested in conservation practices, i.e., waterways, terraces, sediment basins.

Objective 4a.2: Provide cost share opportunities for conservation practices from local, state, and federal sources.

Objective 4a.3: Educate landowners on the requirements for buffer strips along water courses, as well as promoting other conservation programs such as the MN Agricultural Water Quality Certification Program

Objective 4a.4: Verify compliance with MPCA's requirements for Storm Water permits.

Objective 4a.5: Require a minimum of 4:1 side slopes or other approved methods of stream bank stabilization on ditch or drainage way clean outs.

Objective 4a.6: Require grass buffers along drainage ditches and intermittent streams with perennial water flow.

Objective 4a.7: Focus riparian efforts on Rock County's recreational areas to prevent sedimentation to the Blue Mound State Park and the Rez Park in Hills.

Objective 4a.8: Utilize Terrain analysis tools such as LiDAR to prioritize catchments with the highest potential for erosion and delivery of pollutants to impaired waters for conservation practice installation. These same tools can be used for best placement of long term and short term water storage practices.

Objective 4a.9: Administer the Soil Loss Ordinance statute to correct perennial erosion problems.

b. TMDLs

Goal 4b: Develop a plan to address those reaches of water courses that exceed the limits of Total Maximum Daily Load.

Objective 4b.1: Complete MPCA's Watershed Restoration and Prioritization Plan and collaborate with other federal and state agencies in addressing impaired waters identified with the project.

Objective 4b.2: Sample surface waters at critical points to monitor and measure successes of programs.

Objective 4b.3 Coordinate with neighboring counties in the Missouri River Basin to create a watershed based Comprehensive Water Plan.

c. Wetlands and Endangered Species

Goal 4c: Preserve, restore and enhance natural land and waters while benefiting and providing habitat to increase populations of State and Federal endangered species and wildlife.

Objective 4c.1: Prevent draining of wetlands without replacement.

Objective 4c.2: Research opportunities for grants for stream bank stabilization or endangered species habitat.

Objective 4c.3: Encourage and promote programs such as Prairie Bank, Landowner Incentives Program, WHIP, EQIP, CRP and CREP for wildlife habitat and wetland restoration.

C. Implementation Schedule of Priority Concerns

This section establishes the implementation program for the local water management to address priority concerns.

C.1 Priority Concern 1: Protect ground water quality and supply.

Goal 1a: Protect public water supplies from contamination by agricultural production activities and industrial sources.

Action 1a.1: Provide technical assistance to and serve on the existing Well Head Protection committees for Rock County Rural Water and the City of Luverne and other public water suppliers that will be developing a Well Head Protection Plan.
Who: RCLMO, RCRW, CL, MDH, MDA, MRWA
When: 2017-2021
Cost: In-Kind
Benefit: Groundwater

Action 1a.2: Coordinate development of literature and newsletters with the Public Water Suppliers to educate producers on the significance of being in a Well Head Protection Area.
Who: RCLMO, RCRW, CL, MDH, MDA, MRWA
When: 2017-2021
Cost: In-Kind, $1,000 in advertising
Source: RCRW, RCLMO, CL, MDH, MDA
Benefit: Groundwater

Action 1a.3: Using the Water Resources technician to produce fliers and promotional literature, conducting site visits to targeted producers in the highly vulnerable areas, and using promotional activities to raise the awareness of BMP programs.
Who: RCLMO, RCRW, CL, MDH, MDA, MRWA, BWSR, PF
When: 2007-2012
Cost: In-kind, $10,000 per year
Source: RCLMO, RCRW, CL, MDH, MDA
Benefit: Surface Water/ Groundwater

Action 1a.4: Examine existing ordinances and proposed changes to ensure they protect and do not negatively impact Well Head Protection Areas.
Who: RCLMO
When: 2017-2021
Cost: In-Kind
Benefit: Groundwater

Action 1a.5: Develop a list of abandoned wells by interviewing residents in the DWSMA's and pursue funding for increased cost share for sealing the wells.
Who: RCLMO, RCRW, CL, MDH, MRWA
When: 2017-2021
Cost: In-Kind, $5,000
Source: RCLMO, RCRW, CL, MDH, MDA
Benefit: Groundwater

Action 1a.6: Partner with area counties to hire a Water Resources Specialist
Who: RCLMO, RCRW, CL, MDH, MRWA
When: 2017-2021
Cost: In-Kind, $10,000 per year
Source: RCLMO, RCRW, CL, MDH, MDA
Benefit: Groundwater

Action 1a.7: Assist Minnesota Geological Service with developing a County Geological Atlas
Who: MNGS, RCLMO, RCRW, CL, MDH, MRWA
When: 2017-2021
Cost: In-Kind, $10,000
Source: MNGS, RCLMO, RCRW, CL
Benefit: Groundwater

Goal 1b: Prevent contamination of underground aquifers from land use practices through open abandoned wells.

Action 1b.1: Utilize newsletter and newspaper opportunities to educate residents on potential impacts in well head protection areas.
Who: RCLMO, RCRW, CL, MDH, MRWA
When: 2017-2021
Cost: In-Kind, $2500
Source: RCRW, RCLMO
Benefit: Groundwater

Action 1b.2: Budget cost share dollars for sealing 100 abandoned wells.
Who: RCLMO, BWSR, MDH, MRWA
When: 2017-2021
Cost: $500 per well sealed, up to $10,000/cost share per year
Source: BWSR, RCLMO, RCRW, CL, MDH
Benefit: Groundwater

Goal 1c: To make sure that the residents of Rock County have adequate water supplies to allow for future economic growth and development.

Action 1c.1: Research examples of effective water conservation plans.
Who: RCLMO, RCRW, CL, MDH, MRWA, L&CRWS
When: 2017-2021
Cost: In-Kind
Benefit: Groundwater

Action 1c.2: Coordinate and develop a conservation flyer with the public water suppliers in the County.
Who: RCLMO, RCRW, CL, MDH, MRWA, L&CRWS
When: 2017-2021
Cost: In-Kind, $1000
Source: RCLMO, RCRW, CL, L&CRWS
Benefit: Groundwater

Action 1c.3: Stay informed on water supply issues and educate legislators on Rock County's priority issues.
Who: RCLMO, RCRW, CL, MDH, MRWA
When: 2017-2021
Cost: In-Kind
Benefit: Groundwater

C.2 Priority Concern 2. Feedlot Program management.

Goal 2a: To ensure all feedlots that are required to and those in the DWSMA have developed and follow a nutrient management plan.

Action 2a.1: During compliance inspections verify that nutrient management plans are written when required and educate producers on how to develop a plan.
Who: RCLMO, MPCA
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water

Action 2a.2: Promote available planning programs for nutrient management and serve as a resource for questions.
Who: RCLMO, MPCA
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water/ Groundwater

Action 2a.3: Promote training opportunities, forward pertinent information and serve as a resource for questions in plan writing.
Who: RCLMO, MPCA, MDA
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water/ Groundwater

Goal 2b: Have all feedlots in the County in compliance with MN Statute 7020 standards.

Action 2b.1: Provide technical and engineering assistance to producers with the Southwest Prairie Joint Powers Organization, Provide assistance in applying for cost share and low interest loans to correct the problems.
Who: RCLMO, MPCA, BWSR, NRCS, MDA
When: 2017-2021
Cost: In-Kind, $5,000 - $200,000 per feedlot
Source: BWSR, MPCA, RCLMO, NRCS, MDA
Benefit: Surface Water/ Groundwater

Action 2b.2: Utilize check lists for compliance during the application process, conduct site visits during construction to verify compliance and remain current on State regulations.
Who: RCLMO, MPCA, BWSR
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water/ Groundwater

C.3 Priority Concern 3. Non-conforming Individual Septic Treatment System.

Goal 3a: Bring all nonconforming Individual Septic Treatment Systems into compliance with Minnesota Statutes Chapter 7080.

Action 3a.1: Develop an ordinance that requires property owners to upgrade failing septic systems at property transfer.
Who: RCLMO, MPCA, BWSR, MDH
When: 2017-2021
Cost: In-Kind, $9,000 - $15,000 per septic replacement
Source: RCLMO, MPCA
Benefit: Surface Water/ Groundwater

Action 3a.2: Develop an inventory by conducting site visits and interviewing residents in the DWSMA and shore-land areas.
Who: RCLMO, MPCA, BWSR, MDH, RCRW, CL
When: 2017-2021
Cost: In-Kind, $10,000
Source: RCLMO, BWSR, MDH
Benefit: Surface Water/ Groundwater

Action 3a.3: Provide cost share and low interest money to encourage replacement throughout the County. Leverage financing from local and State sources to provide additional cost share on replacement systems for high priority areas such as DWSMA and shore-land.
Who: RCLMO, MPCA, BWSR, MDA, RCRW, CL
When: 2017-2021

Cost: In-Kind, $9,000 - $15,000 per Septic System replaced.
Source: RCLMO, MPCA, BWSR, MDH, RCRW, CL,
Benefit: Surface Water/ Groundwater

C.4 Priority Concern 4. Protect surface water quality.

Goal 4a: Prevent future contamination of surface waters from land use practices and correct the impaired stream reaches.

Action 4a.1: Provide a technician and along with NRCS provide technical assistance to 50 producers and landowners that are interested in installing conservation practices.
Who: RCLMO, NRCS, BWSR
When: 2017-2021
Cost: In-Kind, $100,000 per year Technician
Source: RCLMO, BWSR, NRCS, MDA
Benefit: Surface Water

Action 4a.2: Assist producers in applying for cost share opportunities for conservation practices.
Who: RCLMO, BWSR, NRCS
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water

Action 4a.3: Identify potential and required buffer areas and contact the landowners. Provide a technician to encourage and facilitate conservation program participation.
Who: RCLMO, BWSR, MDA
When: 2017-2021
Cost: In-Kind, $50,000 per year Technician
Source: RCLMO, BWSR, MDA
Benefit: Surface Water

Action 4a.4: Review applications for expansions and construction sites for the need of a Storm Water Permit.
Who: RCLMO, MPCA
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water

Action 4a.5: Develop and promote an ordinance to require 4:1 side slopes on water courses that are cleaned out.
Who: RCLMO
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water

Action 4a.6: Develop and promote an ordinance to require grass buffers along surface waters such as intermittent and perennial streams.
Who: RCLMO, BWSR, NRCS
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water

Action 4a.7: Identify landowners and operators in the watersheds that flow to these parks; promote and educate these landowners on the importance and opportunities of conservation practices.
Who: RCLMO, NRCS, DNR
When: 2017-2021
Cost: In-Kind, GIS Technician-$5,000 per year
Source: RCLMO, NRCS, DNR
Benefit: Surface Water

Action 4a.8: Utilize Terrain analysis tools such as conditioned LiDAR data to prioritize catchments with the highest potential for erosion and delivery of pollutants to impaired waters as well as best placement for long and short term water storage.
Who: RCLMO, MDA, BWSR, NRCS
When: 2017-2021
Cost: In-Kind, GIS Technician-$10,000 per year
Source: RCLMO, MDA, BWSR, NRCS
Benefit: Surface Water

Action 4a.9: Administer the Soil Loss Ordinance Statute to prevent perennial erosion problems.
Who: RCLMO, BWSR, NRCS,
When: 2017-2021
Cost: In-Kind, GIS Technician-$5,000 per year
Source: RCLMO, MDA, BWSR, NRCS
Benefit: Surface Water

Goal 4b: Develop a plan to address those reaches of water courses that exceed the limits of Total Maximum Daily Load.

Action 4b.1: Participate in completion of the Missouri River Basin Watershed Restoration and Prioritization Plan. Access state and federal dollars for water sampling to verify contaminates that caused these streams to be listed as impaired.
Who: RCLMO, MPCA, BWSR, RCRW, CL
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water

Action 4b.2: Continue yearly sampling of surface water at critical points; coordinate, chart and monitor results from all agencies to track changes in the County.

Who: RCLMO, RCRW, CL, BWSR,
When: 2017-2021
Cost: In-Kind, $3,000 per year testing fees.
Benefit: Surface Water

Action 4b.3: Coordinate with neighboring counties in the Missouri River Basin to create a Watershed based Comprehensive Water Plan
Who: RCLMO, RCRW, CL, BWSR, Nobles County, Nobles SWCD, Pipestone Conservation and Zoning, Jackson County, Jackson SWCD, Murray County, Murray SWCD, Lincoln County, Lincoln SWCD, Okabena/Ocheda Watershed District, Kanaranzi Little Rock Watershed District.
When: 2017-2021
Cost: In-Kind, $250,000.
Sources: BWSR, RCLMO, RCRW, CL, BWSR, Nobles County, Nobles SWCD, Pipestone Conservation and Zoning, Jackson County, Jackson SWCD, Murray County, Murray SWCD, Lincoln County, Lincoln SWCD, Okabena/Ocheda Watershed District, Kanaranzi Little Rock Watershed District.
Benefit: Surface Water

Goal 4c: Preserve, restore and enhance natural land and waters while benefiting and providing habitat to increase populations of State and Federal endangered species and wildlife.

Action 4c.1: Coordinate wetland determination with US Army Corp, DNR, and NRCS, perform site visits on filling requests and complaints.
Who: RCLMO, BWSR, NRCS, DNR, USCOE
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water

Action 4c.2: Work with landowners in applying for grants to stabilize stream banks and create endangered species habitat.
Who: RCLMO, BWSR, NRCS, DNR, USFW
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water/ Endangered Species

Action 4c.3: Develop and produce promotional literature and coordinate promotional events, follow up with interested producers with site visits and payment estimates.
Who: RCLMO, BWSR, NRCS, DNR
When: 2017-2021
Cost: In-Kind
Benefit: Surface Water/ Endangered Species

D. Implementation Schedule of Ongoing Activities

D.1 Priority Concern 1: Protect ground water quality and supply.

- Participate on the Rock County Rural Water and the City of Luverne Well Head Protection Boards.
- Utilize a Water Resources Technician to promote Nitrogen BMP practices in well head areas
- Partner with MDA to coordinate local work groups in areas of high nitrates in wells.
- Assist Minnesota Geological Service with developing a County Geological Atlas
- Publish newsletters, news articles, and news releases to address water quality, quantity and conservation issues and concern.
- Conduct nitrate testing at the County Fair.
- Provide well testing kits for the public.
- Provide cost share for and promote the sealing of abandoned wells.
- Collect water samples at 15 surface water sites, 3 tile outlets, and 13 ground water sites.
- Test water levels in DNR observation wells on a regular basis.
- Participate in the State Rainfall Monitoring Program.
- Continue to promote and provide a Household Hazardous Waste Program to correctly dispose of HHW.
- Present a program on HHW to 5^{th} graders using learning stations.
- Provide for collection of waste agricultural pesticides and empty pesticide containers.

D.2 Priority Concern 2. Feedlot Program management..

- Continue to be a delegated County in the MPCA feedlot program and maintain a county feedlot data base.
- Inspect and assist producers in maintaining compliance with County and State feedlot rules.
- Provide technical assistance to correct feedlot problems and promote the use of the Joint Powers Engineering services for enhanced services.
- Promote and provide assistance for nutrient management plans and practices.
- Assist area agronomists and crop consultants in providing nutrient management services.
- Promote and administer the State Cost Share Program for feedlot runoff corrections.
- Administer and provide technical assistance for the State Revolving Fund for best management practices

D.3 Priority Concern 3. Non-conforming Individual Septic Treatment System.

- Administer, permit and inspect individual septic systems in the county.
- Continue to provide low interest loans with the State Revolving Fund to upgrade failing septic systems.

D.4 Priority Concern 4. Protect surface water quality.

- Promote and provide technical assistance for conservation programs.
- Utilize Geographic Information Systems and tools to target conservation practice and water storage placement.
- Promote and facilitate the MN Agricultural Water Quality Certification Program.
- Provide a no-till drill for seeding conservation practices and native grasses.
- Administer and promote the SWCD tree program and provide planting and matting to support the program.
- Work with the USFW on stream bank stabilization and Topeka Shiner habitat.
- Continue to administer the Wetlands Conservation Act.
- Promote and administer the State Cost Share Program for conservation practices.
- Administer and provide technical assistance for the State Revolving Fund for best management practices.
- Actively promote and help facilitate NRCS programs such as EQIP, CREP, WHIP and GRP.
- Provide a technician to promote CREP program to buffer streams and sensitive areas.
- Administer the Shoreland and Flood Plain Management Program.
- Maintain a web site to provide information to all landowners in the county.

D.4 Additional Land Management Programs.

- Work with SWMACDE to sponsor an Environmental Fair for 6th graders in the County.
- Promote and assist with the SWMACDE Area Envirothon.
- Assist landowners with land use permits and zoning regulations.
- Continue to test and provide services for commercial pesticide applicators.
- Facilitate and track biological control of noxious weeds.
- Work with Townships in education and enforcement of the noxious weed program.
- Promote recycling and solid waste management and reduction.
- Provide electronics and appliance disposal.

E. Appendix

E.1 Acronyms Used

BWSR – Board of Water and Sewer Resources
CL – City of Luverne
DNR – Department of Natural Resources
L&CRWS – Lewis & Clark Rural Water System
LPRWS – Lincoln-Pipestone Rural Water System
MDA – Minnesota Department of A
MDH – Minnesota Department of Health
MPCA – Minnesota Pollution Control Agency
MRMA – Minnesota Rural Water Association
NRCS – Natural Resources Conservation Service
PF – Pheasants Forever
RCLMO – Rock County Land Management\SWCD
RCRW – Rock County Rural Water District
USCOE – United States Core of Army Engineers
USFW – United States Fish and Wildlife
MNGS – Minnesota Geological Services

E.2 Priority Concerns Scoping Document

(follows)

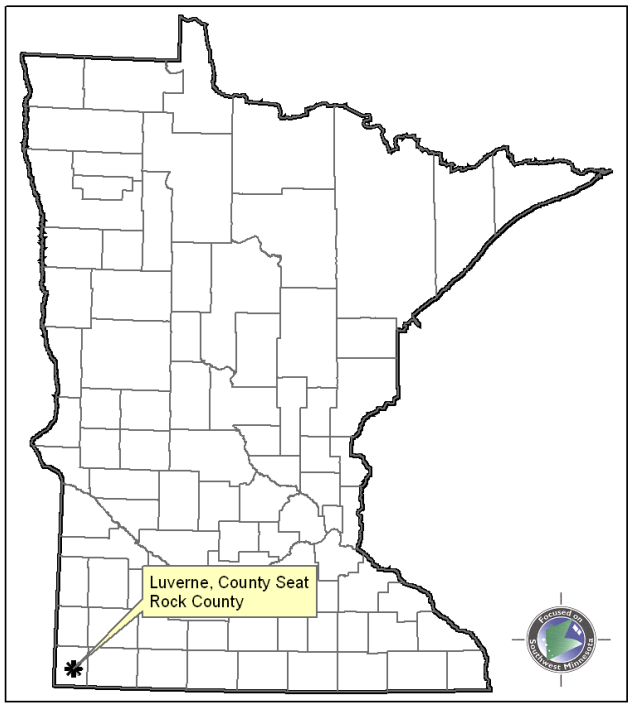
ROCK COUNTY WATER PLAN
PRIORITY CONCERNS SCOPING DOCUMENT

January 2006

Prepared for the Rock County Water Plan Task Force
By Rock County Land Management Office and Southwest Regional Development Commission

1. INTRODUCTION

1.A County Primer



Rock County is located in the southwestern-most corner of Minnesota, adjacent to Pipestone, Murray, and Nobles counties, and the states of Iowa and South Dakota. The City of Luverne is the county seat. Rock County's population in the 2000 U.S. Census was 9,721. The Minnesota State Demographic Center estimates that the population as of 2004 is 9,590. The Demographic Center projects total population to rise to 10,070 by 2030.

Rock County is a typical prairie environment, and unique to Minnesota in that it lies completely within the Missouri River basin. The Rock River enters the county flowing south at an elevation of 1,520 feet and leaves the county at 1,320 feet. The Big Sioux watershed drains the western portion of the county, including Beaver Creek and Split Rock Creek. Soils are varied, with loess, loess over glacial till, loess over Sioux quartzite bedrock (some exposed), sand glacial outwash, and glacial till.

The dominant land use is agriculture, and will likely remain so. The 2002 U.S. Census of Agriculture reports 721 farms on 299,090 acres in Rock County. Of these, 268,581 acres were in cropland with only 499 acres irrigated cropland. The *Rock County Land Management Plan* (2000) found about 85% of land under cultivation, 12% in hay, pasture or grassland, and 2% developed.

1.B Plan Information

The Rock County Board of Commissioners appointed a Water Planning Advisory Committee, which first met on 12 January 1989. The Rock County Comprehensive Local Water Plan was originally prepared by Don Briggs and Kris Rodman in April 1991. In December 1994, the Rock

County Board of Commissioners adopted a resolution to update and revise the water plan. In December 1995, and August 1996, the Board of Water and Soil Resources granted Rock County one-year extensions for revisions to the local water plan, due to staff changes. The plan update was completed by Douglas Bos of the Land Management Office, with assistance from the Rock County Water Planning Advisory Committee, in December 1997. That plan was written to cover water management through December 2006.

The Rock County Land Management Office is responsible for local water management in Rock County, including facilitation of public input and convening the Rock County Water Plan Task Force. Task Force membership currently includes:

Peter Bakken	Township Supervisor
Richard Bakken	County Commissioner
Al Blank	Beaver Creek City Mayor
Doug Bos	Water Plan Coordinator
Ava Christians	Dairy Producer and Citizen
Dan Cook	Rock County Rural Water
Randy Creeger	Friends of the Park, representing Blue Mound State Park and Touch the Sky Prairie
Kurt Elbers	Rock County Cattleman's Assn.
Eric Hartman	Director, Rock County Land Management Office
Al Lais	City of Luverne Public Works (water)
Don Reker	SWCD Supervisor
Andy Steensma	Luverne City Mayor
Leroy Van Wyhe	Beaver Creek Sportsman's Club

2. LIST OF PRIORITY CONCERNS

The *Rock County Local Water Management Plan* to be developed in 2006 will cover ten years, with a 5-year implementation schedule. The Plan will address the following priority concerns.

2.A. Summary of Priority Concerns:

1. Protect ground water quality and supply.

   Goal 1: Protect public water supplies from contamination from agricultural production activities and industrial sources.

   Goal 2: Prevent contamination of underground aquifers from land use practices through open abandoned wells.

   Goal 3: To make sure that the residents of Rock County have adequate water supplies to allow for future economic growth and development.

2. Feedlot Program management

   Goal 1: To ensure all feedlots that are required to and those in the DWSMA have developed and follow a nutrient management plan.

Goal 2: Have all feedlots in the County in compliance with MN Statute 7020 standards.

3. Non-conforming Individual Septic Treatment Systems

   Goal: Bring all nonconforming Individual Septic Treatment Systems into compliance with Minnesota Statutes Chapter 7080.

4. Protect surface water quality.

   Goal 1 : Prevent future contamination of surface waters from land use practices.

   Goal 2: Develop a plan to address those reaches of water courses that exceed the limits of Total Maximum Daily Load.

   Goal 3: Preserve, restore and enhance natural land and waters while benefiting and providing habitat to increase populations of endangered species and wildlife.

2.B Detailed Priority Concerns

1. **Protect ground water quality and supply.**

   Well Head Protection

   Goal 1: Protect public water supplies from contamination from agricultural production activities and industrial sources.

   - Assist Public Water Suppliers in Well Head Protection activities.
   - Provide technical assistance to Well Head Protection committees that have developed or are in the process of developing a plan with a Drinking Water Supply Management Area.
   - Educate producers on the significance of a Well Head Protection Area.
   - Target eligible producers for promoting CREP and CRP by mailings and direct contacts in the WHPAs.
   - Ensure zoning requirements protect WHPA's
   - Target Well Sealing in DWSMA and leverage financing for cost share from local and state sources.

   Abandoned Wells

   Goal 2: Prevent contamination of underground aquifers from land use practices through open abandoned wells.

   - Promote and educate county residents on the importance of sealing wells.
   - Offer a cost share program to encourage residents to seal abandoned wells
   - Compile a list of wells in the DWSMA.

   Future Water Supply

   Goal 3: To make sure that the residents of Rock County have adequate water supplies to allow for future economic growth and development.

   - Develop water supply plans.
   - Promote conservation through education programs.

- Continue to support well exploration, interconnection possibilities and the Lewis and Clark water project.

2. Feedlot Program management

Nutrient Management

Goal 1: To ensure all feedlots that are required to and those in the DWSMA have developed and follow a nutrient management plan.

- Work with feedlots >300 AU's that do not have a nutrient management plan.
- Educate producers that want to write their own plans in development and implementation of their plans.
- Train agronomists and crop consultants in nutrient management planning to provide services for those wanting to hire the planning.

Feedlot Runoff

Goal 2: Have all feedlots in the County in compliance with MN Statute 7020 standards.

- Assist producers that have been identified as having a pollution problem in making corrections.
- Provide technical and engineering assistance to producers with the Southwest Prairie Joint Powers Organization.
- Provide assistance in applying for cost share and low interest loans to correct the problems.
- Ensure that future expansions are constructed in compliance with State regulations.

3. Non-conforming Individual Septic Treatment Systems

Goal: Bring all nonconforming Individual Septic Treatment Systems into compliance with Minnesota Statutes Chapter 7080.

- Require upgrades of failing systems at property transfer.
- Develop an inventory of septic systems in the DWSMA and shore-land areas.
- Provide cost share and low interest money to encourage replacement throughout the County.
- Leverage financing from local and State sources to provide cost share on replacement systems for high priority areas such as DWSMA and Shoreland.

4. Protect surface water quality.

Soil Erosion

Goal 1 : Prevent future contamination of surface waters from land use practices.

- Provide technical assistance to producers interested in conservation practices, i.e., waterways, terraces, sediment basins.
- Provide cost share opportunities for conservation practices from local, state, and federal sources.

- Promote filter strips along water courses with the CREP program, and CRP program.
- Provide a technician to facilitate conservation program participation.
- Verify compliance with MPCA's requirements for Storm Water permits.
- Require a minimum of 4:1 side slopes or other approved methods of stream bank stabilization on ditch or drainage way clean outs.

- Require grass buffers along drainage ditches and intermittent streams with perennial water flow.
- Focus riparian efforts on Rock County's recreational areas to prevent sedimentation to the Blue Mound State Park and the Rez in Hills.

TMDLs

Goal 2: Develop a plan to address those reaches of water courses that exceed the limits of Total Maximum Daily Load.

- Work with MPCA and other federal and state agencies in developing a plan to address how to lower the contaminants that cause water courses to exceed the TMDLs for which they are listed.
- Sample surface waters at critical points to monitor and measure successes of programs.
- Access state and federal dollars for water sampling to verify contaminates that caused these streams to be listed as impaired.

Wetlands and Endangered Species

Goal 3: Preserve, restore and enhance natural land and waters while benefiting and providing habitat to increase populations of endangered species and wildlife.

- Prevent draining of wetlands without replacement.
- Research opportunities for grants for stream bank stabilization or endangered species habitat.
- Encourage and promote programs such as WHIP, EQIP, CRP and CREP for wildlife habitat.

3. PRIORITY CONCERN IDENTIFICATION

3.A Public and Internal Forums

8/16/05 County Board Meeting on Resolution to update plan- 8 att.

8/25/05 Sent requests of Local Units of Government, Agencies and Organizations requesting input of priority concerns.

8/25/05 E-mailed requests for input on priority concerns from State Agencies.

9/14/05 Sent letters requesting input on priority concerns from State Agencies.

9/05 Article for the Rock County Ag News circ. 900

9/15/05 Notice of Decision to Revise and Update Water Plan – *Rock County Star Herald* circ. 3,000

9/29/05 Article for the *Star Herald*, on Water planning process. Cir. 3,000

10/05 Article in the Rock County Ag News requesting input on the water plan process.

12/05 Article in the Rock County Ag News noticing Priority Concerns meeting and providing information on the Water planning process.

12/6/05 Rock County Annual Township Meeting - 35 Twp Officers

12/13/05 Task Force and Public Meeting on Priority Concerns - 16 att.

12/19/05 Rock SWCD Board Mtg- 10 att.

1/11/06 Task Force Meeting on Priority Concerns – 14 att.

3.A.1 Summary of Task Force Proceedings.

Priority Concerns Meeting
Rock County Land Management Office. Luverne, MN, Tuesday 13 December 2005

Don Reker-Rock SWCD
Ava Christians-Dairy Farmer
Richard Bakken-County Board
Tom Kresko-BWSR
Justin Decker-Rock LMO Crep Technician
Kurt Elbers-Rock County Cattlemans Assn
Andy Steensma-City of Luverne Mayor
John Shepard-SRDC
Al Blank-City of Beaver Creek Mayor
Alan Lais-City of Luverne Public Works Director
LeRoy Van Wyhe-Beaver Creek Sportsman's Club
Dan Cook-Rock County Rural Water
Kurt Halfmann-NRCS
Eric Hartman-Rock LMO Director
Doug Bos-Rock LMO Asst Director/Water Planner
Arlyn Gehrke-Rock LMO Technician

Doug Bos, Rock County Land Management Office, facilitated. Also in attendance: Task Force Members; John C. Shepard, AICP, Southwest Regional Development Commission; Tom Kresko, MN Board of Water & Soil Resources (BWSR) Conservationist.

Introductions and brief overview of the water planning process. Rock County did a plan in 1991, updated in 1996-97. BWSR has revised the state water planning process since then. The New Plan will focus on the most important Priority Concerns.

Bos summarized and briefly reviewed the complete list of priority concerns submitted to date. The Task Force then discussed concerns identified for Rock County:

A. Protect Ground Water Supplies

a. Sealing abandoned wells
   i. Q- How many out there?
      Tom- typically 2 wells/farm; also field wells
b. Emphasis on Well Head Protection Areas / DWSMAs
   i. City water sources
   ii. Shallow aquifers
   iii. H_2O flux between streams & aquifer, esp. in drought, creates problems w/high nitrates

B. Feedlots

a. Management Plans
   i. Nutrient Management Plans – Rock County doing outreach
   ii. Manure Management Plans
      - Over 100 A.U., Over 300 A.U., Over 1,000 A.U. each diff.
b. Correcting feedlot runoff
   i. Rock County has a good handle on this
c. Q- Does Rock County issue well permits?
   i. Different process than septic/zoning. MDH tracks permits.

C. Bring Non-Conforming ISTS into Compliance

a. Creates health & safety issues
   i. Q- Could require ISTS compliance on property transfer?
   ii. Murray County had a mixed experience, stepped-back from enforcement; now Pipestone is adopting & Nobles thinking about it.
b. Don't have a good septic inventory
   i. Lack of records, regulations change over time
c. Tom- Some counties addressed TMDL violations, focus by Twp on oldest systems
   i. Q- Map residences & permitted ISTS; houses w/o permits are suspect
d. ISTS vs. Feedlots, relative threat?
   i. ISTS have individual site issues w/human proximity;
      - septic outflow to tile, esp. low flow conditions, immediate hazard
   ii. Feedlots are macro issue; have a strict regulatory regime

Comment: Focus priority on sealing wells/fixing ISTS inside the DWSMAs?

D. TMDL on Impaired Waters

a. Erosion Control, Conservation Practices, Storm Water Controls, Buffering Streams & Ditches
b. TMDLs are Clean Water Act-driven
c. Rock River tests over limits, creates long-term issues

i. Q- What surface monitoring is being done?
ii. Had to eliminate some monitoring with State budget cuts.

E. Ensure Adequate Water Supplies

a. Develop Water Supply Plans
   i. Need drought contingencies
   ii. Lewis & Clark will help, won't solve all water problems
   iii. Difficult to drill deeper into bedrock (e.g. radioactive water!)
b. May be part of Protection issue [above]

F. Wetland Protection & Replacement

a. Preserve, Restore, Enhance
b. Link between tile & surficial aquifer recharge is intuitive, lacks hard data.
   i. Drainage increases velocity of streams & loading [see TMDL above]
   ii. Decreasing number of cattle has lead to less alfalfa grown/pasture, more cropping of marginal land.

G. Protecting Endangered Species

a. Restrictions
b. Opportunities, similar to Wetland Protection [above]
   i. Stream bank stabilization has been successful.

H. Other?

a. Recruit & involve a local environmental group rep for the Task Force.

Next Steps

Tom- Need a new plan by December 2006, understand constraints and opportunities for implementation. Task Force's biggest job is next month or so.

Doug- Staff will develop further the Priority Concerns Summary, working on goals and objectives for the Task Force to review in January. Need to keep in mind limited financial resources for implementation. The Task Force will likely need to meet then next in March.

Priority Concerns Meeting 2
Rock County Land Management Office. Luverne, MN, Wednesday 11 January 2006

Don Reker-Rock SWCD
Tom Kresko-BWSR
Justin Decker-Rock LMO Crep Technician
Kurt Elbers-Rock County Cattlemans Assn
John Shepard-SRDC
Lloyd DeBoer-City of Beaver Creek, Water and Sewer
Alan Lais-City of Luverne Public Works Director
LeRoy Van Wyhe-Beaver Creek Sportsman's Club
Kurt Halfmann-NRCS
Eric Hartman-Rock LMO Director
Randy Creeger-Friends of the Park (Blue Mound and Touch the Sky Prairie)

Doug Bos-Rock LMO Asst Director/Water Planner
Arlyn Gehrke-Rock LMO Technician
Sara Quam-Rock County Star Herald

Doug Bos (Rock County Land Management Office) facilitated, welcoming Randy Creeger to the Task Force as a representative of Friends of the Park. After the December meeting, Bos, John Shepard (SRDC) and Tom Kresko (BWSR) met to refine Priority Concerns, goals and objectives based on direction from the Task Force. Priority Concerns were consolidated in four groups (discussion listed under each):

A. Protect ground water quality and supply.
    - Wells in DWSMAs, well permit process, abandoned wells
    - Q- How are heat pump holes treated?
B. Feedlot Program management
    - Q- How aware is public of consultant assistance? Education is a constant need.
C. Non-conforming ISTS
    - Proximity to residences prompts concern, separation from groundwater, need to distinguish between "failing" and "non-conforming" systems, costs to replace systems
D. Protect surface water quality.
    - Soil erosion, storm water, ditches, Blue Mound Creek (esp. thru the Park)
    - TMDLs & impaired waters, monitoring (esp. improved accuracy)
    - Wetlands and endangered species, public awareness
    - Q- How do gravel pits fit in?
        - Eric Hartman (Rock Co Land Management) explained the CUP process under the zoning ordinance; typically gravel pits are renewed through a public hearing on a 5-year cycle.
        - Potential for contamination—run-off, fuel spills
        - Q- Do we need protection beyond MPCA requirements in DWSMA?
        - Standard CUP reclamation requirements could get everyone on the same page.
E. Other?
    - Inventory land use in buffer area of streams, DWSMAs
    - Q- What can be done about sloughing of stream banks (esp. Rock Creek)?
        - River goes where it wants to. Can carefully protect strategic points, then give it room.
    - Q- Are there other options for future water supply? Interconnects to other systems?

Next Steps
Tom- After finish PCSD and submit, state agencies have 30 days to review. BWSR may take up to 60 days for review, but likely will meet sooner. Should submit final plan by end of summer to complete process by December.

3.B Summary of Comments Received

No plans or controls were received from any state or local agencies. The Rock County Land Management Office administers the *Rock County Land Management Plan* and zoning ordinance, and has found no conflicts with other plans currently in place.

3.B.1 Local and Regional Comments

Nobles County-

1.) Ensure Adequate Water Supplies-
Improve public awareness on recharge.
Impact assessments on new users.

2.) Non-conforming Individual Septic Systems-
Inspect all systems.
Enforce ISTS program.
Develop a cost share program.

3.) Manure application in Well Head Protection Areas-
Require annual manure testing on feedlots in the Drinking Water Supply Management Area with greater than 300AU.
Report results to the Rock County Land Mgt

Martin Township-

1.) Well Head Protection
Keep well head areas free from contamination.

NRCS- Kurt Halfmann, District Conservationist-

1.) Feedlot Runoff/Manure Management
Educate producers on nutrient management.
Protect surface waters from runoff of manure application.

2.) Secure Adequate Water Supplies-
Water monitoring through sampling, monitoring and education.

3.) Repair of Individual Septic Systems
Ensure proper licensure and inspection of installers

4.) Sealing of Abandoned Wells-
Promote and educate on well sealing.

3.B.2 State/Federal Agency Comments

Minnesota Department of Health

1.) Protect ground water based drinking sources within Rock County
Acknowledge and support of public water supply wellhead protection areas.
Inventory unused wells and provide cost share for sealing.

Educate residents how to aid in the protection of these resources

2.) Achieve Total Maximum Daily Loads on the portions of the Rock River designated as impacted waters.

Development of a comprehensive water resource management plan and incorporate goals and action items found in the City of Luverne's and Rock County Rural Water's Well Head Protection Plans within.

Review and evaluate the existing land controls with in the sensitive aquifer areas.

Minnesota Pollution Control Agency

1.) Impaired waters-Total Maximum Daily Load

Identify pollutants and prioritize projects to address impaired waters.

Describe actions and timing intended to reduce pollutant(s) to impaired reaches.

2.) Feedlots

Proper site location of feedlots and manure storage, using manure management planning for land application of manure.

3.) Individual Septic Treatment Systems

Use inspections to find problems.

Aggressively pursue non-compliant systems in ground water sensitive areas and shore land.

4.) Storm water

Educating contractors of permit requirements.

Procedures for best management practices for contractors on construction sites.

Minnesota Department of Agriculture

1.) Ground and Surface water degradation by pesticides and nutrients.

Monitor ground and surface water.

Promote best management practices for reducing potential impacts of pesticides.

2.) Individual Septic Treatment Systems

Seek additional funding sources to assist residents in upgrading.

3.) Manure and Nutrient Management

Provide technical and financial assistance for adopting practices to reduce runoff.

Education and outreach efforts on manure management.

4.) Missouri River Basin concerns, Total Maximum Daily Load

Educate producers on what practices will protect water quality.

Board of Water and Soil Resources

1.) Erosion Controls

Promote and market soil conservation programs

Provide technical assistance for conservation practices.

Possible incentives for adoption of conserving practices.

Promote and demonstrate conservation tillage practices.
Develop county wide standards for storm water management.

2.) Nutrient Management

Educate on the need for and promote using U of M nutrient management recommendations.
Promote programs that provide cost share for developing nutrient management plans.
Implement comprehensive nutrient management practices in well head protection areas.

3.) Wetland Protection and Enhancement

Complete an inventory of drained and existing wetlands and identify high priority areas for restoration.
Promote wetland preservation programs such as RIM, WRP, CREP, WPA.

4.) Buffers

Enforcement of buffers required on public drainage systems.
Promote use of buffers along rivers and streams.

5.) Conservation Tillage

Promote conservation tillage and educate producers on processes to leave 30% residue after planting.

Minnesota Department of Natural Resources

1.) Groundwater and Source Water Protection and Conservation.

Develop water supply plans.
Manage rural water systems on a regional basis.
Monitor consumption and development of use protection thresholds.
Implementation of well head protection measures

2.) Holding water on the Landscape

Changes in land use practices and drainage to promote wetland restoration and retention.
Promotion of retention structures and conservation of water precipitated from the atmosphere.

3.) Conversion of Permanent Vegetative Cover to Row Crop

Preserve, restore, and connect natural lands and waters.
Protect, enhance or restore degraded priority natural habitats.

4.) Threatened and Endangered Special Concern Species-Topeka Shiner

Reduce stream sedimentation, restore or improve riparian vegetation buffers and filter strips.

4. PRIORITY CONCERN SELECTION

The Priority Concerns listed above (Section 2) were selected by Water Plan Task Force members after reviewing the concerns submitted by state and local agencies and other stakeholders. The summary of concerns was presented at the public input meeting and discussed. Staff then reviewed and refined focused Priority Concerns for Task Force consideration. After further discussion, the Task Force members selected the Priority Concerns by consensus.

5. PRIORITY CONCERNS NOT ADDRESSED BY THE PLAN

The Rock County Water Plan Task Force carefully considered all concerns submitted, as well as concerns of individual members representing a diverse constituency in the County. Concerns beyond the specific focus of the Priority Concerns listed above are typically beyond the scope of local water management, or are currently or potentially being addressed by other entities which work closely with the Rock County Land Management Office.