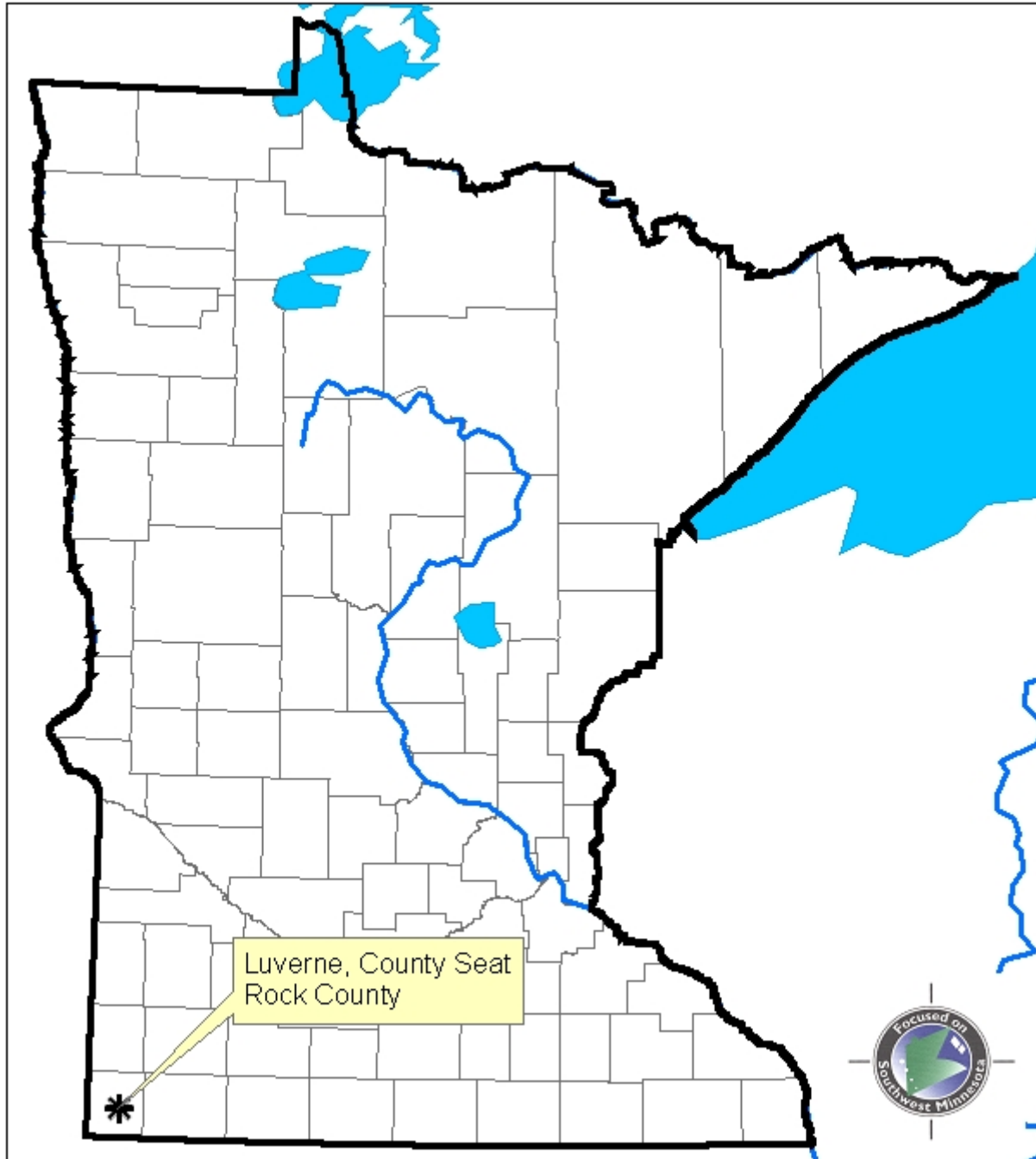


ROCK COUNTY WATER PLAN

A 10-year plan with a 5-year implementation schedule.

September 2006 Updated September 2011

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



ROCK COUNTY WATER PLAN

A 10-year water management plan with a 5-year implementation schedule.
September 2006 Updated September 2011

I. Table of Contents	Page
A. Executive Summary	3
1. Purpose & Introduction	
2. Description of Priority Concerns	
3. Plan Update Process	
4. Summary of Goals, Actions, and Projected Costs	
5. Consistency with Local, State and Regional Plans	
6. Summary of Recommended Amendments to Other Plans	
B. Priority Concerns	8
1. Identification of Priority Concerns	
2. Assessment of Priority Concerns	
3. Goals and Objectives to Address Priority Concerns	
C. Implementation Schedule of Priority Concerns	21
D. Implementation Schedule of Ongoing Activities	28
E. Appendix:	30
1. Acronyms Used	
2. Priority Concerns Scoping Document	

II. Color Maps

- A. Watersheds
- B. Land Use / Land Cover
- C. Previous Ground Water Sampling
- D. City of Luverne Drinking Water Supply Management Areas / Well Locations
- E. Rural Water Drinking Water Supply Management Areas / Well Locations
- F. Rock County Rural Water System
- G. Lincoln-Pipestone Rural Water Distribution Network
- H. Feedlot Locations
- I. Permitted Septic Systems
- J. Surface Water Sampling Sites
- K. Impaired Waters Requiring a TMDL
- L. Public Lands
- M. National Wetland Inventory
- N. Topeka Shiner Locations
- O. County Soil Classifications
- P. County Highly Erodible Soils

For additional information on water management in Rock County, Minnesota, contact:
Rock County Land Management Office, 311 West Gabrielson Road, Ste 5
Luverne, MN 56156 507-293-8862 ext 3.

A. Executive Summary

Rock County, population 9,721, 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 4,617) 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 ten-year management plan with a five-year implementation schedule.

This is the third edition of a local water management plan for Rock County. The Rock County Board of Commissioners appointed a Water Planning Advisory Committee, which first met on 12 January 1989. The original Rock County Comprehensive Local Water Plan was 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.

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

- 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 100-plus feedlots.
- Provided technical assistance and guidance in developing Well Head Protection Plans for Rock County Rural Water and the City of Luverne.

- Sponsored 14 years of the Southwest MASWCDE Environmental Fair for 6th grade classes in the County.
- Promoted and provided technical assistance to install thousands of feet of terraces, hundreds of waterways, and numerous sediment basins.
- Provided cost share and technical assistance to plant hundreds of thousands of trees in shelter belts and wildlife plantings.
- Provided cost share to seal 71 wells since 2001 and numerous wells prior to 2001.
- Promoted and provided cost share and low interest dollars to replace 146 failing individual septic systems since 1999 and many systems prior to 1999.
- Annually sampled and tested 13 surface water sites, 3 field tile outlets and 15 well water sites for water quality for 14 years.
- Developed a program to collect household hazardous waste, waste pesticide, and empty pesticide containers.

Major accomplishments since the development of the 2006 Water Plan

- Addressed runoff issues on 125 feedlots utilizing \$498,675.00 of State Cost Share and \$678,537.00 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.
- Facilitated a TMDL Assessment on the Rock River water quality impairments.
- Established a citizen Advisory Group and Technical Assistance group and developed a TMDL implementation plan addressing the impairments of the Rock River.
- Established a website 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 3 rain gardens.
- Obtained a Clean Water Legacy grant to assist six low income households with replacement of their failing septic systems.
- Applied for and received low interest funding from the Clean Water Partnership for replacing failing septic systems in the Rock River Watershed.
- Inspected and permitted installation of 129 septic systems to replace failing septic systems.
- Provided cost share for sealing 78 abandoned wells.
- Designed and installed 11 major stream bank stabilization projects with USFWS and Clean Water Legacy funding.
- Obtained a 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
- Received three Surface Water Assessment grants to sample various points on major streams in the county.
- Secured funding and facilitated removal of low head dam in City of Luverne.
- Applied for and received Clean Water Legacy 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.

- 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.

Rock County Water Plan						
Ag BMP Loans						
	Feedlots	Dollars	Septics	Dollars	Conservation	Dollars
2000	14	\$236,700	21	\$70,700	8	\$77,325
2001	18	\$306,125	8	\$30,700	7	\$149,350
2002	17	\$227,350	9	\$29,217	3	\$58,250
2003	8	\$119,779	2	\$9,500	1	\$24,950
2004	15	\$280,872	6	\$22,453	1	\$12,105
2005	21	\$542,750	5	\$22,900	4	\$91,250

Source: Rock County Land Management Office

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. On 16 August 2005, the Rock County Board of Commissioners passed a Resolution of Intent to update the Comprehensive Water Management Plan. In October 2005, Rock County retained the Southwest Regional Development Commission for assistance to write the update. A public meeting on priority concerns was held at Luverne on 13 December 2005. After Task Force consideration, the Rock County Board of Commissioners scheduled a Public Hearing on this Water Plan for 19 September 2006.

Task Force membership at the time of Plan development has included:

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

Input to the Rock County Water Plan Update process was provided by the Rock TMDL Advisory and Technical Committee Members along with the Rock SWCD Board.

Members of the TMDL Technical Committee are:

Doug Bos	Rock County SWCD/Land Mgt	Brent Hoffmann	Rock County Rural Water
Eric Hartman	Rock County SWCD/Land Mgt	Tom Kresko	DNR Hydrologist
Arlyn Gehrke	Rock County SWCD/Land Mgt	Kurt Halfmann	NRCS
Justin Decker	Rock County SWCD/Land Mgt	Matt Drewitz	BWSR
Kelli Daberkow	MPCA Hydrologist	Ed Lens	Nobles SWCD
Chris Hansen	Murray Co Planning & Zoning	Al Lais	City of Luverne
Kyle Krier	Pipestone Cty Cons. & Zoning	Scott Ralston	US Fish & Wildlife
Angie Raatz	Pipestone Cty Cons. & Zoning	Wayne Smith	Nobles Co Env. Office

Members of the TMDL Advisory Task Force are:

Grant Binford, farmer & Cattleman's Assn	George Shurr, resident & geology professor
Harold VerSteg, farmer & Corn/Soy Growers Assn	Kraig Rust, farmer & Township Association
Larry Bosch, farmer	Don Reker farmer & Rock SWCD Board
Mary Tilstra, resident & Master Gardner's Assn	Kevin Barnhart, resident & Pork Producers Assn
Bryce Stoltenberg resident	Andy Nesseth, ag consultant
Roger Talsma, farmer	Harlan Solma, resident & agronomist
Bill & Merri Post, farmer & Dairy Producers Assn.	Stan Williamson, farmer & County Commissioner

A.1.a Public Input Requests and Informational Meetings

- 8/16/05 County Board Mtg 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.
- 9/05 Article for the Rock County Ag News Cir. 900
- 9/14/05 Sent letters requesting input on priority concerns from State Agencies.
- 9/15/05 Notice of Decision to Revise and Update Water Plan – Rock County Star Herald cir. 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. Cir 900
- 12/05 Article in the Rock County Ag News noticing Priority Concerns meeting and providing information on the Water planning process.Cir 900
- 12/6/05 Rock County Annual Township Meeting - 35 Twsp 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.
- 2/22/06 Submitted Priority Concerns Scoping Document to State Agencies.
- 9/8/06 Task Force Meeting to review draft plan, Goals and Objectives, Implementation plan.
- 9/19/06 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. Plan Update Process

On February 8th, 2011The Rock County Board of Commissioners passed resolution number 04-11 to update the Rock County Water Plan. At the same time input was requested from State and local stakeholders including township and city officials, landowners, MN Department of Natural Resources, MN Department of Health, MN Department of Agriculture, and the MN Board of Water and Soil Resources.

On April 7th, 2011 a public input meeting was held in conjunction with the Rock River TMDL Advisory and Technical Committee meeting. The same group of State and local stakeholders were also noticed.

On BLANK, 2011 a draft plan update was posted for review and a public meeting held to review a draft update of the Rock County Water Plan.

A.3 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 newer regulatory challenges that none the less demand current action.

A.4 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, using CREP technician and other avenues to educate the public and raise awareness of 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.

UPDATES to implementation actions would include utilizing Best Management Practices such as basil stalk testing, infrared photography, variable rate nitrogen application and the use of nitrogen inhibitors as well as newer management tools as they become available.

Projected costs would include \$25,000 annually for the CREP technician, one-time costs of \$9,500 for public education, \$500 for advertising, \$500-\$1,000 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.

Updates to implementation activities would include improved oversight and education of Commercial Animal Waste Technicians

Projected costs would include \$5,000-\$100,000 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 \$7,000-\$10,000 per septic replaced, \$23,000 to develop an ISTS inventory, as well as annual in-kind services.

UPDATES would be cost increases for septic replacements. Systems installation costs have increased to \$7,000 to \$12,000 per septic replaced.

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.

Updates to goals would include coordination and facilitation with the Rock River TMDL Implementation Plan developed with the input of an Advisory and Technical committee. The Rock River TMDL Assessment and Implementation Plan can be accessed at www.rockriverwatershed.org. Additional updates would include coordination and facilitation with MPCA's development of TMDL assessments and implementation plans for other impaired streams in the county and also addressing areas within the county with high erosion and sedimentation problems (see attached maps O and P). Implementation actions include providing technical assistance and using CREP technician to facilitate conservation participation and education, reviewing storm water permits and ordinances, providing public education and outreach, participating in TMDL planning, continuing yearly water samples, and coordinating wetland determinations

UPDATES to implementation actions would include promotion and funding of the implementation actions chosen in the Rock River TMDL Implementation Plan; grass buffers along all perennial and intermittent streams, stream bank stabilization projects, rain gardens, pasture management systems, mitigation systems to reverse the effects of tiling and ditching, submitting water sample results to the MPCA and other Best Management Practices to protect surface water quality.

Projected costs would include \$30,000 annually for the CREP technician, as well as annual in-kind services.

A.5 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.6 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 Plan update of Priority Concerns

The existing priority concerns presented at the public update meeting were reviewed and discussed. Comment and question forms were also distributed to allow for further review of existing priority concerns. A few of the forms were returned with comments which were utilized in the update of the water plan. Priority areas of highly erodible grounds and areas of water quality problems were identified in the attached maps.

B.3 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 9,541 residents in the County as of 2005, 1.8% less than the 9,721 people counted in the year 2000 US Census and 2.7% less than the 9,806 counted in 1990. The Demographic Center projects the County's population to rise to 10,070 by 2030.

Although total population has declined, the number of households is growing. In 2000, the US Census counted 3,843 households in the County. In 2005, the Demographic Center estimates a 1% expansion to 3,883 households. The largest number of new households are estimated in the largest cities, Luverne and Hills. However, the largest proportional gain is seen in Vienna Township (10%), Kanaranzi Township (5.3%) and Battle Plain Township (5.1%), indicating a growing number of rural residences.

The 2010 census showed a small loss in population for Rock County. There are 34 less people than the 2000 census, with cities showing a modest increase and townships losing population.

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 all of the 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.

Rock County Water Plan		
Population		
	2005	2000
Civil Division	Estimate	Population
Battle Plain township	243	233
Beaver Creek city	246	250
Beaver Creek township	366	391
Clinton township	261	292
Denver township	213	212
Hardwick city	199	222
Hills city	555	565
Jasper city (part)	74	75
Kanaranzi township	297	286
Kenneth city	54	61
Luverne city	4596	4617
Luverne township	490	493
Magnolia city	204	221
Magnolia township	238	250
Martin township	432	451
Mound township	248	257
Rose Dell township	214	214
Springwater township	256	266
Steen city	173	182
Vienna township	182	183
Rock County	9541	9721

Source: Minnesota State Demographic Center

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. 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.

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. In August 2006, there were 37 pending requests for assistance which the Rock County Land Management Office was unable to grant due to lack of funding. Public demand for this assistance is likely to continue.

Rock County SWCD/Land Management has provided cost share to seal another 78 abandoned wells since 2005

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 is currently constructing supply lines to provide treated water from the Missouri River to the Sioux Falls area, Northwestern Iowa and Southwestern Minnesota. L&CRWS will use a series of wells outside Vermillion, SD, to tap into aquifers near the Missouri. Currently, construction is estimated for completion in 2014-2016.

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. The number of cattle recorded in the 2002 US Census of Agriculture rebounded after 10 years of contractions, but the largest change was the number of hogs and pigs more than doubling. 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.

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 620 registered feedlots in Rock County, spread fairly evenly across the townships (see **attached map**). 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			
Building Permits Issued			
	Feedlots	Other	Total
2000	88	24	112
2001	69	40	109
2002	98	20	118
2003	57	5	62
2004	106	14	120
2005	90	27	117

Source: Rock County Land Management Office

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 recently-installed 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.

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.

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). A TMDL study would identify point and non-point sources of these pollutants. MPCA and other agencies are working to reduce impairments in these waters (**see attached map**). The county will participate with MPCA in their Major Watershed Restoration and Protection Plan Approach to assess and address impaired waters within the county. In Rock County, the 2008 impaired waters list includes:

- Pipestone Creek, MN/SD border to Split Rock Creek, mercury affecting aquatic consumption.

- Split Rock Creek, Pipestone County line to Pipestone Creek, low oxygen affecting aquatic life.
- Rock River, mercury the length of county affecting aquatic consumption, and stretches of turbidity, ammonia and fecal coliform affecting aquatic life and aquatic recreation.
- Mud Creek-Headwaters to MN/IA border, turbidity affecting aquatic life.
- Elk River, Nobles County line to Rock River, turbidity affecting aquatic life.

c. Wetlands and Endangered Species

Wetlands and other natural resources provide important habitat for wildlife, in addition to 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 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: Promote and assist producers in utilizing Best Management practices to better manage nitrogen application such as nitrogen inhibitors, basil stalk testing, variable rate nitrogen application and infrared photography.

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.

Objective 2a.4: Oversight and education of Commercial Animal Waste Technicians.

b. Feedlot Runoff

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

Objective 2b.1: Assist 50 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: Develop an ordinance to require ISTS inspections and subsequent upgrades at the time the property transfers ownership.

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.

Objective 4a.1: Provide technical assistance to 50 producers interested in conservation practices, i.e., waterways, terraces, sediment basins in areas within the county with high erosion or sedimentation problems. Referenced in Map O & P

- Objective 4a.2: Provide cost share opportunities for conservation practices from local, state, and federal sources.
- Objective 4a.3: Promote filter strips along water courses with the CREP program, and other conservation programs.
- 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: Install rain gardens or storm water retention ponds in areas of concentrated rainfall to reduce pollutant delivery to streams and slow delivery of storm water.
- Objective 4a.9: Promote and assist with stream bank stabilization, cattle crossings and pasture management to reduce stream bank erosion.

b. TMDLs

Goal 4b: Utilize the Rock River TMDL Implementation Plan as well as developing plans to address those reaches of water courses that are found to exceed the limits of Total Maximum Daily Load in coordination with MPCA's Major Watershed Restoration and Protection Plan Approach.

- Objective 4b.1: Utilize the Rock River TMDL Implementation Plan as well as work with MPCA and other federal and state agencies in developing a plan to address how to address impairments found and protect other streams.
- Objective 4b.2: Sample surface waters at critical points to monitor and measure successes of programs and better focus implementation activities. Water quality results will be submitted to MPCA to facilitate assessment of county streams.

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.

C. Implementation Schedule of Priority Concerns

This section establishes the implementation program for the local water management to address priority concerns. Costs listed are estimates and subject to increases.

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, MRWA

When: 2011-2016

Cost: \$3,000 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, MRWA

When: 2011-2016

Cost: \$2,000 In-Kind, \$500 in advertising

Benefit: Groundwater

Action 1a.3: Using our CREP technician to produce fliers and promotional literature, conducting site visits to those producers that do not respond to the mailings, and using promotional activities to raise the awareness of the programs.

Who: RCLMO, RCRW, CL, MDH, MRWA, BWSR, PF

When: 2011-2016

Cost: \$25,000 per year, \$1000 printing

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: 2011-2016

Cost: \$500 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: 2011-2016

Cost: \$5,500 In-Kind, 1,000 Mileage
Benefit: Groundwater

Action 1a.6: Promote and assist producers in utilizing Best Management practices to better manage nitrogen application such as nitrogen inhibitors, basil stalk testing, variable rate nitrogen and infrared photography.

Who: RCLMO
When: 2011-2016
Cost: \$5,000 In-kind, \$25,000 Infrared Photography
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: 2011-2016
Cost: \$4,500 In-Kind, \$5000 per year printing
Benefit: Groundwater

Action 1b.2: Budget cost share dollars for sealing 100 abandoned wells.

Who: RCLMO, BWSR, MDH, MRWA
When: 2011-2016
Cost: \$500 to \$1,000 per well sealed, up to \$10,000/cost share per year
Benefit: Groundwater

Action 1b.3: Seek additional funding for assistance sealing additional abandoned wells.

Who: RCLMO, BWSR, MDH, MRWA
When: 2011-2016
Cost: seek at least \$5,000 per year
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: Contact public water suppliers and research examples of effective plans.

Who: RCLMO, RCRW, CL, MDH, MRWA
When: 2011-2016
Cost: \$1,500 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
When: 2011-2016

Cost: \$1,000 In-Kind, \$500 printing
Benefit: Groundwater

Action 1c.3: Stay informed on water supply issues and educate legislators on the priority issues.

Who: RCLMO, RCRW, CL, MDH, MRWA

When: 2011-2016

Cost: \$1,000 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: 2011-2016

Cost: \$10,000 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: 2007-2012

Cost: \$2,500 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: 2011-2016

Cost: \$2,500 In-Kind

Benefit: Surface Water/ Groundwater

Action 2a.4: Oversight and education of Commercial Animal Waste Technicians

Who: RCLMO, MPCA, MDA

When: 2011-2016

Cost: \$2,500 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, MDA

When: 2011-2016

Cost: \$25,000 In-Kind \$5,000 - \$100,000 per feedlot

Benefit: Surface Water/ Groundwater

Action 2b.2: Utilize a check list 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: 2011-2016

Cost: \$12,500 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 to require ISTS inspections and assist with subsequent upgrades at the time of property transfer

Who: RCLMO, MPCA, BWSR, MDA, RCRW, CL

When: 2011-2016

Cost: \$5,000 In-Kind, \$7,000 - \$10,000 per Septic System replaced.

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: 2011-2016

Cost: \$20,000 In-Kind, \$3,000 mileage

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: 2011-2016

Cost: \$2,500 In-Kind, \$7,000 - \$10,000 per Septic System replaced.

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.

Action 4a.1: Along with NRCS provide technical assistance to 50 producers and landowners that are interested in installing conservation practices in areas within the county with high erosion or sedimentation problems.

Who: RCLMO, NRCS

When: 2011-2016

Cost: \$20,000 In-Kind

Benefit: Surface Water

Action 4a.2: Assist producers in applying for cost share opportunities for conservation practices.

Who: RCLMO, BWSR, NRCS

When: 2011-2016

Cost: \$3,500 In-Kind

Benefit: Surface Water

Action 4a.3: Identify potential areas and contact the landowners with our CREP Technician. Provide a technician to encourage and facilitate conservation program participation.

Who: RCLMO, BWSR

When: 2011-2016

Cost: \$2,500 In-Kind, \$25,000 per year Technician

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: 2011-2016

Cost: \$2,500 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: 2011-2016

Cost: \$3,000 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

When: 2011-2016

Cost: \$5,000 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: 2011-2016

Cost: \$5,000 In-Kind, \$5,000 CREP Technician

Benefit: Surface Water

Action 4a.8: Install rain gardens or storm water retention ponds in priority areas to reduce pollutant delivery to streams and slow down storm water.

Who: RCLMO, NRCS, DNR

When: 2011-2016

Cost: 20,000 In-Kind, \$5,000-\$10,000 Per Rain Garden

Benefit: Surface Water

Action 4a.7: Promote and assist with stream bank stabilization, cattle crossing and pasture management to reduce soil erosion.

Who: RCLMO, NRCS, DNR

When: 2011-2016

Cost: \$20,000 In-Kind, \$5,000-\$50,000 per site.

Benefit: Surface Water

Goal 4b: Promote and use the Rock River TMDL implementation plan and develop plans to address those reaches of water courses that exceed the limits of Total Maximum Daily Load in coordination with MPCA's Major Watershed Restoration and Protection Plan Approach.

Action 4b.1: Meet semiannually with the Rock River TMDL Advisory and Technical Committees, participate in regional meetings that address plans of action to correct stream impairments, and work with MPCA in assessing current information and developing TMDL plans. Access state and federal dollars for water sampling to verify contaminants that caused these streams to be listed as impaired.

Who: RCLMO, MPCA, BWSR, RCRW, CL

When: 2011-2016

Cost: \$30,000 In-Kind

Benefit: Surface Water

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

Who: RCLMO, RCRW, CL, BWSR,

When: 2011-2016

Cost: \$50,000 In-Kind, \$6,000 per year testing fees.

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, DNR, USCOE

When: 2011-2016

Cost: \$30,000 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, DNR, USFW

When: 2011-2016

Cost: \$10,000 In-Kind

Benefit: Surface Water/ Endangered Species

Action 4c.3: Utilize our CREP Technician position to 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: 2011-2016

Cost: \$5,000 In-Kind, \$1000 advertising and printing

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.
- 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 5th graders using learning stations.
- Provide for collection of waste agricultural pesticides and empty pesticide containers.
- Assist producers in utilizing Best Management Practices to better manage their nitrogen applications such as nitrogen inhibitors, basil stalk testing, variable rate nitrogen application and infrared photography

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.
- Review applications of manure by Commercial Animal Waste Technicians and provide opportunities for continuing education and trainings for Commercial Animal Waste Technicians.

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.
- Provide other sources of low interest funding and cost share for limited resource residents to replace failing ISTS systems.

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

- Promote and provide technical assistance for conservation programs.
- 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.
- Distribute a monthly newsletter to all agricultural producers in the county.
- Promote and facilitate installation of rain gardens, storm water retention ponds to address storm water runoff.
- Promote and assist producers with stream bank stabilization projects, installation of cattle stream crossings, and pasture management.

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

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 contaminants 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. H₂O 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.