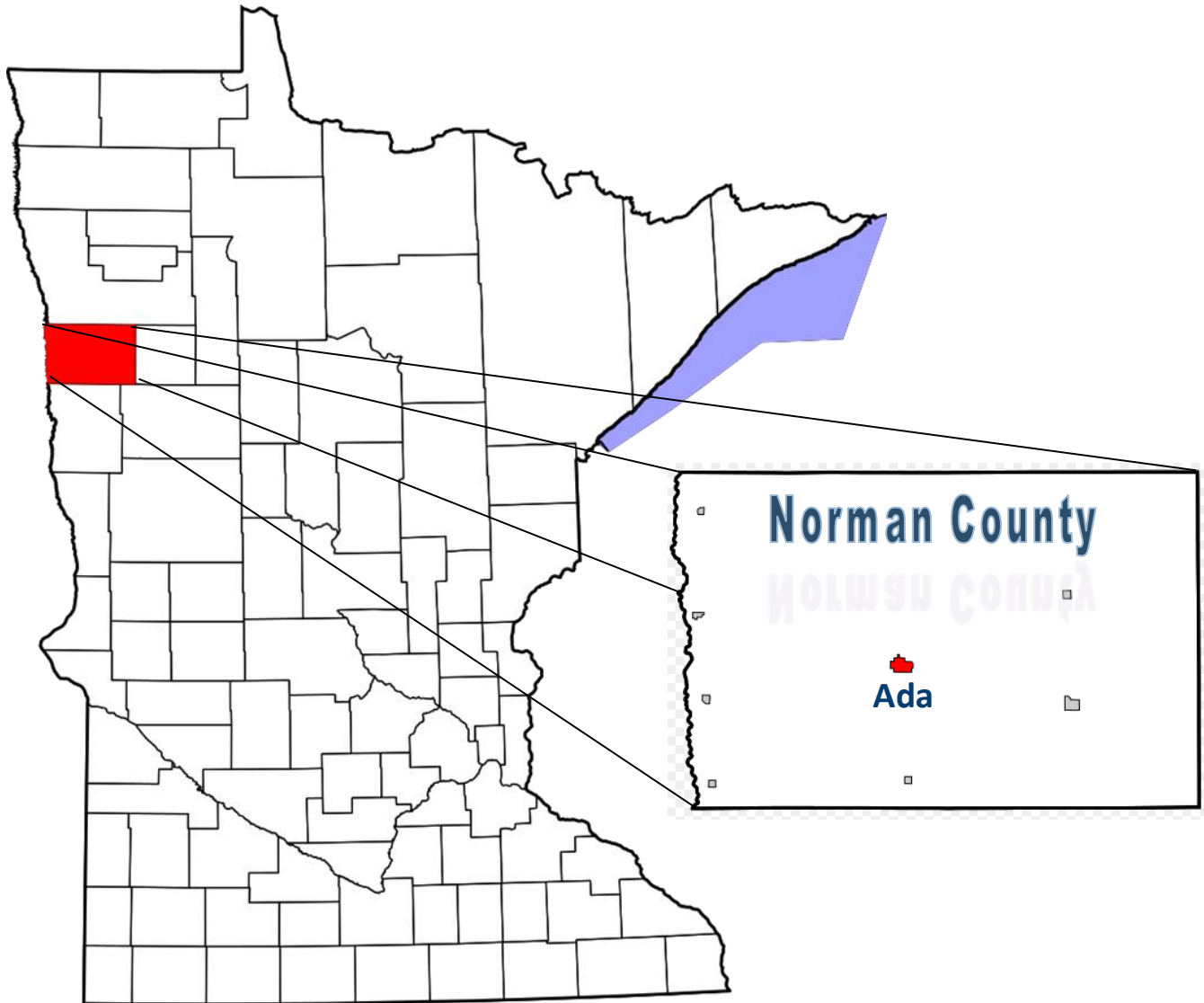


# Norman County's Priority Concerns Scoping Document



*The Priority Concerns Scoping Document of the Norman County Comprehensive Local Water Management Plan was developed in accordance with the changes to the Comprehensive Local Water Management Act; Statutes 103B.304 – 103B.355. The scoping document lists the priority concerns the Norman County Water Management Advisory Committee has chosen, along with a detailed account of how the concerns were identified and selected.*

**The updates to the Priority Concerns Scoping Document were done by the  
Norman County Soil & Water Conservation District**

## A. INTRODUCTION

### 1. COUNTY PRIMER

Norman County is located in northwestern Minnesota, with an area of 887 square miles (561,592 acres). There are 8 cities and 4 unincorporated communities. The 2010 census showed a population of 6,852. The County seat is Ada. The eight cities in Norman County include: Shelly, Halstad, Hendrum, Perley, Ada, Borup, Gary, and Twin Valley. The 4 unincorporated communities include; Faith, Lockhart, Hadler, and Syre.

**Historic Populations (US Census Bureau)**

Census	Population	% increase/ decrease
1890	10,618	
1900	15,045	41.7%
1910	13,446	-10.6%
1920	14,880	10.7%
1930	14,061	-5.5%
1940	14,746	4.9%
1950	12,909	-12.5%
1960	11,253	-12.8%
1970	10,008	-11.1%
1980	9,379	-6.3%
1990	7,975	-15.0%
2000	7,442	-6.7%
2010	6,852	-7.9%

**2010 census by city (US Census Bureau)**

City	Population
Ada	1,707
Twin Valley	821
Halstad	597
Hendrum	307
Gary	214
Shelly	191
Borup	110
Perley	92
<b>TOTAL</b>	<b>4,039</b>

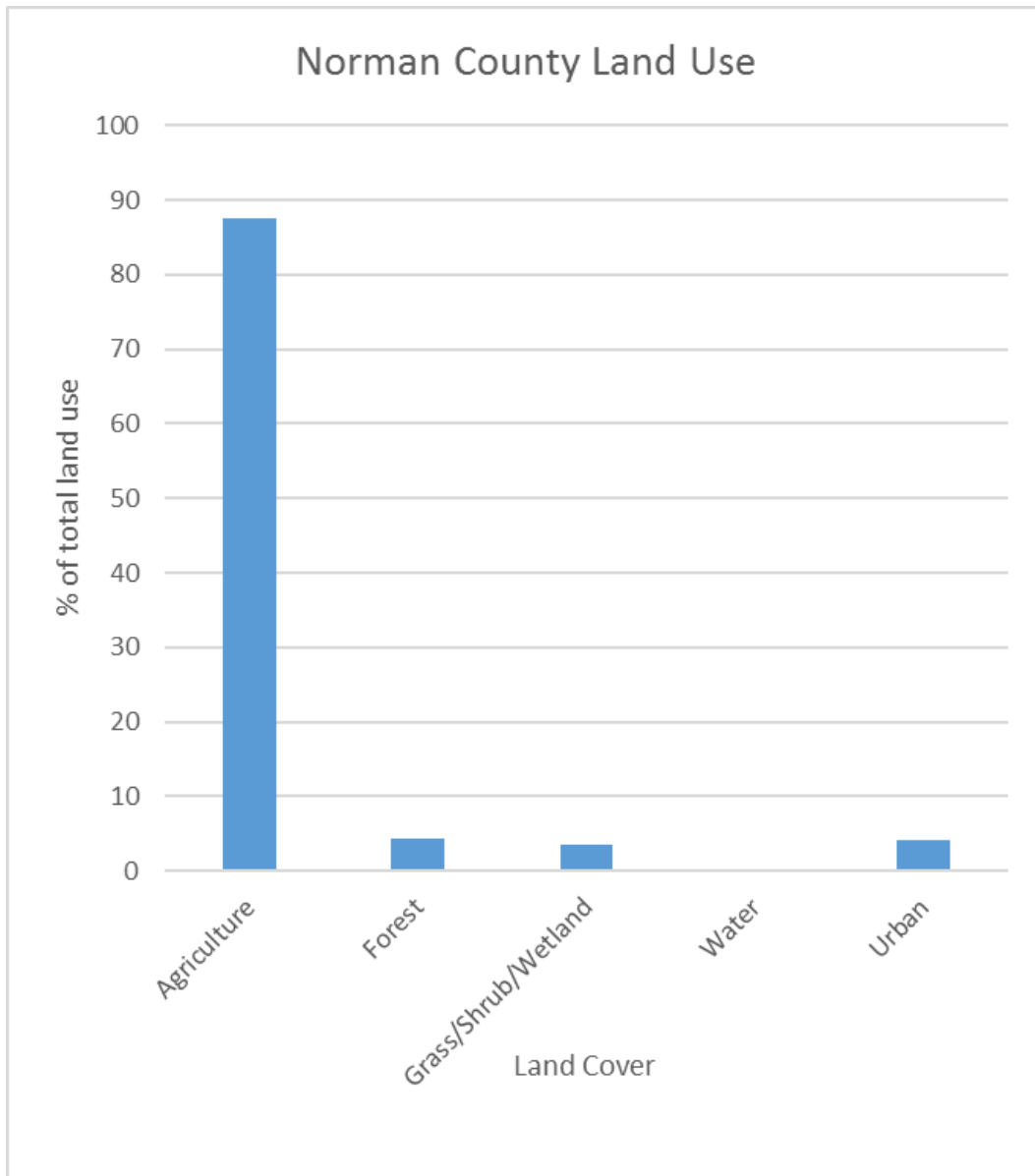
**Estimated 2015 Populations for Norman County, Minnesota** (Minnesota State Demographic Center)

<b>City/Township</b>	<b>Population</b>
Ada City	1702
Anthony Township	47
Bear Park Township	117
Borup City	104
Flom Township	261
Fossum Township	175
Gary City	222
Good Hope Township	46
Green Meadow Township	70
Halstad City	598
Halstad Township	96
Hegne Township	57
Hendrum City	281
Hendrum Township	100
Home Lake Township	177
Lake Ida Township	171
Lee Township	114
Lockhart Township	70
McDonaldsville Township	164
Mary Township	83
Perley City	117
Pleasant View Township	112
Rockwell Township	78
Shelly City	223
Shelly Township	96
Spring Creek Township	78
Strand Township	95
Sundal Township	115
Twin Valley City	771
Waukon Township	85
Wild Rice Township	238
Winchester Township	62

There are 24 Townships in Norman County; Shelly, Good Hope, Lockhart, Spring Creek, Sundal, Bear Park, Halstad, Anthony, Pleasant View, Green Meadow, Strand, Waukon, Hendrum, Hegne, McDonaldsville, Lake Ida, Wild Rice, Fossum, Lee, Mary, Winchester, Rockwell, Home Lake, and Flom. **(Attachment 1: Township Map of Norman County)**

a. Dominant Land Use of Norman County and Projected Trends

Norman County lies within the Red River Valley of the North. The soils left by glacial Lake Agassiz are very productive. The primary land use of Norman County is agricultural based at approximately 87%. In 2010, there were 692 farms, with 465,225 acres being cropland. The main crops are soybeans, corn, wheat and sugar beets. The percentages of land use are not expected to change in the next 10 years. Norman County has five Scientific and Natural Areas, one of which is partially in Polk County, totaling 2,479 acres. There are 14 Wildlife Management Areas totaling 5,260 acres. **(Attachment 2: Norman County Landuse Cover)**



2. PLAN INFORMATION

a. Identify the LGU responsible for the local water management plan/program

The Norman County Local Water Management Plan (LWP), (previously known as the Norman County Comprehensive Local Water Plan) was first developed and approved by the Minnesota Board of

Water and Soil Resources in 1990. It was developed as a five-year plan and was updated in 1997 (the 1990 – 1995 Plan was granted a two-year extension). The 1997–2002 Plan was granted a two-year extension, to match up with the Wild Rice Watershed planning process.

The Norman County Soil and Water Conservation District is responsible for the writing, development, and implementation of the Local Water Management Plan in coordination with the Local Water Management (LWM) Advisory Committee, area watershed districts, local, state, and federal agencies, private citizen groups, organizations, state associations, township boards, and municipalities.

b. Local water management plan adoption dates and the number of times it has been updated.

The Norman County Water Plan was adopted in 1990. Updates to the plan have been in 1997, 2002, 2006, 2012 and 2016.

c. Expiration date of the current plan

The current plan expires on December 31, 2016. After the plan is approved this year, it will expire in 2026 with an update in 2021.

## B. PRIORITY CONCERNS ADDRESSED BY THE PLAN *not listed by importance order*

The following priority concerns were identified through prior public meetings and agency input.

1. Priority 1 will focus on reducing unwanted wind and water erosion and the associated sedimentation that occurs within Norman County.
2. Priority 2 will focus on improving surface and groundwater quality at the watershed level.
3. Priority 3 concentrates on the appropriate use of natural resources by coordinating and implementing government programs.
4. Priority 4 puts emphasis on proper control of water movement, drainage, and retention.

### **Priority Concern 1- Reduce Unwanted Soil Movement**

The first priority concern will focus on wind and water erosion and the associated sedimentation that occurs within Norman County. This Priority Concern could benefit by the expanded use of local, state and federal programs including; CRP, EQIP, CSP, ACEP, WRP, RCPP, MAWQCP, RIM, State Cost Share and other programs. We will be monitoring surface water within local priority areas.

#### **Wind Erosion**

Wind erosion has been a long term problem across all of Norman County. The United States Department of Agriculture (USDA) has identified Highly Erodible Soils based on production loss. The soils in the western half of the county are so productive that they can lose many tons per year and still remain very productive. The soils in the eastern half of the county are lighter soils and are prone to wind erosion. Wind erosion can be slowed or corrected by:

1. Field windbreaks

2. Cross-wind strip-cropping
3. Conservation tillage
4. Cover crops

**(Attachment 3: Norman County Wind Erosion Priority Areas)**

**Water Erosion**

Water erosion is a problem in the eastern half of the county where slopes are steep and soils are prone to erosion. Altering of the streambank will accelerate erosion. A stream will seek to reestablish a stable size and pattern, making streambank erosion a natural process. Damaging or removing streamside vegetation can cause a dramatic increase in bank erosion. A degrading stream bed results in higher and often unstable, eroding banks. When land use changes occur in a watershed, such as clearing land for agriculture or development, runoff increases. With this increase in runoff, the stream channel will adjust to accommodate the additional flow, increasing streambank erosion. Addressing the problem of streambank erosion requires an understanding of both stream dynamics and the management of streamside vegetation. A protected streambank not only stops accelerated erosion, but also provides shade, cover, and food for a variety of wildlife. There are ways streambank erosion can be hindered:

1. Rock rip-rap
2. Planting of vegetation along banks
3. Placement of native, natural materials (rocks, logs) to deflect flow away from sensitive areas
4. Buffers along shoreline to slow runoff

**(Attachment 4: Norman County Water Erosion Priority Areas)**

**Water Erosion and Sedimentation**

When runoff flows across bare soil or impervious surfaces, it picks up soil, waste, salt, pesticides, fertilizers, and other pollutants. This water will eventually drain directly into a water source. This polluted runoff can be harmful to plants, fish, wildlife, and seriously degrades the quality of the water. Sedimentation occurs in the western half of the county where the general slope has dropped to less than one foot per mile. In the eastern half of the county the slopes are steep enough for the water to carry a heavy sediment load. Sediment is harmful in the following ways:

1. Fills up watercourses which will increase the potential for flooding
2. Murky water prevents natural vegetation from growing in the water
3. Sediment can disrupt the natural food chain
4. Sediment increases the cost of treating drinking water
5. Sediment can directly harm fish and other aquatic life
6. Nutrients transported by sediment can activate extreme algae growth
7. Sediment deposits can alter the flow of water, which can cause further erosion

There are different ways to slow sedimentation:

1. Water control structures

2. Cover crops
3. Buffers along water sources
4. Minimize disturbance at construction sites
5. Creation of sediment traps or ditches
6. Stabilizing sensitive soils
7. Protect slopes with perennial vegetation
8. Storm inlet protection

## **Priority Concern 2- Maintain or Improve Water Quality**

Water is one of the most precious resources in Norman County. It maintains crops and other vegetation, offers recreational opportunities, provides habitat and nourishment to wildlife, and provides aesthetic beauty. Groundwater provides the county with much of its drinking water. Surface water and groundwater are closely connected. Groundwater provides discharge to streams and rivers. Surface water provides recharge to groundwater. The second priority will focus on surface and groundwater quality within the watersheds. This priority concern would benefit from monitoring current wells for possible contamination, locating and sealing abandoned wells, monitoring landuse within the area of groundwater sensitivity and developing wellhead protection and management plans. Surface water quality could be improved by use of local, state and federal programs including; CSP, ACEP, RCPP, MAWQCP, RIM, EQIP, WRP, State Cost Share and other programs. Monitoring of surface water within local priority areas, and removal of contamination near surface water can improve water quality. The MPCA has identified 18 streams and rivers in Minnesota that are impaired for turbidity. These streams must have a TMDL developed for it. A TMDL is the maximum amount of a pollutant a body of water can receive without violating water quality standards. **(Attachment 5: Public Water Index)**  
**(Attachment 6: TMDL Impaired Waters)**

### **Groundwater quality**

There are no identified groundwater contamination zones within Norman County. Nitrate problems have been identified in sand point wells and failing deep water wells within the county. Water hardness increases from east to west as the age of the water increases from 100,000 years on the east to 300,000 years on the west side of the county. The county has a very large supply of water but with aquifer recharge of 100,000 to 300,000 years that water is very limited. Wellhead protection and management plans need to be developed. Household hazardous waste needs to continue to be removed from waste streams and disposed of properly. Field irrigation is becoming more common in Norman County. While Minnesota has less irrigated cropland than drier states to its west, irrigation is not uncommon in areas of the state with sandy soils or lower total rainfall. Generally, average annual precipitation decreases from east to west across Minnesota, making irrigation more common in the western part of the state. Irrigation water management is becoming important. An objective of irrigation management is to prevent irrigation-induced soil and water quality problems such as salinity, soil erosion or leaching of nutrients or pesticides into groundwater. Crop managers must understand the potential for these problems to occur and address them as needed.

Groundwater quality within Norman County could be affected by 3 main events:

1. Contamination by failing wells. To correct this, we will help the landowners to find funding for drilling a new well,
2. Contamination by abandoned wells. There is state and federal funding available to help seal abandoned wells in the county,
3. Surface contamination entering groundwater from sources such as over applied fertilizer. We will encourage Ag BMP's to reduce misuse of agricultural chemicals.

### **Surface Water quality**

Minnesota is abundant with surface water. The land of 10,000 lakes actually has 11,842 lakes over 10 acres, over 104,000 miles of streams and rivers, and about 9.3 million acres of wetlands. The task of protecting these resources is shared among numerous government organizations at the local, state, and federal level. There are also many non-government organizations and citizens who get involved. Each organization plays a critical role such as; monitoring and assessing water quality, developing strategies for restoration and protection projects, regulating activities, issuing permits, and compliance inspections. There are many ways that surface water may become impaired, a few ways include:

1. Agricultural runoff
2. Improper wastewater disposal, sewage failure
3. Impervious surfaces near open water, urban development
4. Bank erosion
5. Industrial waste
6. Animal waste

There are ways to prevent surface water degradation on sites in equilibrium, and ways to improve surface water quality of sites with impairments:

1. Buffers or filter strips to filter out impurities before the water reaches a stream, lake, river, wetland, etcetera
2. Proper application and setback limits of agricultural chemicals and fertilizers using Ag BMP's
3. Streambank erosion control structures in priority areas
4. Proper disposal of industrial waste, regulations and restrictions in sensitive areas
5. Proper disposal of waste and setback limits for feedlot operations
6. Upkeep and updating of sewage systems, especially those in or near sensitive areas
7. Construction of water retention projects to control the flow of water into a water body or system and allow time for natural filtration



### **Priority Concern 3- Appropriate Use of Natural Resources**

The third priority concern focuses on the appropriate use of natural resources within the county using Ag BMP's. Correct land use opinions vary greatly, depending on the opinions of landowners, local, state or federal agencies or private organizations. The harmonization of the meaning of correct, and a suitable compensation for an alternative use of natural resources will warrant whether many projects are completed in the county.

The Flood Damage Reduction (FDR) workgroup has identified priority areas for both FDR and Natural Resource Enhancement (NRE) activities within Norman County.

1. Priority NRE areas have been identified for wetland restoration and creation within the beach ridge area of eastern Norman County. This area is unique and comprises rare vegetation.
2. Priority NRE areas have been identified for water storage. In these areas, the main emphasis is on control of the water transported to the river system to reduce flooding.
3. Priority NRE areas have been identified for prairie restoration and establishment along the Wild Rice River and its tributaries.
4. Priority NRE areas would benefit from the use of local, state and federal programs including; Buffers, CSP, ACEP, RCPP, MAWQCP, RIM, EQIP, WRP, State Cost Share and other programs.

### **Priority Concern 4- Control Water Movement Across the watersheds.**

The fourth priority concern will focus on water movement throughout the watersheds. The water cycle has remained the same since the beginning of time. Water stored in wetlands, lakes, rivers, streams, or underground sources are all linked together throughout a watershed. Rain that falls from the sky can flow into a surface water body or filtrate through the soil into the groundwater. Eventually, water flowing over the surface or through the ground makes its way into rivers and lakes, or is absorbed by plants and trees where it evaporates or transpires to begin the cycle again. This is why it is important to control the movement of water across the watershed. A healthy watershed provides safe drinking water, conserves water, promotes streamflow, supports sustainable streams, rivers, lakes, groundwater sources, enables healthy soils for crops, manages flood and drought impacts, maintains healthy ecosystems, and contributes to tourism and recreation. There are many factors that affect the flow of water across a watershed; steepness of the slope, type of rock or soil, amount of vegetation, shape of the streambed, style of biological diversity, and obstructions. Water that falls in the form of precipitation will either soak into the soil or flow across the surface as runoff until it finds a stream, river, lake, or wetland. Runoff is excess water that is not absorbed by the surrounding area. If not properly controlled, runoff has the opportunity to pick up contaminants before reaching a waterbody.

There are many ways to control the movement of water across a watershed:

1. Streambank stability which stabilizes a streambank from eroding and adding sediment to the watercourse.
2. Wetland restoration which reestablishes or repairs the hydrology, plants, and soils of a former degraded wetland.
3. Vegetation

- a. Certain plants soak more water out of the ground, thus requiring more water to soak into the ground and leaving less as runoff.
  - b. We cannot control the soil type, so certain types are more prone to creating runoff. Vegetation can help certain soil types absorb more water.
- 4. Culvert restrictions limit the sizes of new culverts or exiting culverts to manage water flow.
- 5. Water retention measures that aim to safeguard and enhance the water storage potential of landscape, soil, and aquifers, by restoring ecosystems, natural features and characteristics of water courses and using natural processes.
- 6. Conservation tillage, Ag BMP's
  - a. Soil that is tilled too hard will lose its soil structure.
  - b. Soil left bare without cover crop or residue is vulnerable to soil erosion, and rainwater cannot infiltrate bare soil as easily as soil with cover.
- 7. Shoreland Management, which regulates all land within 1,000 feet of a lake and 300 feet of a river and its designated floodplain.

## C. Priority Concern Identification Process

1. Public and Internal Forums held to gather input regarding priority concerns
  - March 27, 2002- a Norman County Comprehensive Local Water Plan Task Force meeting was held to discuss the goals and their corresponding objectives and the time line of the Norman County LWP revision.
  - April 2002- the Norman County Board adopted a resolution to revise the Norman County Comprehensive Local Water Plan. (Norman County Local Water Management Plan)
  - May 2002- Notice of Decision to revise the Norman County Comprehensive Local Water Plan was sent to:
    - County Boards of contiguous counties
    - Watershed District Boards with boundaries within Norman County
    - All LGU's wholly or partially within Norman County
    - Minnesota Board of Water and Soil Resources – Bill Best, Board Conservationist
    - Municipalities within Norman County
    - Townships within Norman County
    - Norman County Comprehensive Local Water Plan Task Force members
  - May 2002- Norman County made a request for Local Plans and Official Controls to all cities, townships, and watershed districts with boundaries of Norman County in conjunction with the Notice of Decision.
  - September 3, 2002- a request on behalf of Norman County was made to the Minnesota Board of Water and Soil Resources for an extension to the Norman County Comprehensive Local Water Plan.

- October 23, 2002- the Minnesota Board of Water and Soil Resources approved Norman County's request for an extension of the Norman County Comprehensive Local Water Management Plan.
- May 5, 2004- a public informational meeting was held to gather information on local water plan priorities.
- May 5, 2004- the Norman County Local Water Management Plan Task Force met to discuss priority concerns for Norman County.
- May/June 2004- published water plan survey in the Ada Index and the Twin Valley Times.
- June 2004- ran radio ads to request residents to fill out and return surveys published in the local newspapers.
- June 21, 2004- requested priority concerns from local, state and federal agencies and organizations.
- June 1, 2006- update of the Norman County Local Water Plan.
- July 1, 2012- update of the Norman County Local Water Plan.
- December 29, 2015- resolution approved to update the Norman County Local Water Plan
- February 3, 2016- requested priority concerns from local, state and federal agencies and organizations.
- July 27, 2016- Local Water Management Plan Advisory Committee met to discuss the 2016 water plan and scoping document update and additions or changes to the Priority Concerns Scoping Document
- August 8, 2016- Public Meeting for the Priority Concerns Scoping Document.
- August 8, 2016- Local Water Management Plan Advisory Committee met to discuss the Public Meeting.
- August 12, 2016- Priority Concerns Scoping Document sent to BWSR for review and 30-day comment period.

#### D. Priority concerns not addressed by the plan

There are some concerns that are unable to be adequately addressed through the Local Water Management Plan. Some issues and concerns should not be addressed through this plan, but through

other entities' plans and programs such as watershed districts, county planning and zoning, cities, and others.

## E. Acronyms

Ag BMP- Agricultural Best Management Practices

ACEP- Agricultural Conservation Easement Program

CRP- Conservation Reserve Program

CSP- Conservation Stewardship Program

EQIP- Environmental Quality Incentives Program

FDR- Flood Damage Reduction

LGU- Local Government Unit

LWM- Local Water Management

LWMP- Local Water Management Plan

MAWQCP- Minnesota Agricultural Water Quality Certification Program

MPCA- Minnesota Pollution Control Agency

NRE- Natural Resource Enhancement

RCPP- Regional Conservation Partnership Program

RIM- Reinvest in Minnesota

SWCD- Soil and Water Conservation District

TMDL- Total Maximum Daily Load

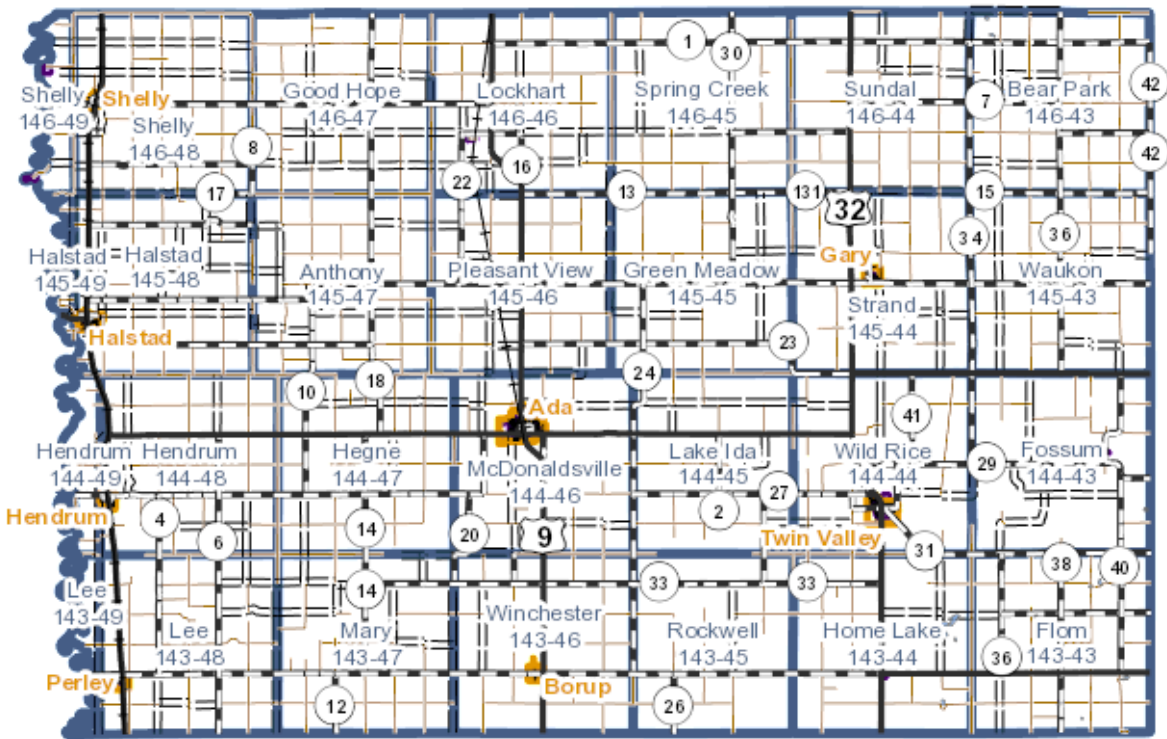
USDA- United States Department of Agriculture

WRP- Wetland Reserve Program

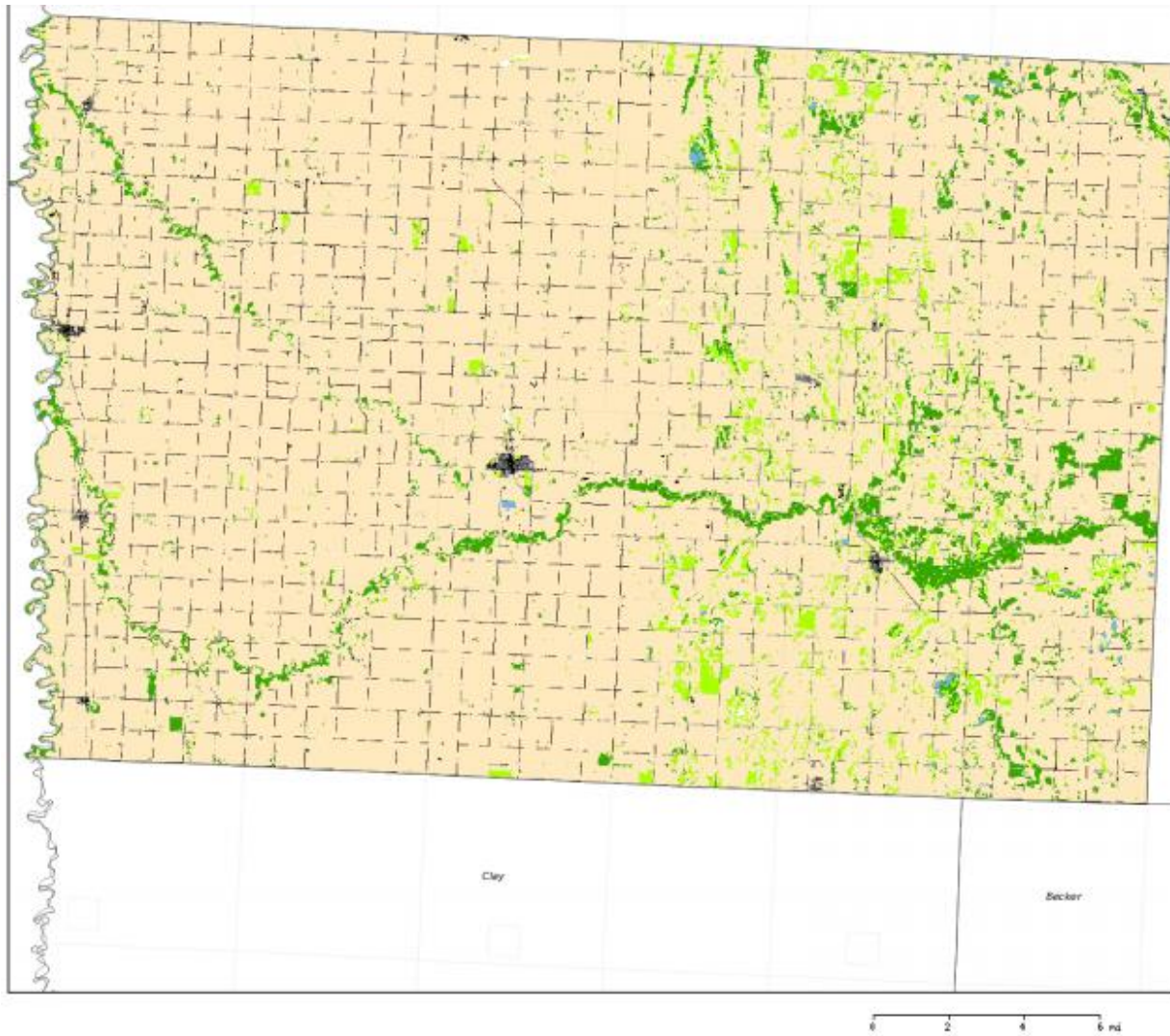
## F. Attachments

1. Township Map of Norman County
2. Norman County Landuse Cover
3. Norman County Wind Erosion Priority Areas
4. Norman County Water Erosion Priority Areas
5. Public Water Index
6. TMDL Impaired Waters
7. Watershed boundaries in relation to Norman County

Attachment 1: Township Map of Norman County (Norman County Website)



Attachment 2: 2000 Norman County Land Cover and Impervious Surface Area (University of Minnesota)

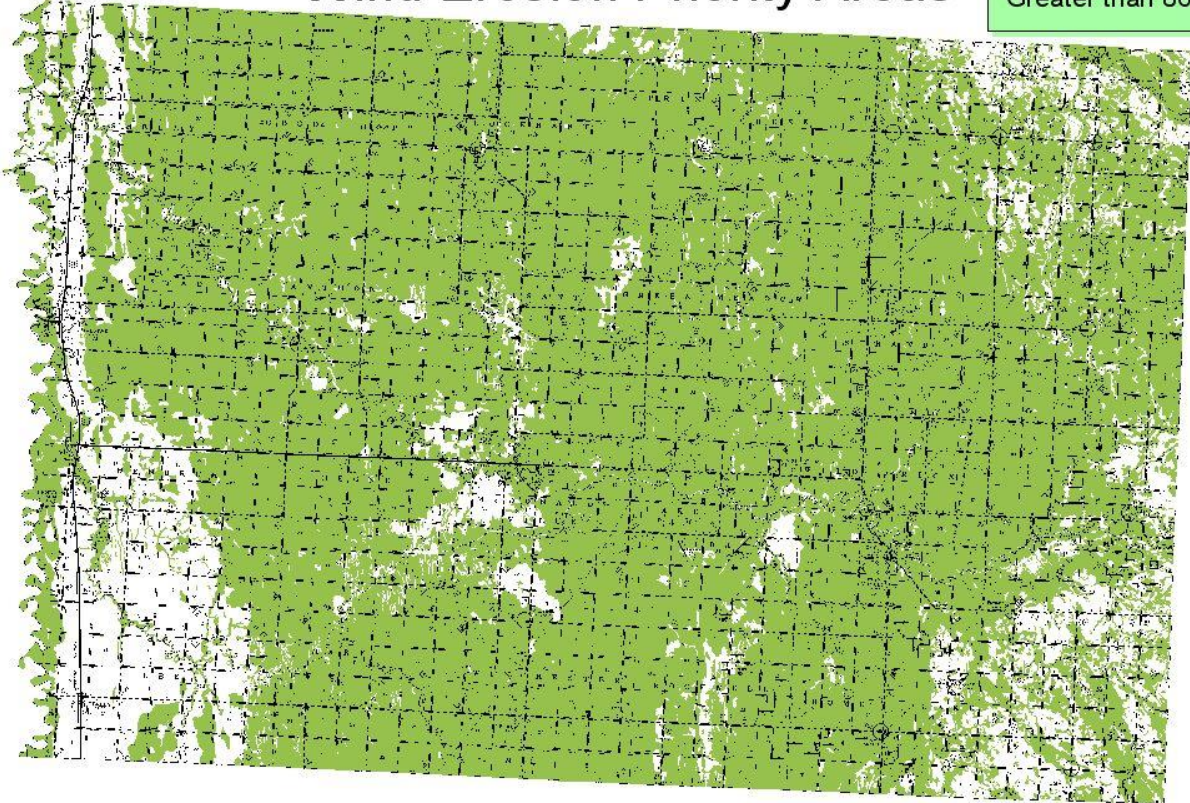


Land Cover	Acres	Percent	Impervious Intensity (%)	Acres	Percent	Weighted Impervious Area (%)
Agriculture	491,913	87.59	0	539,036	95.98	0
Forest	24,659	4.39	1-10	2,426	0.43	0.02
Grass/Shrub/Wetland	20,235	3.6	11-25	3,917	0.7	0.13
Water	836	0.15	26-40	3,919	0.7	0.22
Urban	23,647	4.21	41-60	4,305	0.77	0.39
			61-80	3,820	0.68	0.48
			81-100	4,184	0.75	0.68

**Total Area:** 561,592 Acres  
**Total Impervious area:** 10,802 Acres  
**Percent Impervious Area:** 1.9 %

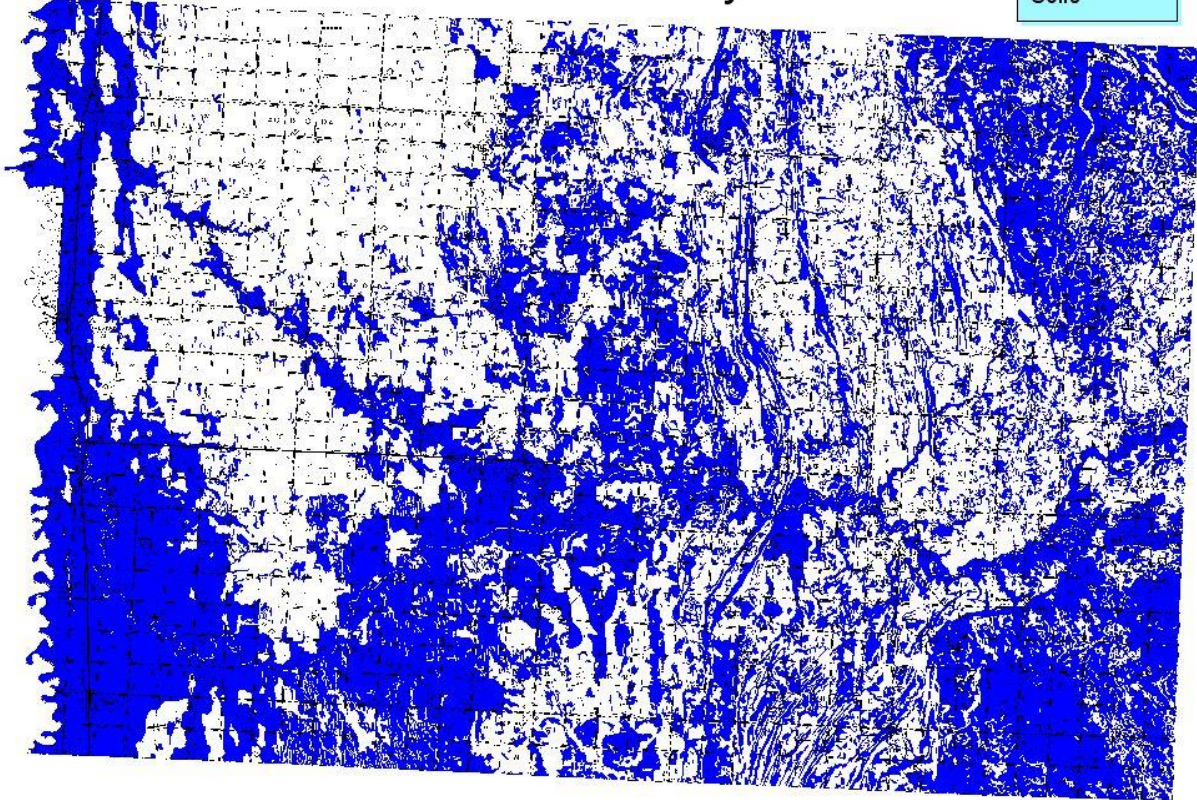
# Norman County Wind Erosion Priority Areas

Soils with an  
Erodibility Index  
Greater than 86



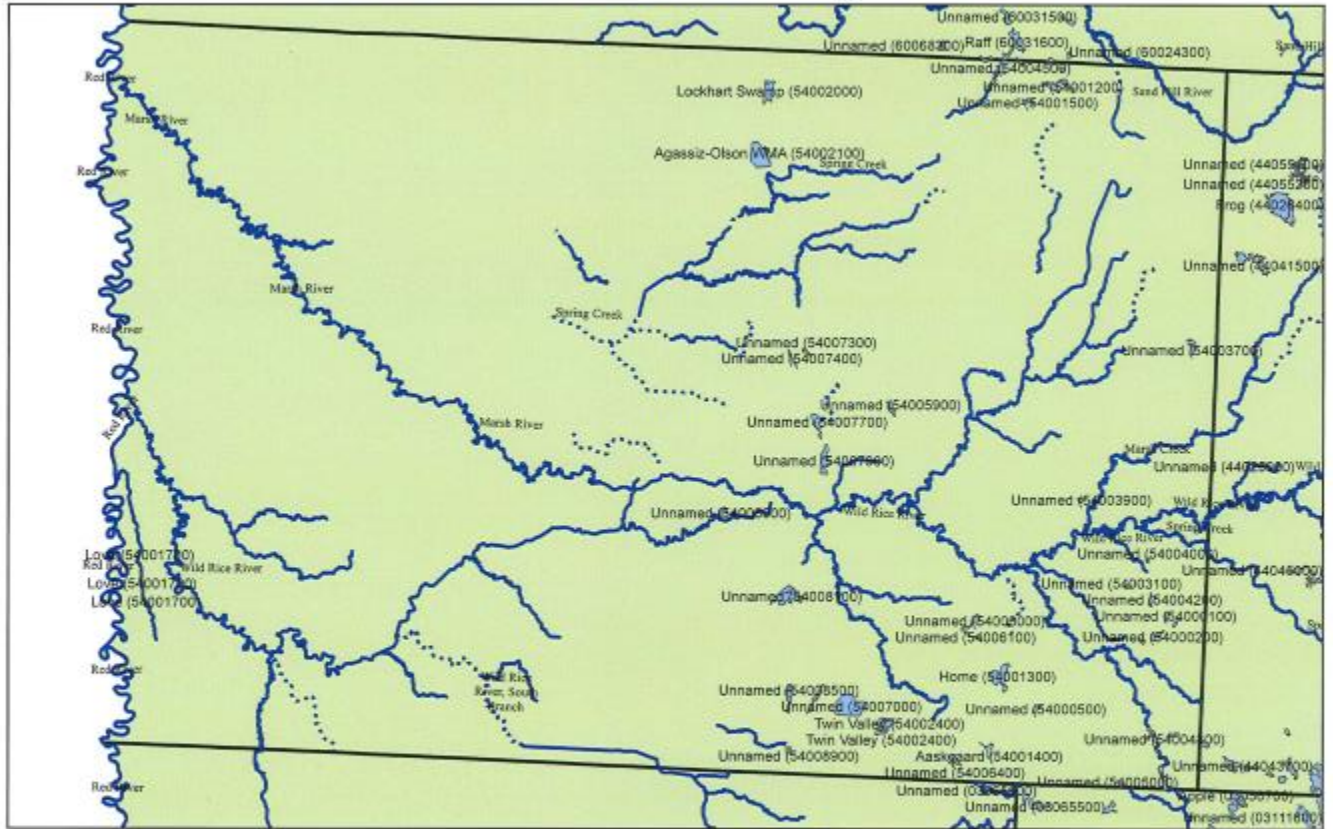
# Norman County Water Erosion Priority Areas

Slope  
Depressional  
Aluvial  
Soils



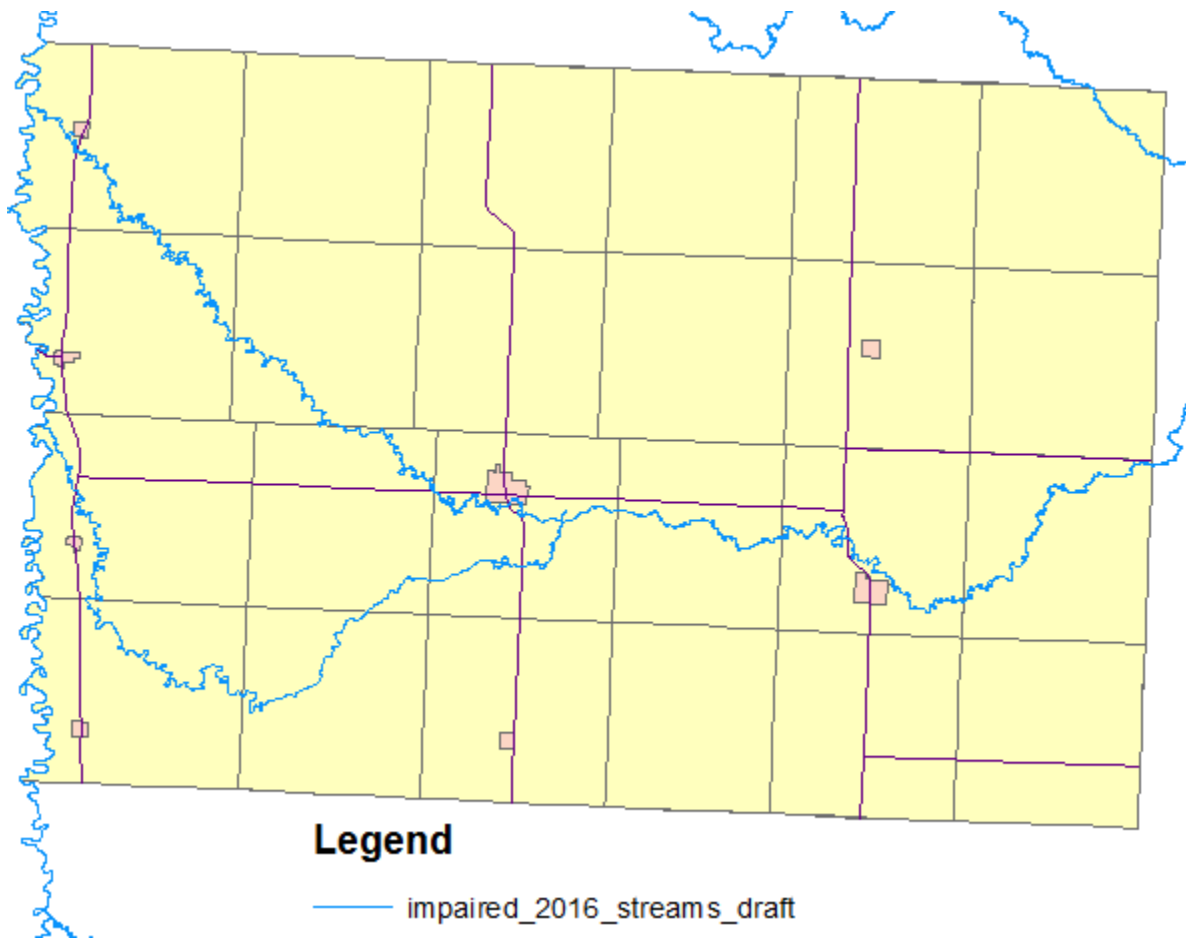


# Norman County PWI



- Legend**
- Public Water Watercourse
  - ..... Public Ditch/Altered Natural Watercourse
  - Public Waters Basins
  - mn\_county\_boundaries\_multipart

Attachment 6: TMDL Impaired Waters (MPCA)



Attachment 7: Watershed Boundaries in relation to Norman County

