

# **NOBLES SOIL AND WATER CONSERVATION DISTRICT**

## **2012 ANNUAL PLAN OF OPERATIONS**

### **INTRODUCTION**

The purpose of the Nobles SWCD Annual Plan of Operations is to provide a mechanism to implement the Nobles County Comprehensive Water Management Plan by identifying the goals and objectives that need to be implemented during the year. The annual plan provides specific statements about the actions to be performed, the programs to be implemented, and the budget allocated for the overall program. The annual plan serves as a tool for guiding actions during the year and for measuring performance at appropriate time intervals.

### **PRIORITY INITIATIVES:**

Surface Water Quality  
Drainage Management  
Public Water Supply

**Descriptions and goals of the Priority Initiatives can be viewed in the  
Nobles Local Water Management Plan**

## **PRIORITY Concern: 1. Surface Water Quality**

### **Annual Objective and Plan of Action:**

#### **Objective #1a. Address TMDL Impaired Waters.**

##### **1a.2 Provide public information on protecting stream and lake water quality.**

- a. Provide public information via annual newsletter, newspaper articles and website
- b. Retain staff able to provide information as needed.
- c. Direct staff contact with landowners having high priority concerns.

##### **1a.3 Conduct water monitoring for water quality data.**

- a. Continue water monitoring efforts on streams and lakes in Nobles County.
- b. Seek funding sources to continue water monitoring efforts.

##### **1a.4 Work with MPCA to improve quality of waters entering Heron Lake.**

- a. Assist the Heron Lake Watershed District in their efforts.
- b. Seek landowners with high priority environmental issues.
- c. Provide cost-share and technical assistance as needed.

##### **1a.5 Work with MPCA and private wildlife and sportsmen's organizations to improve quality of waters entering Okabena, Ocheda and Bella lakes.**

- a. Provide staffing assistance with education, promotion and marketing of conservation programs related to Okabena, Ocheda and Bella Lake.
- b. Provide cost-share assistance when available.

##### **1a.6 Provide technical assistance for the Des Moines River TMDL.**

- a. Provide staff time to serve on the technical committee.
- b. Work with staff and landowners on implementing the WFDRB Implementation Plan.

##### **1a.7 Provide technical assistance for preparation of other TMDL plans as necessary.**

- a. Provide staff time to serve on the technical committees.
- b. Take on leadership roles or shared leadership roles involving impaired waters that have a majority of the watershed within Nobles County.
- c. Assist with the implementation of TMDL Plans concerning waters in Nobles County

##### **1a.8 Participate in implementation of the Rock River TMDL study and plans, through funding from Clean Water Legacy and other sources.**

- a. Provide staff time to serve on the technical committee.
- b. Work with staff and landowners on implementing the Rock River Implementation Plan.

##### **1a.9 Participate in implementation of the Des Moines River TMDL study and plans, through funding from Clean Water Legacy and other sources.**

- a. Provide staff time to serve on the technical committee.
- b. Work with staff and landowners on implementing the WFDRB Implementation Plan.
- c. Assist with seeking funding sources for implementation of the WFDRB Implementation Plan.

##### **1a.10 Participate in implementation of other TMDL plans as necessary.**

- a. Assist with the implementation of TMDL Plans concerning waters in Nobles County
- b. Assist with seeking funding for implementation of the WFDRB Implementation Plan.
- c. Provide staff to serve on committees as needed.

## **Objective #1b. Prevent soil erosion.**

### **1b.1 Promote environmental education and conservation.**

- a. Provide educational opportunities and materials as requested.
- b. Seek out additional educational opportunities for area students, residents and landowners.
- c. Provide educational information via local media such as newsletters, newspaper articles, radio and direct mailings.

### **1b.2 Help fund an annual environmental fair and conservation day which educates 1,400 students from southwest Minnesota, and the local/state Envirothon event.**

- a. Provide staff time to serve on committees as well as assistance with the events as needed.
- b. Assist school districts with financial assistance to attend the Envirothon and Environmental fair when funding is available.
- c. Provide schools with educational assistance as requested and available.

### **1b.3 Assist tours of Prairie Wetland Learning Area in Worthington and Prairie Learning Area in Adrian that educate over 500 students about wildlife, wetlands and native prairie.**

- a. Plan and organize learning tours as needed.
- b. Assist with planning and implementing the event.
- c. Provide financial assistance as needed when available.

### **1b.4 Promote use of natural cover and windbreaks.**

- a. Provide staffing services to assist landowners with completing tree and grass plantings in Nobles County.
- b. Continue running the tree planting and matting services for Nobles County landowners.
- c. Continue running the grass drill rental program for planting CRP, wildlife and waterway practices.
- d. Continue running the native grass and waterway seed sales program.
- e. Install 1,000 feet of field windbreaks.
- f. Install 10 acres of farmstead windbreaks.
- g. Install 5 acres of living snow fences
- h. Assist with and plan for an additional enrollment of 150 acres into easements or public acquisitions.
- i. Assist with the contracting and installation of 150 acres of CRP filterstrips, wetland restorations and general signups.

### **1b.5 Inventory status of all ditch buffers in GIS**

- a. Assist Nobles County Environmental Services with the Inventory of Ditch Buffers.

### **1b.7 Assist with and install 200 grassed waterways, critical area plantings and terraces with EQIP, Continuous CRP, State cost-share and other available funds.**

- a. Assist with the installation of 200 grassed waterways, critical area plantings and terraces prior to 2018.
- b. Assist with the installation of 7 waterways in 2012
- c. Assist with the installation of 3 critical area plantings in 2012
- d. Assist with the installation of 10 terraces in 2012
- e. Assist with the installation of diversions.

### **1b.8 Assist with and install 15 sediment control structures.**

**Objective #1c. Promote Ag Best Management Practices (AgBMPs).**

**1c.1 Assist producers in applying for cost share opportunities for conservation practices.**

- a. Promote, administer and provide technical assistance for the Ag. BMP loan program.
- b. Use the EQIP cost-share program to apply strip tillage, ridge tillage or 50% mulch tillage
- c. Promote, administer and provide technical assistance for all BMP's available to Nobles County residents including all environmental improvement practices.

**1c.3 Promote conservation tillage, EQIP, and AgBMPs by contacting all County landowners through an informational bulletin sent by the SWCD**

**1c.4 Conduct conservation tillage transect survey for the county and analyze data to determine residue cover.**

**Objective #1d. Facilitate compliance of nutrient management, feedlots & SSTS with state and federal requirements.**

**1d.2 Assist 5 producers a year with nutrient management plans.**

- a. Provide general information to landowners regarding benefits of utilizing nutrient management plans
- b. Direct landowners to Environmental Services staff.

**1d.4 Provide technical assistance for feedlot improvements to 30 projects.**

- a. Provide technical assistance to 3 landowners annually.

**1d.5 Provide implementation funding through EQIP and state cost-share to 10 projects.**

- a. Provide funding through state and Federal Programs to assist with 1 feedlot project annually.

**Priority Concern 2. Drainage Management.**

**Objective #2a. Improve shoreland and impervious surface areas.**

**2a.3 Meet with 50 landowners and provide best practices information on proper lakeshore and streambank stabilization prior to 2018**

- a. Meet with 5 landowners annually to discuss lakeshore and streambank BMP's
- b. Assist landowners with obtaining technical assistance and cost-share for lakeshore and streambank improvement projects.

**2a.9 Consider County ordinance provisions encouraging soil erosion mitigation during construction.**

**Objective #2b. Improve flood control, drainage systems and stormwater retention.**

**2b.6 Facilitate City of Adrian efforts to improve storm water drainage.**

**2b.8 Promote and cost-share installation of on-site stormwater retention and rain gardens to reduce peak storm-event flows.**

**2b.9 Facilitate a drainage retention demonstration project.**

**2b.10 Seek additional funding for water retention structures within the Jack Creek and Elk Creek (Des Moines), and Elk Creek (Rock River) watersheds.**

**2b.11 Seek additional funding for water retention structures within the Okabena-Ocheda watershed.**

**Objective 2.c: Encourage wetland restoration and protection of natural habitat.**

**2c.1 Administer the Wetland Conservation Act.**

- a. Evaluate and act on WCA applications.
- b. Evaluate and act on wetland replacement plans.
- c. Enforce Wetland Conservation Act as necessary.
- d. Serve on technical evaluation panel and coordinate meetings as needed.
- e. Review watershed district permit applications for WCA compliance as requested.
- f. Issue certificates of exemption and contractor notification forms when appropriate.
- g. Evaluate and approve wetland banking applications when appropriate.
- h. Request WCA Administrative Training for District Manager.

**2c.2 Utilize USFWS drained wetland inventory and identify high priority areas for wetland restoration and enhancement.**

**2c.4 Educate landowners on the benefits of restoring wetlands, using Wetland Reserve Program, Conservation Reserve Program and Continuous CRP.**

- a. Directly contact landowners with high priority environmental issues.
- b. Provide staff time for promotion and contracting of available programs.
- c. Utilize Media resources for promotion of available programs.
- d. Educate landowners via newsletters or direct mailings.

**2c.5 Enroll 100 acres of marginal land into wetland restoration programs over 10 years.**

**2c.6 Provide information to landowners on benefits of appropriate natural cover on habitat for threatened and endangered species.**

**2c.7 Consider benefits of wildlife habitat in project prioritization.**

**Priority Concern 3. Public Water Supply.**

**Objective #3a. Support Well Head Protection planning and implementation.**

**3a.2 Work with water suppliers to implement Wellhead Protection Plans.**

- a. Utilize state and federal programs to improve water quality and quantity to Nobles County wellhead areas.

**3a.4 Educate landowners near public supply wells on measures to protect groundwater.**

- a. Utilize state and federal programs to improve water quality and quantity to Nobles County wellhead areas.

**Objective 3c. Facilitate land retirement in critical areas.**

**3c.1 Work with water suppliers to identify opportunities to retire lands in vulnerable areas.**

**3c.2 Consider benefits of wildlife habitat and recreation in project prioritization.**

**3c.5 Seek additional funding from USDA and other sources for land retirement.**

**Objective 3.d: Support rural water systems and long-term water supply.**

**4c.4 Monitor groundwater and review all available monitoring data and information.**

- a. Continue monitoring DNR Observation Wells in Nobles County.
- b. Provide rainfall data to the Minnesota Climatology Office.

### **Implementation Schedule of Ongoing Activities**

This section identifies other local activities and programs of the SWCD which may not be reflected in the priority concerns above. There are also many other public and private efforts at the regional, state and federal levels which serve to promote the goals of sound water management. These particular ongoing activities typically encompass all watersheds in the county, reaching a broad cross-section of local residents and businesses.

- Educate the public and promote water quality and conservation
- Participate in state Impaired Waters Program
- Administer Wetland Conservation Act
- Provide technical assistance for conservation programs.
- Promote the SWCD tree, no-till drill, and seed sales program.
- Administer and provide assistance for the State Revolving Fund for Ag BMP's.
- Promote and help facilitate the RIM, CRP and similar conservation programs.
- Promote and help facilitate stormwater retention and lakeshore restoration.
- Inspect and assist producers in maintaining compliance with County and State rules.
- Assist the County Board of Commissioners with drainage management.
- Take applications for watershed district regulated activities, evaluate applications, issue or deny permits.
- Achieve wildlife habitat and recreation benefits through land retirement.

**NOTE:** Cooperating agencies which will assist with the implementation of the following priorities.

Minnesota Board of Water & Soil Resources  
Minnesota Extension Service  
Minnesota Department of Natural Resources  
U.S.D.A. Farm Services Agency  
Worthington Future Farmers of America  
Heron Lake Watershed District  
Kanananzi-Little Rock Watershed Project Joint Powers Board  
Kanananzi-Little Rock Watershed District  
State of Minnesota Department of Transportation  
Nobles County Board of Commissioners  
Natural Resources Conservation Service  
Okabena-Ocheda Watershed District  
Nobles County Public Works Department  
Southwest Minnesota Association of Conservation District Employees  
Southwest Prairie Joint Powers Organization  
U.S. Fish and Wildlife Service  
City of Worthington  
Nobles County Pheasants Forever

## **2012 Large Project Implementation**

**2a.3 b.** Assist landowners with obtaining technical assistance and cost-share for lakeshore and stream bank improvement projects.

Nobles SWCD applied for and received a FY2011 Clean Water Fund Grant for a Lakeshore Stabilization Project for Lake Ocheda. The grant includes \$162,105 for construction, seeding and engineering cost for improving \$1,600 feet of Lake Ocheda Shoreline. Project was delayed due to weather and State shutdown. Project is expected to start spring of 2012. Two stream bank improvement projects will be completed Summer/Fall 2012 on the Kanaranzi Creek. Approximately \$42,000 of state Flood Reduction Grant funds will be used as cost-share.

**1d.2, 1d.4, 1d.5** Assist landowner with Technical assistance, Cost-share assistance and Nutrient Management.

Nobles SWCD applied for and received a FY2012 Clean Water Fund Grant for a Feedlot Improvement Project on a tributary of the Kanaranzi Creek. The Kanaranzi Creek is currently listed as impaired for E. Coli on the MPCA's 303(d) list. The Grant includes \$ for correction of outdoor lots, creation of manure storage facilities and engineering cost for the site correction. Project is expected to start spring of 2012.

**1b.7, 1b.8.** Providing Technical Assistance to the Kanaranzi - Little Rock Watershed District for implementation of the Federal ARRA (Stimulus) Funds.

In 2010 the Kanaranzi - Little Rock Watershed District was the recipient of \$300,000 of cost-share assistance project funds. The Project is expected to be completed this year. The Nobles SWCD will be utilizing an undetermined portion (as of this date) of the allocated State Cost-Share Funds for Technical Assistance in the installation projects utilizing the Federal ARRA Funds.

## 2012 LAND TREATMENT ACTION GOALS

<u>Conservation Practice</u>	<u>2009 Actual</u>	<u>2010 Actual</u>	<u>2011 Actual</u>	<u>2012 Goal</u>	<u>Water Plan Progress</u>	<u>Water Plan Goal</u>
Conservation Tillage (acres)	5,259	3,352	5200	8000	13,811	80,000
Critical Area Planting (#)	1	0	0	3	1	30
Grassed Waterways (#)	6	7	8	7	20	70
Terraces and Water and Sediment Control Basins (#)	75	61	50	13	186	115
Diversions (#)	1	0	2	1	3	10
Farmstead Windbreaks (acres)	13.5	18.9	9.1	10	41.5	100
Field Windbreaks (feet)	0	600	0	2500	600	25,000
Tree Mat - Weed Barrier (feet)	15,000	14,100	8,000	10,000	37,100	100,000
Private Wildlife Plantings (acres)	4	4.3	5	7	13.3	70
Living Snow Fences (acres)	0	0	0	5	0	50
Riparian Buffers (acres)	0	6.7	17.3	10	24.0	100
Permanent Easements (acres)	0	0	29.7	20	29.7	200
CRP (non-wetland) (acres)	232.5	290.8	304.8	200	828.1	2,000
CRP Wetland Restorations (acres)	22.3	43.9	24.2	20	90.4	200
Nutrient Management Plans (#)	0	9	7	5	16	50
Ag. Waste Management System (#)	0	2	1	3	3	30
Streambank and Shoreline protection (feet)	0	0	1200	500	1200	5,000
Alternative Intakes (number)	0	0	8	15	8	150



## WORKLOAD ANALYSIS

### WORK COMMITMENT

Water Quality Protection	Water Erosion Control	Wind Erosion Control	Flood Control	Resource Management Education	Wildlife Habitat Creation & Enhancement
--------------------------------	-----------------------------	----------------------------	------------------	-------------------------------------	--

#### POSITIONS:

District Manager (100% FTE; 52 weeks)

Work hours available = 2080

550	550	400	280	100	200
-----	-----	-----	-----	-----	-----

Financial/Contracting Officer (80% FTE; 52 weeks)

Work hours available = 1664

500	500	200	214	200	50
-----	-----	-----	-----	-----	----

District Technician (100% FTE; 52 weeks)

Work hours available = 2080

300	400	500	400	200	280
-----	-----	-----	-----	-----	-----

TOTAL WORK HOURS AVAILABLE = 5824

1350	1450	1100	894	500	530
------	------	------	-----	-----	-----

**BUDGET SUMMARY**  
**January 1 through December 31, 2012**

**EXPENDITURES:**

District Operations	
Personnel Services	\$ 195,281.00
Other Services and Charges	\$ 43,315.00
Supplies	\$ 1,000.00
Capital Outlay	\$ 2,000.00
Project Expenses—Cost-Share	\$ 182,078.00
Project Expenses- District	<u>\$ 38,500.00</u>

<b>TOTAL EXPENDITURES</b>	<b><u>\$ 462,174.00</u></b>
---------------------------	-----------------------------

**REVENUES:**

Intergovernmental	
State	
District Operations	\$ 133,336.00
Cost-Share Program	\$ 172,183.00
County	\$ 61,980.00
Local	\$ 35,000.00
Federal	\$ 18,500.00
Charges for Services	\$ 31,600.00
Miscellaneous	\$ 3,000.00
Fund Balance Withdrawal	<u>\$ 6,575.00</u>

<b>TOTAL REVENUES</b>	<b><u>\$ 462,174.00</u></b>
-----------------------	-----------------------------

## APPENDIX A: COST-SHARE PROGRAM REQUIREMENTS

### High Priority Problems

#### 1. High Priority Erosion Problems

High priority erosion problems are areas where erosion from wind or water is occurring to, or in excess of, 2 X T tons per acre per year or is occurring in any area that exhibits gully erosion or is identified as high priority in the comprehensive local water plan or the conservation district's comprehensive plan.

#### 2. High Priority Water Quality Problems

High priority water quality problems means areas where sediment, nutrients, chemicals, or other pollutants discharge to Department of Natural Resources designated protected waters, or any high priority waters as identified in a comprehensive local water plan or the conservation district's comprehensive plan, or discharge to a sinkhole or groundwater. The pollutant delivery rate to the water source is in amounts that will impair the quality or usefulness of the water resource.

**a. High Priority Feedlots** are those where the pollution potential rating from the feedlot model is greater than or equal to one and which are discharging pollutants to Department of Natural Resources designated protected waters or to a sinkhole or shallow soils overlying fractured or cavernous bedrock or within 100 feet of a water well. Feedlots not meeting these criteria are not eligible for cost-sharing assistance unless cited by the Minnesota Pollution Control Agency.

**b. High Priority Sedimentation Problems** are areas within 300 feet of a water course or 1,000 feet of a water basin or wetland where the water erosion rate exceeds three tons per acre per year or areas where the District can show that sediment delivery occurs from a watershed or direct conveyance structure such as a storm sewer or paved outlet channel discharging to these waters. The water basin, wetland, or watercourse must be classified by the Department of Natural Resources as protected waters. Sedimentation problems not meeting these criteria are not eligible for cost-sharing assistance.

Maps containing regions of Nobles County that are prone to Erosion, Sedimentation and Flooding can be found in the Nobles Local Water Management Plan.

## **APPENDIX B. STATE COST-SHARE NEEDS**

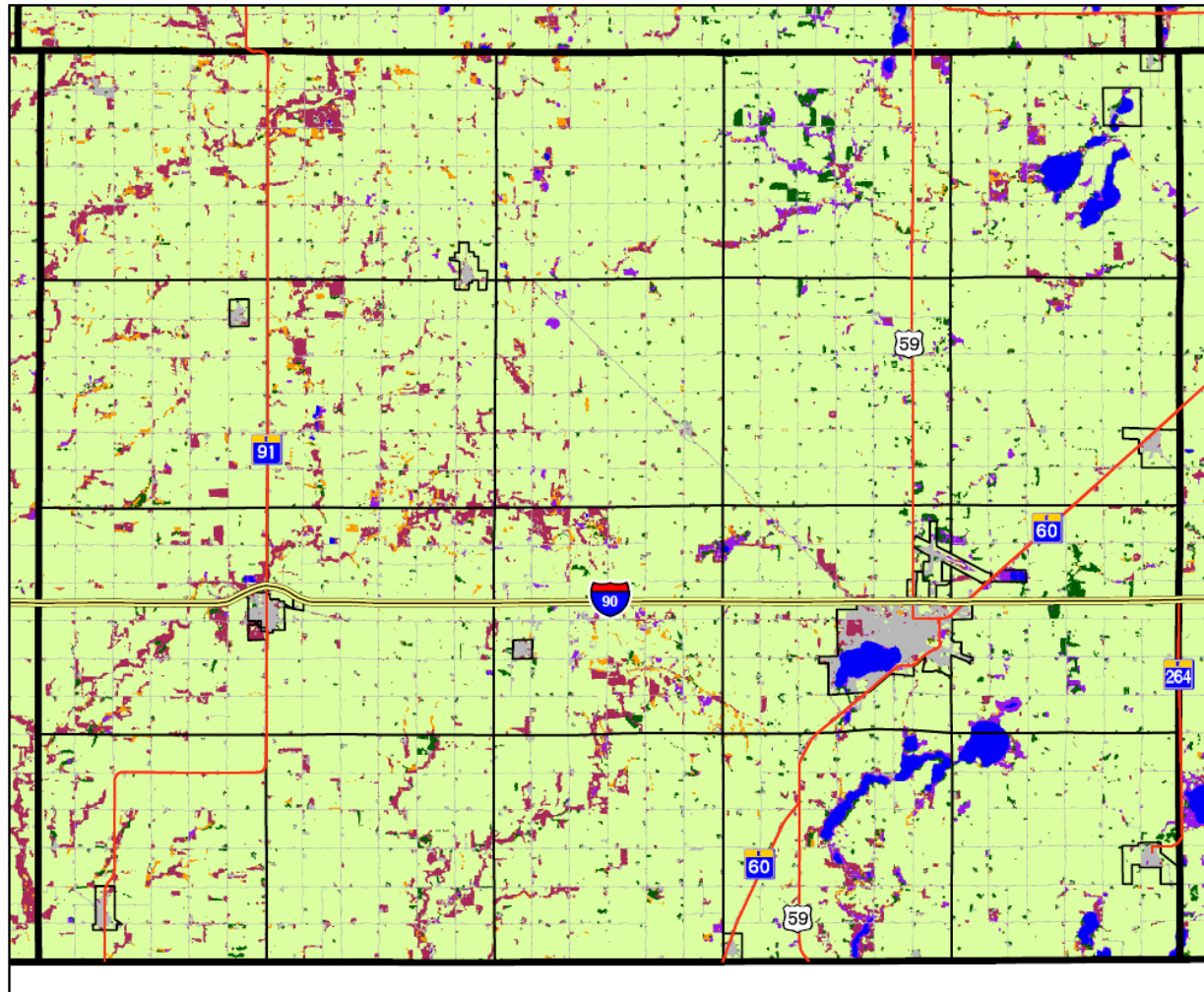
1. Water quality protection	\$ 2,500.00
2. Water erosion and sedimentation control	\$ 2,500.00
3. Wind erosion control	\$ 3,828.40
4. Flood control	\$ 1,250.00

Nobles SWCD received \$22,598.00 for its state cost-share program for 2012. Of this amount, \$10,000 will likely be utilized for technical assistance related to the Federal American Recovery and Reinvestment Act (ARRA) funds allocated to the Kanaranzi – Little Rock Watershed District and Federal EQIP funds allocated to the County for Structural Conservation Practices. The K-LR Watershed District received \$300,000 of Cost-share funding for practices related to water quality protection, water erosion and sedimentation control as well as flood control. At this time we are expecting in excess of \$100,000 of Federal EQIP Funds based on approved applications, although this may change as landowners are still able to back out without penalty.

Of the expected remaining funds (\$12,598.00), 20% or \$2,519.60 will be used for administration and the remaining 80% or \$10,078.40 for high priority cost-share practices.

This current plan may be adjusted based on additional EQIP funds. As additional EQIP funds are allocated to the Nobles NRCS office the Nobles SWCD may increase the funding requested for the Technical Assistance option to meet the technical needs of the landowners in Nobles County

## Land Use and Cover



Southwest Regional  
Development Commission

JCS 07.08

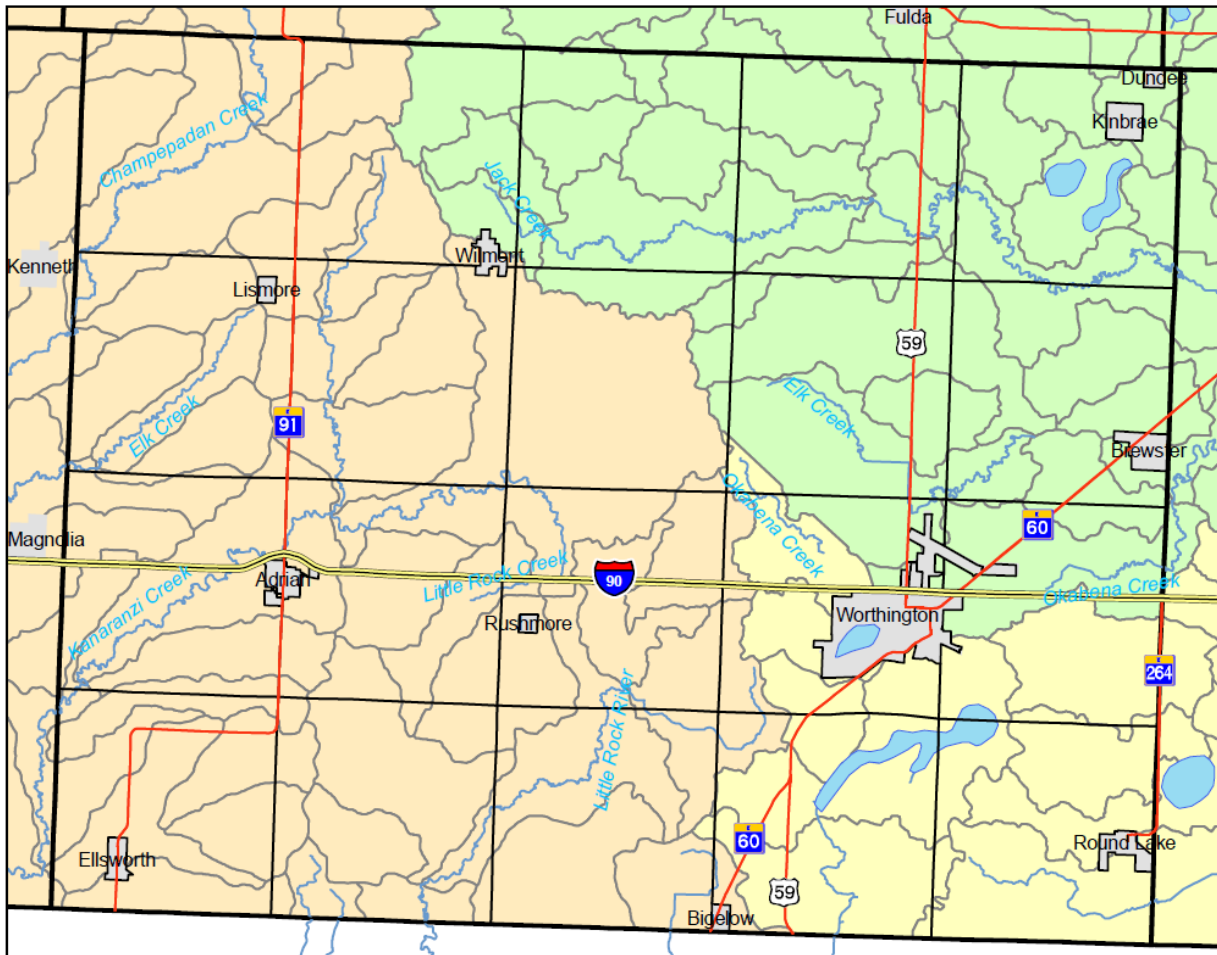
- County
- Townships
- Trunk Highways
- Urban/Developed
- Agriculture
- Grassland
- Forest
- Water
- Wetland
- Shrubland

This is a level one land covertype map for the entire state of Minnesota representing the year 2000. The covertype was derived via multitemporal, multispectral supervised image classification of satellite imagery acquired by the Landsat TM and Landsat ETM+ satellites. Seven level one land covertype classes were: urban, agriculture, grassland, forest, water, wetland and shrubland. This data may be used for educational and non-commercial purposes, provided proper attribution is given. Secondary distribution of the data is permitted, but not supported by the University of Minnesota. By accepting the data, the user agrees not to transmit this data or provide access to it or any part of it to another party unless the user includes with the data a copy of this disclaimer. Source: Remote Sensing and Geospatial Analysis Laboratory, University of Minnesota

Projection: NAD83 HARN Adj Nobles Co  
Source: Univ. Minnesota, MnDOT, ESRI

0 1 2 4 6 8  
Miles

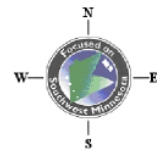
# Watersheds



- County
- Townships
- Lakes
- Named Streams and Rivers

## Major Watersheds

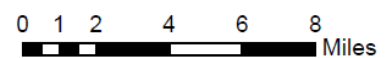
- Little Sioux River
- Rock River
- W Fork Des Moines



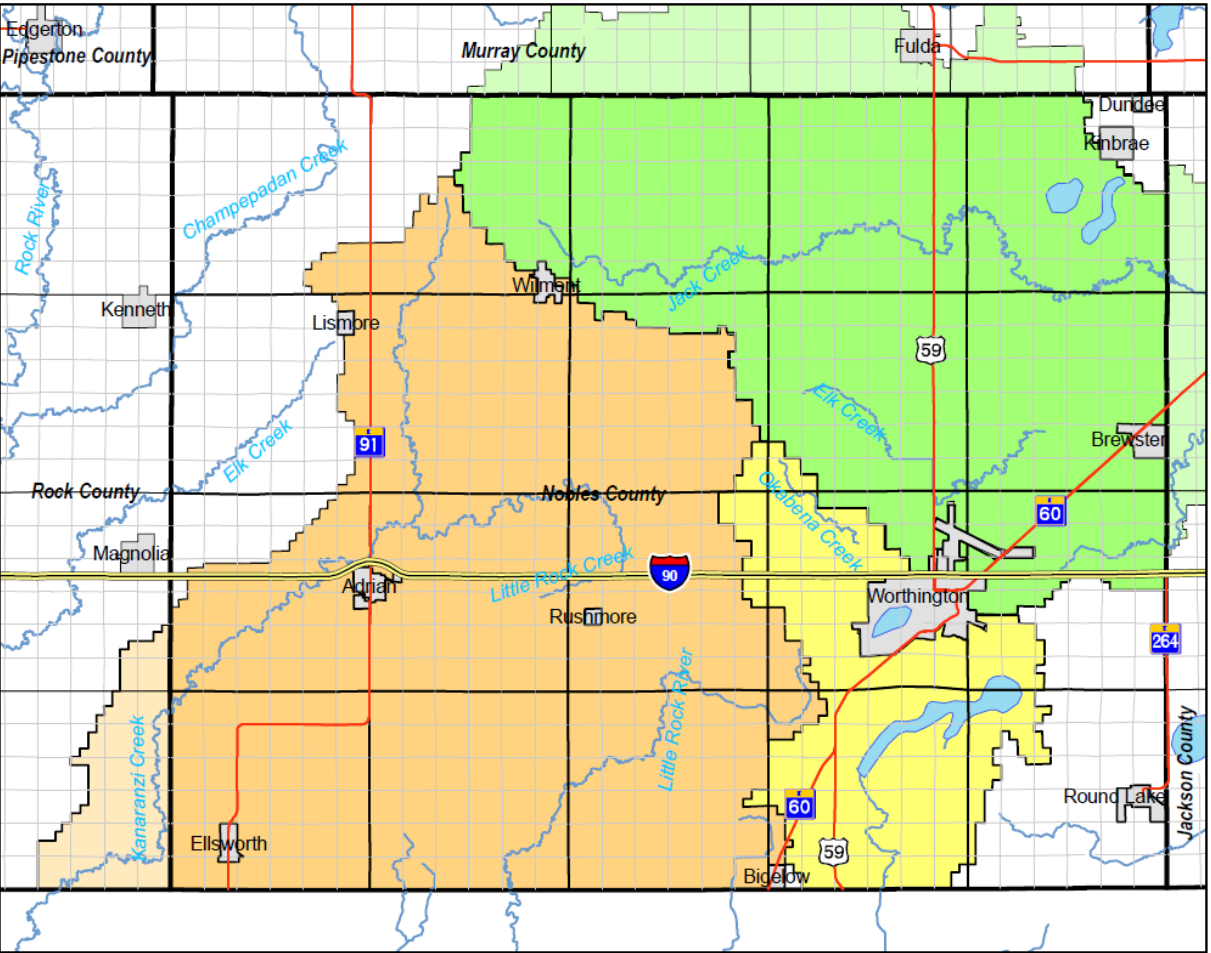
Southwest Regional  
Development Commission

JCS 08.08

Projection: UTM 15N  
Source: MDH, MN DNR, MnDOT, ESRI



# Watershed District Boundaries



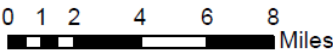
- County
- Townships
- Sections
- Lakes
- Named Streams and Rivers
- Heron Lake WD
- Kanaranzi-Little Rock WD
- Okabena-Ocheda WD



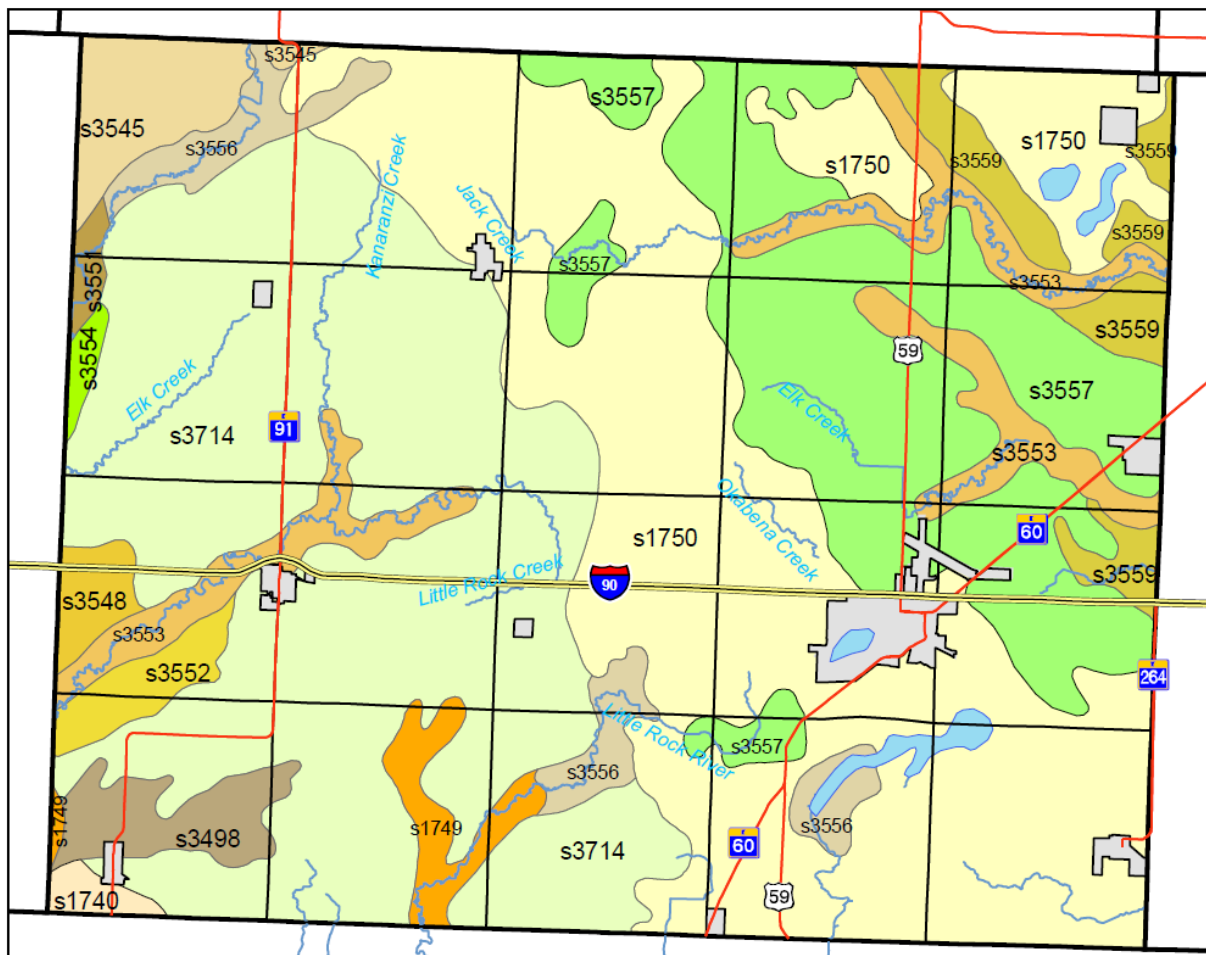
Southwest Regional  
Development Commission

JCS 09.08

Projection: NAD83 HARN Adj Nobles Co  
Source: Watershed Districts, MN DNR, MnDOT, ESRI



## General Soils



## Soil units in Nobles County

### Primghar-Galva (s1740)

Spillco-Millington (s1749)

Webster-Nicollet-Clarion-Canisteo (s1750)

Fairhaven-Estherville (s3498)

Vienna-Kranzburg-Hidewood (s3545)

Trent-Sac (s3548)

Talcot-Millington-Fairhaven (s3551)

Fairhaven-Dickman-Biscay (s3552)

Spillville-Millington-Comfrey (s3553)

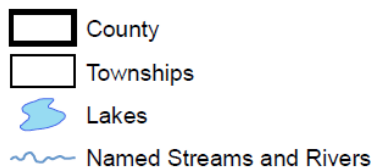
Flandreau-Everyly-Dickman (s3554)

Storden-Everly (s3556)

Webster-Nicollet-Glencoe-Crippin-Canisteo (s3557)

Waldorf-Lura-Collinwood-Clarion (s3559)

Wilmington-Letri-Everly (s3714)

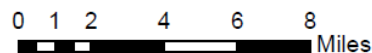


Southwest Regional  
Development Commission

JCS 09.08

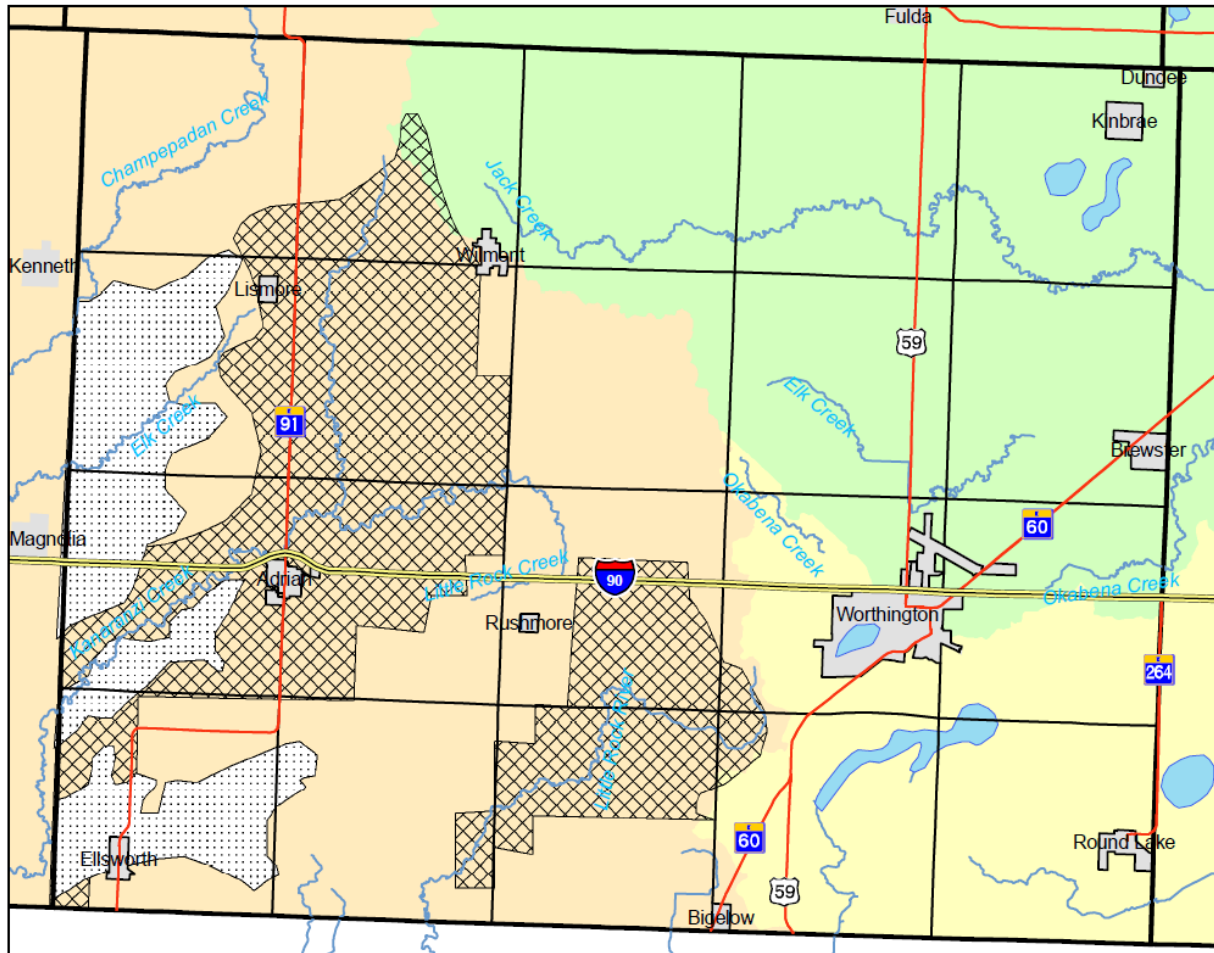
Projection: UTM 15N

Source: NRCS STATSGO, MN DNR, MnDOT, ESRI





# Erosion Prone Areas



- County
- Townships
- Lakes
- Named Streams and Rivers
- Wind Erosion Areas
- Water Erosion Areas

## Major Watersheds

- Little Sioux River
- Rock River
- W Fork Des Moines



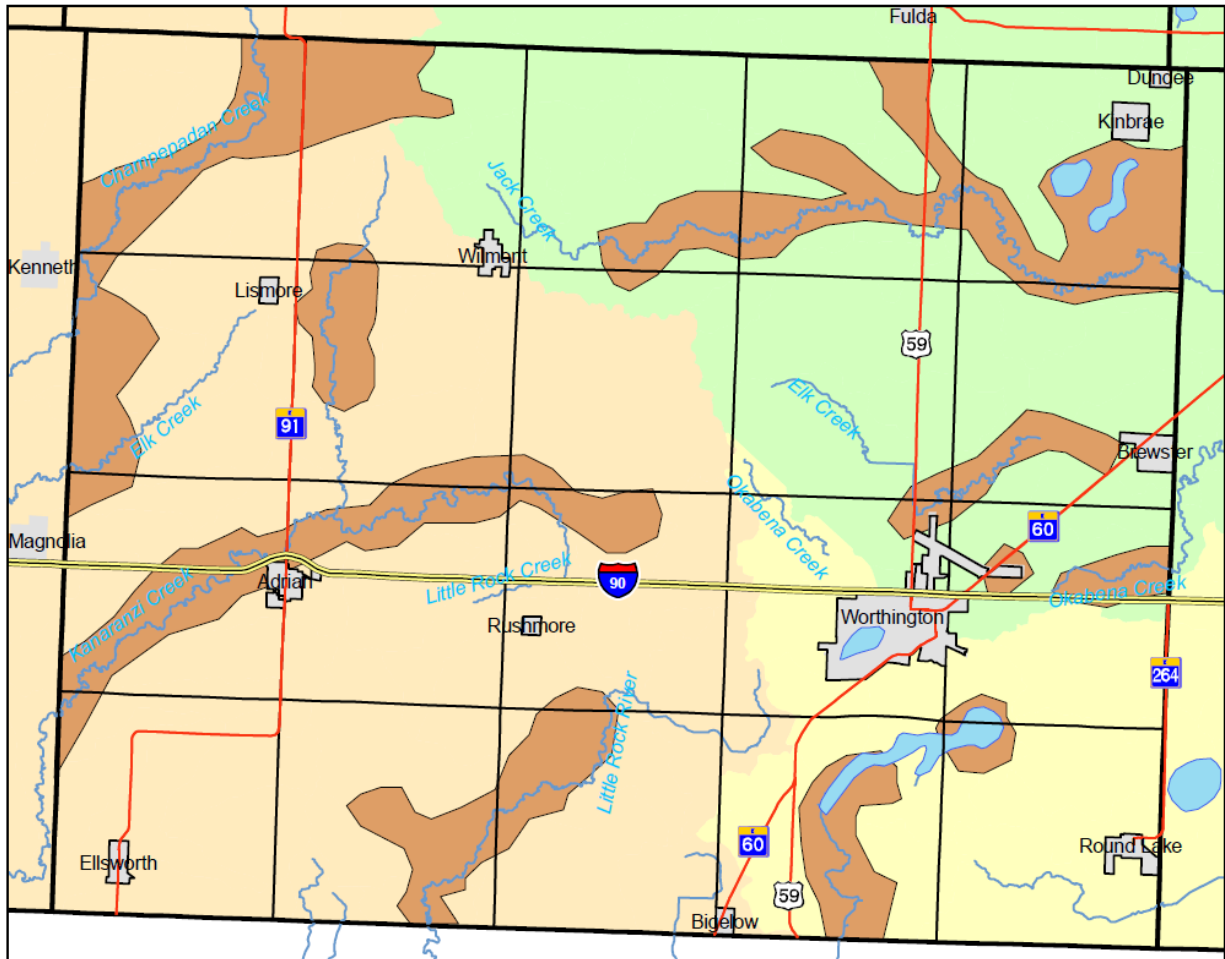
Southwest Regional  
Development Commission

JCS 08.08

Projection: UTM 15N  
Source: Nobles Co Env Svcs, MN DNR, MnDOT, ESRI

0 1 2 4 6 8  
Miles

## Sedimentation Prone Areas



- County
- Townships
- Lakes
- Named Streams and Rivers
- Sedimentation Areas

### Major Watersheds

- Little Sioux River
- Rock River
- W Fork Des Moines



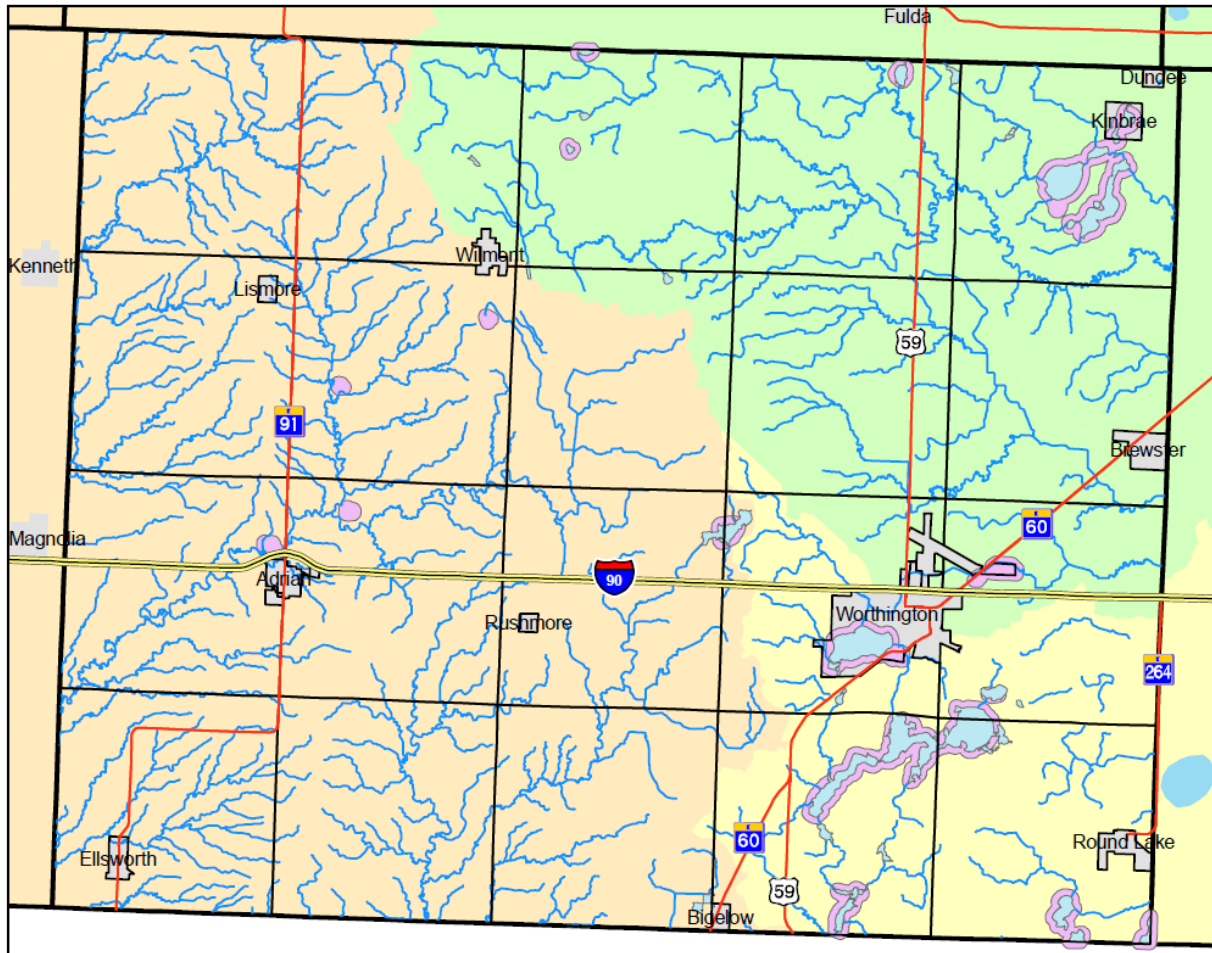
Southwest Regional  
Development Commission

JCS 09.08

Projection: UTM 15N  
Source: Nobles Co Env Svcs, MN DNR, MnDOT, ESRI

0 1 2 4 6 8  
Miles

# Shoreland



Note: This map is a general representation only of areas likely to be in or adjacent to shorelands. Shoreland zoning areas are as shown on the Official Zoning Map of Nobles County and/or other local jurisdictions. Refer also to DNR Protected Waters and Wetlands Map 1984 for further information.

- County
- Townships
- USGS mapped rivers & streams
- Shoreland Area
- Lakes
- Major Watersheds**
  - Little Sioux River
  - Rock River
  - W Fork Des Moines



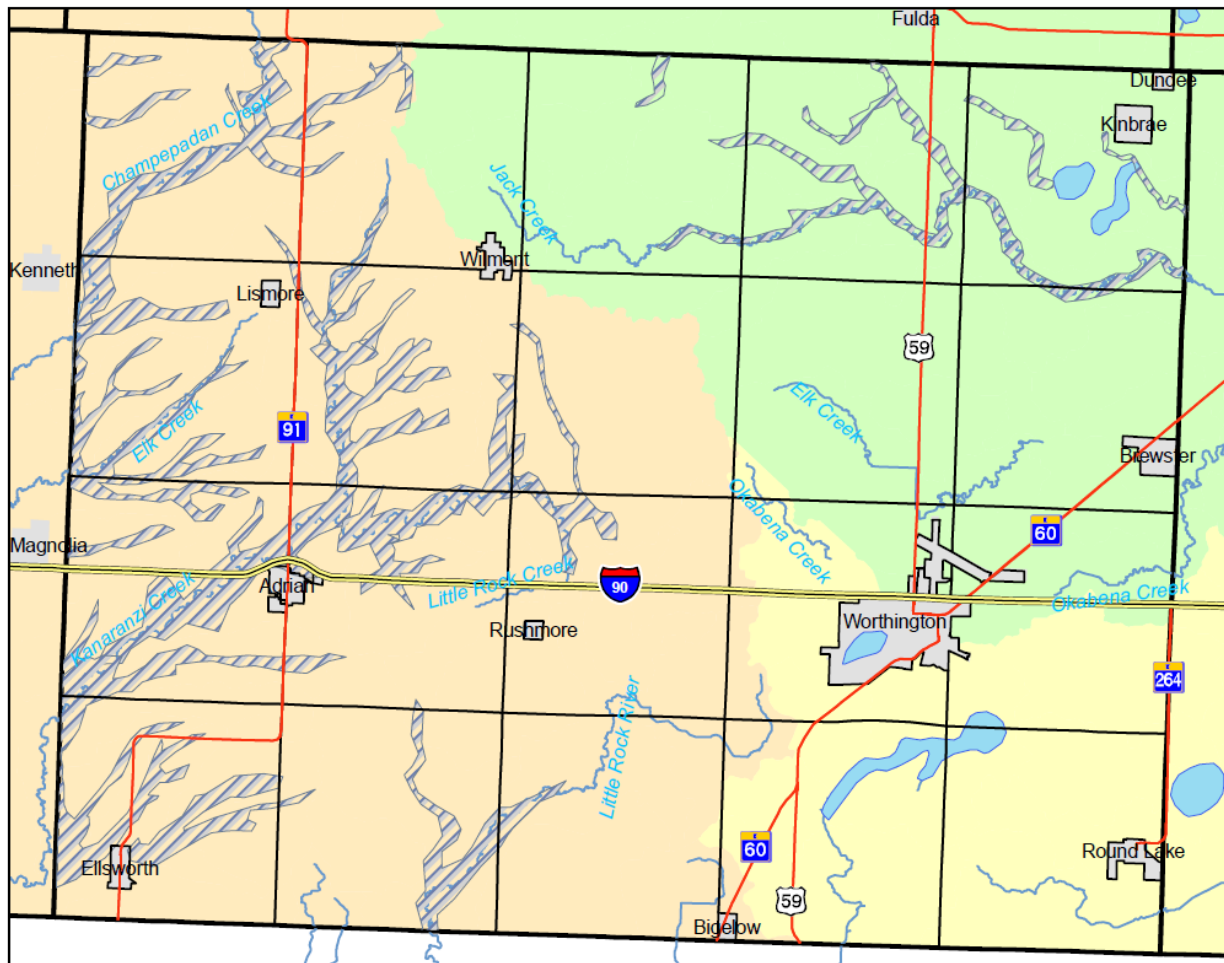
Southwest Regional  
Development Commission

JCS 09.08

Projection: UTM 15N  
Source: FEMA, Nobles Co Env Svcs, MN DNR, MnDOT, ESRI

0 1 2 4 6 8  
Miles

# Floodplains



- County
- Townships
- Floodplains

- Lakes
- Named Streams and Rivers

## Major Watersheds

- Little Sioux River
- Rock River
- W Fork Des Moines

Note: Floodplain is a rough estimation of the FEMA 100-year flood hazard area as shown on the Flood Insurance Rate Map. Not to be used for other than planning purposes. Additional hazard areas do exist. Actual location is only accurate by field elevation.



Southwest Regional  
Development Commission

JCS 09.08

Projection: UTM 15N  
Source: FEMA, Nobles Co Env Svcs, MN DNR, MnDOT, ESRI

0 1 2 4 6 8  
Miles

# Wellhead Protection



- County
- Townships
- WHPA
- DWSMA
- Lakes
- Named Streams and Rivers

## Major Watersheds

- Little Sioux River
- Rock River
- W Fork Des Moines



Southwest Regional  
Development Commission

JCS 09.08

Projection: UTM 15N  
Source: MDH, MN DNR, MnDOT, ESRI

0 1 2 4 6 8  
Miles