Becker County
Local Water Management Plan 2017-2027
Priority Concerns Scoping Document

Submitted to the Minnesota Board of Water and Soil Resources – November 29, 2016

Introduction

Purpose of the Priority Concerns Scoping Document

Becker Soil and Water Conservation District is coordinating the preparation of the Becker County Comprehensive Water Management Plan in accordance with the "Comprehensive Local Water Management Act," Minnesota Statute 103B.301 to 103B.315. Before writing the water management plan, the county must identify priority local water management concerns and prepare a Priority Concerns Scoping Document.

As defined by Minnesota Statute 103B.305, ""Priority concerns" means issues, resources, subwatersheds, or demographic areas that are identified as a priority by the plan authority."

The process for identifying the county's priority water management concerns involved 1) notifying local units of government in the county and region and state review agencies that the county is updating the water management plan and inviting those interested to submit lists of priority concerns, 2) a public survey and meeting, 3) meetings with local stakeholders, and the 4) water plan task force.

In accordance with Minnesota Statute 103B.312, the Priority Concerns Scoping Document must contain (1) a list of proposed priority concerns the plan will address, and 2) a description of how the priority concerns were chosen.

Priority Concerns Scoping Document Review and Approval

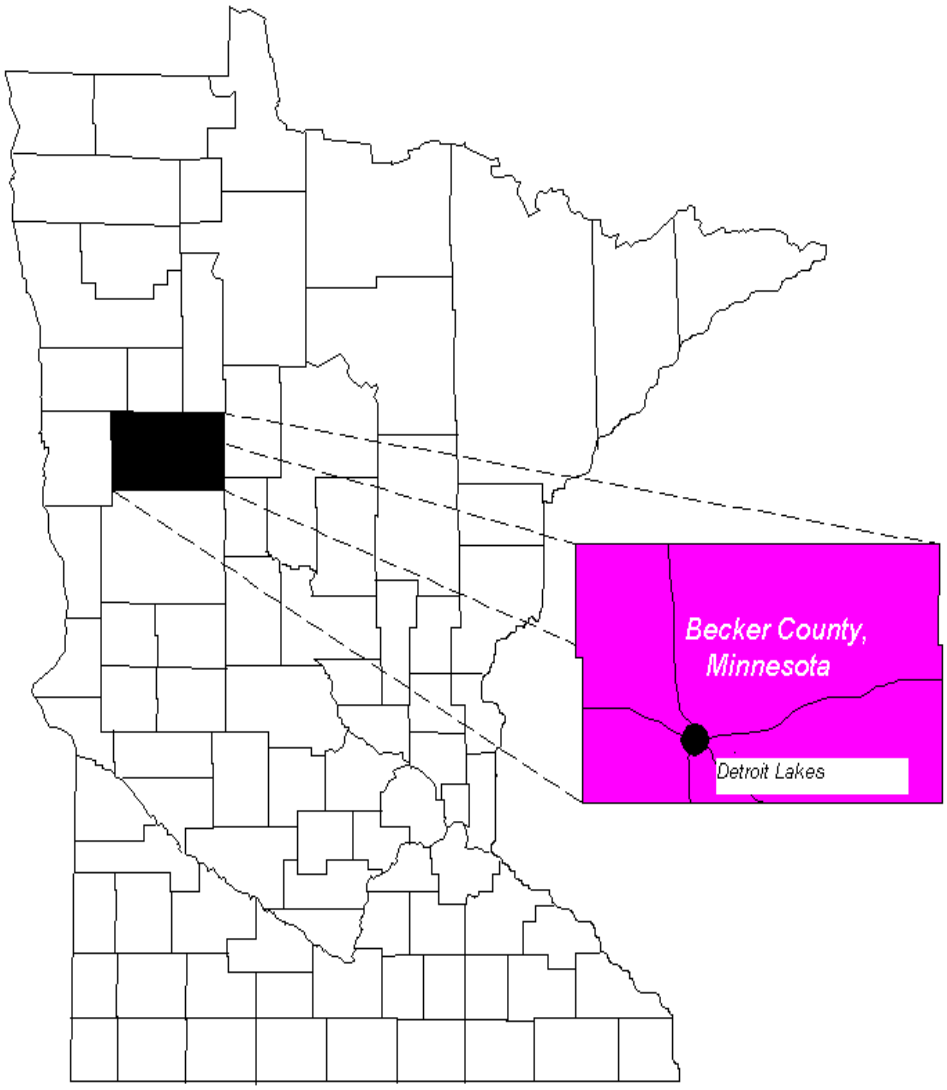
The Priority Concerns Scoping Document is submitted to the Minnesota Board of Water and Soil Resources (BWSR) for review and approval. The BWSR requests all counties' Priority Concerns Scoping Documents use the same format and outline.

General Description

Becker County is located in west-central Minnesota, 30 miles east of the Fargo/Moorhead metropolitan area, and encompasses an area of approximately 1,440 square miles. From 2000 to 2010 Becker County experienced steady growth in population, and current estimates indicate the number of residents is nearing 35,000. In reviewing previous Minnesota State Demographers census projections it appears Becker County's population growth is slightly exceeding previous estimations.

Of the 921,000 acres that make up Becker County the two predominant land cover types are forestland (376,393 ac. 41%) and agricultural land. Agricultural land is comprised of cultivated crop land (307,518 ac. 23%), and other agricultural land comprised of grass, pasture and hay (96,857 ac. 11%). Becker County is blessed with 487 named lakes within its boundaries and is situated in a prime tourist area of Minnesota due to its natural beauty.

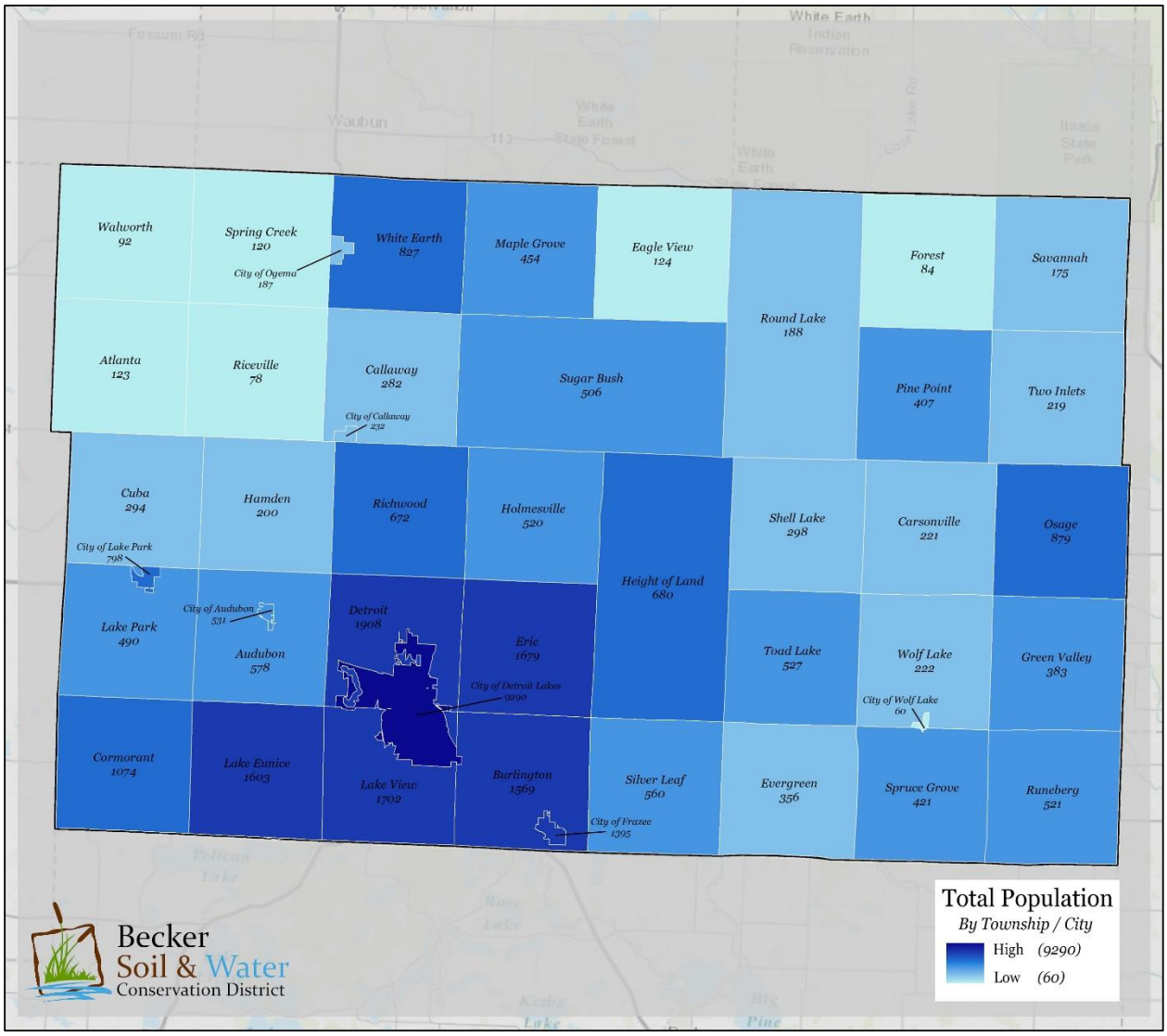
General Location



County Population

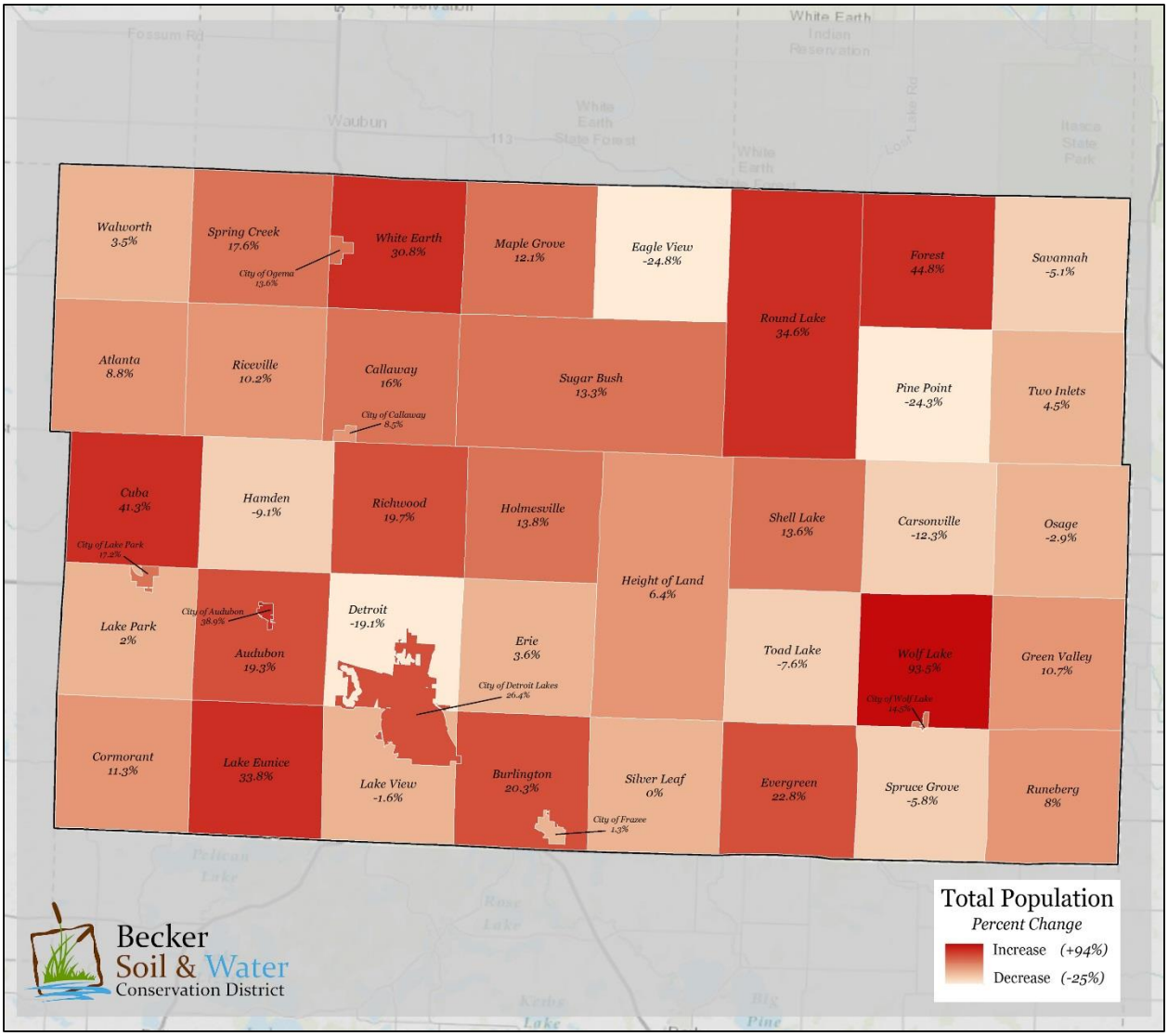
As documented in the previous U.S. Census data, Becker County lost approximately 5% of its population between 1980 and 1990. In the decades since, Becker County population has been experiencing gradual growth. According to 2015 estimates from the Minnesota Demographic Data Center and U.S. Census data, 34,893 people now reside in Becker County, with 38 percent (12,493 people) living in municipalities. Recent growth has occurred largely in rural townships with an abundance of general and recreational development lakes, though the municipalities of Becker County also saw growth ranging from 9 to 26 percent.

Map 2 – Becker County City and Township Population – 2015 Estimate



Source: MN Demographic Data Center

Map 3 – Becker County Population Change – 2000- 2015 Estimates

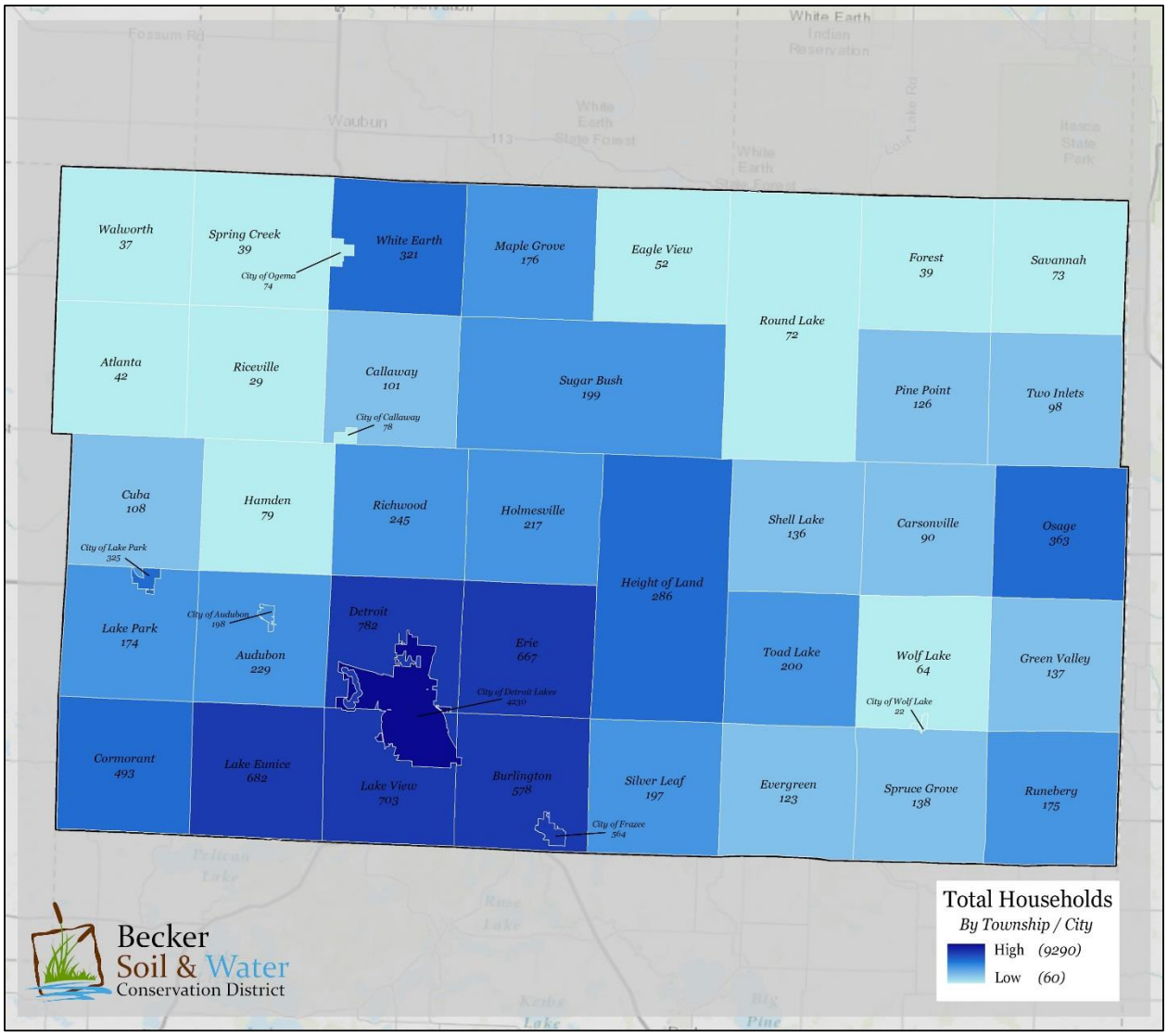


Source: MN Demographic Data Center

The City of Detroit Lakes has been experiencing the greatest actual population increase, while the percent of population increase in the City of Wolf Lake is statistically higher. Detroit Lakes' population has grown from 7,348 in 2000 to an estimated 9,290 according to the State Demographic Data Center and U.S. Census data, which also indicates that the City of Wolf Lake's population grew from 31 in 2000 to an estimated 60 in 2015.

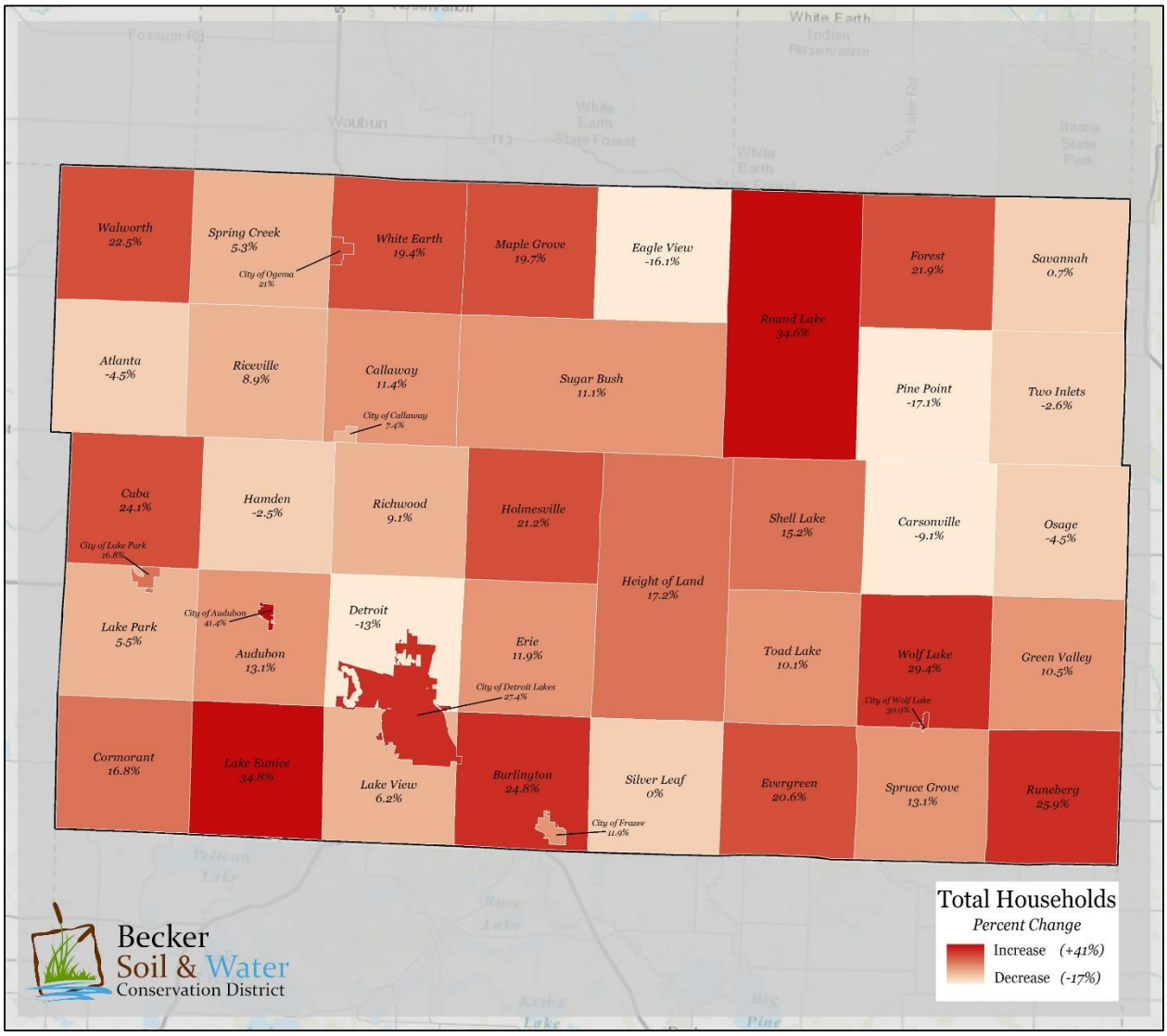
Much of the growth outside of Becker County's seven municipalities has led to an increase in the development of non-farm housing in agricultural areas. Development is similarly cropping up on increasingly remote lakes, and in more intensive development patterns than seen historically.

Map 4 – Becker County City & Township Households - 2015 Estimate



Source: MN Demographic Data Center

Map 5 – Becker County Households Change – 2000- 2015 Estimates



Source: MN Demographic Data Center

Figure 1. – Becker County Township & City Population Statistics – 2000- 2015 Estimates

Name	Population 2015	Households 2015	Population 2000	Households 2000	Population Change	Population Change %	Household Change	Household Change %
Atlanta township	123	42	113	44	10	8.8	(2)	-4.5
Audubon city	531	198	445	175	86	19.3	23	13.1
Audubon township	578	229	416	162	162	38.9	67	41.4
Burlington township	1,569	578	1304	463	265	20.3	115	24.8
Callaway city	232	78	200	70	32	16.0	8	11.4
Callaway township	282	101	260	94	22	8.5	7	7.4
Carsonville township	221	90	252	99	(31)	-12.3	(9)	-9.1
Cormorant township	1,074	493	965	422	109	11.3	71	16.8
Cuba township	294	108	208	87	86	41.3	21	24.1
Detroit township	1,908	782	2359	899	(451)	-19.1	(117)	-13.0
Detroit Lakes city	9,290	4,230	7348	3319	1,942	26.4	911	27.4
Eagle View township	124	52	165	62	(41)	-24.8	(10)	-16.1
Erie township	1,679	667	1621	596	58	3.6	71	11.9
Evergreen township	356	123	290	102	66	22.8	21	20.6
Forest township	84	39	58	32	26	44.8	7	21.9
Frazee city	1,395	564	1377	504	18	1.3	60	11.9
Green Valley township	383	137	346	124	37	10.7	13	10.5
Hamden township	200	79	220	81	(20)	-9.1	(2)	-2.5
Height of Land township	680	286	639	244	41	6.4	42	17.2
Holmesville township	520	217	457	179	63	13.8	38	21.2
Lake Eunice township	1,603	682	1198	506	405	33.8	176	34.8
Lake Park city	798	325	782	308	16	2.0	17	5.5
Lake Park township	490	174	418	149	72	17.2	25	16.8
Lake View township	1,702	703	1730	662	(28)	-1.6	41	6.2
Maple Grove township	454	176	405	147	49	12.1	29	19.7
Ogema city	187	74	143	62	44	30.8	12	19.4
Osage township	879	363	774	300	105	13.6	63	21.0
Pine Point township	407	126	419	132	(12)	-2.9	(6)	-4.5
Riceville township	78	29	103	35	(25)	-24.3	(6)	-17.1
Richwood township	672	245	610	225	62	10.2	20	8.9
Round Lake township	188	72	157	66	31	19.7	6	9.1
Runeberg township	521	175	387	130	134	34.6	45	34.6
Savannah township	175	73	162	58	13	8.0	15	25.9
Shell Lake township	298	136	314	135	(16)	-5.1	1	0.7
Silver Leaf township	560	197	493	171	67	13.6	26	15.2
Spring Creek township	120	39	120	39	-	0.0	-	0.0
Spruce Grove township	421	138	358	131	63	17.6	7	5.3
Sugar Bush township	506	199	537	176	(31)	-5.8	23	13.1
Toad Lake township	527	200	465	180	62	13.3	20	11.1
Two Inlets township	219	98	237	89	(18)	-7.6	9	10.1
Walworth township	92	37	88	38	4	4.5	(1)	-2.6
White Earth township	827	321	799	262	28	3.5	59	22.5
Wolf Lake city	60	22	31	17	29	93.5	5	29.4
Wolf Lake township	260	89	227	68	33	14.5	21	30.9

Sources:

MN State Demographic Center, Metropolitan Council, and U.S. Census Bureau. Released July 2016.

The U.S. Census Bureau conducts the 10-year (decennial) census, and is the source for all data for years ending in "---0".

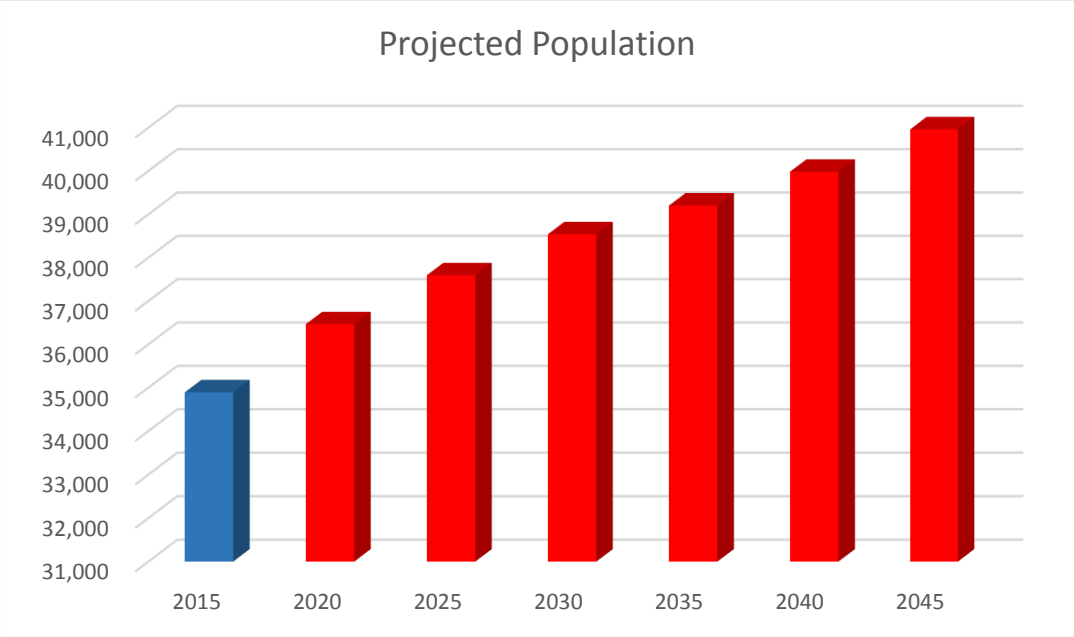
The Minnesota State Demographic Center and the Metropolitan Council jointly produce population and household estimates for years between the decennial counts.

Population Projections

The Minnesota Demographic Data Center projects the county population will continue to grow at a steady, nearly linear rate. Projections completed in 2015 indicate the county population will reach 40,961 by the year 2045, an increase of approximately 15% from the estimated 2015 population of 34,893 people.

Figure 2. Becker County Population and Population Projection

Minnesota Demographic Center – 2015 to 2045 population projections (2015)



General Characteristics

Becker County is located in west-central Minnesota, 30 miles east of the Fargo/Moorhead metropolitan area, and encompasses an area of approximately 1,440 square miles. Situated in the heart of what is known as Park Region and is considered one of the state's most beautiful and versatile recreation areas, the County encompasses 37 townships and 11 communities, and stretches 30 miles north to south and 48 miles east to west.

Becker County is blessed with an abundance of water resources with 487 lakes located within its boundaries and is situated in a prime tourist area of Minnesota due to its natural beauty of lakes and forests. According to a 2005 USDA Economic Analysis of the Detroit Lakes area, over 300,000 visitors come to the County each year, drawn largely by the many opportunities for aquatic based recreation.

Physiography and Relief

The main geomorphic areas in Becker County include the Alexandria Moraine Area, the ltaska Moraine Area, the Wadena Drumlin Area, the Pelican River Sand Plain, the Park Rapids Sand Plain, and the Mahnomen Till Plain. Nearly half of the 1,440 square miles of the county consists of terminal moraines-the Alexandria Moraine and the ltaska Moraine. The moraine area is in the central part of the county and extends into the southwest and northeast corners. The vertical relief in the moraine ranges to as much as 200 to 300 feet. In places the moraine is more than 20 miles wide (Anderson).

The Alexandria Moraine runs mainly from north to south in the western part of Becker County and contains the drift of two different ice lobes. The bulk of the moraine was deposited at the terminus of the Wadena Lobe, and its deposits are exposed on the east side of the moraine. The moraine was subsequently overridden from the west by the Des Moines Lobe. Glacial till from the Wadena Lobe typically has a sandy loam texture, and glacial till from the Des Moines Lobe typically has a loam or clay loam texture. A narrow band of glacial till with silty clay loam textures also occurs in the western part of the county. The origin of the very clayey glacial till sediments suggests that ice retreated and then readvanced over lake sediments in the Lake Agassiz basin (Fenton and others, 1983). The Des Moines Lobe contains a higher percentage of shale fragments and is thought to have a more northwesterly source area than the Wadena Lobe (Anderson). Relief is typically rolling to very hilly.

The ltaska Moraine runs mainly from east to west across the northern and central parts of Becker County. The moraine is a deposit of the Wadena Lobe. The ltaska Moraine is characterized by sandy loam glacial till. The glacial till is commonly mixed with pockets of sand and gravel (ice-contact deposits). Relief is typically rolling to very hilly.

The Wadena Drumlin Area is in the southeastern part of Becker County. The Wadena Drumlin Field is the largest drumlin field in Minnesota (Wright, 1962). The drumlins were formed by the Wadena Lobe and consist of sandy loam glacial till. In Becker County the long axis of the drumlins has an east-west orientation (Perkins). Relief is typically undulating to rolling.

The Pelican River Sand Plain is located in the southwestern part of Becker County. The glacial outwash consists of sands and gravels deposited primarily by meltwaters of the Des Moines Lobe. Relief is typically rolling to hilly.

The Park Rapids Sand Plain is located in the eastern part of Becker County. The glacial outwash consists of sands and gravels deposited by meltwaters of the Wadena Lobe as it stood at the ltaska Moraine (Wright, 1972a). Relief is typically nearly level or undulating.

The Mahnomen Till Plain is located in the northwestern part of Becker County. The till plain consists primarily of glacial till from the Des Moines Lobe, but the glacial till is mantled in some areas by silty glacial lacustrine sediments. These silty sediments indicate ponding at elevations considerably above the level of the Herman Beach of Lake Agassiz (Fenton and others, 1983). As the glacial ice retreated northward, water began to pond in low areas between the moraine and the retreating glacial ice. The present-day South Branch of the Wild Rice River and the Buffalo River are former meltwater channels that eventually drained these ponded meltwaters into Glacial Lake Agassiz. Relief is typically nearly level or undulating.

The highest elevation in Becker County is about 1,850 feet. This elevation is in section 16 of Wolf Lake Township. The lowest elevation, about 1,150 feet, is in section 19 of Walworth Township.

Drainage

The rugged topography within the Alexandria and Itaska Moraines prevents good natural drainage throughout a substantial portion of the county. Thus, there are more than 300 lakes that are 40 acres or more in size in these areas. Lakes, rivers, streams, and wetlands cover approximately one-fourth of the surface area of this portion of the county.

Artificial drainage through surface ditches is extensive in the northwestern part of Becker County. Many shallow depressions have been drained with these shallow ditches and are now being used as cropland. While historically not used extensively in Becker County, Subsurface tile drainage is on the rise in the north western portion of the county.

Maximum runoff generally occurs in the spring and early summer. Flooding is generally not a major problem, although periodic high-peak flows do occur and can cause damage to infrastructure and to agricultural production.

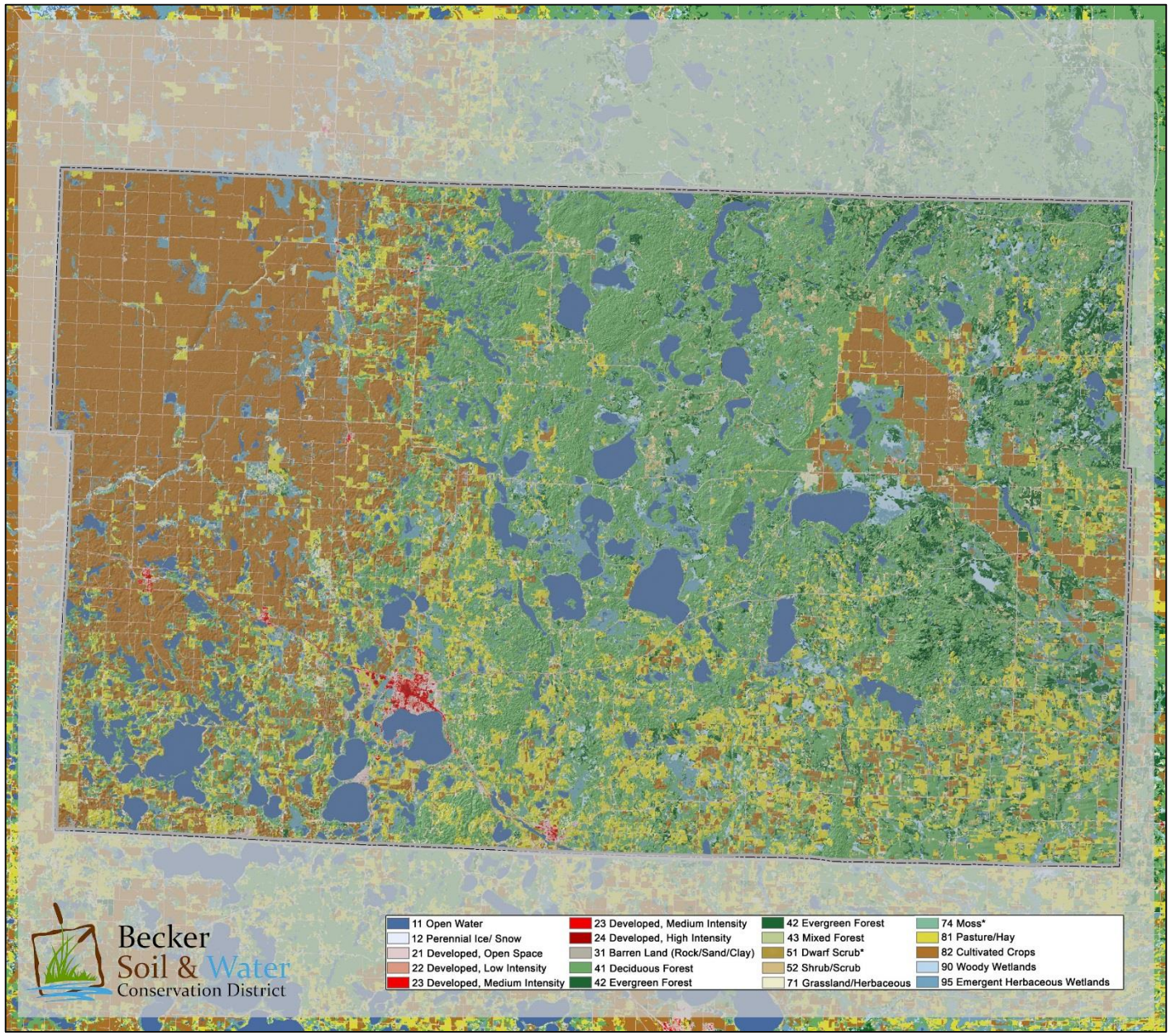
Land Use and Land Cover

The 2011 USGS National Landcover Dataset indicates Becker County's two dominant land uses are forest land (376,393 ac. 41%) and cultivated cropland (307,518 ac. 23%). With an additional 11% of hay/pastureland/grassland designation, agricultural land use accounts for approximately 34% of Becker County's overall area. It should be also be noted that over 17% of Becker County is either open water (85,196 ac. 9%) or wetland (74,203 ac. 8.1%), while only 4.5% is considered developed (41,624 ac.)

Figure 3. Becker County Landcover / Landuse
USGS MLRC National Landcover Database (2011)

Landuse / Landcover	Acres	Percent of County
Open Water	85,196	9.2
Developed, Open Space	36,268	3.9
Developed, Low Intensity	3,537	0.4
Developed, Medium Intensity	1,373	0.1
Developed, High Intensity	445	0.0
Barren Land	788	0.1
Deciduous Forest	326,629	35.3
Evergreen Forest	49,764	5.4
Shrub/Scrub	12,746	1.4
Herbaceuous	26,428	2.9
Hay/Pasture	96,857	10.5
Cultivated Crops	210,660	22.8
Woody Wetlands	18,078	2.0
Emergent Herbaceuous Wetlands	56,125	6.1

Map 6 – Becker County Landuse / Landcover



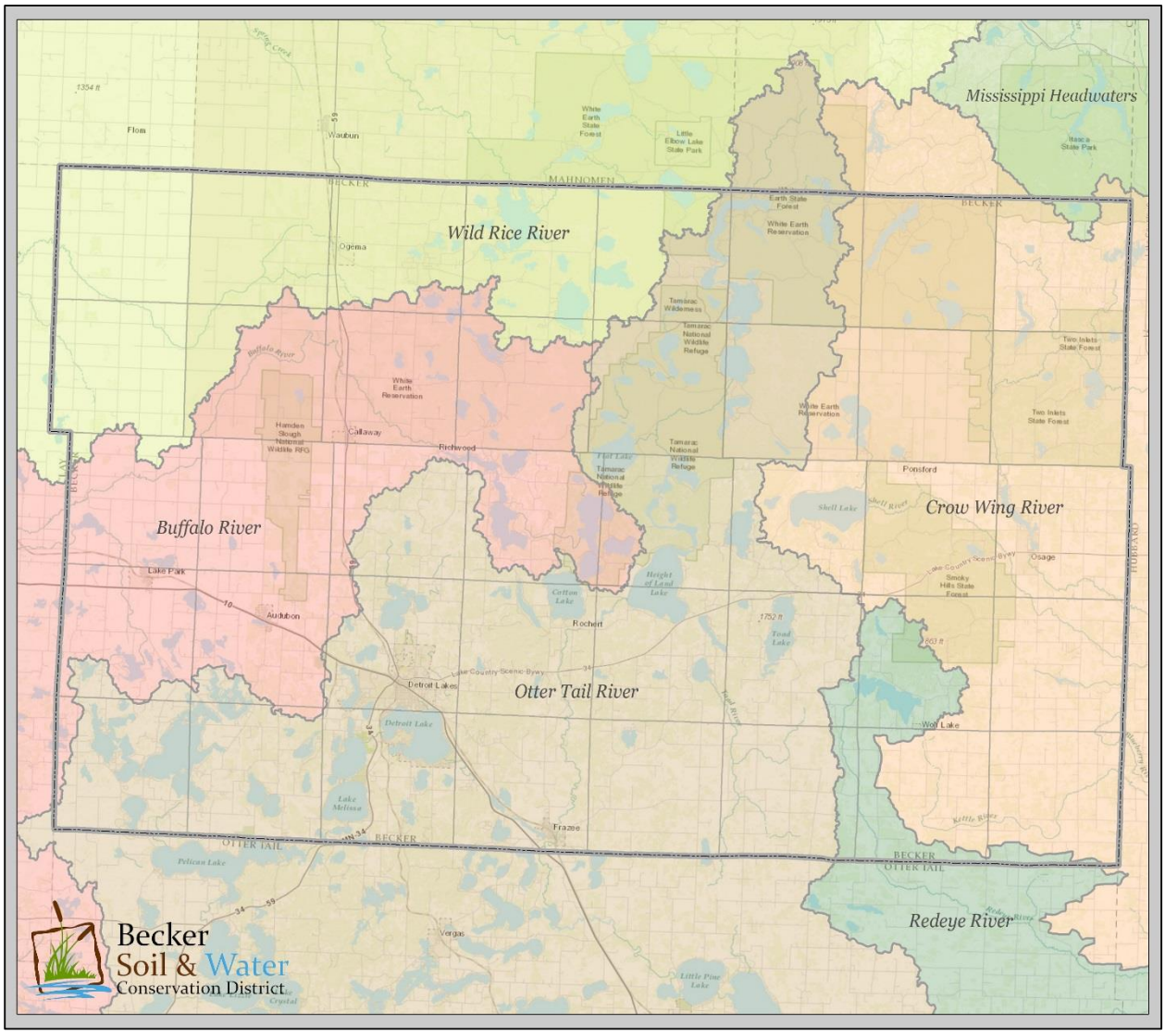
***Source**: USGS MLRC National Landcover Database (2011)*

Major Watersheds

Becker County is located on the watershed divide of North America. The western three-fourths of the county are tributary to the Red River of the North, which flows northward into Hudson Bay. The eastern one-fourth of the county is tributary to the Mississippi River, which flows southward into the Gulf of Mexico.

The county lies at the top of six major watersheds, the Wild Rice River, the Buffalo River, the Otter Tail River, the Crow Wing River, the Red Eye River and the Headwaters of the Mississippi River. Of these six, the Otter Tail covers the largest area in Becker County, 350,636 acres (total watershed size 1,269,120 ac.) and contains a significant number of the 487 lakes located in the county.

Map 7 – Major Watersheds of Becker County

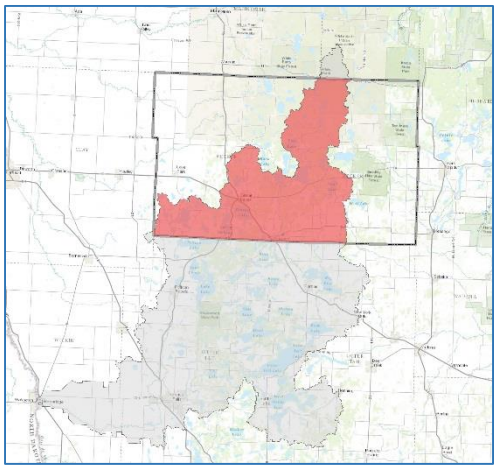


Major Watershed	Total Square Miles	Square Miles in County	Percent of Watershed	Percent of County
Mississippi River - Headwaters	1920	2.8	0.1	0.2
Crow Wing River	1983	360.0	18.2	24.9
Redeye River	894	44.4	5.0	3.1
Otter Tail River	1909	534.5	28.0	37.0
Buffalo River	1131	286.6	25.3	19.8
Wild Rice River	1636	217.1	13.3	15.0

Table 2. Comparison of Major Watersheds

Otter Tail River Watershed – At a Glance

The Otter Tail watershed encompasses three different ecoregions, covering 1,249,541 acres. The southwest portion of the watershed, the mouth of the watershed, is located in the Red River Valley ecoregion. The northeast portion of the watershed, the headwaters of the watershed, is in the Northern Lakes and Forests ecoregion.



The majority of the watershed found between these two areas is characterized by the North Central Hardwood Forest ecoregion. The eastern three-fourths of the watershed contains thousands of lakes and wetlands. The watershed is a drainage basin of the Red River and the major tributaries of the watershed are the Otter Tail and Pelican Rivers. The majority of the lakes in the greater Red River Basin are found in this watershed.

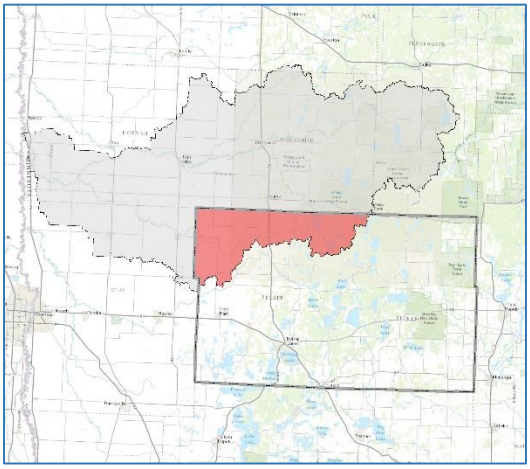
Of all of the watersheds in the Red River Basin, the Otter Tail River watershed is one of the least impacted by flooding. Annual average flood damage in the watershed is estimated at $457,784 (in 1996 dollars) with 99% being rural.

Frequently cited resource concerns throughout the watershed include wind and water soil erosion, wetland management, surface water quality, stormwater runoff, and wildlife habitat. Many of the resource concerns relate directly to changing land use and increased development in the region, resulting in fragmentation and increased sediment/pollutant (mercury, excess nutrients) loadings to surface waters.

A significant portion of the land within this watershed is considered highly erodible, or potentially highly erodible. Land use within the watershed is largely agricultural, accounting for approximately 45% of the overall watershed acres. Development pressure is moderate to considerable in some areas, with occasional farms, timberland, and lakeshore being parceled out for recreation, lake, or country homes.

Wild Rice River Watershed – At a Glance

The Wild Rice River begins its course at Mud Lake in Minnesota's Clearwater County, and flows largely to the west through Norman and Mahnomen counties. The river is joined by its two largest tributaries, the South Fork Wild Rice and the White Earth River before converging with the Red River of the North.



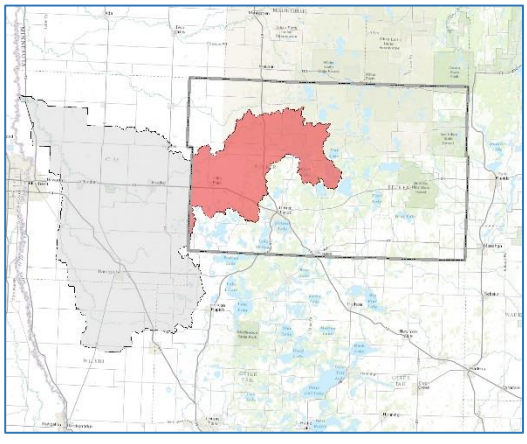
The watershed is part of the Red River Basin in northwestern Minnesota, with portions in Minnesota's Glacial Lake Agassiz Plain, North Central Hardwoods, and Northern Lakes and Forests Level III ecoregions.

Eastern Wild Rice is, in terms of area, the third largest watershed of the Red River basin in Minnesota, and arguably one of the most ecologically diverse. The watershed includes portions of 9 of the 12 separate agroecoregions identified in the Red River region.

The main threat to the surface water quality in the watershed is non-point sources such as failing septic systems, agricultural runoff of fertilizers and feed lot runoff. However, a more common non-point pollution problem involves increases in turbidity due to wind and water erosion of soil from the land. The sediment entering the streams and lakes originate from upland erosion, stream bank erosion, drainage ditch erosion, and gully and wind erosion.

Buffalo River Watershed – At a Glance

The Buffalo River flows 88 miles from the pine forests around Tamarac Lake in eastern Becker County to the Red River of the North, across the former beach ridges and the lake plain of the Glacial Lake Agassiz land formation. Nearly 1,200 square miles of Clay, Becker, Otter Tail, and Wilkin counties drain to the Buffalo before it's convergence with the Red River of the North.



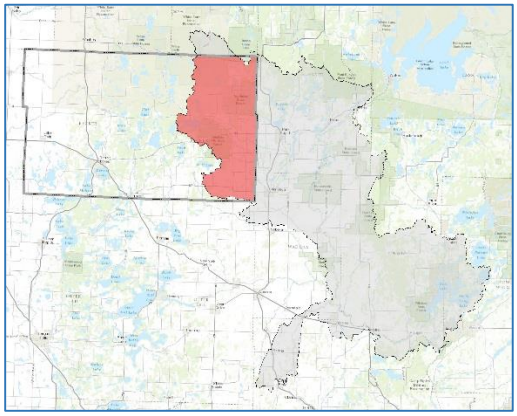
The Buffalo River Watershed spans three ecoregions: the Lake Agassiz Plain, the North Central Hardwood Forests, and the Northern Lakes and Forests. Land use within the BRW is predominantly agricultural (row crops and pasture) in the west and central portions accounting for more than 70% of the overall watershed acres; the eastern portion of the watershed is mostly forested.

Intensive monitoring shows that E.coli and turbidity are the most prevalent factors for rivers and streams within the watershed. Shallow lakes have issues with clarity, chlorophyll and nutrients leading to eutrophication.

Frequently cited resource concerns in the watershed are wind / water soil erosion, wetland management, surface water quality, flood damage reduction, and wildlife habitat. Many of the resource concerns relate directly to landuse practices in the region, resulting in fragmentation and increased sediment and pollutant (E.coli, excess nutrients) loadings to surface waters.

Crow Wing River Watershed – At a Glance

The Crow Wing River Watershed is located in north-central Minnesota and covers approximately 1,946 square miles within Becker, Cass, Clearwater, Crow Wing, Hubbard, Morrison, Otter Tail, Todd, and Wadena Counties. The watershed is located in the Upper Mississippi River Basin and is comprised of two ecoregions: the Northern Lakes and Forests, and North Central Hardwood Forests.

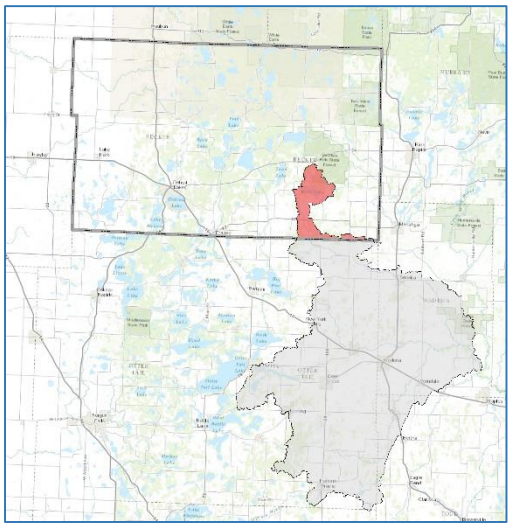


Land use within the watershed is primarily forested/shrub lands, followed by agricultural lands, wetlands, open water, and developed lands. There are a large number of pristine, high-value recreational lakes in the Crow Wing River Watershed and several cold water streams that support trout are located in the watershed.

Commonly cited resource concerns in the basin are excessive soil erosion, woodland management, surface water quality, groundwater quality and quantity, surfacewater management, wetland management, and land conversion issues. Associated with the surfacewater management and land conversion issues are increased sediment and nutrient (namely phosphorus) loading to surface waters, and groundwater contamination. Declining wildlife habitat is also a concern.

Red Eye River Watershed – At a Glance

The Redeye River watershed covers 575,366 acres (899 square miles) and is located the northwestern to north-central part of the Upper Mississippi River Basin in central Minnesota. The watershed encompasses all or parts of Becker, Otter Tail, Todd, and Wadena counties. The Redeye River begins at Wolf Lake and travels south where it joins the Leaf River and eventually joins the Crow Wing River north of Staples.

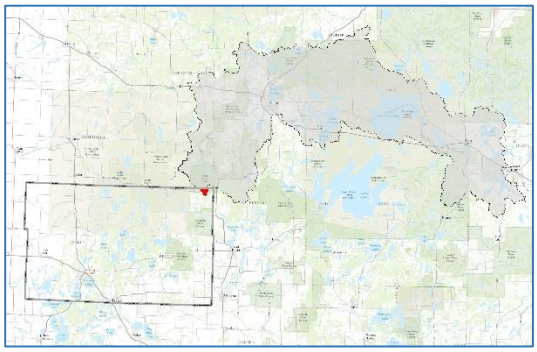


The Redeye River watershed has approximately 633 total river miles, of which 316 miles of rivers are considered perennial. The major rivers within this watershed include the Red Eye, the Leaf, and the Wing. There are 11 creeks and 7 county ditches, as well as numerous smaller flowages. The watershed contains approximately 126 lakes with a total acreage of 8,228.

The dominant land use within the watershed is agricultural (66%), while grasslands and forests make up 14% each, water makes up 2%, and 4% is urban. The majority of the watershed is within the North Central Hardwood Forest with small sections in the Northern Lakes and Forests ecoregion.

Mississippi River Headwaters Watershed – At a Glance

The Mississippi River Headwaters watershed consists of 1,255,105 acres (1,961 square miles) in the far north part of the basin. The watershed contains the headwaters of the Mississippi River at Lake Itasca in Itasca State Park. The watershed includes parts of Becker, Beltrami, Cass, Clearwater, Hubbard and Itasca counties, boasts nearly 685 river miles, and contains more than 1,000 lakes.



The watershed is largely forested and located in the Northern Lakes and Forest ecoregion of Minnesota. As the Mississippi River begins its 2,320-mile journey to the Gulf of Mexico, it runs north to north easterly through the watershed's abundant forest resources and large riverine wetland areas. The forest resources are a vital component to the economy of the area and provide habitat for a variety of wildlife species.

Approximately 44% of the land in this watershed is privately owned, with the remaining portion of land state, county or federal public land, or held by tribal land owners. Agricultural land use within the watershed is moderate, accounting for approximately 10% of the available acres.

Groundwater springs are present throughout much of the river channel throughout this watershed. These springs are especially common above Lake Bemidji where groundwater contributes approximately two-thirds of the Mississippi River's flow in this section.

Commonly cited concerns in the watershed include loss of shoreline and aquatic habitat due to development, increased sedimentation due to forest management practices, increased nutrient, contaminant, and sediment loading from stormwater runoff, and loss of biodiversity due to competition from invasive species.

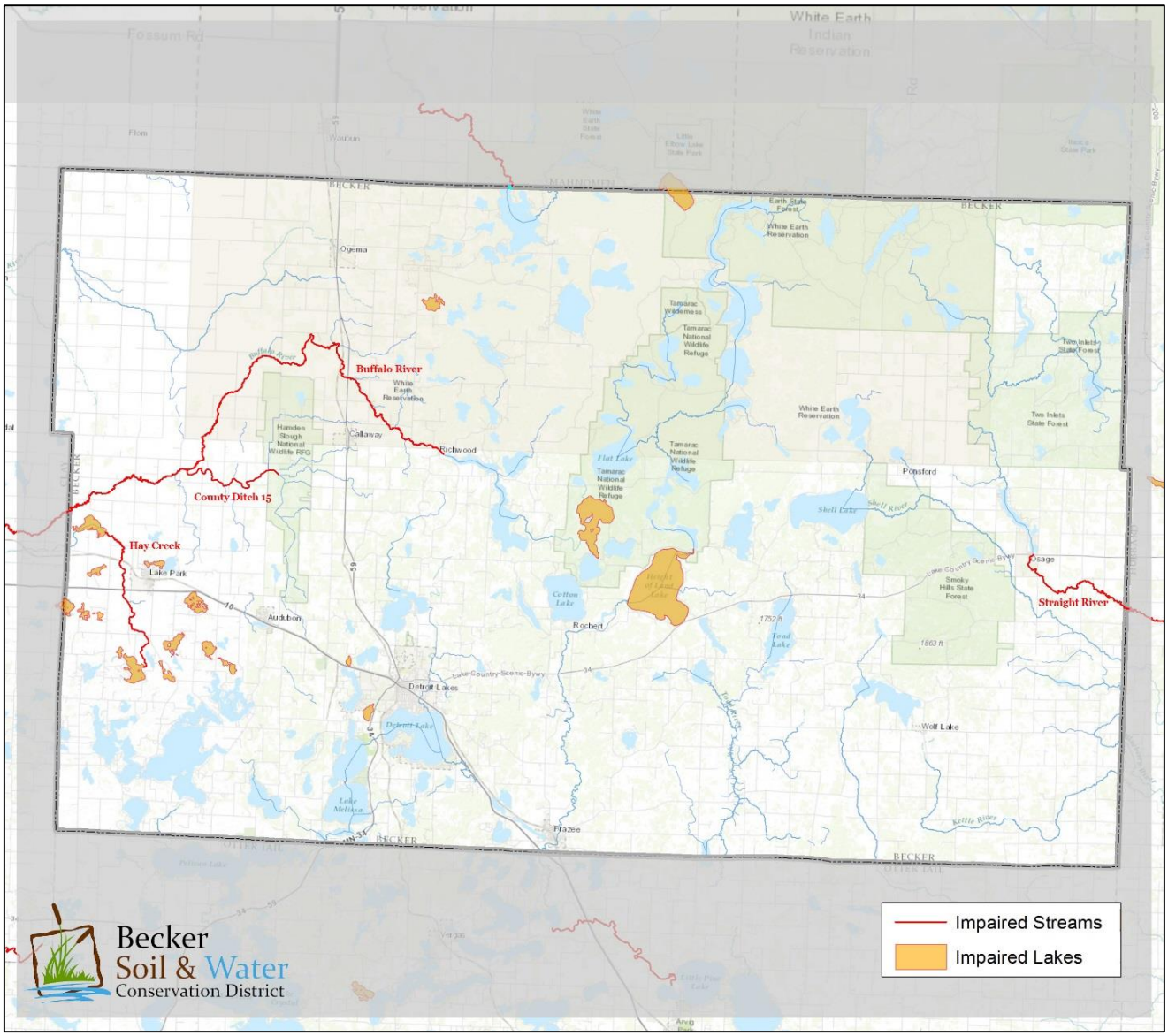
Impaired Waters – Excess Nutrients, Turbidity, Biological Integrity

Watercourse	Impairment	Watershed	Impaired Miles
Buffalo River	E.coli, Turbidity	Buffalo-Red River	9.4
White Earth River	Turbidity	Wild Rice	0.1
Straight River	Low DO	Crow Wing	8.4
Unnamed ditch (Becker County Ditch 15)	E.coli	Buffalo-Red River	6.3
Buffalo River	E.coli, Turbidity, IBI	Buffalo-Red River	25.8
Hay Creek	E.coli	Buffalo-Red River	8.9

Waterbody	Impairment	Watershed	Affected Use
Height of Land Lake	Excess Nutrients, Mercury	Otter Tail	Aquatic Recreation
Mission Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
Marshall Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
Gottenberg Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
Boyer Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
Talac Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
Forget-Me-Not Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
Sorenson Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
Stakke (Stake) Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation

Waterbody	Impairment	Watershed	Affected Use
Gourd Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
West LaBelle (Duck) Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
Lime (Norby, Selvine) Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
Stinking Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
Sand (Stump) Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
North Tamarack Lake	Excess Nutrients	Buffalo-Red River	Aquatic Recreation
Tulaby Lake	Excess Nutrients	Wild Rice	Aquatic Recreation
Wine Lake	Excess Nutrients	Pelican River / Otter Tail	Aquatic Recreation
St Clair Lake	Excess Nutrients	Pelican River / Otter Tail	Aquatic Recreation

Map 8 – Becker County Impaired Waters - 2012



Source: MN Pollution Control Agency, 2012 Approved TMDL List

Water Management Plan Information

Local Government Units – County/SWCD/Municipalities and Townships

Becker County has delegated the responsibility of coordinating preparation of the comprehensive local water management plan to the Becker Soil and Water Conservation District. The county, area watershed management organizations, partner agencies and concerned members of the public are participating in development of the plan. Much of the plan implementation will be the responsibility of the county and SWCD. Municipalities and townships are also responsible for some plan objectives related to their jurisdiction.

Original Plans and Updates

The Comprehensive Water Management Plan 2017-2027 will be the fourth water management plan or update prepared for the county, the third update to the first water plan. The current plan expires December 31, 2016. The following is a list of the county's water plans.

1.Comprehensive Water Plan 1990-1997 (first plan)
2.Comprehensive Water Plan 1998-2004 (first update/second plan)
3.Local Water Management Plan 2005-2014/2015/2016 (second update/third plan)

List of Priority Concerns 2017-2027

The purpose of the priority concerns scoping document and the priority concerns identified herein is to provide Becker County, related entities and various stakeholders with guidance and direction for water planning and implementation activities over the course of the next ten years.

Priority Concern Selection

Participants in the local water plan survey, workgroups, stakeholder forums and public meetings were asked to consider what resources they felt were most threatened and prioritize corresponding resource concerns. Neighboring and local water management plans, Total Maximum Daily Load (TMDL) plans, Watershed Restoration and Protection Strategy Reports (WRAPS), the Becker County Comprehensive Plan, and land use ordinances from Becker County and the City of Detroit Lakes were also reviewed to ensure consistency between plans.

Based on available data, local expertise, survey responses and public input, two main priority water management concerns were selected for inclusion in the water plan update. Each of these priority concerns has several subparts, related objective and identified or suggested actions.

Priority Concern 1

Surface Water Quality, which includes:

- Stormwater Management
- Erosion & Sediment Control on Agricultural Land
- Nutrient, Turbidity and Bacteria Reductions in impaired watersheds
- Aquatic Invasive Species (AIS) Prevention
- Managing Soil Health
- Managing Hydrology (Water Quantity)
- Shoreland Protection
- Wetland Protection
- Development Pressure and Landuse Change
- Water Quality Monitoring

Priority Concern 2

Ground Water Quality, which includes:

- Septic System Maintenance, Inspection & Compliance
- Wellhead Protection
- Irrigation Water Management
- Nutrient Management
- Solid & Hazardous Waste Disposal
- Ground Water Monitoring

The main priority concerns and their subparts are summarized in the following sections.

Priority Concern: Surface Water Quality

Goal: Protection and Restoration of Surface Water Quality

With six major watersheds, nearly 500 lakes and countless wetlands Becker County has an abundance of surface water area. Rivers, streams, lakes wetlands and marshes account for over 17% of Becker County's total surface area. The opportunities for aquatic recreation and water-oriented living draw over 300,000 visitors annually and comprise a significant portion Becker County's local economy and tax base.

Development pressure, land use conversion, municipal stormwater, agricultural runoff, invasive species and changing climate trends are contributing factors to water quality changes in local watersheds. These changes can affect the health of aquatic life as well as the publics use and enjoyment of property and local surface water bodies.

Managing land, water and soil to adapt to increased overall annual precipitation, larger rainfall events, existing and potential impacts of development, stormwater runoff, land use conversion and the growing threats posed by aquatic invasive species can restore, protect or enhance the health of our local surface waters and their corresponding watersheds.

Areas of related concern to be addressed are as follow:

Surface Water Quality - Stormwater Management

"Stormwater is an all-inclusive term that refers to any of the water running off of the land's surface after a rainfall or snowmelt event." -Minnesota Stormwater Manual

Stormwater is a term used to describe all water that isn't able to soak into the ground and runs off into storm drains, ponds, lakes, rivers, and streams. Historically, this did not happen regularly since rainwater or snowmelt was able to infiltrate the ground. Now, with increased amounts of impervious surface, like parking lots, streets, and rooftops, more and more water from rain and snow simply runs straight to water bodies. This has the potential to negatively impact our local water resources, like increased flooding of streams and the pollution of our lakes and ponds.

Identified Actions include:

- Increasing Infiltration
- Temporary Erosion and Sediment Control
- Minimization / Mitigation of Impervious Area
- Reduction of Nutrients from Upstream Sources

Surface Water Quality - Erosion & Sediment Control on Agricultural Land

Soil erosion involves the breakdown, detachment, transport, and redistribution of soil particles by forces of water, wind, or gravity. Soil erosion on cropland is of particular interest because of its on-site impacts on soil quality and crop productivity, and its off-site impacts on water quantity and quality, biological activity and overall watershed health.

Specific Erosion and sedimentation issues in Becker County include:

- Sheet, Rill and Wind Erosion: Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality
- Concentrated Flow Erosion: Concentrated flow erosion processes are distinguished from sheet and rill processes in their enhanced ability to mobilize and transport large amounts of soil, water and dissolved elements.
- Excessive bank erosion from streams shorelines or water conveyance channels: Sediment from banks or shorelines threatens to degrade water quality and limit use for intended purposes.

Eroded soils leaving agricultural landscapes pose risks of water quality degradation in a variety of ways, including turbidity (decreased water clarity), excess nutrient loading and delivery of excess pathogens and chemicals form manure, biosolids, compost or chemical applications.

Identified Actions include:

- Conversion to no-till operations or reduced tillage
- Increased Crop Residue Management
- Compliance with the requirements of Minnesota's 2015 Buffer Law
- Conservation Crop Rotations
- Structural Best Management Practices

Surface Water Quality - Nutrient, Turbidity and/ or Bacteria Reductions in impaired watersheds.

Becker County is fortunate in that few lakes, rivers or streams in the county are on the Minnesota Impaired Waters List maintained by the Minnesota Pollution Control Agency (MPCA). While the majority of surface waters meet or exceed federal and state water quality thresholds, there are some streams and lakes listed as impaired for turbidity, excess nutrients, bacteria, and low biological integrity.

Specific goals and milestones have been set for the majority of affected watercourses and water bodies, either in an approved Total Maximum Daily Load (TMDL) plan or a Watershed Restoration and Protection Strategy Report (WRAPS).

Identified actions include:

Turbidity:

- Installation of Sediment Controls and Buffers
- Residue management - conservation tillage
- Flow Reduction Strategies / Retention Projects

Nutrients:

- 75% Sediment Control within Watershed
- Installation of Sediment Controls and Buffers
- Timing of nutrient application (spring or split applications)

Bacteria / Pathogens:

- 100% compliance of existing septic systems
- Rotational grazing and livestock exclusion
- Improved field manure (nutrient) management

Biological:

- Removal of Connectivity Barriers
- Planting and improving perennial vegetation in riparian areas
- Accurately size bridges and culverts to improve stream stability

Surface Water Quality - Aquatic Invasive Species (AIS) Prevention

Invasive species are defined as a nonnative species that: (1) causes or may cause economic or environmental harm or harm to human health; or (2) threatens or may threaten natural resources or the use of natural resources in the state. It is generally recognized that the most effective strategy against invasive species is to prevent their introduction and establishment. Preventive measures typically offer the most cost-effective means to minimize or eliminate environmental, societal, and economic impacts. Prevention relies on a diverse set of tools and methods, including inspections, outreach, regulations, and enforcement.

Management of water bodies in a way to decrease their susceptibility to invasion by invasive species (e.g., maximizing diversity and reducing disturbance of in-lake and near shore vegetation) may also constitute an element of prevention. There is a growing need to examine how we can increase our understanding of managing ecosystems with invasive species as part of the picture. Management should focus on maintaining resilient systems that can act to slow the establishment, spread, and dominance of invasive species. This could lead to a basic shift from focusing solely on control, by adding management of the site to limit invasion as a part of the whole management package.

Identified Actions include:

- Watercraft Inspection & Decontamination
- Education and Outreach
- Intensive monitoring of area lakes
- Rapid Response to new infestations

Surface Water Quality - Managing Soil Health

According to the USDA NRCS, "Managing for soil health is one of the most effective ways for farmers to increase crop productivity and profitability while improving the environment."

"Healthy soils hold more available water. The soil's water-holding capacity reduces runoff that can cause flooding, and increases the availability of water to plants during droughts. Good infiltration and less need for fertilizers and pesticides keep nutrients and sediment from loading into lakes, rivers, and streams. Groundwater is also protected because there is less leaching from healthy soils."

Identified actions or management systems include:

- Conservation Crop Rotation
- Cover Crops
- No Till
- Mulch Tillage
- Mulching
- Nutrient Management
- Pest Management

Conservation practices such as grassed waterways, filter strips, vegetated buffers, etc. help retain topsoil and agricultural productivity during extreme weather events. Wetland restoration and similar practices can provide water treatment, reducing nitrogen and other pollutants.

Surface Water Quality - Managing Hydrology (Water Quantity)

The natural hydrologic cycle is altered by removal of wetlands, perennial vegetation, ponds and depressions, draining soils, impervious surfaces, and collecting or conveying stormwater runoff from land to ditches, channels and storm sewers in urban, rural and agricultural landscapes. These activities affect the way that the landscape stores and releases water. The result is increased peak flows, lower base flows, and increased nutrient and sediment concentrations in streams, rivers, and lakes. Water quality is usually degraded when storage is removed, and improved when storage is added.

Drainage systems managed under Minnesota Statute 103E as well as tile drainage systems can consider environmental, land use and multipurpose drainage opportunities and alternatives before establishing drainage projects. Use of alternative drainage practices can help make working lands, as well as artificial and natural drainage systems, more resilient to extreme weather events and improve water quality.

Water storage in municipalities, shoreland areas and small developments can improve water and resiliency to extreme weather events. Some municipalities and townships stormwater systems are regulated by the MPCA through the Municipal stormwater (MS4) permitting process. In Becker County, the City of Detroit Lakes has a Storm Water Pollution Prevention Plan (SWPP) and a general storm water permit for the collection and discharge of municipal storm water.

Perched at the top of numerous watersheds and with over 70 percent of our land mass draining to the Red River Basin, retention projects are also a crucial part of managing local hydrology and achieving regional goals for peak flow reductions.

Identified Actions include:

- Maintenance of Public and Private Ditch Systems
- Culvert / Conveyance Sizing
- Restoration & Enhancement of Wetlands
- Nonstructural floodplain management
- Regional / Distributed Retention Projects

Surface Water Quality - Shoreland Protection

Protecting natural shorelines is important for water quality, wildlife and the use and enjoyment of public lakes and rivers by all. Shoreland areas of lakes, rivers, streams and wetlands are critical habitat for most aquatic and many terrestrial wildlife species. Natural vegetation in shoreland areas is important for wildlife and for protecting from erosion caused by waves and ice.

Runoff to lakes and rivers from development is a concern in shoreland areas. Runoff from lawns and impervious surfaces typically contains more nutrients per acre compared with farmland. Enforcement of shoreland development regulations and treating stormwater runoff are important for protecting water quality.

Identified Actions include:

- Encourage shoreland development patterns that protect resources
- Limit amount of impervious surface & increase infiltration
- Establish perennial vegetation adjacent to lakes
- Provide incentives for private shoreland restoration
- Protect sensitive shores and natural environment lakes
- Stronger enforcement of local and state ordinances

Surface Water Quality – Wetland Protection for Multiple Benefits

In essence, the composition of a wetland allows it to act as both a sponge and filter for surface water. Once deemed wasteland, wetlands are now regarded as key components to maintaining water quality, and also a very important tool in efforts to reduce peak flows and reduce associated flood damage.

Wetlands throughout Becker County have varying amounts of protection enforced by different government regulations, such as the federal Clean Water Act, the Minnesota Wetlands Conservation Act and local ordinances adopted by watershed districts, municipalities and the County. While these varying protective mechanisms exist, they largely only regulate direct impacts to wetlands. Indirect impacts such as altered hydrology, increased pollutant loadings and encroachment can limit or compromise the

functionality of wetland complexes and affect overall watershed heath – including water quality and the integrity of biological communities.

Identified Actions include:

- Maintain no-net loss of wetlands in Becker County
- Restore wetlands to provide water storage and treatment
- Simplify regulatory processes and achieve consistency
- Provide Financial incentives for wetland restoration and enhancement

Surface Water Quality – Development Pressure and Landuse Change

Becker County's natural resources have long provided both economic sustenance and a high quality of life for Becker County residents. The county agricultural production and its varied lakeshore environment continue to offer economic and quality-of-life benefits to county residents and visitors.

In recent years Becker County has seen increasing pressures on the county's agricultural and lake resources. Traditional agricultural areas have seen an increase in the development of non-farm housing, including those areas designated agricultural. Development is similarly cropping up on increasingly remote lakes, and in more intensive development patterns than historically seen. This development pressure may be attributed to economic incentives to sell and divide property due to high land values, potential investment returns, demand for riparian properties, and diminishing agricultural returns. Development pressure and impacts are a concern due to high growth rates and the cumulative effects of development on surface as well as groundwater resources.

Additional concern has been raised over increasing conversion of forested land to irrigated agricultural production. Portions of the County that have historically been forested and have coarse grained sandy soils (such as those of the Park Rapids (or Pineland) Sand Plain have a high potential of contributing to surface and groundwater quality issues when converted to agricultural production without proper management.

Identified Actions Include:

- Support landuse patterns that protect agricultural land, forests, lakes, rivers and wetlands
- Require stormwater management plans for all riparian development and redevelopment
- Require lot sizes on natural environment lakes that afford the greatest protection for water quality and wildlife habitat.
- Educate landowners on the importance of natural, native shoreline vegetation for maintaining water quality and aquatic habitat
- Educate contractors, realtors and Developers on low impact, lake friendly development and landscaping
- Identify Forest Land with vulnerable soils and potential for conversion to agriculture
- Provide financial assistance or tax incentives for permanent protection of native and/or forested habitats

Surface Water Quality – Water Quality Monitoring

Stakeholders and workgroup members agree: To truly be effective in assessing, preventing or addressing issues relating to surface water quality useful data must be available. Consistent, relevant and timely acquisition and sharing of water quality data will enable the identification of potential threats, evaluation of management actions, and measurement of the effectiveness of the actions taken.

Identified Actions Include:

- Support and streamline citizen monitoring programs and collection of water quality data
- Establish and maintain organized countywide surface water quality data storage
- Monitor targeted and/or Impaired waters annually

Priority Concern 2: Ground Water Quality and Quantity
Goal: Protection and Preservation of Ground Water Quality & Quantity

Becker County has an abundant groundwater resource in its surficial and buried drift aquifers located throughout the county. All of Becker County's citizens depend on the ground water for their drinking water, and maintaining a supply of high quality drinking water continues to rank as a high priority for local stakeholders. Since the first water management plan was adopted in 1990, protecting groundwater from contamination has always been high on the list for water plan implementation activities.

Private water wells are regulated by the County in accordance with the State Well Code under a delegation agreement with the Minnesota Department of Health. Public water supply wells are regulated and monitored by the Minnesota Department of Health (MDH). Several municipalities across the county are in various stages of developing wellhead protection plans with the MDH.

Areas of related concern to be addressed are as follow:

Ground Water Quality/Quantity - Septic System Maintenance, Inspection & Compliance

Septic systems both complying and non-complying with management regulations, have the potential to impact groundwater quality. Failing sewage systems discharge untreated waste water into the environment where it contaminates groundwater supplies, degrades surface waters, or poses a serious pathogenic health threat on the ground surface. Failing septic systems continue to be a problem throughout Becker County based on unacceptable failure rates. The Becker Planning and Zoning office estimates that the countywide failure rate could exceed 50%.

Identified Actions include:

- Encourage septic system maintenance every 3 years
- Conduct lake-wide SSTS compliance inspections
- Provide financial assistance for septic system upgrades

Ground Water Quality/Quantity – Wellhead Protection

Wellhead Protection is a way to prevent drinking water from becoming polluted by managing potential sources of contamination in the area which supplies water to a public well. Much can be done to prevent pollution, such as the wise use of land and chemicals. Public health is protected and expense of treating polluted water or drilling new wells is avoided though wellhead protection efforts.

Specific wellhead protection requirements vary for the different classifications of public water systems in Minnesota which include transient non-community water systems (such as resorts, restaurants, and churches) and Community water systems. Few protective requirements are in place for private domestic wells, though those that are abandoned or in disrepair pose risks for groundwater contamination.

Identified Actions include:

- Assist water suppliers with developing & implementing Well Head Protection Plans
- Incentives for perennial vegetation in Drinking Water Supply Management Areas
- Financial assistance for well decommissioning and replacement
- Permanent protective measures such as easements for sensitive areas

Ground Water Quality/Quantity – Irrigation Water Management

Irrigation water management primarily aims to control the volume and frequency of irrigation water applied to crops, so as to meet crop needs while conserving water resources. Competition for water resources for agricultural and other uses is increasing—even in portions of the state like Becker County that have abundant water. This makes it all the more essential to use irrigation water as efficiently as possible.

Another 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. Irrigation water management can be significantly enhanced by practices that increase soil health, particularly those increasing the soil's moisture-holding capacity or decreasing evaporation.

Identified Actions include:

- Soil moisture monitoring and management
- Scheduled irrigation applications
- Increase Crop Residue Management
- Financial assistance to increase irrigation efficiency
- Prioritize efforts within the Straight River Groundwater Management Area

Ground Water Quality/Quantity – Nutrient Management

Nutrient management is using crop nutrients as efficiently as possible to improve productivity while protecting the environment. Nutrients that are not effectively utilized by crops have the potential to leach into groundwater or enter nearby surface waters via overland runoff or subsurface agricultural drainage systems. Too much nitrogen or phosphorus can impair water quality.

The storage and application of livestock waste poses similar risks to water quality, making the guiding principles of nutrient management safe storage and preventing over-application of nutrients.

Identified Actions include:

- Apply manure and fertilizer at or below U of M recommended rates
- Provide financial assistance for adequate ag waste storage facilities
- Offer technical assistance for on-farm nutrient management planning

- Encourage split applications of nutrients, chiefly nitrogen
- Promote use of nitrogen scavenging cover crops
- Prioritize efforts within the Straight River Groundwater Management Area

Ground Water Quality/Quantity – Solid & Hazardous Waste Disposal

Household hazardous waste, pesticides and herbicides, business and electronic waste, old prescription drugs, used oils, and many other common products should be properly disposed of, rather than simply dumping them into the environment or down the drain. If disposed of inappropriately, they may contaminate soil, ground water or surface water, and air quality. The first option should always be to reduce, reuse, or recycle it; if no other options are available then they must be properly disposed of. Many of these items are banned from landfills.

In Becker County the Environmental Services department offers a household hazardous waste program, as well as the VSQG (Very Small Quantity Generator) program which manages businesses hazardous waste upon request. The county is also a participant in the Minnesota Department of Agriculture's "Clean Sweep Program", which provides safe disposal of residential and agricultural waste pesticides at no cost.

Identified Actions include:

- Provide environmentally sound solid waste management
- Increase public awareness of available hazardous waste programs
- Offer additional locations / dates for hazardous waste collection

Ground Water Quality/Quantity – Groundwater Monitoring

To evaluate aquifer functions, groundwater quantity and the overall health of our drinking water supply it is crucial to regularly assess our groundwater supplies. Overall the quality of the groundwater in Becker County continues to be good, though elevated nitrate levels have been discovered in portions of the Park Rapids (or Pineland) Sand Plain located in the eastern part of Becker County, and elevated arsenic levels have been detected in pockets of the Pelican River Sand Plain located in the southwestern portion of the County. Since 1995 the Becker SWCD has conducted free well water testing clinics annually.

Identified Actions include:

- Continue to participate in the MN DNR Groundwater Level Monitoring Program
- Continue to support private well water quality monitoring efforts
- Offer nitrate testing to the public at no cost

Priority Concerns Identification Process

1. Notice of Plan Revision and Invitation to Submit Priority Concerns

As required by Minnesota Statutes 103B.313, Becker Soil and Water Conservation sent notification of the plan update and invitation to submit priority concerns to the following:

- All 45 local government units, including Becker County, 7 municipalities and 37 townships
- Each of the 4 organized watershed districts within Becker County
- The six adjacent counties (Clay, Norman, Mahnomen, Hubbard, Wadena and Otter Tail)
- The five state review agencies, including the Board of Water and Soil Resources (BWSR), the Department of Agriculture (MDA), the Department of Health (MDH), the Department of Natural Resources (DNR), and the Pollution Control Agency (MPCA)
- Becker County Coalition of Lake Associations (COLA)

Four of the five state review agencies submitted priority concerns or related comments. MPCA did not supply any information.

One municipality in the county, the City of Detroit Lakes, indicated priority concerns would be identified in the City's pending ordinance revisions, and further information could be found in the Detroit Lakes Stormwater Pollution Prevention Plan. Eagle view township was the only township to reply, citing controlling invasive species and erosion of lakeshore as priorities.

Buffalo Red Watershed district and the Pelican River Watershed District both responded that they are currently in the process of updating their respective revised management plans and referenced priorities and objective outlined in their existing plans, as well as the draft Buffalo Red River WRAPs. No comments or submissions were received from Wild Rice or Cormorant Lakes Watershed District.

List of Priority Concerns Recommended:

- Drinking water and groundwater protection
- Altered hydrology
- Drainage Maintenance
- Stormwater management
- Wetland Protection
- Flood Damage Reduction
- Excess nutrients
- Soil erosion
- Soil health
- Aquatic invasive species
- Development Pressure
- Wildlife Habitat
- Agricultural Runoff
- Shoreline Protection
- Irrigation Water Management

2. Local Water Plan Survey

To help determine priority concerns to address in the water plan, the SWCD administered a fifteen question online survey using Survey Monkey in March of 2016. The survey was promoted using the county website, press releases, radio interviews and emails to drainage authorities, lake associations, partner agencies and to county, township or city officials.

Survey Questions, responses and results are included in the following attachment.

3. Local Work Sessions, Internal & Public Forums

June 3, 2015: PRAP Follow up and water plan scoping session

SWCD/NRCS: Peter Mead, Ed Clem, Ed Musielwicz;
Becker County: Eric Evenson,
BWSR: Don Buchout, Brett Arne

Priority Issues Identified:

- Effective Communication and Coordination between entities
- Consistency Between Planning Documents & Components
- Stages of various plans – WRAPS, TMDLS, LWPs, RWMPs
- Common Resource Concerns Between Plans

January 5, 2016 – Scoping Session

SWCD: Peter Mead & Ed Clem, Becker SWCD
Pelican River Watershed District: Tera Guetter
Buffalo Red Watershed District: Bruce Albright
Wild Rice Watershed District: Kevin Ruud
Cormorant Lakes Watershed District: Elis Peterson

Priority Issues Identified:

- Compliance with MN's 2015 Buffer & Soil Loss Laws
- Shoreland Protection & Stabilization
- Soil Erosion in the Buffalo-Red & Wild Rice Watersheds
- Increasing Phosphorus in the Pelican Chain of Lakes
- Targeting conservation with PTMApp, WQDSA & Similar
- AIS Prevention

January 21, 2016: Landowner Forum, Lake Park, MN

Priority Issues Identified:

- Compliance with MN's 2015 Buffer & Soil Loss Laws
- Shoreland Protection & Stabilization
- Incentives for compliance / stewardship
- Private and Public Ditch Maintenance

January 29, 2016: AIS Scoping Session

SWCD: Peter Mead, Karl Koenig
SWCD Supervisor: Kathy Stenger
Pelican River Watershed District: Tera Guetter
Becker COLA: Barb Fishberg-Hallbakken, John Postovit, Dick Heckock

Priority Issues Identified:

- Regionalized Watercraft decontamination
- Increase / Target Watercraft Inspections
- Increased monitoring
- Additional Public Outreach & Education
- "Rapid Response" treatment for new infestations

February 8, 2016: Water Quality Scoping Session

SWCD: Peter Mead, Karl Koenig
Pelican River Watershed District: Tera Guetter
Becker COLA: Dick Heckock
RMB Laboratories: Moriaya Rufer
Lowell Deede, Retired USFWS

Priority Issues Identified:

- Available data, collection methods and existing TSS & Nutrient Trends
- Support and streamline citizen monitoring programs and collection of water quality data
- Establish and maintain organized countywide surface water quality data storage
- Monitor targeted and/or Impaired waters annually

February 10, 2016: Lake Development Subcommittee Meeting

SWCD: Peter Mead
Becker County: Commissioner Larry Knutson
Becker County: Roy Smith, Surveyor
MN DNR: Donna Dustin & Mandy Erickson

Priority Issues Identified:

- Phosphorus Loading and Lake Sensitivity
- Near-Shore Disturbance and Habitat Fragmentation
- Lot-Width/Size Thresholds for Aquatic Health
- Stormwater Management and Mitigation

February 18, 2016: Landowner Forum, Wolf Lake, MN

Priority Issues Identified:

- Increasing Irrigation / Irrigation Water Management
- Soil Health (Cover Crops, Rotational Grazing)
- Nutrient Management
- Wildlife Habitat Enhancement

March 17, 2016: Landowner Forum, Callaway, MN

Priority Issues Identified:

- Simplification of Regulatory / Permitting Processes
- Soil Loss & Sedimentation
- Private and Public Ditch Maintenance
- Compliance with MN's 2015 Buffer & Soil Loss Laws

June 16, 2016: Local Workgroup Meeting

SWCD: Peter Mead, Aaron Salo
SWCD Supervisors: Tony Beck, Travis Schauer
NRCS: Ed Musielwicz, Ray Hummel
BWSR: Brett Arne
MN DNR: Rob Baden, Roger Hemphill, Phil Doll
Wild Rice Watershed District: Kevin Ruud
Bill Zurn, Producer

Priority Issues Identified:

- Soil Erosion & Water Quality in the Buffalo Red and South Branch Wild Rice Watersheds
- Increased phosphorous in the Pelican River Watershed District and greater Otter Tail Basin.
- Irrigation, cover crops, nutrient & pest management on irrigated lands in central sands region
- Soil Health practices (no-till, residue management cover crops, rotational grazing, etc.)
- Compliance with MN's 2015 Buffer & Soil Loss Laws.

4. Local Water Management Advisory team

An advisory team was assembled to work on various components of the water management plan.

Advisory Members:
Barry Nelson, Becker County Commissioner
Peter Mead, Soil and Water Conservation District Administrator
Jerome Flottemesch, Soil and Water Conservation District Supervisor
Eric Evenson, Becker County Planning and Zoning Administrator
Kasey Klem, Detroit Lakes City Administrator
Jake Hein, MN Farm Bureau, Local Producer
Carrie Johnston, Detroit Lakes Chamber of Commerce
Tera Guetter, Pelican River Watershed District Administrator
Bruce Albright, Buffalo Red Watershed District Administrator
Kevin Ruud, Wild Rice Watershed District Administrator
Richard Hecock, Becker County Coalition of Lake Associations

Technical Members:
Ed Clem, Soil and Water Conservation District Technician
Karl Koenig, Soil and Water Conservation District AIS/WQ Coordinator
Ed Musielwicz, USDA-NRCS District Conservationist
Brett Arne, BWSR Board Conservationist
Donna Dustin, MN DNR Fisheries Biologist
Roger Hemphill, MN DNR Area Hydrologist
Rob Baden, MN DNR Area Wildlife Manager
Leticia Kiehl, Ducks Unlimited Restoration Specialist
Moriya Rufer, RMB Laboratories

Summary of Proceedings and Supporting Data:

Advisory and technical members and subcommittees met to review various components of proposed priority concerns and ensure input from citizens, local, state and regional entities was considered.

There was some internal dialog as how best to combine or groupi various concerns and still remain inclusive of all those submitted. The fifteen submitted priority resource concerns and related components were ultimately represented by two overarching primary resource concerns – Surface

Water Quality and Groundwater Quality, with related resource concerns addressed as subparts or components of each.

Priority Concern 1 - Surface Water Quality, which includes:

- Stormwater Management
- Erosion & Sediment Control on Agricultural Land
- Nutrient, Turbidity and Bacteria Reductions in impaired watersheds
- Aquatic Invasive Species (AIS) Prevention
- Managing Soil Health
- Managing Hydrology (Water Quantity)
- Shoreland Protection
- Wetland Protection
- Development Pressure and Landuse Change
- Water Quality Monitoring

Priority Concern 2 - Ground Water Quality, which includes:

- Septic System Maintenance, Inspection & Compliance
- Wellhead Protection
- Irrigation Water Management
- Nutrient Management
- Solid & Hazardous Waste Disposal
- Ground Water Monitoring

There was additional discussion as to whether suggestion of addressing fish passage/barriers and culvert replacement were included in the identified resource concerns, and it was deemed to be accommodated in the recommended goals or actions under Nutrient, Turbidity and Bacteria Reductions in impaired watersheds. Following scoping and sessions and final review, the list of priority concerns presented by local staff was accepted.

5. Public Meeting

Date: A public meeting was held from 1:00 pm to 3:00 pm, on Tuesday, April 12th in the Commissioners room of the Becker County Courthouse. The meeting was publicly noticed 15 days prior in the Detroit lakes tribune on Wednesday, March 30th, 2016 and featured in a Detroit Lakes Tribune news article on Friday, April 1, 2016

Participants:
The Becker Soil and Water Conservation District staff conducted the meeting. Two citizens, both permanent residents of Becker County, attended the open house.

Meeting Summary:
The meeting was a two-hour open house. The citizens who attended were concerned about water management issues in the county in general, including drainage system maintenance, water quality monitoring, wetland protection and the amount of sediment being delivered to both the South Branch of the Wild Rice and The upper reaches of the Buffalo River.

6. Consideration of current state and local watershed, water management and other local plans and planning efforts

Becker SWCD staff reviewed other local, regional and state studies and plans and evaluated the priority concerns, action items and goals included in each. Reviewed plans include:

Becker County Comprehensive Plan:
http://www.co.becker.mn.us/dept/planning_zoning/PDFs/CompPlan.pdf

Becker County Comprehensive Local Water Management Plan:
http://www.co.becker.mn.us/dept/soil_water/PDFs/LWMP.pdf

Pelican River Watershed District Revised Watershed Management Plan:
http://www.prwd.org/about-prwd/revised-mgt-plan/

St. Clair Lake TMDL Study:
https://www.pca.state.mn.us/sites/default/files/wq-iw5-07b.pdf

Buffalo Red River Watershed District Revised Watershed Management Plan:
http://www.brrwd.org/revised-watershed-management-plan-update/

Buffalo River Watershed TMDL Study:
https://www.pca.state.mn.us/sites/default/files/wq-iw5-06e.pdf

Buffalo River Watershed Restoration and Protection Strategy Report
https://www.pca.state.mn.us/sites/default/files/wq-ws4-11a.pdf

Buffalo-Red River Rapid Watershed Assessment
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/mn/technical/dma/rwa/?cid=nrcs142p2_023629

Crow Wing Watershed Restoration and Protection Strategy Report
https://www.pca.state.mn.us/sites/default/files/wq-ws4-09a.pdf

Crow Wing Watershed TMDL Study:
https://www.pca.state.mn.us/sites/default/files/wq-iw8-45e.pdf

Crow Wing River Rapid Watershed Assessment
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/mn/technical/dma/rwa/?cid=nrcs142p2_023587

Red Eye River Watershed Restoration and Protection Strategy Report:
https://www.pca.state.mn.us/sites/default/files/wq-ws4-17a.pdf

Red Eye River Watershed TMDL Study:
https://www.pca.state.mn.us/sites/default/files/wq-iw8-48e.pdf

Red Eye River Rapid Watershed Assessment
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/mn/technical/dma/rwa/?cid=nrcs142p2_023588

Mississippi River Headwaters Rapid Watershed Assessment
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/mn/technical/dma/rwa/?cid=nrcs142p2_023582

Otter Tail River Rapid Watershed Assessment:
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/mn/technical/dma/rwa/?cid=nrcs142p2_023627

Wild Rice River Rapid Watershed Assessment
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/mn/technical/dma/rwa/?cid=nrcs142p2_023631

Straight River Groundwater Management Area Draft Plan
http://files.dnr.state.mn.us/waters/gwmp/area-sr/sr_draft-plan_PAT.pdf

Long Term Flood Solution Strategies for the Red River Basin:
http://www.redriverbasincommission.org/Comprehensive_Report_12-15-11_FINAL.pdf

Hubbard County Local Water Management Plan
http://www.co.hubbard.mn.us/Environmental/Forms/2016%20Hubbard%20County%20LWMP.pdf

Clay County Local Water Management Plan
http://claycountymn.gov/DocumentCenter/View/470

Otter Tail County Local Water Management Plan
http://eotswcd.fatcow.com/EOT/Documents/Plans/OTC%20Water%20Plan%20Update.pdf

Wadena County Local Water Management Plan
http://www.wadenaswcd.org/WadenaCtyLocalWaterMgmtPlanAmended5.3.20112006_2016.pdf

Norman County Local Water Management Plan
http://www.normancountyswcd.org/uploads/3/5/3/2/3532157/5yearwaterplan.pdf

Minnesota Nitrogen Fertilizer Management Plan
http://www.mda.state.mn.us/~/media/Files/chemicals/nfmp/nfmp2015.pdf

Minnesota Non-Point Priority Funding Plan
http://www.bwsr.state.mn.us/planning/npfp/2016_NPFP_Final.pdf

Priority Concern Selection Process

The steps used to choose the priority concerns were:

1. County staff prepared a list of all priority concerns submitted by LGUs and state agencies.

2. County staff analyzed the survey results and written comments.

3. County and Soil and Water Conservation District staff reviewed the list of priority concerns and survey results and had a workshop to discuss all the priority concerns and suggest additional priority concerns. The group recommended all priority concerns submitted be included in the water plan.

4. Portions of the water plan advisory team were convened to review the list of recommended priority concerns to ensure the list was complete and if the recommended priority concerns should be included in the water plan. Following the aforementioned discussions, no additions or changes to the recommended list of priority concerns were made.

All priority concerns were addressed.
There were no differences between the plan's priority concerns and other state, local, and regional concerns.

Attachment

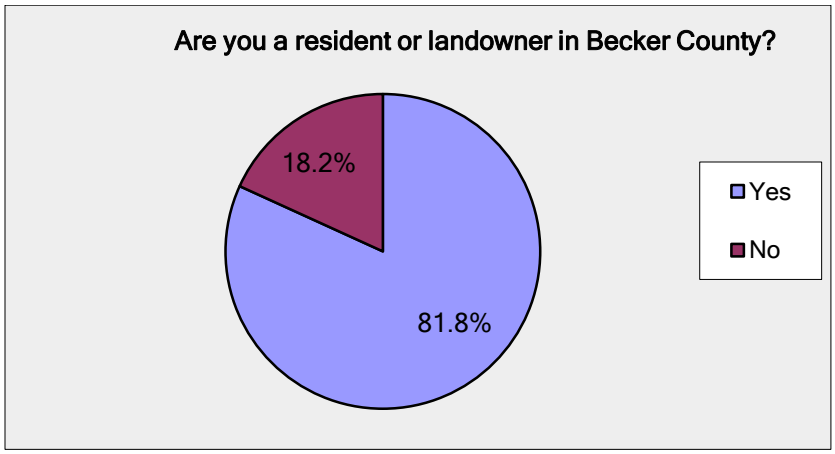
A summary of the water plan survey results is attached.

Becker County Local Water Management Plan
Public Survey & Results – Spring 2016

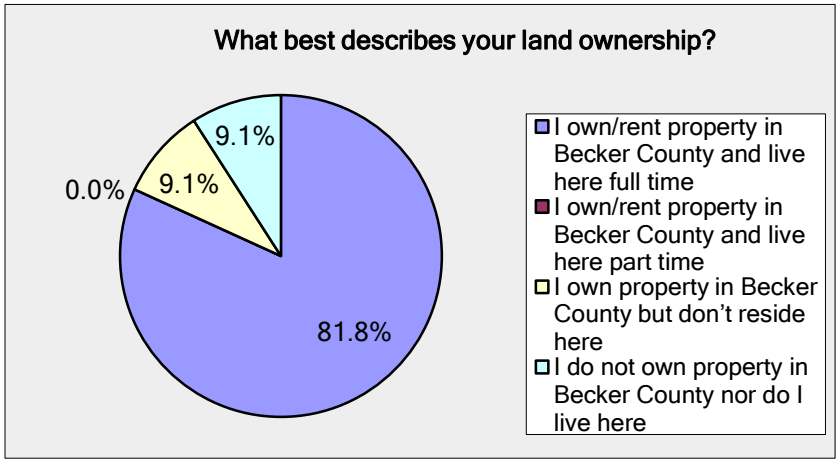
Background

In 2015 Becker SWCD initiated the process of updating Becker County's Comprehensive Local Water Management Plan. To help determine public attitudes relating to water management and establish priority concerns to address in the plan, the SWCD administered an 11 question online survey using Survey Monkey Beginning in March of 2016. The survey was promoted using the county website, press releases, newspaper articles, radio segments and emails to township and city officials. There were 46 survey respondents. The survey and results are summarized in this document.

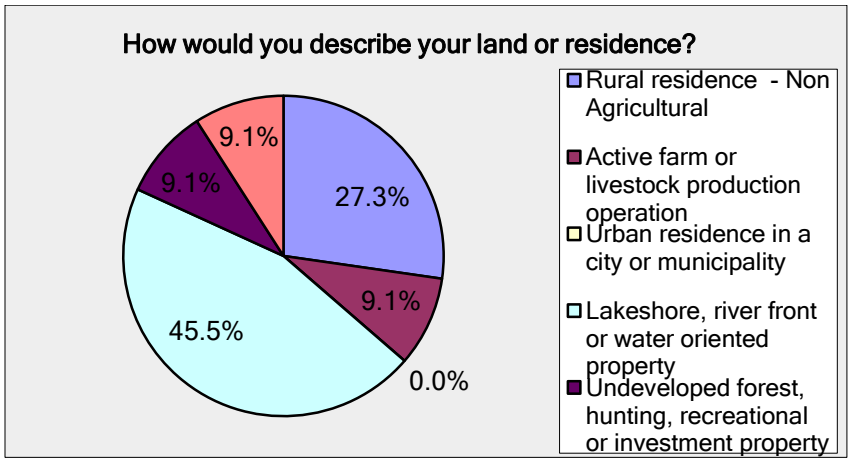
1. Are you a resident or landowner in Becker County?	
Answer Options	**Response Percent**
Yes	81.8%
No	18.2%



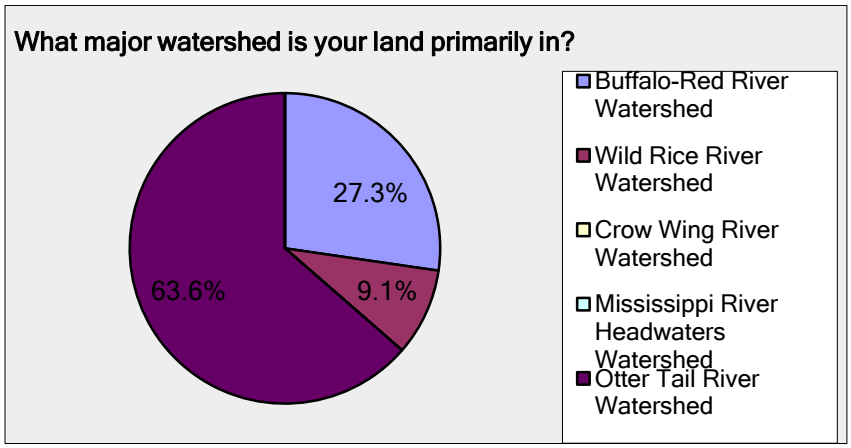
2. What best describes your land ownership?	
Answer Options	**Response Percent**
I own/rent property in Becker County and live here full time	81.8%
I own/rent property in Becker County and live here part time	0.0%
I own property in Becker County but don't reside here	9.1%
I do not own property in Becker County nor do I live here	9.1%



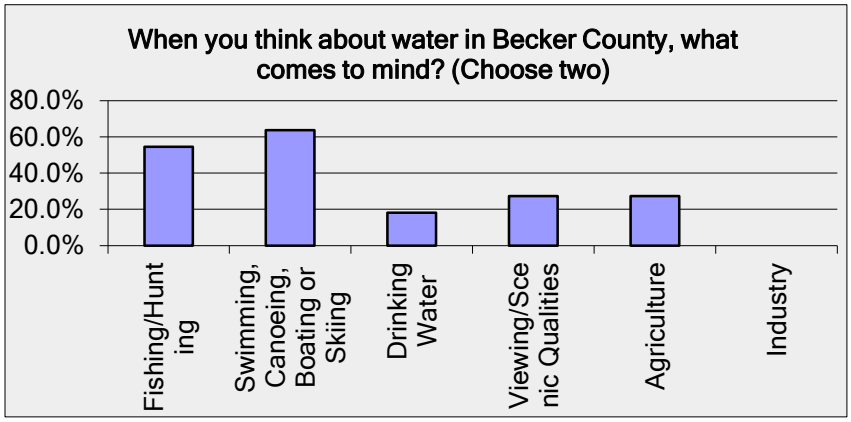
3. How would you describe your land or residence?	
Answer Options	**Response Percent**
Rural residence - Non Agricultural	27.3%
Active farm or livestock production operation	9.1%
Urban residence in a city or municipality	0.0%
Lakeshore, river front or water oriented property	45.5%
Undeveloped forest, hunting, recreational or investment property	9.1%
I do not own property in Becker County nor do I live here	9.1%



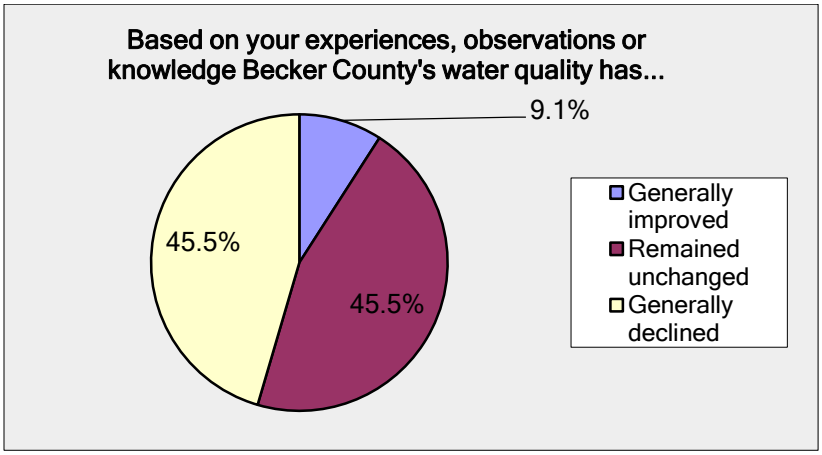
4. What major watershed is your land primarily in?	
Answer Options	**Response Percent**
Buffalo-Red River Watershed	27.3%
Wild Rice River Watershed	9.1%
Crow Wing River Watershed	0.0%
Mississippi River Headwaters Watershed	0.0%
Otter Tail River Watershed	63.6%
Redeye River Watershed	0.0%
I do not own property in Becker County nor do I live here	0.0%



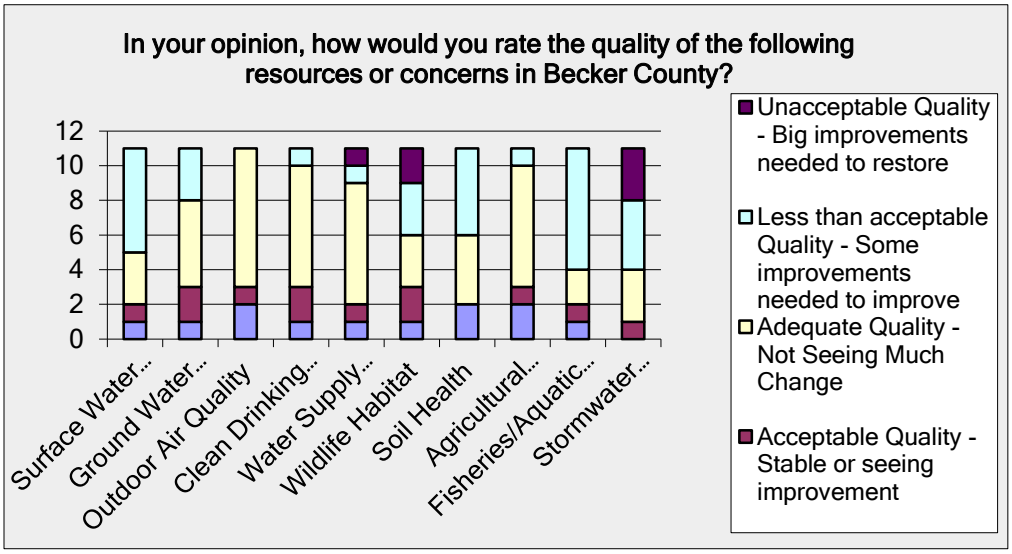
5. When you think about water in Becker County, what comes to mind? (Choose two)	
Answer Options	**Response Percent**
Fishing/Hunting	54.5%
Swimming, Canoeing, Boating or Skiing	63.6%
Drinking Water	18.2%
Viewing/Scenic Qualities	27.3%
Agriculture	27.3%
Industry	0.0%



6. Based on your experiences, observations or knowledge Becker County's water quality has...	
Answer Options	**Response Percent**
Generally improved	9.1%
Remained unchanged	45.5%
Generally declined	45.5%

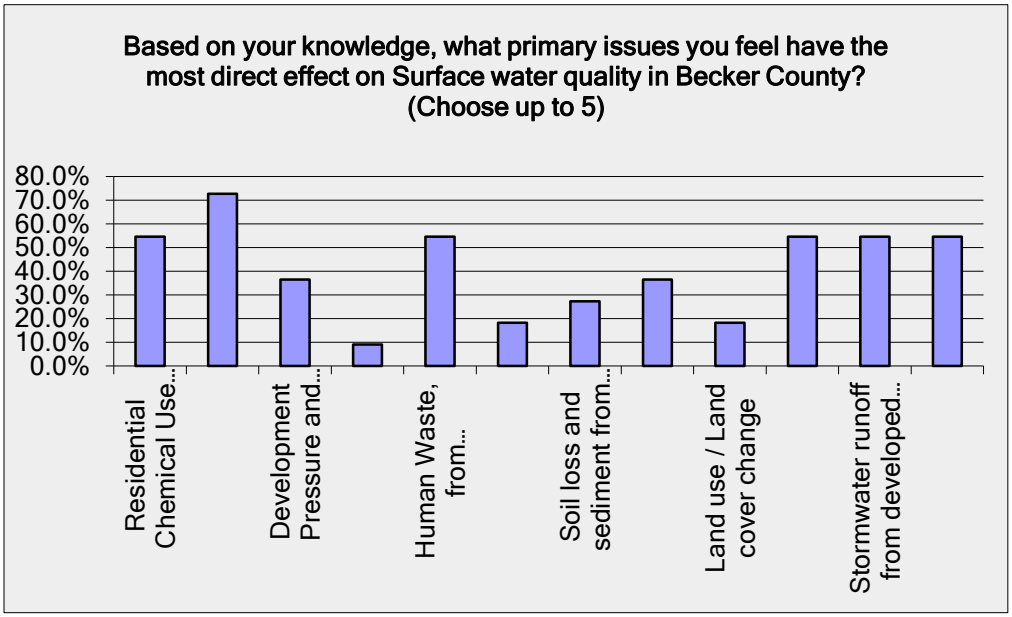


7. In your opinion, how would you rate the quality of the following resources or concerns in Becker County?					
Answer Options	**Unacceptable Quality - Big improvements needed to restore**	**Less than acceptable Quality - Some improvements needed to improve**	**Adequate Quality - Not Seeing Much Change**	**Acceptable Quality - Stable or seeing improvement**	**Good to Excellent - Need to protect existing quality**
Surface Water Quality	0	6	3	1	1
Ground Water Quality	0	3	5	2	1
Outdoor Air Quality	0	0	8	1	2
Clean Drinking Water	0	1	7	2	1
Water Supply (Amount)	1	1	7	1	1
Wildlife Habitat	2	3	3	2	1
Soil Health	0	5	4	0	2
Agricultural Productivity	0	1	7	1	2
Fisheries/Aquatic Habitat	0	7	2	1	1
Stormwater Management	3	4	3	1	0

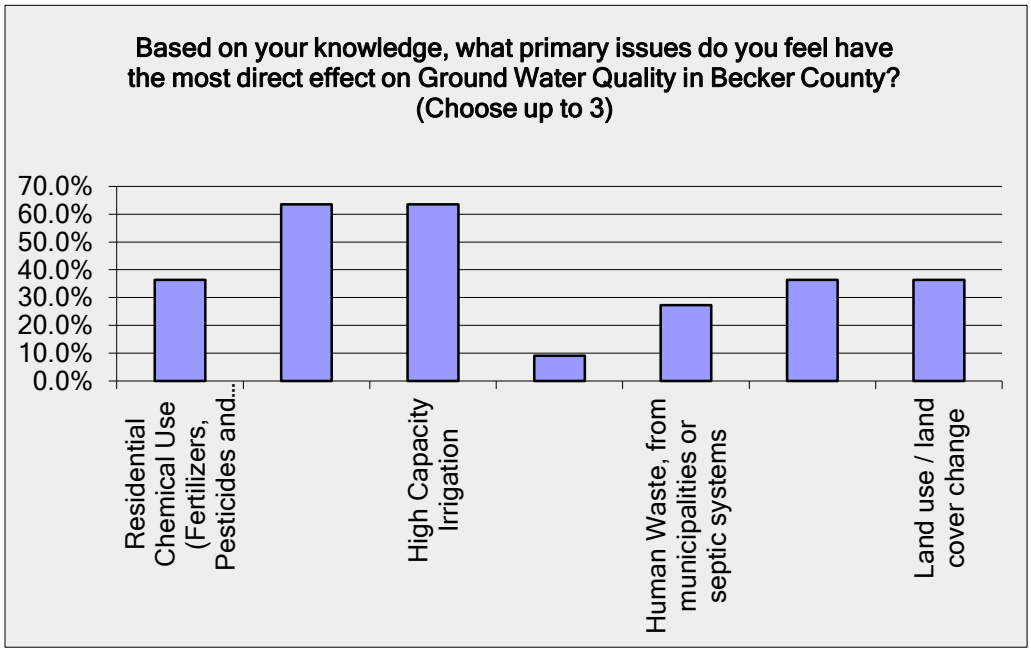


8. Based on your knowledge, what primary issues you feel have the most direct effect on Surface water quality in Becker County? (Choose up to 5)

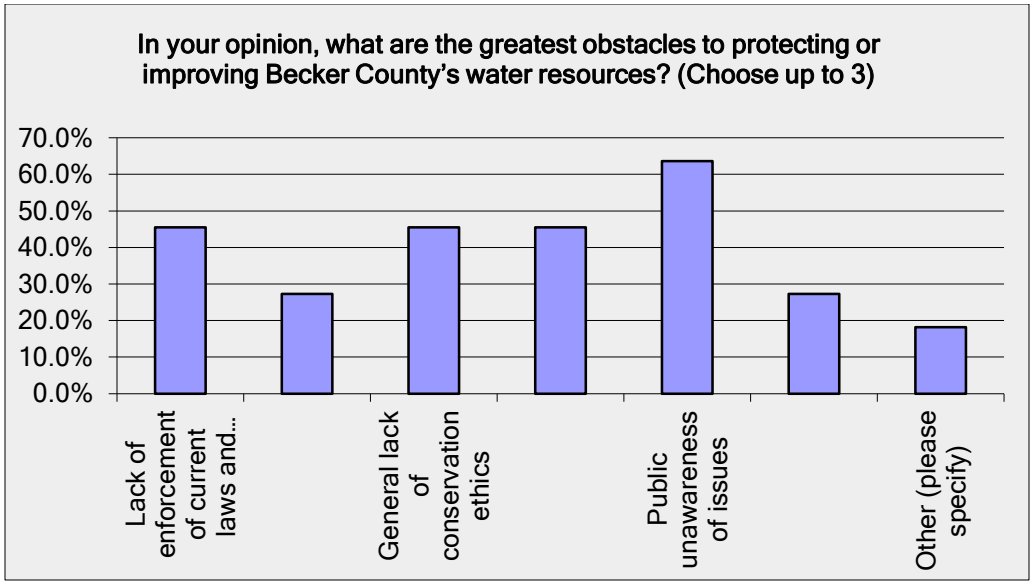
Answer Options	Response Percent
Residential Chemical Use (Fertilizers, Pesticides and Pharmaceuticals)	54.5%
Agricultural Chemical Use (Fertilizers, Herbicides and Pesticides)	72.7%
Development Pressure and related impacts	36.4%
Animal Manure, feedlots and field spreading	9.1%
Human Waste, from municipalities or septic systems	54.5%
Commercial logging and forestry operations	18.2%
Soil loss and sediment from over-land erosion	27.3%
Boats, Docks and Water related equipment	36.4%
Land use / Land cover change	18.2%
Aquatic Invasive Species	54.5%
Stormwater runoff from developed areas	54.5%
Loss of Shoreline/Riparian vegetation	54.5%



9. Based on your knowledge, what primary issues do you feel have the most direct effect on Ground Water Quality in Becker County? (Choose up to 3)	
Answer Options	**Response Percent**
Residential Chemical Use (Fertilizers, Pesticides and Pharmaceuticals)	36.4%
Agricultural Chemical Use (Fertilizers, Herbicides and Pesticides)	63.6%
High Capacity Irrigation	63.6%
Mining/Gravel Operations	9.1%
Human Waste, from municipalities or septic systems	27.3%
Failing/Abandoned private wells	36.4%
Land use / land cover change	36.4%

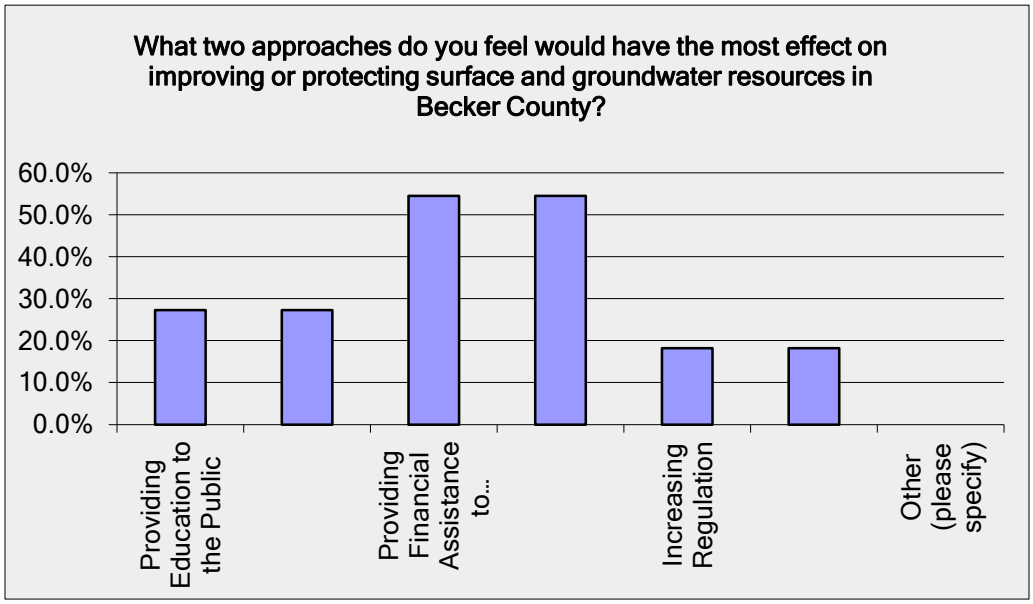


10. In your opinion, what are the greatest obstacles to protecting or improving Becker County's water resources? (Choose up to 3)	
Answer Options	**Response Percent**
Lack of enforcement of current laws and rules	45.5%
Confusing or conflicting environmental rules	27.3%
General lack of conservation ethics	45.5%
Not enough funding to fix existing problems	45.5%
Public unawareness of issues	63.6%
Inadequate ordinances or regulations	27.3%
Other (please specify)	18.2%



11. What two approaches do you feel would have the most effect on improving or protecting surface and groundwater resources in Becker County?

Answer Options	Response Percent
Providing Education to the Public	27.3%
Providing Technical and Planning Assistance	27.3%
Providing Financial Assistance to Landowners	54.5%
Enforcing Existing Laws	54.5%
Increasing Regulation	18.2%
Reducing Government Involvement	18.2%
Other (please specify)	0.0%



Individual additional comments:

“We have enough laws. Promoting awareness/education such as informing lake shore owners of the detrimental effects of lawn fertilization and promoting better stewardship. Implementing cost sharing programs is a much more effective and less intrusive approach than making more rules, regulations and red tape that foster more red tape and negativity.”

“ There is a Lack of knowledge about natural resources by our State and local government officials.”

“The City of Detroit Lakes is not being responsible with their authority to administer the the shoreline ordinance. Detroit Lakes is being negatively impacted because of that.”