

2.0 COMMUNITY PROFILE

2.1 General Overview

Todd County's geographic location is approximately in the center of Minnesota. Todd County is approximately 80 miles west of the Twin Cities and 30 miles northwest of St. Cloud, Minnesota. The County is known as being apart of the transitional area in Minnesota where "the eastern forest meets the western prairie". The total spatial area of Todd County is approximately 631,280 acres (980 square miles) with over 27,000 acres of lakes. The county borders are shared between six counties which include: Cass and Wadena to the north, Morrison to the east, Stearns to the south, and Douglas and Ottertail to the west. Todd County is currently composed of 11 incorporated cities and 28 organized townships. A complete listing of the Todd County Cities and townships can be found within section 2.3.

2.2 General County History

In February of 1856, Todd County was established as a Minnesota Territory. The county boundaries were different in 1856 compared to what the current boundaries are. One of the main differences in boundary locations was the eastern boundary extending eastward to the Mississippi River, including what currently is now the town of Fort Ripley (formerly known as Fort Gaines). Todd County's name originated from Captain John Baines Smith Todd, who was in command of Fort Gaines during the time the county became a territory. During the late 1840's to mid - 1850's, Todd County was the main battleground between the Chippewa and Sioux Indians. Because of this, the government decided to bring the Winnebago Indians from Southeastern Minnesota to the area to serve as a buffer between the two conflicting tribes.

On January 1, 1867, Todd County officially became organized. At this time the county was broken down into three main sections (townships) consisting of Hartford, Long Prairie and West Union. These three sections later were broken down more, developing what are known today as the 28 townships and eleven cities that make up Todd County.

In 1872, the first railroad in Todd County was built. It extended across the northern end of the County through the Staples area. Today, the railroad is used by Amtrak and Burlington Northern and SantaFe.

2.3 Local Government Information

The tables below identify all of the local units of government located within Todd County and how each participated with the hazard mitigation planning process at various levels, including direct participation in committee meetings and planning functions or simply through the identification of local projects and the signing of a resolution showing their

support of the planning process. These resolutions are located within Appendix II of this plan.

Table 2-1

City	Participation in the planning process
Bertha	Survey, Resolution
Browerville	Survey, Resolution
Burtrum	Survey
Clarissa	Survey, Resolution
Eagle Bend	Survey, Resolution
Grey Eagle	Resolution
Hewitt	Survey, Resolution
Long Prairie	Survey, Resolution
Osakis *	Survey
Staples *	Survey, Resolution
West Union	Survey, Resolution

** Cities partially located within Todd County*

Table 2-2

Townships	Participation in the planning process
Bartlett	Survey
Bertha	Resolution
Birchdale	Survey
Bruce	Resolution
Burleene	Survey, Resolution
Burnhamville	Survey, Resolution
Eagle Valley	Survey, Resolution
Fawn Lake	Survey, Resolution
Germania	Survey, Resolution
Gordon	Survey, Resolution
Grey Eagle	Survey
Hartford	Survey
Iona	Survey, Resolution
Kandota	Survey
Leslie	
Little Elk	Survey, Resolution
Little Sauk	Resolution
Long Prairie	Survey
Moran	
Reynolds	Survey
Round Prairie	Survey
Staples	
Stowe Prairie	
Turtle Creek	Survey, Resolution
Villard	Survey, Resolution
Ward	Survey
West Union	Survey
Wykeham	Survey

2.4 County characteristics Information

2.4.1 Historic Population

Todd County has experienced a fluctuating population base over the past fifty years. From 1940 to 1970, the population decreased by 5,324 people (from 27,438 to 22,114). This decline amounted to approximately 20 percent of the population. Much of the decrease in population was attributed to out-migration of working age people for opportunities in the metropolitan job markets. In 1960, the population of cities accounted for over 37 percent of the County's overall population. Past trends indicate that the percentage of the County's population living in townships has generally increased, while the percent of city population has decreased. Since 1970, the County has seen a gradual increase in population. The table below indicated the populations of each city within Todd County for the years 1970, 1980, 1990, and 2000. The table also compares overall population of cities within Todd County to the overall population townships.

Table 2-3

Cities	U.S. Census			
	1970	1980	1990	2000
Bertha	512	510	507	407
Browerville	665	693	782	735
Burtrum	135	177	172	146
Clarissa	599	663	637	609
Eagle Bend	557	593	524	595
Grey Eagle	325	338	353	335
Hewitt	198	299	269	267
Long Prairie	2,416	2,859	2,786	3,040
Osakis*	69	88	58	1,567
Staples*	2,657	2,623	2,357	3,104
West Union	71	74	54	87
Total Cities	8,204	8,917	8,499	10,955
Total Townships	13,979	16,074	14,864	15,505
TODD COUNTY	22,114	24,991	23,363	24,426

* Cities partially located within Todd County

2.4.2 Population by Age Group

During the time span of 1970 to 2000, the overall population within Todd County has progressively been getting older. With nearly one-fourth of the overall population classified as Under 18 in 1970. This is not apparent in 2000. This signifies that the overall population is aging with less youth within the county. The table below shows the overall population of the County, broken down by age groups.

Table 2-4

Age Group	U.S. Census			
	1970	1980	1990	2000
Under 18	8,300	8,123	7,131	6,683
Ages 18-24	1,469	2,523	1,627	1,967
Ages 25-44	4,025	5,667	6,126	6,030
Ages 45-64	4,997	4,808	4,502	5,807
65 & Over	3,323	3,870	3,977	3,939
Totals	22,114	24,991	23,363	24,426

2.4.3 Median Age

Another way to document Todd County's aging population is to examine how the population's median age has changed throughout the years. In 1970, the County's median age was 31.7 years. This number increased to 38.5 years in 2000. During the same timeframe, the State's median age increased from 26.8 to 35.4 years.

2.4.4 Households

In 1970, the number of households increased slightly to 6,764. According to the U.S. Census, there were 8,514 and 8,589 households in 1980 and 1990. In the past decade, eight of eleven cities gained households with only very small losses occurring in Bertha, Browerville and Hewitt. Of the 28 townships in the County, 24 had gains in households with four having minor losses including Eagle Valley, Gordon, Round Prairie, and West Union.

Table 2-5

Persons Per Household 1970 - 1998				
	1970	1980	1990	1998
Persons/Household	3.26	2.91	2.69	2.65

2.4.5 Median Housing Values

The 2000 Census reports median housing values for each of the 11 cities and 28 townships in Todd County. This information is displayed in the “Median Building Values” table found in Appendix VI. The map breaks the County into five median property value ranges, and assigns a corresponding color to each city and township. Overall, Todd County’s 2000 median household value was \$64,400, although the map shows these ranges from \$26,300 in the northwestern portion of the County, to \$121,200 in the southeastern portion of the County. Those housing value patterns can be primarily explained by the proximity of southeastern Todd County to Interstate 94 and the City of St. Cloud.

2.4.6 Population and Household Projections

In October 2002, the Minnesota State Demographic Center published population and household projections for Todd County in five-year increments between 2000 and 2030. The results are displayed in Table 2-6. The projections anticipate that Todd County will continue to gain population and households at its historic level of slow but steady growth.

Population and household projections however are only educated estimates based upon historical data. There are a number of variables that directly and indirectly influence population levels; in-migration, out-migration, net births/deaths, and economic conditions. For this reason, the population and household projections should only be used for general planning purposes.

Table 2-6

Todd County Population and Household Projections								
Age Group	2000	2005	2010	2015	2020	2025	2030	+/-
0-4	1,446	1,390	1,530	1,580	1,550	1,500	1,470	24
5-9	1,740	1,660	1,610	1,740	1,780	1,760	1,720	-20
10-14	2,046	1,890	1,810	1,760	1,860	1,910	1,900	-146
15-19	2,267	1,970	1,840	1,750	1,700	1,780	1,830	-437
20-24	1,151	1,570	1,410	1,320	1,250	1,220	1,270	119
25-29	1,122	1,240	1,560	1,450	1,380	1,300	1,270	148
30-34	1,221	1,260	1,360	1,650	1,560	1,480	1,400	179
35-39	1,794	1,350	1,360	1,450	1,730	1,650	1,580	-214
40-44	1,893	1,810	1,410	1,390	1,470	1,720	1,650	-243
45-49	1,823	1,970	1,900	1,480	1,460	1,530	1,780	-43
50-54	1,464	1,850	2,000	1,930	1,530	1,490	1,570	106
55-59	1,341	1,540	1,920	2,080	2,010	1,610	1,570	229
60-64	1,179	1,360	1,580	1,960	2,130	2,070	1,690	511
65-69	1,042	1,110	1,300	1,520	1,870	2,050	2,010	968
70-74	977	930	1,000	1,180	1,400	1,720	1,890	913
75-79	836	810	790	850	1,010	1,200	1,490	654
80-84	552	640	620	620	670	820	990	438
85+	532	560	640	680	710	770	920	388
Total Population	24,426	24,910	25,640	26,390	27,070	27,580	28,000	3,574
Total Households	9,342	9,780	10,340	10,800	11,270	11,660	12,030	2,688

Source: Minnesota State Demographic Center

2.5 Local Community Overview

Todd County is currently made up of 11 municipalities and 28 townships. Long Prairie is the county seat and is one of the largest cities within Todd County. The municipalities within Todd County are: **Bertha, Browerville, Burtrum, Clarissa, Eagle Bend, Grey Eagle, Hewitt, Long Prairie, Osakis, Staples, and West Union.** Maps of each city in Todd County can be found in Appendix IV.

Of the 28 townships within Todd County, Long Prairie Township currently has the highest population consisting of 823 people. This is followed closely by Birchdale Township with an overall population of 819 people. The 28 townships within Todd County include: **Bartlett, Bertha, Birchdale, Bruce, Burleene, Burnhamville, Eagle Valley, Fawn Lake, Germania, Gordon, Grey Eagle, Hartford, Iona, Kandota, Leslie, Little Elk, Little Sauk, Long Prairie, Moran, Reynolds, Round Prairie, Staples, Stowe Prairie, Turtle Creek, Villard, Ward, West Union and Wykeham.** Maps of each township within Todd County can be found in Appendix V of this plan.

Below is summary of each municipality within Todd County.

Bertha:

The City of Bertha is located in the Northwest corner of Todd County, just off US Highway 71 and has an estimated population of 475. Along US Highway 71, the City of Bertha has a campground which offers utility hookups, a picnic area and a shelter for visitors and campers. The city currently operates the city hall, police station and municipal liquor store.

Browerville:

Browerville has a population of 734 and is located between Long Prairie and Clarissa along US Highway 71. Browerville has four public parks, a local community center, the Long Prairie River and churches' that are the landmarks for the community.

Burtrum:

The City of Burtrum has a population of 146. The city is located in the southeastern corner of Todd County and has many lakes nearby for outdoor recreational activities including fishing and boating. The city also has a large community center for social events. Active clubs/organizations within this community are the Lions Club and the 4-H Club.

Clarissa:

Located near the middle of Todd County, the City of Clarissa is nestled between ranges of low lying hills with Eagle Creek making its way to the tributaries of the Mississippi River. The city was officially incorporated in 1897 and in 1997 it celebrated its centennial with events for the public held throughout the year. The community is composed of churches, farms, small businesses and manufacturing throughout the area. It is estimated that in the year 2005 the population of the city was 631 people.

Eagle Bend:

Eagle Bend has a population of 610 people and is located in the western part of the County along US Highway 71. Found within this community is a public library, museum complex, a public school, and many local businesses.

Grey Eagle:

The city of Grey Eagle is located in the southeast corner of Todd County. The northeast side of the City borders Trace Lake, with Bass Lake just outside of the city boundaries to the east. The City of Grey Eagle has an overall population of 335 and is surrounded by Grey Eagle Township.

Hewitt:

The City of Hewitt is a small bedroom community of 268 people. Hewitt is located in the northwest corner of the County adjacent to US Highway 71. The city has many amenities that most of its size is not able to offer in regards to recreational activities. These range from parks, tennis courts, ball diamonds, a museum, and being a close drive to many lakes within Todd County.

Long Prairie:

Long Prairie is a progressive community located in middle area of Todd County with a population of 3,040. Long Prairie is the county seat of Todd County and is located at three major highways: US Highway 71, State Highway 27 and State Highway 287. Long Prairie is known for being a thriving hub of industry and agricultural processing within the area. Key natural resources within the city include the bodies of water of the Long Prairie River in the northern part of the city and Charlotte Lake bordering the city limits to the south.

Osakis:

Though the City of Osakis only partially falls within the boundaries of Todd County, it still brings tourism and a boost to the economy for the county. The city is located along the southern shore of Lake Osakis which is primarily known for its fishing. The economic base for the city is tourism and agriculture, but manufacturing expansion is encouraged with the development of an industrial park. Due to its relatively easy access to Interstate 94, the City of Osakis is a small thriving community with many recreational activities and entrepreneur opportunities.

Staples:

The City of Staples is located in the Northeast corner of Todd County along US Highway 10 and Minnesota State Highway 210. The City lies in both Todd and Wadena Counties and is one of the largest cities in Todd County. This community was throughout the 1900's known as a thriving railroad community. To this day the railroad is still active in Staples with the depot being an obvious landmark within the community. Along with the railroad, the city also has an extensive parks system along with a community center near the downtown area of the City. The overall topography of this city is fairly flat and the nearest bodies of waters to the city are: Dower Lake to the west, Hayden Lake to the east, and the Crow Wing River to the North. Many opportunities are present within the City of Staples due to the presence of the Staples Campus of Central Lakes College and the Lakewood Health Systems Hospital which opened a new main facility during the winter of 2006.

West Union:

The City of West Union is located in the southwestern corner of the County, near Interstate 94. The community is one of the smallest cities within Todd County, but its overall distance to other communities (Osakis and Sauk Center) is only a few miles.

2.6 Physical Characteristics

Todd County has a relatively flat topography with only subtle changes in the southern part of the county. The primary land use found within Todd County is agriculture along with lakes becoming more and more apparent farther west in the county. Throughout section 2.4 different characteristics along with identification of some assets found within Todd County will be discussed more in depth.

2.6.1 Climate and Precipitation

Table 2-7 summarizes temperature data, table 2-8 summarizes precipitation activity, table 2-9 summarizes the growing season, and table 2-11 summarizes snowfall averages for Todd County.

The continental climate of Minnesota is influenced by a variety of air masses. During the winter months, cold, dry continental polar air dominates the region. Hot, dry continental air masses from the desert southwest, along with warm, moist maritime tropical air masses that originate over the Gulf of Mexico, are common during the summer months. The spring and fall months serve as transition periods between summer and winter, composed of alternate intrusions of air from various sources.

The average daily temperature for Todd County is approximately 41 ° Fahrenheit. The average daily maximum temperature for the County is 53 ° Fahrenheit, while the average daily minimum temperature is 32 °F.

Todd County receives approximately 30 inches of precipitation each year. Of this, approximately two thirds fall between the months of May through September. This is considered seasonal precipitation.

Annual snowfall within Todd County is approximately 51 inches. Although this total is seemingly substantial, snowfall represents only a small portion of the County's total annual precipitation because of the relatively low moisture content of snow.

Table 2-7

Temperature Summary													
1971-2000 NCDC Normals													
Element	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Max °F	19.3	27.1	38.7	56.2	70.4	78.2	82.5	80.4	71.0	58.2	37.9	23.8	53.6
Min °F	-0.4	6.6	19.2	32.9	45.6	54.8	59.4	57.0	47.3	35.8	21.3	6.5	32.2
Mean °F	9.5	16.9	29.0	44.6	58.0	66.5	71.0	68.7	59.2	47.0	29.6	15.2	42.9
HDD base 65	1723	1348	1117	617	262	65	21	38	200	558	1062	1545	8556
CDD base 65	0	0	0	3	46	110	205	153	24	0	0	0	541

Source: <http://mcc.sws.uiuc.edu>

Table 2-8

Precipitation Summary													
1971-2000 NCDC Normals													
Element	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Precip. (in)	1.28	0.85	1.96	2.20	3.20	4.28	4.13	3.47	2.93	2.55	1.71	0.92	29.48

Source: <http://mcc.sws.uiuc.edu>

Table 2-9

Growing Season Summary										
Derived from 1971-2000 Averages										
Base Temp. °F	Date of Last Spring Occurrence					Date of First Fall Occurrence				
	Median	Early	90%	10%	Late	Median	Early	90%	10%	Late
32	5/14	4/16	4/24	5/26	6/21	9/22	9/01	9/15	10/07	10/10
30	5/03	4/11	4/22	5/20	5/26	9/29	9/03	9/17	10/10	10/14
28	4/29	4/11	4/21	5/13	5/19	10/02	9/18	9/22	10/19	11/03
24	4/18	3/24	4/07	5/07	5/15	10/14	9/20	10/03	11/01	11/09
20	4/09	3/18	3/27	4/20	5/08	10/30	9/22	10/11	11/08	11/15
16	3/30	3/04	3/17	4/09	4/14	11/04	10/02	10/19	11/18	11/28

Source: <http://mcc.sws.uiuc.edu>

Table 2-10

Length of Growing Season (Days)					
Derived from 1971-2000 Averages					
Base Temp. °F					
	Median	Shortest	10%	90%	Longest
32	136	101	112	158	164
30	147	111	124	163	180
28	159	128	134	178	201
24	180	139	149	203	224
20	205	152	182	222	225
16	219	189	196	239	261

Source: <http://mcc.sws.uiuc.edu>

Table 2-11

Snowfall Summary													
1971-2000 Averages													
Element	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Snow (in)	13.3	7.7	9.9	3.0	0.0	0.0	0.0	0.0	0.0	0.7	8.1	8.9	51.6

Source: <http://mcc.sws.uiuc.edu>

2.6.2 Geology

Todd County is located in a region of the State where glaciers have advanced and retreated at least four times during 60,000 years of the Wisconsin glaciation. Many of the hills and plains that make up the County's landscapes are the result of several substages of the Wisconsin glaciation with the last advance occurring approximately 10,000 years ago. Today, the landscape of Todd County is dominated by glacial debris, deposited in the form of rolling drumlin hills, steep terminal moraines, ground moraines and level outwash plains.

One of the more pronounced and unique geologic features in Todd County are drumlins. These are long narrow hills, which are typically aligned in a north-south pattern and cover the northern and central portions of the County. The hills were formed by the Wadena Lobe of the Cary Substage Glacier. In between the drumlins are long, linear shaped wetlands. The drumlin fields cover approximately 40 percent of the County and are one of the few drumlin fields found in Minnesota.

Along the eastern one-third of the County is a terminal moraine complex. This area is characterized by hills with short, steep slopes extending in several directions. These hills were formed as a part of the St. Croix Terminal Moraine. In between the hills are many of the County's lakes and streams. The glaciers left a series of lakes along the eastern and southern portion of the County in a "J" shape or pattern.

Ground moraines typify the western side of the County. These features are composed of clayey soil with relatively high clay content and are associated with higher run off rates.

The fourth major landform in the County is the outwash plain. The outwash area is primarily located in the northeastern part of the County. The glacial debris left in the outwash area is composed of brown, sandy materials.

Glacial till in Todd County ranges from a few feet to almost 400 feet in thickness, over granite bedrock. It should be noted that there are a few small areas in the County where there is exposed bedrock, such as Section 15 of Ward Township.

2.6.2.a Soils

Soils are produced by natural processes acting through time on material deposited or accumulated by geologic process. Generally, soil characteristics are determined by several factors including: a) the physical and mineralogical composition of the parent material, b) the climate under which the soil material accumulated c) plant and animal activities and material on and in the soil, and d) relief or topography in the area of soil formation.

Soils with identical or near identical profiles are grouped into a soil series, normally named for a geographic feature where it was initially located. Each series has the same characteristics, regardless of where it is subsequently found.

Soil associations, which are described on a general county soils map, are a distinct pattern of soil series in defined proportions. Most associations contain one or more major soil series and at least one minor series. Associations are named from the major soil series names.

Soil association maps provide an overview of the soils at a county level. These maps can help identify where high runoff or erosion could be expected, or where areas of high or low agricultural potential are likely to be located. These maps are not adequate for detailed planning and site selection of structures or roads or for the development of farm management plans.

Todd County soils have also been mapped by the more detailed soil series. The detailed soils classification can be used to help in organizing and managing farms, individual fields and woodlands, and in engineering work. Only the general soils association map is included in this plan.

There are nine general soil associations in the County as identified in the Todd County Soil Survey. In addition, there are 97 soil series listed. Soil parent material in Todd County ranges from clay in the west to sandy loam in the major river valleys.

Soils have significant interaction with and affect water resources. For example, highly erodible soils can contribute sedimentation to rivers and streams. Conversely, sandy soils with high infiltration and surface permeability characteristics significantly contribute to aquifer recharge.

A soils map for Todd County can be found in Appendix VII of this plan.

2.6.3 Hydrology

Todd County has abundant groundwater resources in surficial and buried aquifers located throughout the County. Surficial aquifers are generally quickly recharged by precipitation and snow melt, primarily in the ice contact sands and gravels where infiltration rates are high and the topography is rolling and hummocky. Much of the recharge in Todd County occurs in geologically sensitive areas. In addition, Todd County serves as the recharge area for its own aquifers, as well as those for neighboring counties.

2.6.3.a Aquifer Systems

There are fourteen principal aquifers in the state and they are categorized into two broad groups – glacial drift aquifers and bedrock aquifers. Glacial drift aquifers are further divided into two categories including surficial drift and buried drift aquifers. Surficial drift aquifers are exposed at the land surface and are found in about one-third of the state. Most of these aquifers consist of sand and gravel deposits called outwash. Wells in these aquifers are typically at a depth of 30 to 240 feet and produce from 100 to 800 gallons of water per minute. These aquifers are a significant source for irrigation in central Minnesota.

Buried drift aquifers are also composed of sand and gravel deposits but because of repeated glaciation in the state, lie beneath layers of confining silt and clay. These aquifers occur in nearly all areas of the state where the depth to bedrock exceeds 100 feet. Their size and extent are not well documented. Wells using these aquifers are commonly at depths of 80 to 280 feet with typical yields of 100 to 600 gallons per minute.

The Long Prairie Sand Plain is the major aquifer in the County and is related to outwash deposits. This surficial aquifer covers a large portion of the northeastern corner of the County and extends southward along the Long Prairie River. A second surficial aquifer, the Swanville spillway/sand plain, also trends north-south, and is located near the Todd-Morrison county line.

Most irrigation and municipal groundwater withdrawals in Todd County are from surficial aquifers that are in direct contact with the ground surface. These aquifers are rapidly recharged and are also very susceptible to contamination. Buried drift or confined aquifers provide groundwater for rural residents and farms as well as some of the smaller municipalities in the County.

Recharge of the major aquifers in Todd County occurs primarily through precipitation in surface areas with sand and gravel where infiltration rates are high and the topography is rolling and hummocky. Most recharge occurs in the spring from snowmelt and rainfall when groundwater demands by growing vegetation are minimal and precipitation can soak through to the water table. Some of the main recharge areas within Todd County include: gravel pits, wetlands and ponds, lakes and rivers, and road ditches. It is also important to note that Todd County is a recharge area for itself and neighboring counties within the region.

More information about aquifers within Todd County can be found within the Todd County Water Plan, and the Todd County Comprehensive Plan. A map of County aquifers can also be found within Appendix VIII of this plan.

2.6.3.b Watersheds

In the 2005 Todd County Comprehensive Local Water Management Plan, six major – minor watersheds were identified within the County. These watersheds include: the Long Prairie River Watershed, the Sauk River Watershed, the Mississippi – Brainerd Watershed, the Crow Wing River Watershed, the Redeye River Watershed, and the Mississippi – Sartell Watershed. For a map of the county watersheds, please refer to Appendix IX of this plan. The following information is from the 2005 Todd County Comprehensive Local Water Management Plan.

The **Long Prairie River Watershed**, mostly located in the central part of the county, is the largest in Todd County covering a total of 305,930 acres and is made up of 50 minor watersheds. The majority of irrigation systems in Todd County are located in this watershed, and use wells that are an average of 80 to 100 feet deep. Ground water impacts to the Long Prairie River have the potential to be significant. The USGS conducted base flow measurements along the Long Prairie River which indicated net gains from ground water of 0.85 to 1.3 cfs per river mile. Ground water yields are typically high within the watershed and average annual recharge to the surficial aquifer has been estimated to be 8.0 inches. The shallow aquifer is susceptible to contamination by unused wells, abandoned agricultural waste pits and other direct access points to the ground water.

The **Sauk River Watershed** is located in the southern part of Todd County and is the second largest watershed in the county with a total of 137,392 acres and is made up of 20 minor watersheds. The surficial aquifer in this part of the county is found in a corridor along the Sauk River approximately 2 to 4 miles in width. Wells are typically at a depth of 30 to 240 feet and are generally of good quality. Most of the watershed contains buried drift aquifers that lie below confining layers of silt and clay.

The **Mississippi – Brainerd Watershed** in Todd County is the third largest with a total of 82,152 acres, most of which are located within the Swan River sub-watershed along the South East side of the county. There are 15 minor watersheds found within this major watershed. Ground water concerns in this watershed are minimal.

The **Crow Wing River Watershed** in Todd County is the fourth in size covering 68,100 acres in the Northern and Northeastern part of the county, in the Partridge River and Hayden Creek areas. There are 13 minor watersheds found within the Crow Wing River Watershed.

The **Redeye River Watershed** is the second smallest of the major watersheds in Todd County with only 29,708 acres, most located within the Wing River sub-watershed in the Northwest corner of the county. There are five minor watersheds found within this major watershed.

The smallest watershed in Todd County is the **Mississippi River – Sartell Watershed**, located in the Southeast corner of the county and totaling only 5,228 acres. Most of this

watershed is located in Stearns and Morrison Counties. There is no dominant river course for Todd County’s portion of this watershed and only one minor watershed present.

Table 2-11

Areas of Major Watersheds in Todd County					
Watershed	Watershed Area in Todd County			Total Watershed Area	
	Acres	Square Miles	Percent of Total	Acres	Square Miles
Crow Wing	68,100	106	5.5	1,245,280	1,946
Long Prairie	305,930	478	53.5	571,673	893
Mississippi – Brainerd	82,152	128	7.6	1,079,925	1,687
Mississippi – Sartell	5,228	8	0.8	652,670	1,020
Redeye	29,708	46	5.2	575,285	899
Sauk River	137,170	214	20.1	667,108	1,042

Source: Land Management Information Center

2.6.3.c Ditches

There are approximately 45 county ditches within Todd County, totaling over 550 miles. Todd County realized the importance of proper ditch management practices for its residents. As a result, Todd County worked with Region Five Development Commission to develop the Todd County Drainage Management Policy. This policy guides the implementation and management process for ditches within Todd County. It also identifies where original ditches were designated during the development of them in the early 1900’s and where the current geographic locations of these ditches are to this date.

2.6.3.d Protected Waters and Control Structures

In Todd County, protected waters cumulatively cover over 32,000 acres. There are 355 bodies of water listed on the Minnesota department of Natural Resources water inventory, including 118 bodies defined as protected lakes. There are 178 defined as protected wetlands and 59 protected rivers and streams. A complete and maintained listing of protected waters in Todd County can be found at the Todd County Soil and Water Conservation District.

2.6.4 Landform Descriptions

“Everything is related to everything else, but near things are more related than distant things.” –Waldo Tobler 1970

Landform patterns are important because they help to explain the relationship between the land and its underlying features with surface and groundwater resources. For example, groundwater resources are more susceptible in sand plain areas than in till or drift plain areas. The till plains have substantial clay deposits that minimize groundwater infiltration. Therefore, it is useful to consider the landform patterns of a given watershed of geopolitical area.

The primary landform patterns found within Todd County were made during the most recent geologic activity. These landform patterns include: sand plains, moraines, till plains, drumlins, and lakes. The general locations of these landform patterns in Todd County follow the descriptions below.

Landcover

Activities occurring on the land within Todd County are inventoried in eight basic categories. The table below indicates these categories, the amount of acres being used for each category and the percent of the total county being used for that given purpose.

Table 2-12

Land Cover	Mid 1800's		1969		1989	
	Acres	Percent	Acres	Percent	Acres	Percent
Urban and rural development	0	0.0	9,037	1.4	14,220	2.3
Cultivated land	0	0.0	267,286	42.5	273,879	43.7
Hay/pasture/grassland	20,990	3.3	161,126	25.6	138,327	22.1
Brushland	161,377	25.8	0	0.0	29,860	4.8
Forested	325,024	51.9	157,521	25.1	134,039	21.4
Water	15,709	2.5	22,358	3.6	20,920	3.3
Bog/marsh/fen	103,571	16.5	10,991	1.7	14,791	2.4
Mining (gravel pits, granite mines)	0	0.0	213	<0.1	644	0.1
Total	626,680	100.0	626,680	100.0	626,680	100.0

Source: Todd County Comprehensive Plan

2.6.5 Topography and Drainage

The highest elevation in Todd County appears to be located along its western edge in Wykeham Township according to the U.S.G.S. information available. The elevation of this area exceeds 1,500 feet above sea level. A second high point, as documented in the Todd County Soil Survey, is Tower Love Hill, located in the east-central part of the County. It has a reported elevation of 1,498 feet. A third high point in the county, as identified in the 1990 Todd County Water Plan, is Mt. Nebo. This point is located in the northwest corner of the County and was reported as having an elevation of 1,511 feet above sea level (U.S.G.S. Bertha Quadrangle Map).

Perhaps with somewhat less attention, the lowest elevation in the county is located along the eastern border where the Swan River flows into Morrison County directly north of Swanville. Here, the elevation is reported as being 1,159 feet above sea level.

Approximately 65 percent of the County is above the 1,300 foot elevation. Most of the drumlins and terminal moraine areas are above the 1,300 foot elevation. The outwash plains and the ground moraines tend to be below the 1,300 foot mark.

Land in the county is generally characterized as being level to slightly sloped. As reported in the 1990 Water Plan, 41 percent of the County slopes are 2 percent or less. Areas with steeper slopes, from 6 to 45 percent, are typically located in the eastern third of the County, in the terminal moraine area. There are some steeper slopes in the western portion of the County as well as the southwestern and southern portions. It is interesting to note that most of the steeper sloped areas are located adjacent to many of the County's water resources including lakes, rivers, and wetlands.

Drainage patterns are formed by the topographic features in the County. In addition to the topographic information, Appendix X includes a County Ditch map and Watercourse map. The Long Prairie River is the major drainage feature or watercourse in the County. Its watershed covers almost 50 percent of the County. The Sauk River is the second major watercourse in the County and its watershed covers just over 20 percent of the County's total area. More about watersheds can be found in section 2.4.3.b of this plan.

2.7 Facilities

2.7.1 Emergency Response Facilities

Emergency facilities listed within this plan include law enforcement, ambulance, fire, emergency shelter and gathering places. This information can be found in the tables below.

Table 2-13

	Agency	Address	City	Phone
Sheriff/Police				
	Todd County Sheriff's Department	113 3 rd Ave S.	Long Prairie	(320) 732-2157
	Bertha Police	208 2 nd Ave NE	Bertha	(218) 924-2100
	Browerville Police	544 Main St. W	Browerville	(320) 594-2233
	Clarissa Police	202 Main St. W	Clarissa	(218) 756-2133
	Eagle Bend Police	108 Main St. W	Eagle Bend	(218) 738-3492
	Grey Eagle Police			
	Long Prairie Police	615 Lake St. W	Long Prairie	(320) 732-2156
	Osakis Police		Osakis	(320) 859-2550
	Staples Police	611 Iowa Ave NE	Staples	(800) 794-5733
Fire				
	Bertha Fire			
	Browerville Fire	653 Main St N	Browerville	(320) 594-8200
	Clarissa Fire	Hwy 71	Clarissa	(218) 756-3773
	Eagle Bend Fire			
	Grey Eagle Fire			
	Hewitt Fire			
	Long Prairie Fire	615 Lake St	Lon Prairie	(320) 732-2156
	Melrose Fire			
	Motley Fire			
	Osakis Fire	PO Box P	Osakis	
	Sauk Center Fire			
	Staples Fire	831 4 th St NE	Staples	(218) 894-1550
	Swanville Fire			
	Verndale Fire			
Ambulance	Bertha	127 2 nd Ave NW	Bertha	(218) 924-4452
	Browerville	* If needed in an emergency, please call 911 or contact your local Police Department or Sheriff's Office.		
	Long Prairie			
	Melrose			
	Osakis			
	Sauk Center			
	Staples			
	Wadena			

* For departments without a contact

2.7.2 Community Facilities

City Halls

Bertha City Hall	113 2 nd Ave NW	Bertha
Browerville City Hall	544 Main St. S	Browerville
Clarissa City Hall	202 Main St. W	Clarissa
Eagle Bend City Hall	108 Main St. W	Eagle Bend
Grey Eagle City Hall	202 Woodman St. S	Grey Eagle
Hewitt City Hall		Hewitt
Long Prairie City Hall	615 Lake St. S	Long Prairie
Osakis City Hall	PO Box 486	Osakis
Staples City Hall	611 Iowa Ave NE	Staples

County Complexes

County Courthouse	119 3 rd St. S	Long Prairie
Law Enforcement Center	115 3 rd Ave S	Long Prairie
County Public Works Building	44 Riverside Dr	Long Prairie
Social Services Building		Staples
Solid Waste	Hwy 71 South	Browerville
SWCD	607 9 th St NE	Long Prairie

Hospitals/Clinics *

Lakewood Health Systems	49725 County Road 83	Staples
Long Prairie Memorial Hospital	20 SE 9 th Street	Long Prairie

*For clinics, see the Todd County Emergency Operations Plan (EOP)

Schools

ISD-213 (Osakis)	Osakis
ISD-486 (Swanville)	Swanville
ISD-487 (Upsala)	Upsala
ISD-740 (Melrose)	Melrose
ISD-743 (Sauk Center)	Sauk Center
ISD-786 (Bertha-Hewitt)	Bertha
ISD-787 (Browerville)	Browerville
ISD-818 (Verndale)	Verndale
ISD-2155 (Wadena-Deer Creek)	Wadena
ISD-2170 (Staples-Motley)	Staples
ISD-2753 (Long Prairie –Grey Eagle)	Long Prairie
ISD-2759 (Eagle Valley)	Eagle Bend

2.7.3 *Hazardous Material Facilities*

Hazardous wastes include a wide range of household, commercial, industrial products and substances. Some of the more common products that individuals and businesses use include paints, fertilizers, cleaning solvents, acids, lead, heavy metals and other substances. Due to their toxic nature, these products and their containers require special handling, use and disposal.

There are 81 registered hazardous waste generators in Todd County. Most of these generators are found within Long Prairie and Staples. Todd County does not have treatment, storage, or disposal facilities for hazardous waste and ships less than 10 tons of hazardous waste out of the County per year.

2.8 *Infrastructure*

2.8.1 *Pipelines*

Due to the sensitive nature of pipelines, all location and description information is maintained by the Todd County Emergency Management Director. For more information related to pipelines including locations, incident information, and similar information contact the Todd County Emergency Management Director. The following companies all maintain pipelines within Todd County.

Table 2-14

Pipeline Operator(s)
Viking Gas
Minnesota Pipeline Co.

2.8.2 *Solid Waste*

Landfills have generally replaced open dumps as the most common method of waste disposal in Minnesota. The dangers of open dumps as a disposal method have more recently become apparent. Improper site selection, often in areas of groundwater recharge such as abandoned gravel pits, and use of improper materials to cover the waste, has contributed to one of the most significant sources of groundwater contamination in the state. There are 14 solid waste sites in Todd County as indicated in table 2-15 below.

Table 2-15

MPCA Landfill Inventory			
City	Name	Address	Twp/Range/Sec/QQQQ
Bertha	Bertha Dump	1 mi. E of Hwy 24 & Co Rd 75	132/35/11/A/A
Browerville	Browerville Dump	1 ¼ mi. SE Hwys 14 & 71	130/33/16/A/B
Burtrum	Burtrum Dump	1 mi SW of Hwy 13 & 28	128/32/34/B/D
Clarissa	Clarissa Dump	½ mi SW of Hwy 11 & 71	131/34/28/D/A
Eagle Bend	Eagle Bend Dump	NW of Hwy 22 & Co Rd 78	131/35/12/D/D
Grey Eagle	Grey Eagle Dump	½ mi W of Co Rd 98 & Hwy 28	127/32/7/B/D
Hewitt	Hewitt Dump	1 mi NE of Hwy 71 & 210	133/35/15/D/A
Staples	Killian San. Landfill	6 mi SE of Staples on Co Rd 83	133/32/28/C/B
Little Sauk	Little Sauk Dump	1 ¾ mi W of Hwy 50 & 71	128/34/27/B/D
Long Prairie	L.P. San. Landfill		129/32/18/C/C/A
Osakis	Osakis Dump	1 ¼ mi SE of Hwy 127 & 46	128/35/31/C/D
Round Prairie	Round Prairie	1 ½ mi N of Hwy 6 & 8	128/33/21/A/C
Staples	Staples Dump	½ mi E of Hwy 21 and 210	133/33/12/A/C
* Browerville	Todd Co. Demolition Landfill		130/33/17

Source: Minnesota Pollution Control Agency; Todd County Comprehensive Plan 2000

* Note: The Todd County demolition Landfill in Browerville is open as of September, 2000. All other facilities have been closed.

2.8.3 Public Transit

As of January 2, 2007, Todd County brought forth public transit within the County. The City of Staples currently is serviced by Friendly Rider Transit, based out of Wadena, MN. This is the first time in over thirty years that public transportation is available within Todd County. It has been an expressed concern to in the past and will be looked into further once it's completely established within the City of Staples.

2.8.4 *Waterworks*

2.8.4.a Drinking Water

The following provides capacity information on the three largest municipal water systems in the County:

Browerville

Water Source:	Wells
Storage Capacity:	300,000 gal./day
Pumping Capacity:	216,000 gal./day
Average Demand:	100,000 gal./day
Peak Demand:	180,000 gal./day
Total Water Hardness:	(NA) ppm
Industrial Water Rate:	\$2.75 per 1,000 gal. or portion of.

Long Prairie

Water Source:	Wells
Storage Capacity:	500,000 gal./day
Pumping Capacity:	1,720,000 gal./day
Average Demand:	700,000 gal./day
Peak Demand:	1,200,000 gal./day
Total Water Hardness:	345 ppm
Industrial Water Rate:	\$7.00/month + \$0.00792/cubic foot

Staples

Water Source:	Wells
Storage Capacity:	700,000 gal.
Pumping Capacity:	332,000 gal./day
Average Demand:	288,000 gal./day
Peak Demand:	520,000 gal./day
Total Water Hardness:	114 ppm
Industrial Water Rate:	Base charge \$1.50/month; \$1.47/1,000 gal.

2.8.4.b Public Sanitary Sewer Systems

Most cities in Todd County provide public sanitary sewer service while some cities have areas within their boundaries that are still on individual septic systems. The following provides capacity information on the three largest systems in the County:

Browerville

Treatment Plant Type:	Stabilization Pond System
Capacity of Plant:	300,000 gal./day
Average Demand:	216,000 gal./day
Peak Demand:	344,000 gal./day
Usage Charge:	\$10.00 -1 st 4,000 gal., \$1.80/1,000 gal. thereafter.

Long Prairie

Treatment Plant Type:	Stabilization Pond System
Capacity of Plant:	736,000 gal./day
Average Demand:	600,000 gal./day
Peak Demand:	1,300,000 gal./day
Usage Charge:	\$7.00/month + \$0.00792/cubic foot

Staples

Treatment Plant Type:	Mechanical Plant
Capacity of Plant:	425,000 gal./day
Average Demand:	250,000 gal./day
Peak Demand:	400,000 gal./day
Usage Charge:	Base Charge \$1.50/month; \$1.47/1,000 gal.

2.8.4.c Wastewater Discharge

Wastewater discharge from municipal sewage treatment systems is controlled by the Minnesota Pollution Control Agency (MPCA). Permits are required for any discharge into waters of the state. Permits are issued for 5 years and any changes in the conditions of a permit require public notice and a public comment period. The permitting process requires self-monitoring reports of discharge, which are reviewed by the MPCA. Greater than 90 percent of major municipal and industrial dischargers within the County are in compliance with permitted conditions. Table 2-16 lists the permitting facilities in Todd County.

Table 2-16

Minnesota Pollution Control Agency Wastewater Discharge Permits		
Permit Number	Facility Name	Discharge/Receiving Waters
MN0022926	Browerville	Long Prairie River
MN0052060	Clarissa	Eagle River
MN0023248	Eagle Bend	Eagle Creek
MN0058076	Glacier Park Co	Ditch to Lagoon
MN0023566	Grey Eagle	Trace Lake
MN0059374	Hewitt	Wing River
MN0000523	Land O' Lakes/Browerville	Long Prairie River
MN0020303	Long Prairie	Long Prairie River
MN0024988	Staples	Lagoon to Hayden Creek

Source: Minnesota Pollution Control Agency; Todd County Comprehensive Plan

2.8.5 Electricity

There are five electric companies that provide electrical services to the residents within Todd County. Table 2-17 identifies these providers. A map of the electrical providers is available with the Emergency Management Director.

Table 2-17

Electric Companies Operating in Todd County
• Lake Region Coop. Elec. Association
• Minnesota Power
• Todd-Wadena Elec. Association
• Runestone Elec. Association
• Stearns Electric Association

2.8.6 Natural Gas

Due to security reasons, information pertaining to the location of natural gas lines is not available in the public version of this plan. For more information about natural gas lines and providers contact the Emergency Management Director or a natural gas provider identified in the table below.

Table 2-18

Natural Gas Provider
Minnegasco
Mn Energy