CHAPTER 2
COMMUNITY PROFILE

COMMUNITY PROFILE 2045

SNAPSHOT AT A GLANCE

Demographics

Population
65,318

Median age	65 and over	Foreign born	
32.6	**13.4%**	**4.8%**	Clay County
(38.0)	(17.0%)	(8.5%)	Minnesota
People per household	Non-white (including Hispanic)	Speaks a language other than English at home	
2.46	**15.9%**	**6.9%**	Clay County
(2.49)	(20.9%)	(11.7%)	Minnesota

Employment

Unemployment rate	Household income	Poverty rate	
1.6%	**$74,266**	**12.3%**	Clay County
(3.3%)	($71,306)	(9.0%)	Minnesota

Housing

Median house price	Median rent price	Owner-occupied rate	
$252k	**$843**	**67.5%**	Clay County
($311k)	($1,043)	(66.1%)	Minnesota

Education

High school graduate	Bachelor's degree	Commute time	
94.9%	**34.2%**	**20.2 min**	Clay County
(83.8%)	(36.1%)	(23.7min)	Minnesota

Buffalo River State Park

Demographics

Demographics are an important contributing factor to development patterns. Significant increases or decreases in the number of inhabitants, along with population characteristics such as income, education, and age have impacts on housing, economic development, land use, transportation, and utility and recreational needs. Examining past changes and present population characteristics enhance a community's ability to prepare for the future.

An analysis of the demographic trends in Clay County helps identify factors of change and reveals a trend in the economic characteristics of the county. These characteristics will assist the county in determining future land use and other development activities.

This plan utilizes information from the U.S. Census, the American Community Survey, and the Minnesota State Demographer's office.

The demographic information provided includes population information, age and diversity distributions, household information, income and poverty levels, employment statistics, education levels, and health and wellness information.

As growth, development, and demographic changes continue, the county will need to consider the potential implications to the programs and services it provides.

Population

Clay County has seen steady and continuous growth every decade since its formation in 1862. In 2020, Clay County had an estimated population of 65,318, an increase of over 6,300 new residents compared to 2010. Over the coming years, the Fargo-Moorhead Metropolitan Council of Governments projects that Clay County's population will reach 90,420 in 2045.

In 2020, approximately 87.4 percent of Clay County's population lived in one of eleven cities in the county. The remaining population were residents of the county's 30 townships.

Cities that saw the fastest population growth between 2010 and 2020 include: Sabin (18.6 percent), Moorhead (16.9 percent), Dilworth (14.6 percent), and Barnesville (7.6 percent).

Fourteen of the county's 30 townships also experienced population growth between 2010 and 2020 including: Eglon (39.4 percent), Spring Prairie (37.5 percent), Barnesville (23.1 percent), Flowing (15.6 percent), and Goose Prairie (14.3 percent).

On the whole, cities saw a 14.6 percent increase in population growth while townships saw a 10.4 percent decrease. Part of this decline is due to Moorhead annexing portions of Oakport Township in 2015 as part of an orderly annexation agreement. The population within Oakport Township fell from 1,818 to 445, with the remaining residents becoming part of Moorhead. However, the population rose to 506 in 2020.

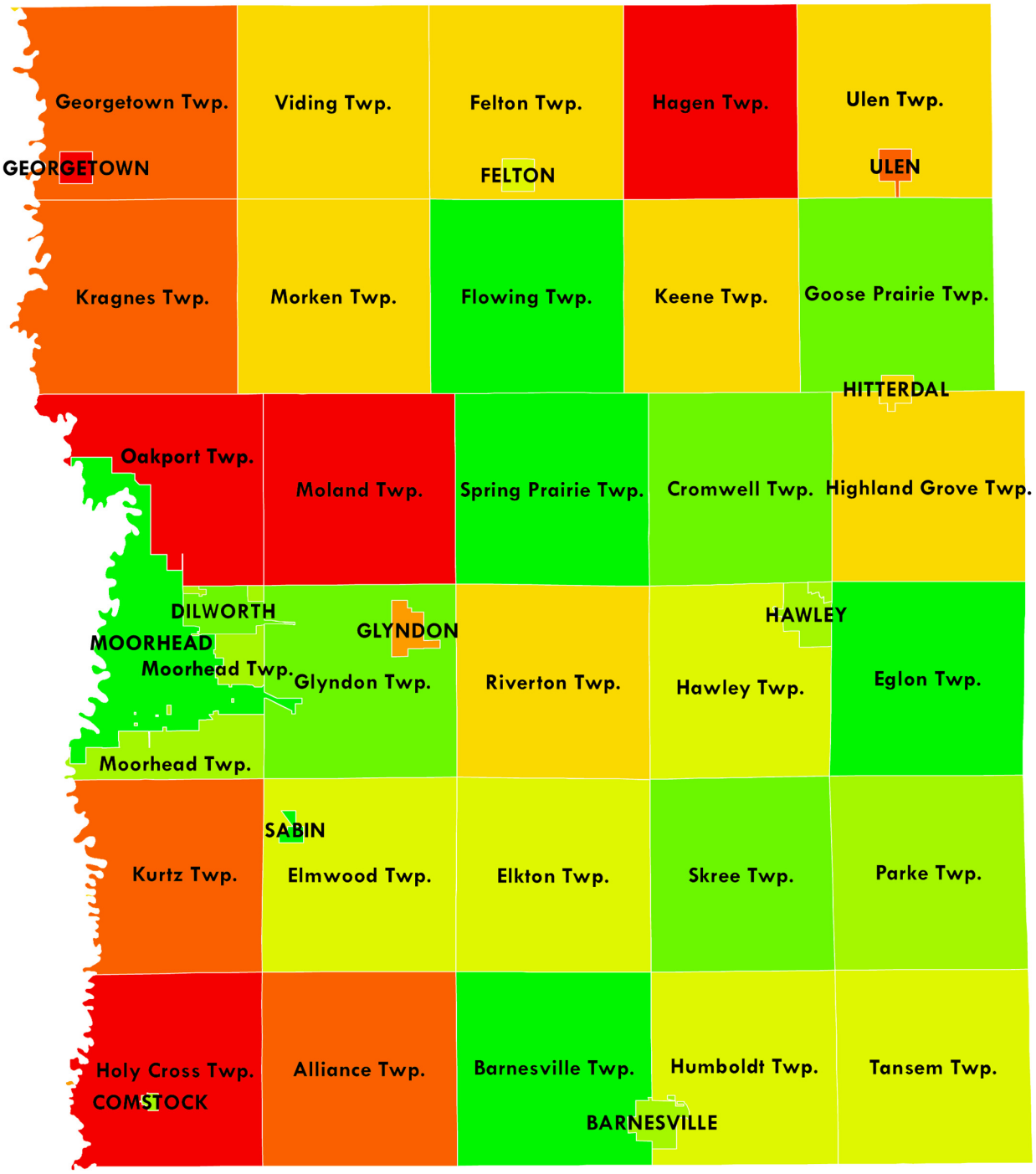
Table 3.1 – Clay County Population, 2000 to 2020

Population	2000	2010	2020	% Change 2010-2020
Clay County	51,229	58,999	65,318	10.7%
Barnesville	2,173	2,563	2,759	7.6%
Comstock	123	93	100	7.5%
Dilworth	3,001	4,024	4,612	14.6%
Felton	216	177	177	0.0%
Georgetown	125	129	86	-33.3%
Glyndon	1,049	1,394	1,306	-6.3%
Hawley	1,882	2,067	2,219	7.4%
Hitterdal	201	201	199	-1.0%
Moorhead	32,177	38,065	44,505	16.9%
Sabin	421	522	619	18.6%
Ulen	532	547	476	-13.0%
TOTAL	**41,900**	**49,782**	**57,058**	**14.6%**
Townships	9,329	9,217	8,260	-10.4%
FM Metro Area	141,632	175,898	216,818	23.3%

Table 3.2 – Clay County Township Population, 2000 to 2020*

Population (Townships)	2000	2010	2020	% Change 2010-2020
Alliance	246	235	203	-13.6%
Barnesville	149	147	181	23.1%
Cromwell	323	345	388	12.5%
Eglon	440	508	708	39.4%
Elkton	283	308	317	2.9%
Elmwood	371	415	415	0.0%
Felton	108	86	83	-3.5%
Flowing	97	77	89	15.6%
Georgetown	188	156	135	-13.5%
Glyndon	281	278	317	14.0%
Goose Prairie	199	175	200	14.3%
Hagen	153	154	128	-16.9%
Hawley	459	474	491	3.6%
Highland Grove	304	288	274	-4.9%
Holy Cross	129	140	113	-19.3%
Humboldt	239	275	280	1.8%
Keene	128	155	153	-1.3%
Kragnes	319	293	255	-13.0%
Kurtz	288	293	253	-13.7%
Moland	340	299	252	-15.7%
Moorhead	442	169	184	8.9%
Morken	203	156	151	-3.2%
Oakport*	1,689	1,797	506	-71.8%
Parke	450	485	526	8.5%
Riverton	462	446	435	-2.5%
Skree	166	159	177	11.3%
Spring Prairie	364	368	506	37.5%
Tansem	222	259	269	3.9%
Ulen	163	174	173	-0.6%
Viding	124	103	98	-4.9%
TOTAL	**9,329**	**9,217**	**8,260**	**-10.4%**

* In 2015, the City of Moorhead annexed portions of Oakport Township as part of an orderly annexation agreement. The population of Oakport Township decreased from 1,818 to 445, with the remaining residents becoming part of Moorhead.

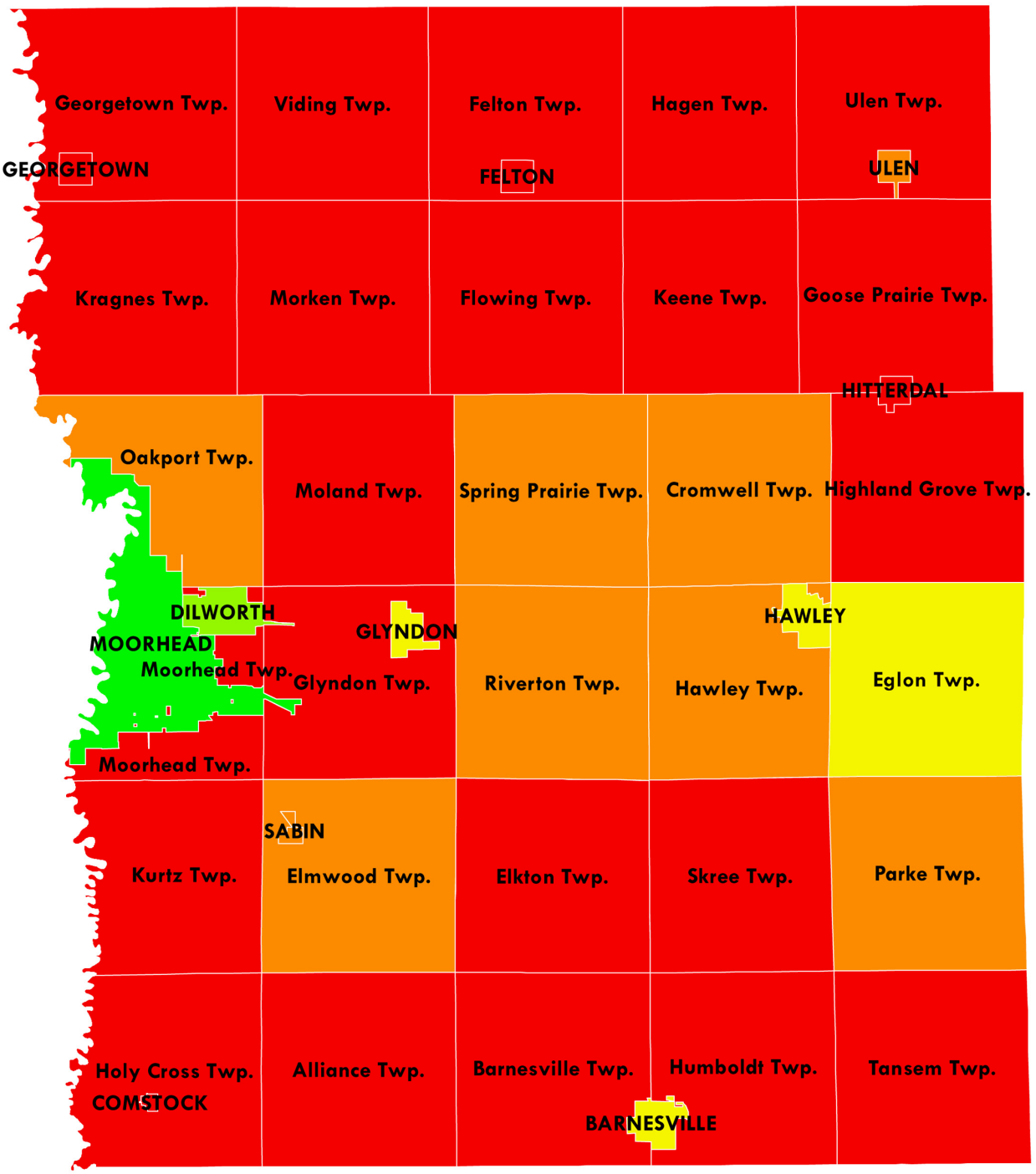


CLAY COUNTY
COMPREHENSIVE PLAN

Map 3.1 - Clay County Population Growth, 2000 to 2020

Less than -15%	-10% to -5%	0% to 5%	10% to 15%
-15% to -10%	-5% to 0%	5% to 10%	More than 15%

N

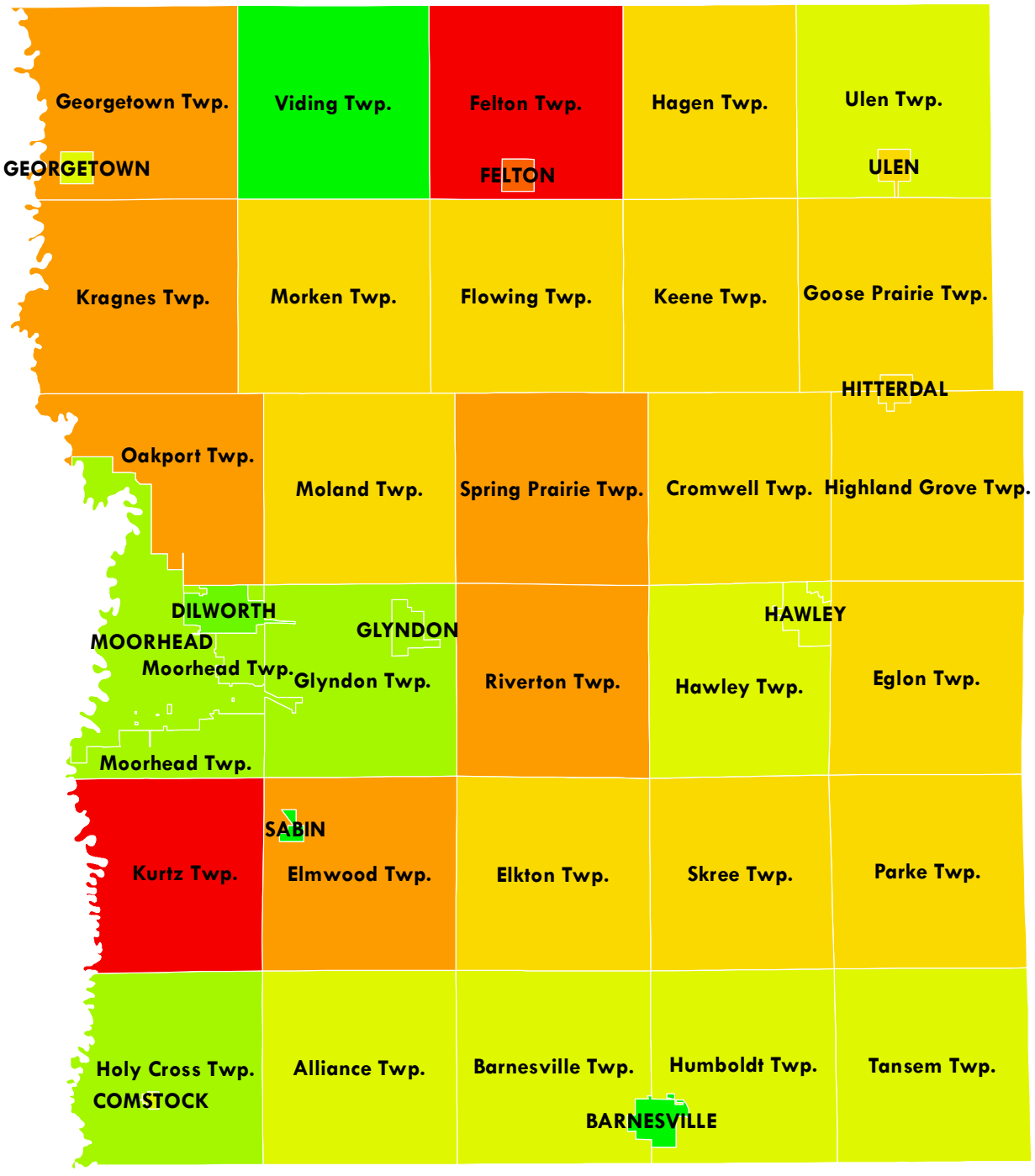


CLAY COUNTY
COMPREHENSIVE PLAN

Map 3.2 - Percent of Total Population in Clay County, 2020

Less than 0.5%
0.5% to 1%
1% to 5%
5% to 10%
More than 10%

N

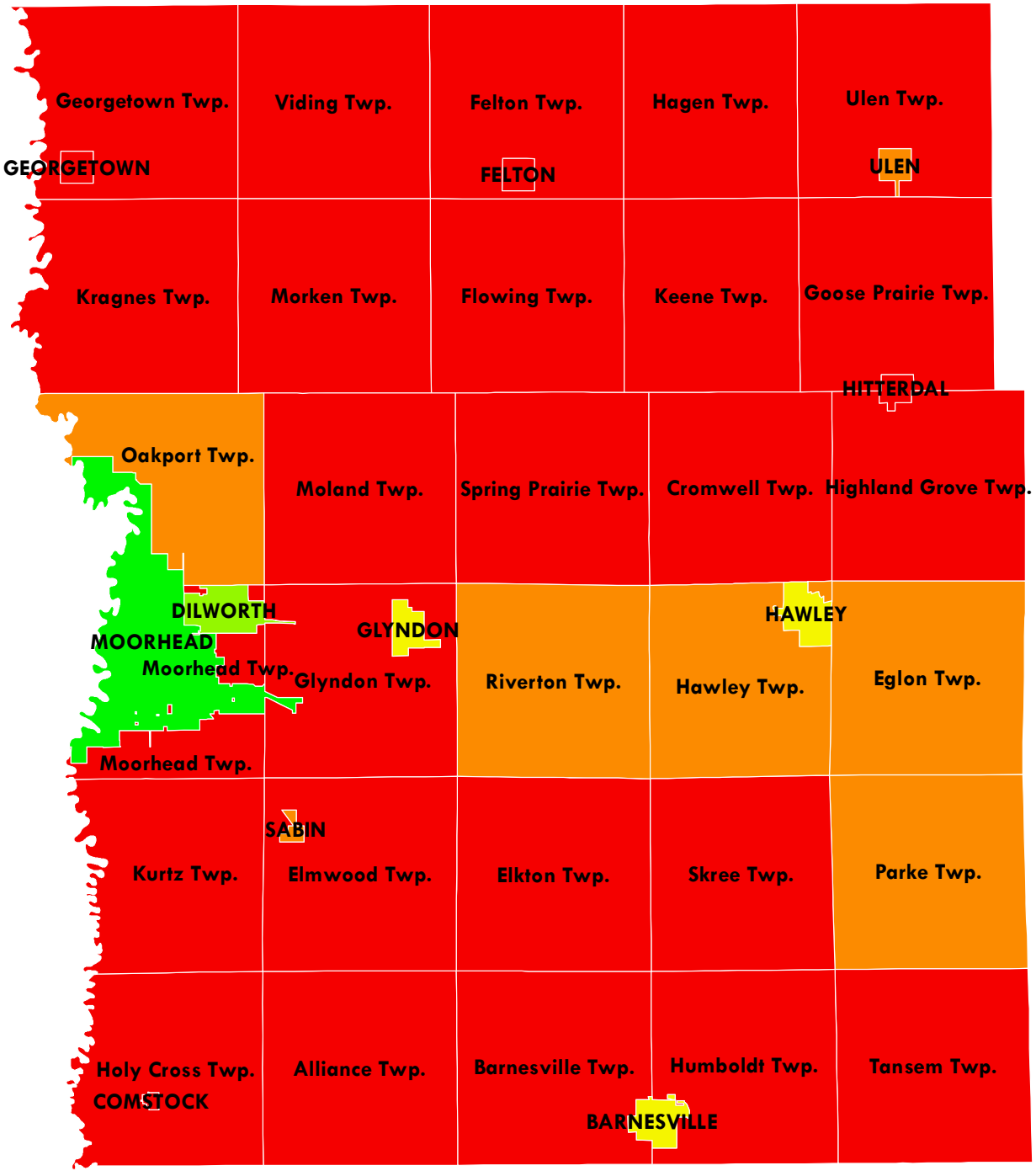


CLAY COUNTY
COMPREHENSIVE PLAN

Map 3.3 – Clay County Projected Population Growth, 2020 to 2045

Less than -5%	0% to 10%	20% to 30%	40% to 50%
-5% to 0%	10% to 20%	30% to 40%	More than 50%

N



CLAY COUNTY
COMPREHENSIVE PLAN

Map 3.4 – Percent of Total Population in Clay County, 2045

Less than 0.5%
0.5% to 1%
1% to 5%
5% to 10%
More than 10%

N

Age and Diversity

Clay County's population is aging overall, mirroring both state and national trends. In 2010, the median age in Clay County was 31.6; by 2019 the median age had increased 3.2 percent to 32.6. However, the median age of Clay County is much lower than the statewide averages of 37.4 in 2010 and 38.3 in 2019.

As with many communities across the United States, Clay County's population will see a higher percentage of seniors over the coming years. This will likely have several impacts on the county from housing choice to transportation to healthcare services.

Though Clay County's racial make-up is predominantly white (89.8 percent), the population has become more diverse over the years, including both native and foreign-born residents. From 2010 to 2019, the Black or African American population increased from 1.5 percent to 4.4 percent of the population. The Hispanic or Latino population increased from 3.5 percent of the total population in 2010 to 4.7 percent in 2019. The American Indian population also increased from 1.4 percent to 1.8 percent of the entire population. This trend is likely to continue, and the county can expect to become more diverse in the years ahead.

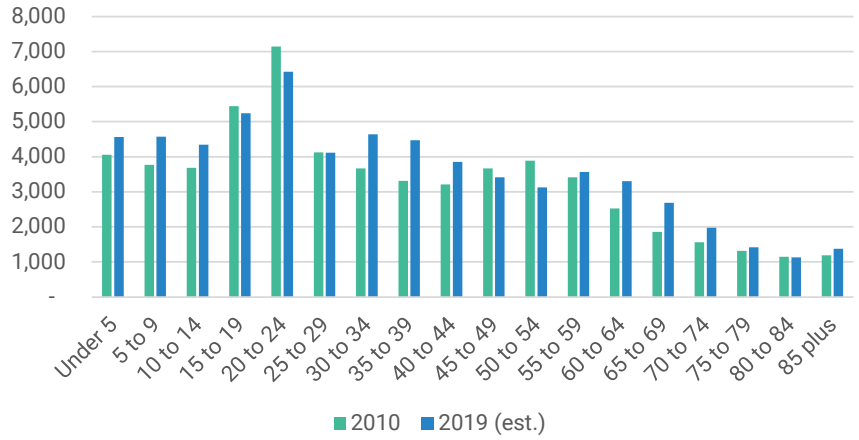


Figure 3.1 – Age Distribution in Clay County

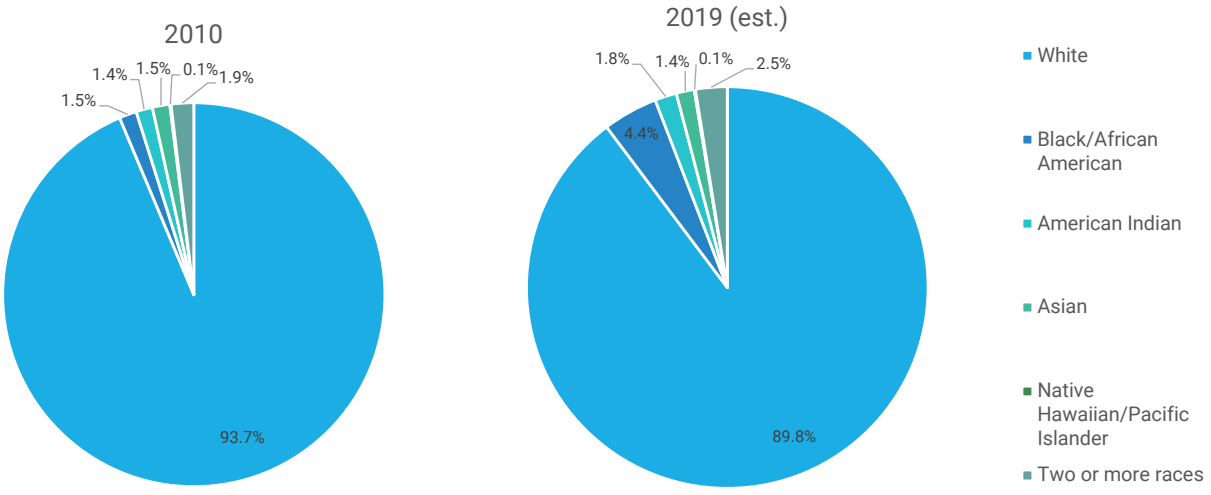


Figure 3.2 – Racial Distribution in Clay County, 2010 to 2019

Ethnoreligious Communities

In addition to city and township divisions, Clay County is home to the Spring Prairie Hutterite Colony - one of ten such colonies in Minnesota. Founded in 1979, the colony had over 180 individuals and 45 households in 2020. Approximately 4,200 acres are collectively owned by the Spring Prairie Hutterite Colony in Spring Prairie Township.

Hutterite colonies consist of clustered housing with onsite amenities such as schools, churches, clinics, community centers, and childcare facilities. Colonies are supported by agriculture, processing facilities, or other industries that may utilize both labor from colony members as well as employ others in the community.

The Spring Prairie Hutterite Colony is home to Taracon Precast, which manufactures precast concrete structures for buildings and infrastructure projects in the region. To support this industry, the colony operates its own trucking company and motor and engine repair shop. The colony also has 500 dairy cows with robotic milking stations operating 24 hours a day. Additional colony operations include swine, beef cattle, chicken, turkeys, fruit orchards, and a printing shop.

Taracon Precast - Spring Prairie Hutterite Colony

Taracon Precast - Spring Prairie Hutterite Colony

Households

In 2019, Clay County had an estimated 25,296 households, a 13.5 percent increase from the number of households in 2010. Changes in household composition continue to follow trends of the past few decades: younger and older single-person households increased while married couple households with children decreased. Changes in household growth do not always parallel population growth because average household size of Clay County has continued to decline, from 2.52 in 2000 to 2.44 in 2019.

Changes in household composition have implications for housing preferences and markets. On the whole, as single-person households increase, demand for more multifamily housing is likely to rise. Housing accessibility becomes more important as the senior population continues to increase. As family sizes decline, school enrollments can be affected. However, both the total population of the county and the number of school age children are expected to gradually increase through 2045.

Table 3.3 – Households by Type, 2019

Households by Type	2019 (est.)	
Family households	16,002	63.3%
With children under 18 years	8,222	32.5%
Married-couple family households	13,048	51.6%
With children under 18 years	6,051	23.9%
Single-person family households	2,954	11.7%
With children under 18 years	2,171	8.6%
Nonfamily households	9,294	36.7%
Householder living alone	7,349	29.1%
65 years and over	2,581	10.2%
Households with one or more children under 18 years	8,277	32.7%
Households with one or more people 65 years and over	5,793	22.9%

Oakport Township

Table 3.4 – Households in Clay County, 2000 to 2019

Households	2000	2010	2019 (est.)
Clay County	18,670	22,279	25,296
Barnesville	865	1,013	1,065
Comstock	47	38	39
Dilworth	1,160	1,595	1,818
Felton	91	78	76
Georgetown	50	48	34
Glyndon	359	464	472
Hawley	744	854	944
Hitterdal	86	89	90
Moorhead	11,660	14,304	17,342
Sabin	152	180	192
Ulen	203	234	241
TOTAL	**15,417**	**18,897**	**22,313**
Townships	3,253	3,382	2,983

Table 3.5 – Persons per Household, 2000 to 2019

Persons per Household	2000	2010	2019 (est.)
Clay County	2.52	2.48	2.44
Barnesville	2.42	2.50	2.48
Comstock	2.61	2.45	2.33
Dilworth	2.58	2.52	2.49
Felton	2.37	2.27	2.22
Georgetown	2.5	2.69	2.38
Glyndon	2.92	3.00	2.98
Hawley	2.45	2.42	2.37
Hitterdal	2.33	2.26	2.23
Moorhead	2.43	2.41	2.38
Sabin	2.76	2.90	2.87
Ulen	2.24	2.16	2.12
Townships	2.87	2.73	2.66
Minnesota	2.52	2.48	2.47

Income and Poverty

Household income is the amount of money people earn in a year and is a good measure of an area's vitality. Measuring household income is an important indicator of the quality of life residents enjoy and is also important for attracting new businesses and development.

Clay County's median household income in 2019 is estimated to be $65,269, meaning that half of households earned more than that amount and half earned less. The median household income for county households increased by 34.9 percent between 2010 and 2019, however this does not account for inflation.

Clay County's median household income in 2019 is 8.5 percent less than the statewide average. However, compared to some parts of the state, Clay County has seen a decrease in income disparity: the percentage of low-earning households has decreased by 14.9 percent while middle-earning households have increased by 29.3 percent. Clay County's poverty rate has continued to decrease from 12.0 percent in 2010 to 11.2 percent in 2019.

Table 3.6 – Median Household Income, 2010 to 2019

Median Household Income	2010	2019 (est.)
Clay County	$48,395	$65,269
Minnesota	$52,321	$71,306

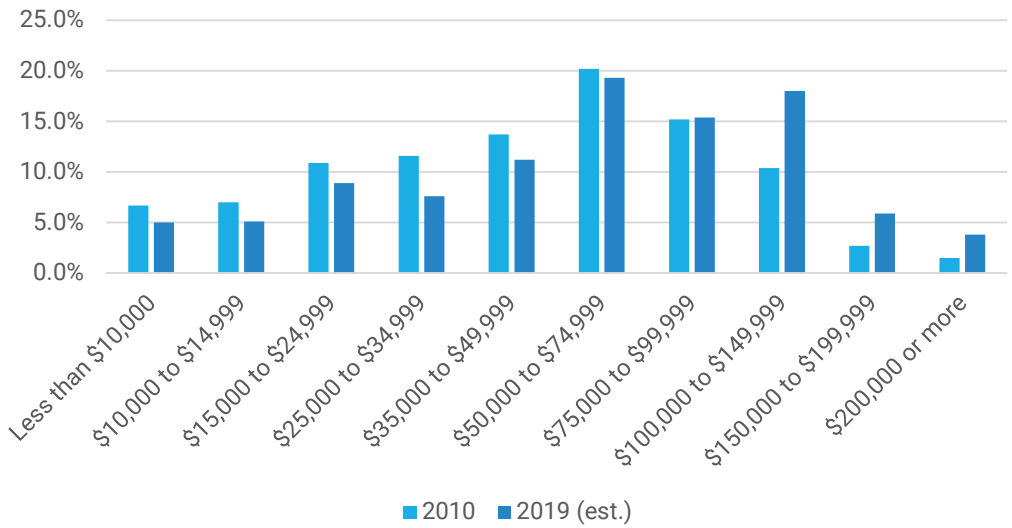


Figure 3.3 – Household Income in Clay County, 2010 to 2019

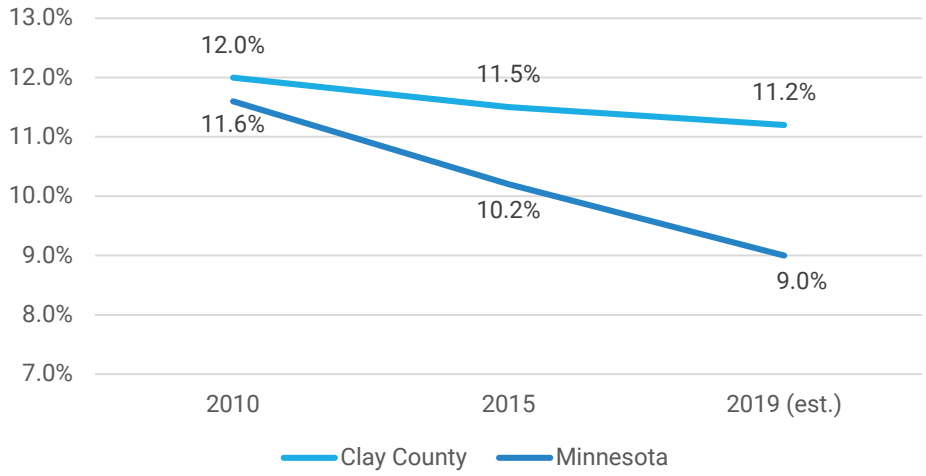


Figure 3.4– Poverty Rate in Clay County, 2010 to 2019

Labor Force

The size of the labor force has consistently grown in Clay County, mirroring population growth.

Clay County saw an 11.4 percent increase in the number of jobs between 2010 and 2019. In 2019, education, health care, and social assistance held the highest number of jobs and accounted for nearly a third of the labor force in the county. This is followed by retail trade, manufacturing, and construction. It is important to note that the Census measures employment through surveys of "covered" industries (i.e. industries that pay unemployment insurance), which typically excludes farmers and self-employed individuals.

The Minnesota Department of Employment and Economic Development projects professions in healthcare and social assistance will see the highest rates of growth in the coming years. This is likely an effect of an aging population across the state as well as the fact that people are living longer.

Overall, Clay County has seen positive growth in the number of new jobs between 2010 and 2019. However, it is projected that the region will begin to see a decline in the labor force as the population becomes older.

Unemployment

Clay County benefits from the broad, diverse, and stable economy of the Fargo-Moorhead metropolitan area. Because of this, the county has consistently had lower unemployment rates compared to the Minnesota statewide average. The 2019, the unemployment rate was 3.0 percent.

Figure 3.5– Labor Force and Class of Worker in Clay County, 2019

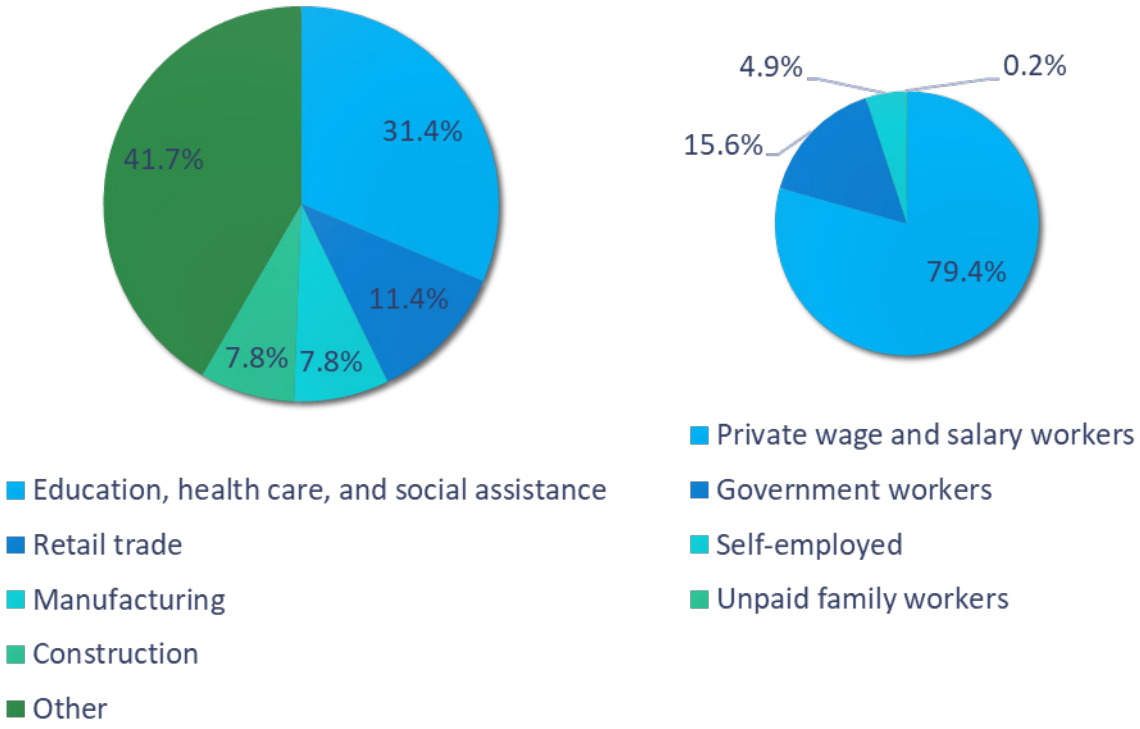
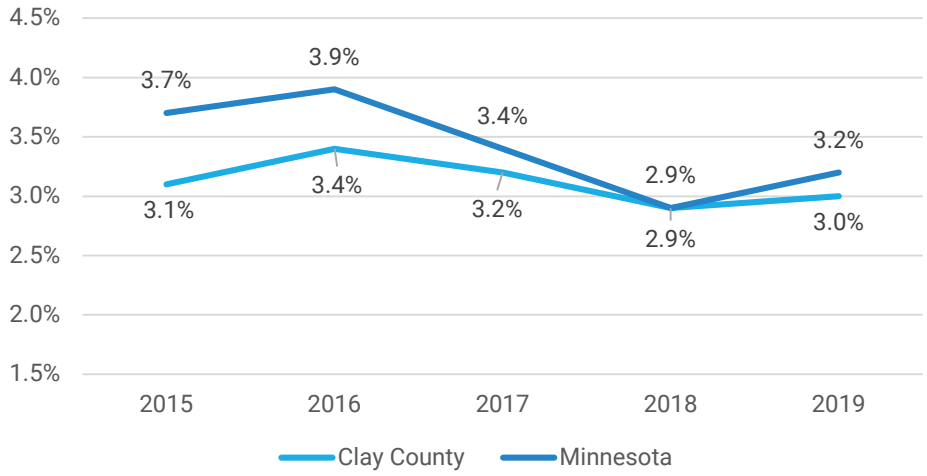


Figure 3.6– Unemployment Rate in Clay County, 2015 to 2019



Education

Educational attainment is an indicator of future economic success in the trained workforce of local jurisdictions. Students who do not complete high school are more likely to live in poverty, earn less over a lifetime, and experience longer and/or more frequent periods of unemployment.

The estimated percentage of the county population with an associate's degree or higher rose from 42.9 percent in 2010 to 49 percent in 2019. These are both slightly higher than statewide averages for both years. The rest of the county's educational attainment in 2019 is broken down by the following: 5.1 percent have less than a high school education, 23.7 percent are high school graduates or equivalent, and 22.2 percent have some college but no degree. 2019 (est.)

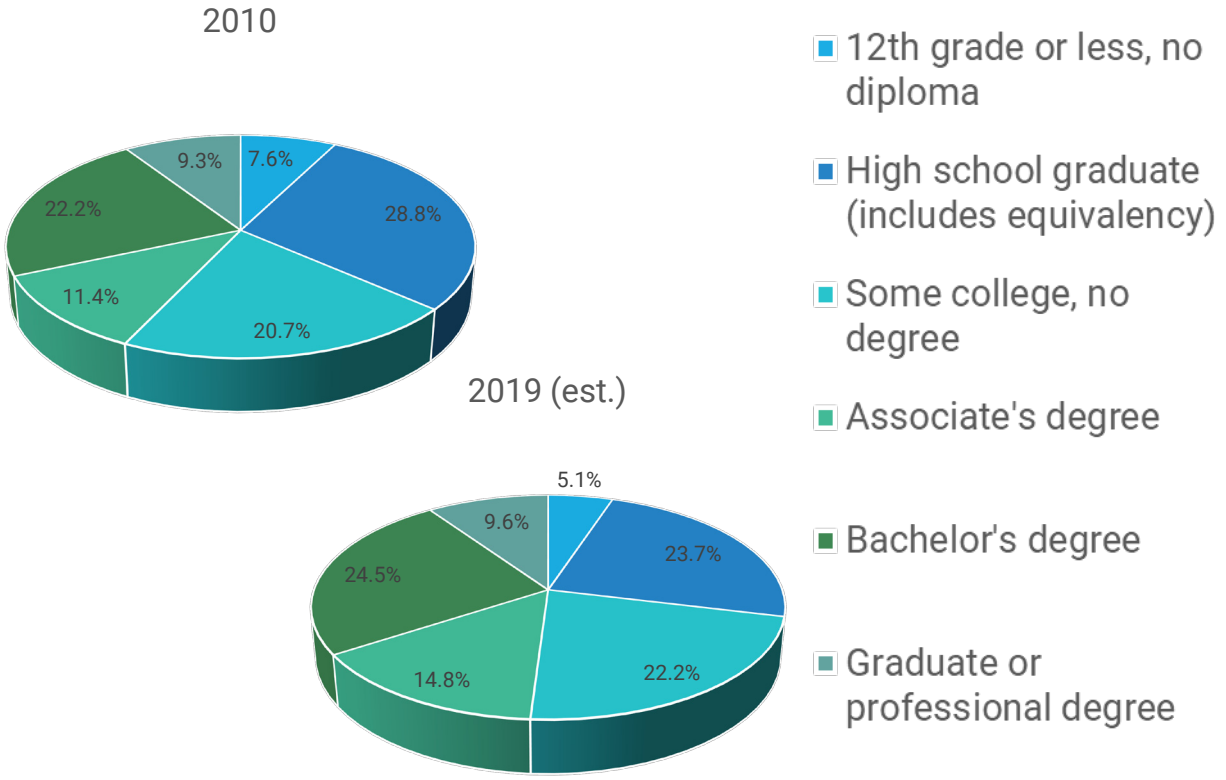


Figure 3.7 – Educational Attainment in Clay County, 2010 to 2019

Table 3.7 – Percent Population 25 Years and Over with an Associate's Degree or Higher, 2010 to 2019

	2010	2019 (est.)
Clay County	42.9%	49.0%
Minnesota	41.1%	47.6%

School Enrollment

School enrollment forecasting requires analysis of multiple data sources including, but not limited to, birth rates, historical enrollment trends, local and regional economic and housing trends, program and boundary changes, and an empirical understanding of individual communities. School population projections tend to be more reliable when enrollment is projected for a larger geographic area.

There are five primary school districts located in Clay County, with an additional four districts that have partial boundaries in the county. From 2015 to 2019, an additional 791 students were enrolled in schools throughout the county, with the Moorhead Area Public School district accounting for most new enrollments. However, at the start of the 2020-2021 school year during the unprecedented Covid-19 health emergency, enrollments decreased 2.1 percent from 10,942 to 10,716.

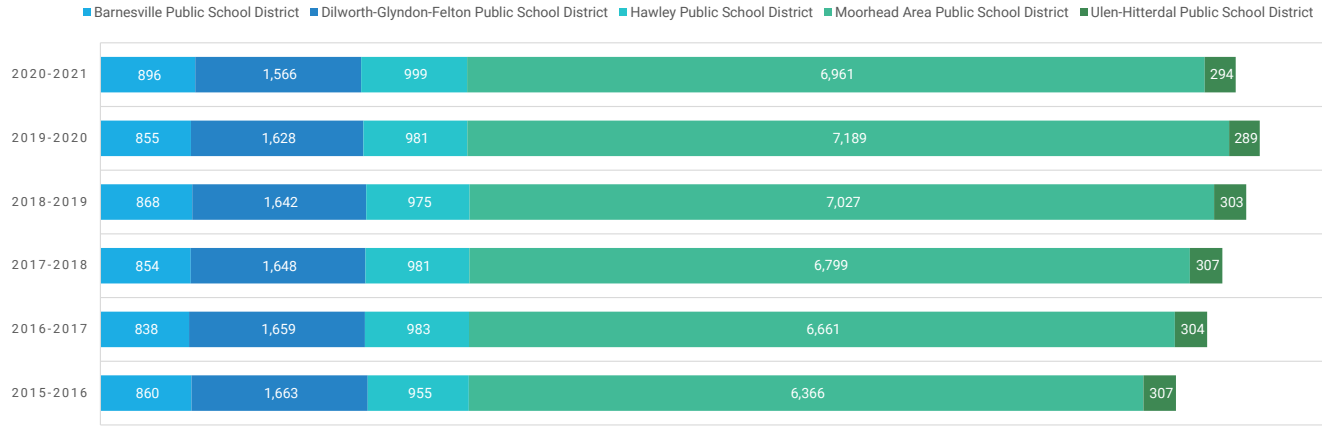
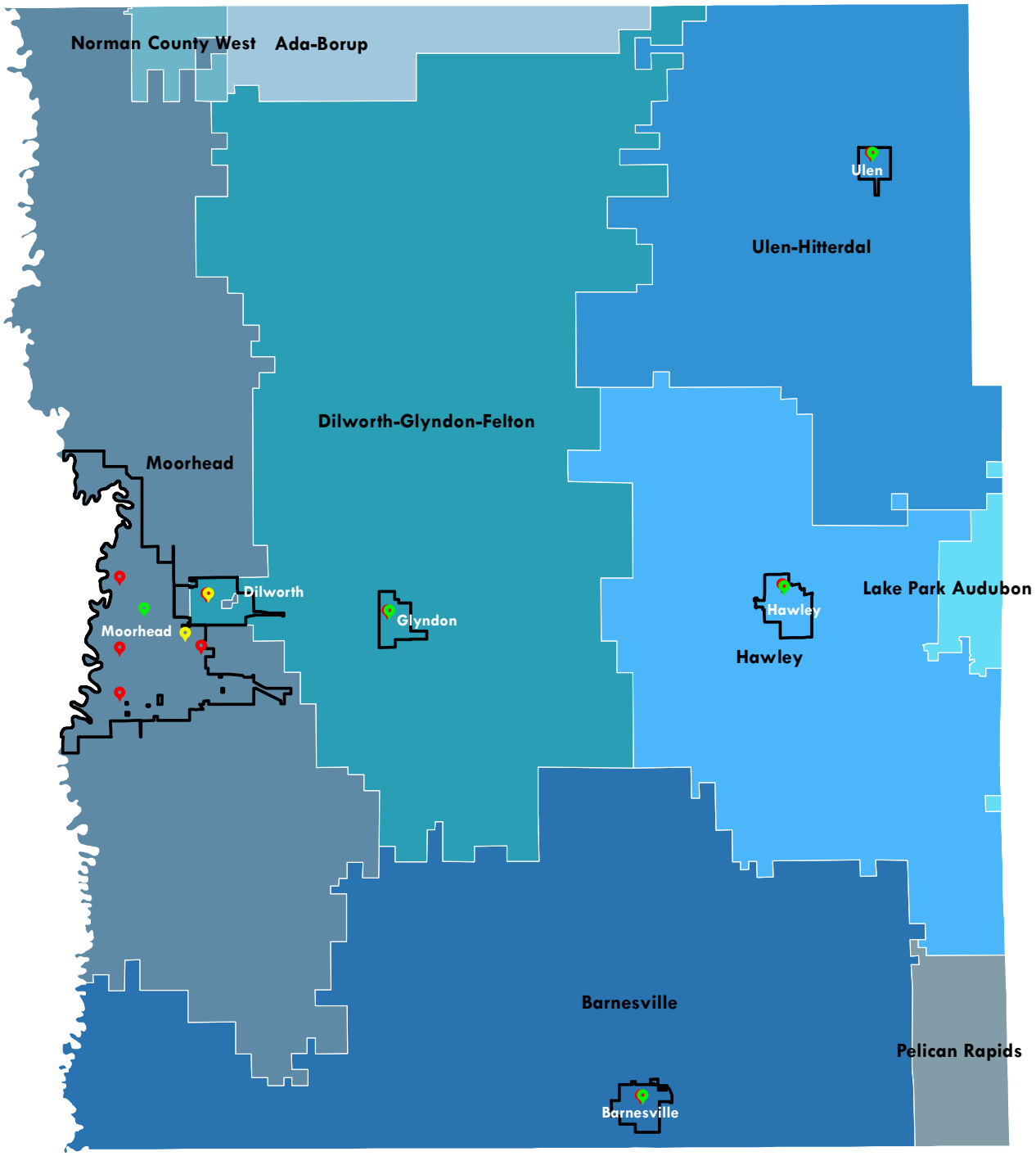


Figure 3.8 – School Enrollment Information in Clay County, 2015-2016 to 2020-2021

Ulen-Hitterdal Public School



Map 3.5 – School Districts in Clay County

School District
School City Location
Elementary School
Middle School
High School

N

CLAY COUNTY
COMPREHENSIVE PLAN

Health and Wellness

Comprehensive plans are increasingly addressing public health as part of the larger planning process. Building health considerations into comprehensive planning can help improve general health and wellbeing, as well as promote individual and community resilience. The following indicators begin to identify the general health and wellness of residents in Clay County.

Like much of the rest of the nation, Clay County residents face public health challenges including chronic disease, diabetes, and obesity. According to a community health needs assessment completed in 2016, it was estimated that 61.3 percent of Clay County adults were overweight or obese and that 6.4 percent of adults had been diagnosed with diabetes. However, these are lower instances than both the statewide and national averages.

Specific behaviors like physical activity, fruit and vegetable consumption, and drinking and smoking habits contribute to overall wellbeing.

In Clay County, 17 percent of adults are not physically active, which is in line with the statewide average but lower than the nation as a whole. Just 20 percent of Clay County residents consume at least three of the recommended five servings of fruits and vegetables each day, which is lower than both the statewide and national average. Smoking prevalence among Clay County residents is on par with what is seen in Minnesota and the United States, but binge drinking behaviors are noticeably higher in Clay County than in the rest of the state and the nation.

Access to health care includes both transportation and provider availability. In 2016, Clay County residents had better access to primary care physicians, dentists, and mental health providers than Minnesota and the United States. Clay County also has fewer preventable hospital stays and uninsured residents than the state and national averages. In addition to these indicators, approximately 7.7 percent of Clay County households received Supplemental Nutrition Assistance Program (SNAP) benefits in 2019.

Table 3.8 – Residential Health and Wellness in Clay County, 2016

Residential Health and Wellness	Overweight	Obese	Diabetes
Clay County	31.7%	29.6%	6.4%
Minnesota	36.7%	27.8%	8.4%
United States	32.8%	37.9%	10.0%

Table 3.9 – Residential Health and Wellness in Clay County (cont.), 2016

Residential Health and Wellness (cont.)	Clay County	Minnesota	United States
Adults who are not physically active	17%	18%	23%
Adults who consume at least three or more servings of fruits and vegetables each day	20%	25%	23%
Adults who smoke	17%	16%	17%
Adults who binge drink	23%	19%	17%

Table 3.10 – Access to Health Care and Uninsured Rate in Clay County, 2016

Access and Uninsured Rate	Clay County	Minnesota	United States
Primary care physician ratio	1,045:1	1,113:1	1,330:1
Dentists ratio	1,377:1	1,404:1	1,520:1
Mental health provider ratio	386:1	529:1	500:1
Preventable hospital stays per 1,000 medicare enrollees	39	45	59
Uninsured rate	5.3%	6.1%	8.8%

Food Access Trends

In 2016, nearly 900,000 Minnesota residents lived in communities with insufficient grocery store access. This grocery gap is the fourth worst in the country and disproportionately affects Minnesotans living in rural communities. Ensuring access to a healthy, sustainable food system is key to establishing and maintaining a high quality of life. The ability to easily access basic needs and services influences a person's social, economic, physical, and mental well-being. Planning for future development requires integrated thinking about transportation and land use, including considerations about where and how people will obtain food. Long-range planning must support a balanced retail environment, including a fair distribution of food outlets, and a diversity of options to purchase healthy food.

Access to healthy foods can reduce the rates of preventable diseases, improve the county's overall health, aid in community and economic development initiatives, and promote a fair share for all residents.

Access to healthy food is a challenge, particularly in rural communities. Long drives to healthy food sources, and associated transportation costs, are a deterrent to obtaining healthy foods and maintaining a nutritious diet. Distance is compounded for households that lack a personal vehicle or the ability to drive one. Rural poverty also means that more low-income households are located in communities where transit service is limited or nonexistent.

Housing

A critical component to a healthy and vibrant community is a diverse and balanced housing supply in good physical condition that includes a variety of price levels, housing types, and sizes. A mix of housing tenures, types, and rent and sales prices provides residents with a range of choices so that they can continue living in their community as their housing needs change through their lifetimes.

The affordability of housing is especially important for all residents because it provides a stable foundation on which to build one's life. A diverse housing supply can also better adapt to future environmental, social, and economic changes than one that is largely based on just one of these types. A full range of housing options also enables communities to address the housing needs of employers and a diverse workforce.

In 2020, the existing housing market of Clay County consisted of approximately 26,844 units. The number of households, a direct reflection of the number of housing units, is forecasted to increase from 25,296 households in 2019 to 34,970 households by 2045. The private market will likely build housing stock to accommodate a majority of this anticipated growth. The production of affordable, special needs, and senior housing, however, will require assistance from Clay County and the Housing and Redevelopment Authority (HRA), as well as other public funding partners.

Clay County encourages housing choices that provide residents the opportunity to remain a part of the community while moving through their stages of life. A variety of housing ensures single-family homes and multifamily homes, and senior living developments are available in all price ranges throughout the county. Residents at the low end of the income spectrum are not easily serviced by the conventional housing market. Clay County and HRA programs are aimed at helping housing providers to develop new and preserve existing housing, thus creating diverse housing choices in all communities. Funding from these programs can create opportunities for providers to develop diverse housing choices in all communities.

Cities in Clay County are seeing growth, and there is continuing demand for more residential options at the edges of these cities. A number of townships are also seeing demand for traditional large-lot rural residential developments.

Table 3.11 – Housing Units in Clay County, 2020

Housing Units	2020	%
Total housing units	26,844	100%

Owned and Rental Housing	2020	%
Vacant housing units (including seasonal units)	1,913	7.1%
Occupied housing units	24,931	92.9%
Average household size	2.5	
Owner-occupied	16,829	62.7%
Average household size	2.6	
Renter-occupied	8,102	30.2%
Average household size	2.1	

Housing Needs

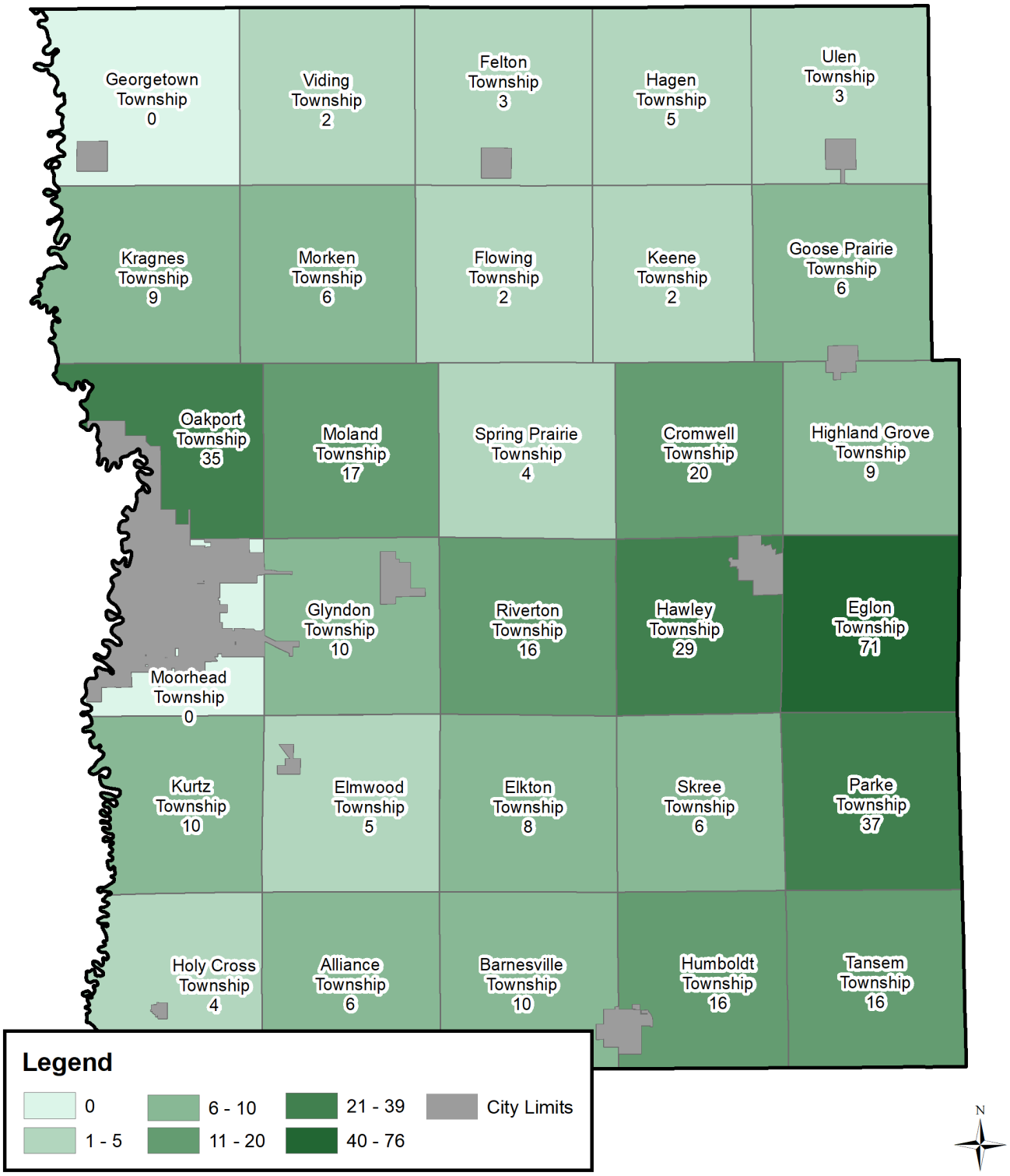
The existing housing market of Clay County consists of approximately 26,844 units, according to 2020 U.S. Census. Clay County has a diverse housing stock with a good mix of owner-occupied and rental units. Housing units are more concentrated in the western half of the county due to growth and development patterns in the Fargo-Moorhead metropolitan area. An unmet need exists for greater affordability in home prices and rents to ease the housing needs of people who work in the county. This is a result of home and apartment prices increasing faster than incomes.

Housing Tenure

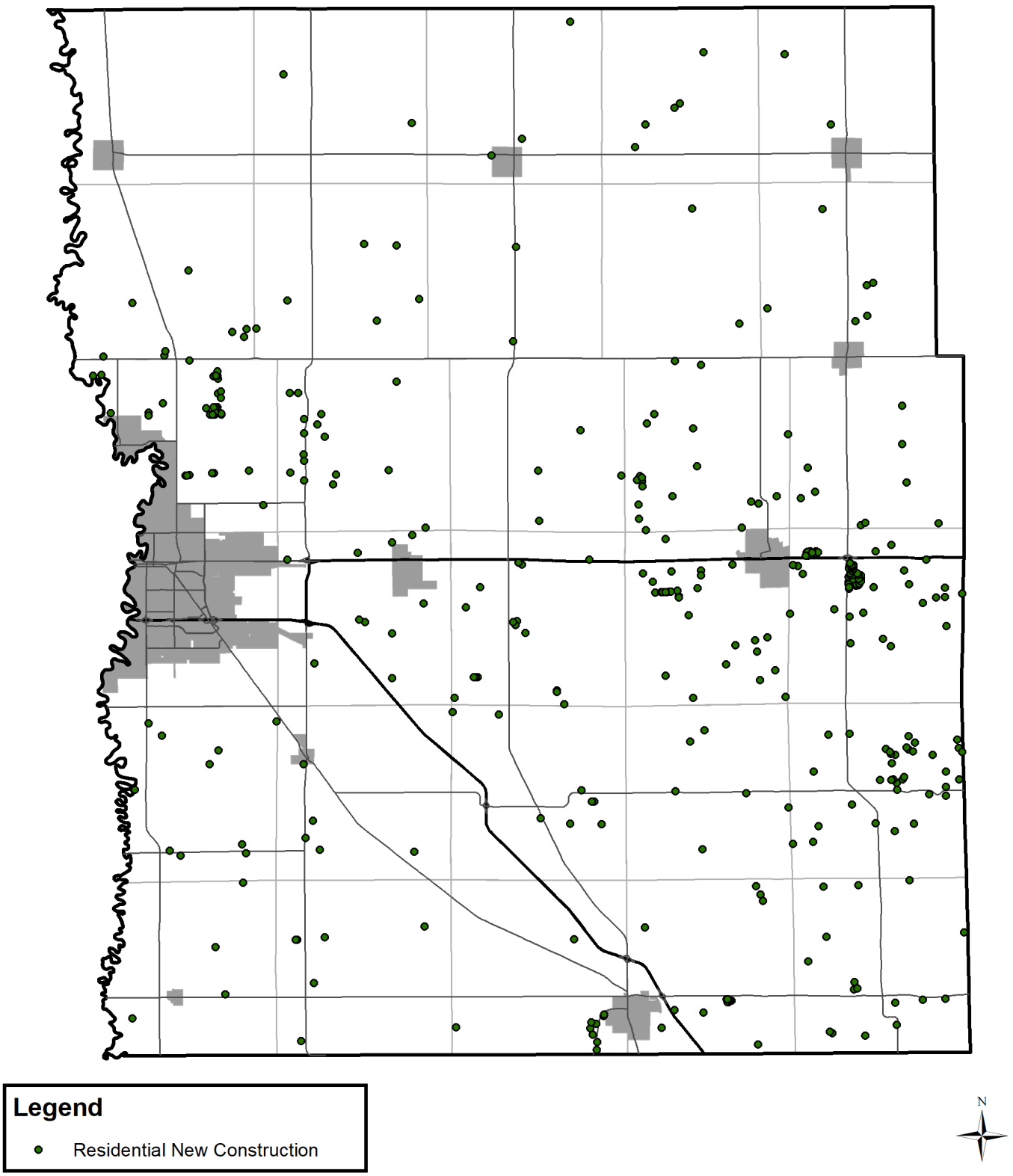
With a rate of 67.5 percent, Clay County's 2020 homeownership rate is slightly less than the Minnesota average of 71.6 percent. Of all households, approximately 16,829 owned and occupied their home and 8,102 rented. The homeownership rate in Clay County decreased slightly from 71.2 percent in 2010. The county's portion of rental housing increased from 28.8 percent in 2010 to 32.5 percent in 2020.

New Housing Construction

From 2010 to 2020, Clay County saw a total of 370 new home starts outside of current city boundaries. Eglon Township saw the most new home construction with 71 homes, followed by Parke Township (37), Oakport Township (35), and Hawley Township (29).



Map 3.6 – New Single Family Residence Construction by Township, 2010 to 2020



Map 3.7 – New Single Family Residence Construction by Location, 2010 to 2020

New Housing Value

Of newly constructed houses located outside city boundaries, average home value has increased noticeably in the past decade. The average value of new homes has risen by nearly 46.6 percent over the past 10 years, increasing from $206,000 in 2010 to $302,086 in 2020.

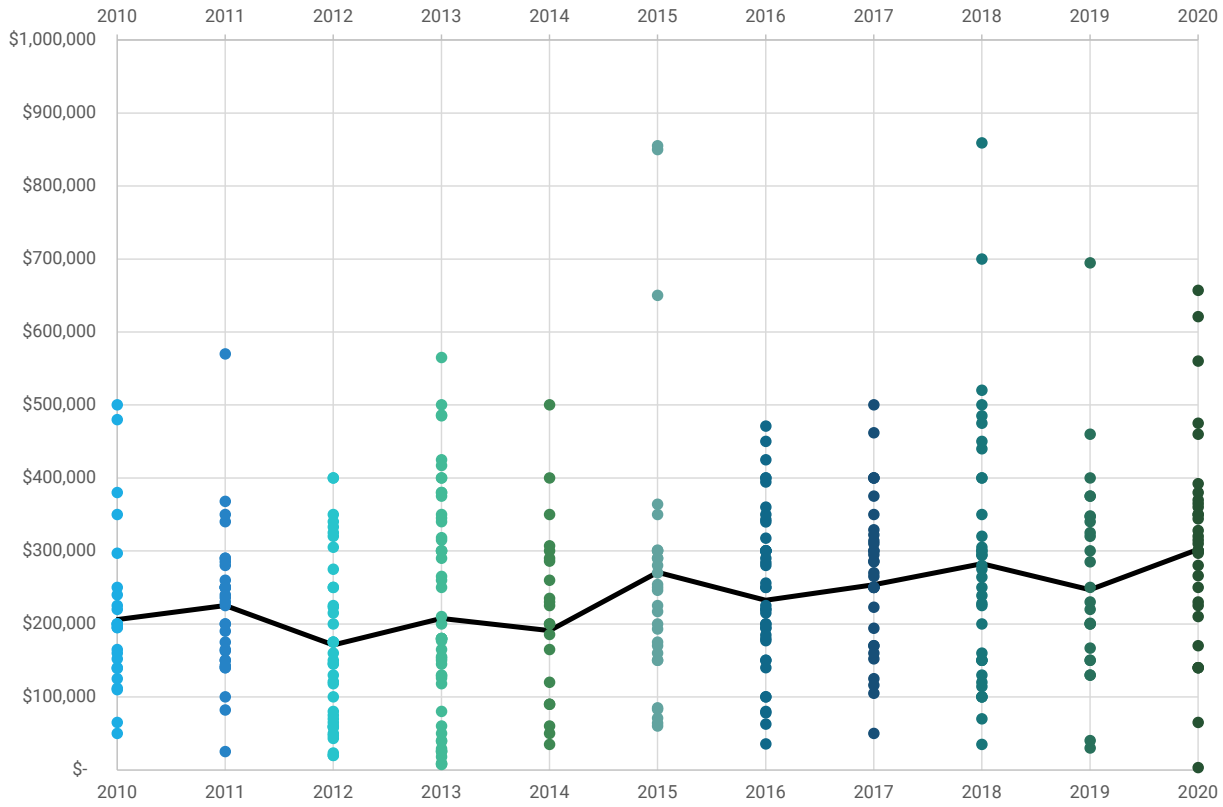


Figure 3.9 – Average Residence Value of New Single Family Construction, 2010 to 2020

Housing Type

Clay County's housing stock is primarily comprised of single family homes. Multifamily units, both owner-occupied and rental, account for nearly 25.5 percent of the county's housing stock. There are nine manufactured home parks located in Clay County, with three in Moorhead, three in Dilworth, two in Glyndon, and one in Hawley.

The economic life of housing when not maintained or renovated is typically 45 to 60 years. Approximately 63.6 percent of the county's housing stock was built prior to 1970, and those units that have not been maintained or renovated will be reaching the end of their economic life. As homes age, investments to retain quality, update amenities, and maintain market viability are needed.

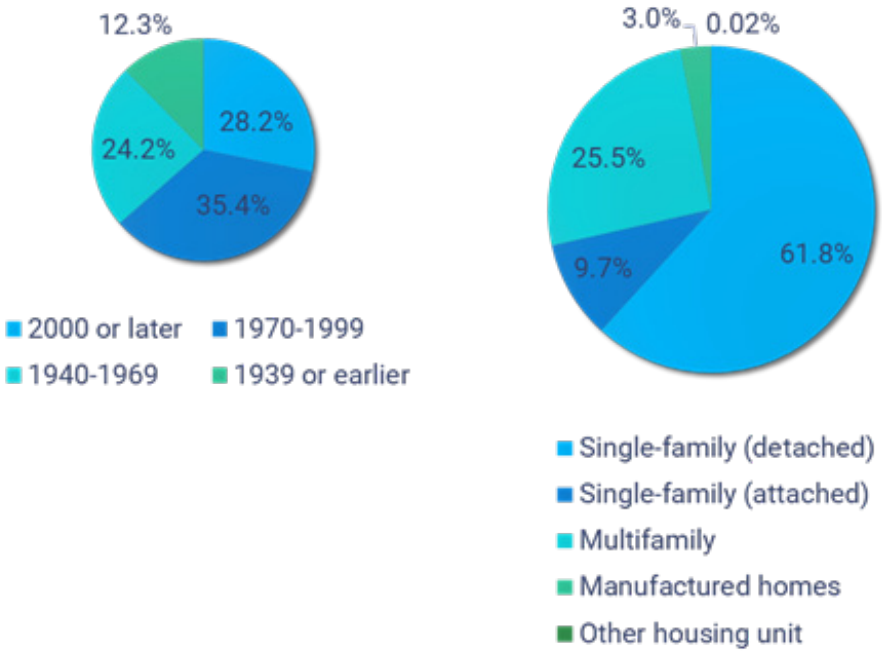


Figure 3.10 – Housing Units by Year Built and Type in Clay County

Housing Trends

According to a 2017 study prepared by the Urban Institute, the nation can expect the following housing trends in rural America:

- Rural areas will see slower growth rates.
- Rural Americans are aging faster than Americans in metropolitan areas.
- Rural households will become as racially diverse by 2030 as the nation was in 1990.
- Demand for housing in rural areas will increase.
- The housing needs of rural seniors will require urgent attention.
- A growing share of working-age rural Americans may need housing assistance, even if they do not qualify.

However, there are early indications that Covid-19 may lead to a modest, permanent rise in those able to work remotely. With this, rural areas may see modest to higher growth rates than what would have been predicted prior to the pandemic.

Lifecycle Housing and Affordability

A major component of a healthy housing market is the availability of lifecycle and affordable housing. Lifecycle housing entails an array of housing options that meet people's preferences and circumstances for all of life's stages.

With lifecycle housing, not only are single-family homes in all price ranges available, but townhomes, apartment buildings, and senior living complexes are all located within the same community. This provides residents the opportunity to remain a part of the community while moving throughout different stages of life. It also offers housing options for young adults and seniors that want to remain close to their families.

Affordable housing is a vital part of lifecycle housing as it allows for these family members to afford living in different housing choices that the community offers. Housing affordability is measured by dividing a household's housing costs by its gross income. If housing costs are 30 percent or less than a household's income, the housing is considered affordable and not cost burdened. Housing costs include mortgage or rent payments, utilities, homeowners or renters insurance, and other fees.

In Clay County, it is estimated that nearly 28.6 percent of households are cost-burdened, meaning that they are paying more than 30 percent of their household income on housing needs. Split between owners and renters, 16.6 percent of home owners are cost burdened and over half (55.4 percent) of renters are cost burdened.

Table 3.12 – Cost-Burdened Households in Clay County, 2019

Cost-Burdened Households	2019 (est.)	
All households for which cost burden is calculated	24,668	100.0%
Cost-burdened households	7,054	28.6%
Owner households for which cost burden is calculated	17,063	100.0%
Cost-burdened owner households	2,840	16.6%
Renter household for which cost burden is calculated	7,605	100.0%
Cost-burdened renter households	4,214	55.4%

Senior Housing and Group Quarters

As a subset of the housing market, group quarters are a unique market and separate from general occupancy rental and owner-occupied housing markets. This type of housing is defined as places where people live or stay in shared living arrangements owned or managed by an entity that provides housing and services for residents. This typically includes nursing and assisted living facilities, dormitories, and correctional or rehabilitation facilities.

In 2020, there were 3,133 people that lived in group housing quarters in Clay County, with approximately 397 people in nursing or skilled-nursing facilities.

Clay County Housing and Redevelopment Authority

The Clay County Housing and Redevelopment Authority (HRA) offers a number of services to assist in the creation and preservation of affordable housing. The Clay County HRA partners with local communities to develop and manage housing choices for seniors, low-income families, and households caring for an individual with mental health concerns.

Apartment and townhome units are offered at seven locations in Moorhead, Dilworth, Hawley, and Ulen. Additional programs, such as Housing Choice Vouchers (Section 8), are utilized to maintain affordability in existing housing stock in communities in Clay County. The HRA also manages housing stabilization services for adults with disabilities who are homeless or at risk of homelessness. It also offers two separate programs for home improvements including an owner-occupied rehabilitation program and rehabilitation loan program.

Clay County encourages HRA projects and partnerships with local communities to provide lifecycle and affordable housing in its communities.

Resilience and Economic Competitiveness

A diverse housing supply that includes a variety of single family homes, townhomes, apartments, and other types of housing can better adapt to future environmental, social, and economic changes than one that is based solely on one of these housing types. It provides local governments with a broad tax base that can withstand these changes to minimize dramatic impacts on government budgets and services.

A mix of housing at various price points specifically helps to address the needs of local workers and employers. Typically, workers want to live close to where they work while employers want housing options that attract and retain the best qualified talent at all wage levels with a variety of home preferences. A full range of housing options enables communities to match the housing needs of a diverse workforce.

Vibrant and growing communities have a diverse range of jobs at a variety of wage rates as well as a housing supply that caters to all income levels so those who work in the county can also call it home. This will help ensure that businesses that want to grow and expand will have a reliable labor force to fuel it. Available affordable housing is critical to that effort to attract and retain a talented workforce.

Economic Development

Economic development involves anticipating change, diversifying industries, and redefining opportunities and challenges. It is an outcome of the direct actions of elected and appointed officials in concert with the private sector aimed at promoting the quality of life and economic vitality of the community. These actions involve interdependent variables such as regional competitiveness, human capital, environmental sustainability, workforce development, education, social services, tax base retention and expansion, physical infrastructure, and health and safety.

Regional Market Trends

Economic development is used to describe the growth of a local or larger scale economy. This growth can be experienced in both residential and commercial sectors of an economy. It can be achieved through the new construction of homes or businesses and/or through the redevelopment of existing residential or commercial structures. Byproducts of this growth are the creation of jobs and tax revenues. Economic development in rural Clay County will occur through new subdivisions, aggregate operations, ag-supported industries, and infill and redevelopment opportunities.

It is important for cities and counties to have a healthy ratio of residential to commercial uses to create a balanced relationship between commercial and residential revenues and expenditures. This balance is important to accommodate fluctuations in the real estate market and related revenue generated within office, retail, and residential sectors. A certain amount of residential development is desirable for a jurisdiction to create a thriving retail atmosphere.

Tax Increment Financing and Tax Abatement

The Clay County Board of Commissioners serves as the Clay County Economic Development Authority (EDA) in the county. The EDA implements the Clay County Business Subsidy Policy by offering tax abatement and tax increment financing (TIF) programs to potential businesses seeking to locate or expand in Clay County. These programs are for businesses that are outside current city boundaries or existing EDA's in the county.

The purpose of these business subsidies include:

- To retain local jobs and increase the number and diversity of jobs that offer stable employment and attractive wages and benefits;
- To enhance and diversify Clay County's tax base;
- To encourage additional unsubsidized private development in the area, either directly or indirectly through "spin off' development;
- To achieve development on sites which would not be developed without business subsidy assistance;
- To remove blight and/or encourage development of commercial and industrial areas in the County that result in higher quality development or redevelopment and private investment; and
- To offset increased costs of development of specific properties when the unique physical characteristics of the site may otherwise preclude private investment.

Economic Development Partnerships

Clay County partners with the Greater Fargo-Moorhead Economic Development Corporation (GFMEDC) for help establish primary sector industries in Clay County and the greater Fargo-Moorhead area.

Economic development programs are available through West Central Initiative (WCI), a public foundation serving counties in west central Minnesota, including Clay County. The maximum total of loans to any one business is $300,000. For retail or local service businesses, the maximum loan amount is $35,000. In most cases, private investment and/or private financing is required, in addition to WCI loan funds.

The Clay County Loan Fund (CCLF) is a WCI component fund established by the county to provide additional job opportunities outside the Moorhead area. The CCLF Revolving Loan Fund is designed for:

- Business start-ups and expansion;
- Succession or preservation of businesses;
- Tourism;
- Childcare;
- Job creation and retention; and
- Other economic development activities that benefit people in Clay County.

The Fargo Moorhead West Fargo Chamber of Commerce (the Chamber) is a bi-state, regional federation of over 2,100 private, public, and nonprofit member firms representing more than 109,000 people. The largest local chamber in Minnesota, the Chamber advocates for a strong metropolitan community and supports the interests of its members located in Clay County and beyond.

Borders-Cities Enterprise Zone Program

The Border-Cities Enterprise Zone Program provides business tax credits (property tax credits, debt financing credit on new construction, sales tax credit on construction equipment and materials, and new or existing employee credits) to qualifying businesses that are the source of investment, development, and job creation or retention in the Border-Cities Enterprise Zone cities, including Dilworth and Moorhead.

Businesses locating or existing in those cities are eligible, excluding a recreation or entertainment facility, one owned by a fraternal or veteran's organization, one owned by a public utility, one used in operation of a financial institution, or one owned by a retail food or beverage service business operating under a franchise.

Minnesota Department of Employment and Economic Development

The Minnesota Department of Employment and Economic Development (DEED) is the state's principal economic development agency. DEED programs promote business recruitment, expansion, and retention; international trade; workforce development; and community development.

The Minnesota Department of Employment and Economic Development offers a number of grants and business financing programs to help companies and communities retain existing jobs and create new high quality jobs.

Agriculture and Natural Resources

Agriculture

Agriculture continues to be an important economic activity in Clay County. There have been significant changes in how farms are owned and operated at both the state and national level. After being relatively stable from 1997 to 2007, Clay County has seen a decrease in the number of farming operations between 2007 and 2017. At the same time, the amount of land being farmed has increased. This finding suggests smaller farms are removing their land from production or selling to larger operations or corporations, which mirrors national trends.

According to the 2017 Census of Agriculture, there were 694 farms in Clay County, averaging 831 acres in size. Compared to 2007, this represents a decrease of 227 farms in the county, with the average acreage per farm increasing by 165 acres.

The Census of Agriculture shows the total acreage of land being used for farming decreasing from 613,819 acres in 2007 to 576,646 in 2017 a net change of 37,173 acres.

The decrease of land in farms could be attributed to a variety of reasons such as conversion of farmland into conservation land, change in use or development of land, or temporarily taken out of production. As the size of the farming operation increases and the number of farms decrease, homes that were once associated with a farming operation are sold to nonfarm residents and are no longer included in the farming acreage. This acreage attributes to approximately 24 percent of the loss of land in farm acreage.

Moland Township

The land in farms acreage is comprised of four categories: total cropland, total woodland, permanent pasture and rangeland, and land in farmsteads.

Cropland, not for pasture, acreage saw an increase between 2007 and 2017 by 530,824 and 536,924 acres, respectively. 2007 marked a record number of acres enrolled in conservation practices at 60,722 acres. This number dropped to 22,271 acres in 2017. Pastureland and woodland both saw decreases in acreage, with woodland not pastured decreasing from 11,441 in 2007 to 5,516 in 2017 and pastureland, all types decreasing from 47,518 acres in 2007 to 19,042 in 2017. Considering the loss in acreage of land enrolled in conservation practice, pastureland and woodland and the increase of cropland, it is likely acreage that once was pastureland was converted to cropland. Additionally, conservation land could of transferred ownership to a conservation focused group that does not report to the Census of Agriculture. It is likely over the next decade that the total cropland acreage will continue to decline due with an increase in conservation easements,

Table 3.13 – Land in Farms According to Use

	2007	2017	Net Change	Proportion of Net Change
Total Cropland	549,592	538,136	-11,456	30.8%
Total Woodland	15,723	9,369	-6,354	17.1%
Permanent Pasture and Rangeland	24,468	13,977	-10,491	28.2%
Land in Farmsteads	24,036	15,164	-8,872	23.9%

Table 3.14 – Cropland Not Used for Pastureland

	2007	2017	Net Change
Harvested Cropland	478,701	507,417	+28,716
Other Cropland	52,123	29,507	-22,616

Table 3.15 – Pastureland Acreage Within Each Use

	2007	2017	Net Change	Proportion of Net Change
Pastureland, All Types	**47,518**	**19,042**	**-28,476**	**100%**
Cropland used only for pasture or grazing	18,768	1,212	-17,556	61.7%
Woodland pastured	4,282	3,853	-429	1.5%
Permanent pasture & rangeland	24,468	13,977	-10,491	36.8%

Hawley Township

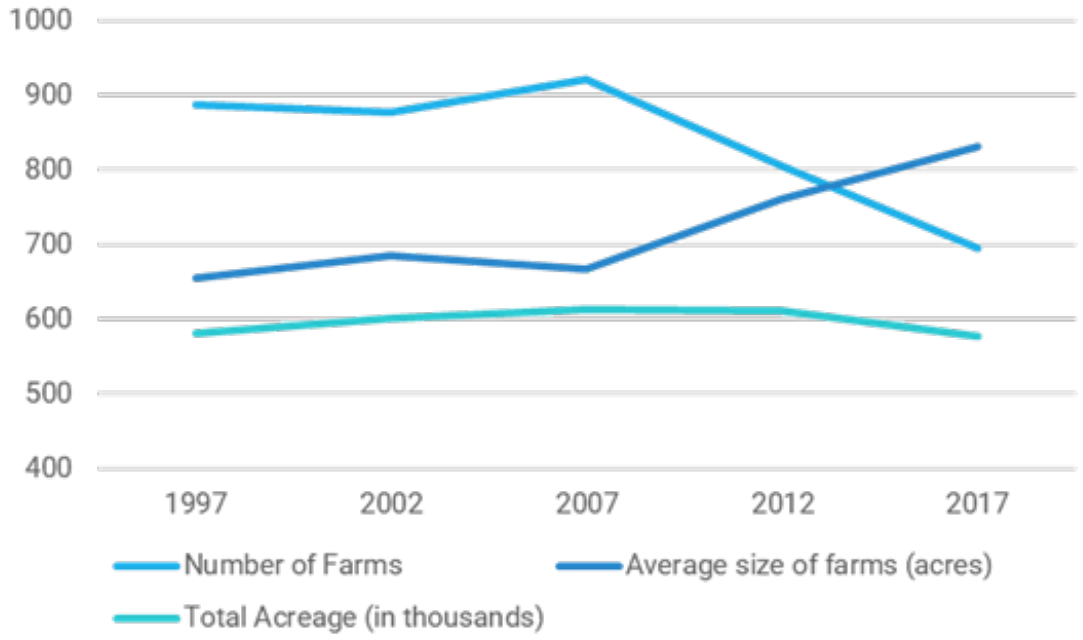


Figure 3.11 – Farms in Clay County, 1997 to 2017

The estimated market value of Clay County's agriculture products sold in 2017 totaled $277,750,000. This value includes both crops (including nursery and greenhouse crops) as well as livestock, poultry, and other products such as dairy and eggs. This is down from a high of nearly $400,000,000 of agricultural products sold in 2012. The average market per farm was $400,216, down from almost $500,000 five years prior in 2012.

Approximately four percent of farms sold directly to consumers in 2017, whether through farmers markets, community supporter agriculture (CSA) programs, or other direct methods.

Table 3.16 – Market Value of Agricultural Products in Clay County, 2007 to 2017

Market Value	2007	2012	2017
Market value of agricultural products sold (in thousands)	$201,781	$398,075	$277,750
Average per farm	$219,089	$495,118	$400,216
Crops, including nursery and greenhouse crops (in thousands)	$170,059	$359,311	$240,202
Livestock, poultry, and their products (in thousands)	$31,722	$38,764	$37,549

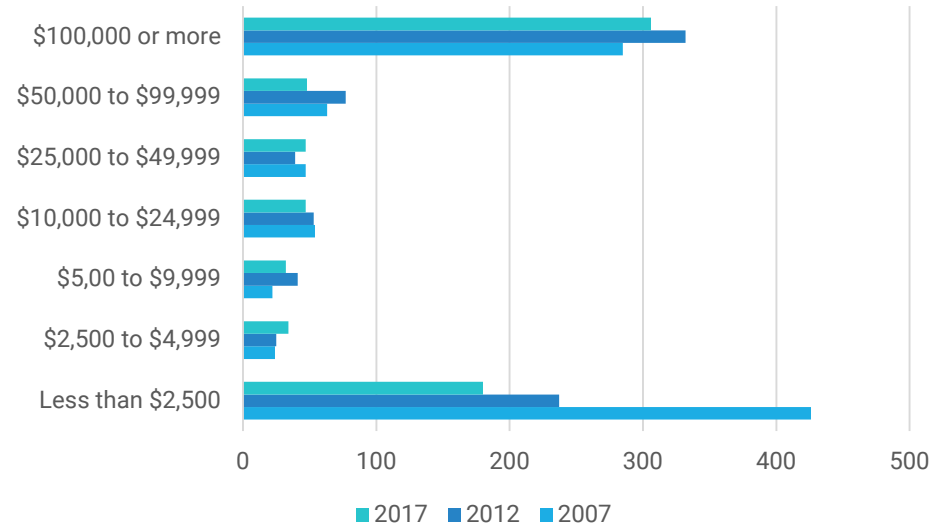


Figure 3.12 – Farms by Value of Sales, 2007 to 2017

In addition to the direct income from agriculture, many other firms are supported locally through sales to farms or by adding value to farm commodities, although that economic activity in not usually reported among the agricultural statistics.


Parke Township

In terms of acreage, the top five crops grown in Clay County in 2017 were: soybeans (210,459 acres), corn for grain (159,122 acres), wheat (70,262 acres), sugarbeets (40,195 acres), and hay and grass silage (16,780 acres). Together, these account for over 98 percent of all crop acreage in the county. Compared with 2007, the acreage for corn for grain and soybeans has risen by 87.4 and 24.7 percent respectively, while wheat, sugarbeets, and forage have declined 47.3 percent, 29.1 percent, and 13.0 percent respectively.

Livestock and poultry farms also play an important role in the agriculture economy. Beef cows made up the bulk of the county's farm inventory with 123 farms spread throughout the county, followed by 48 poultry farms. Since 2007, poultry farms have seen the highest growth while hog and sheep farms have both seen declines.

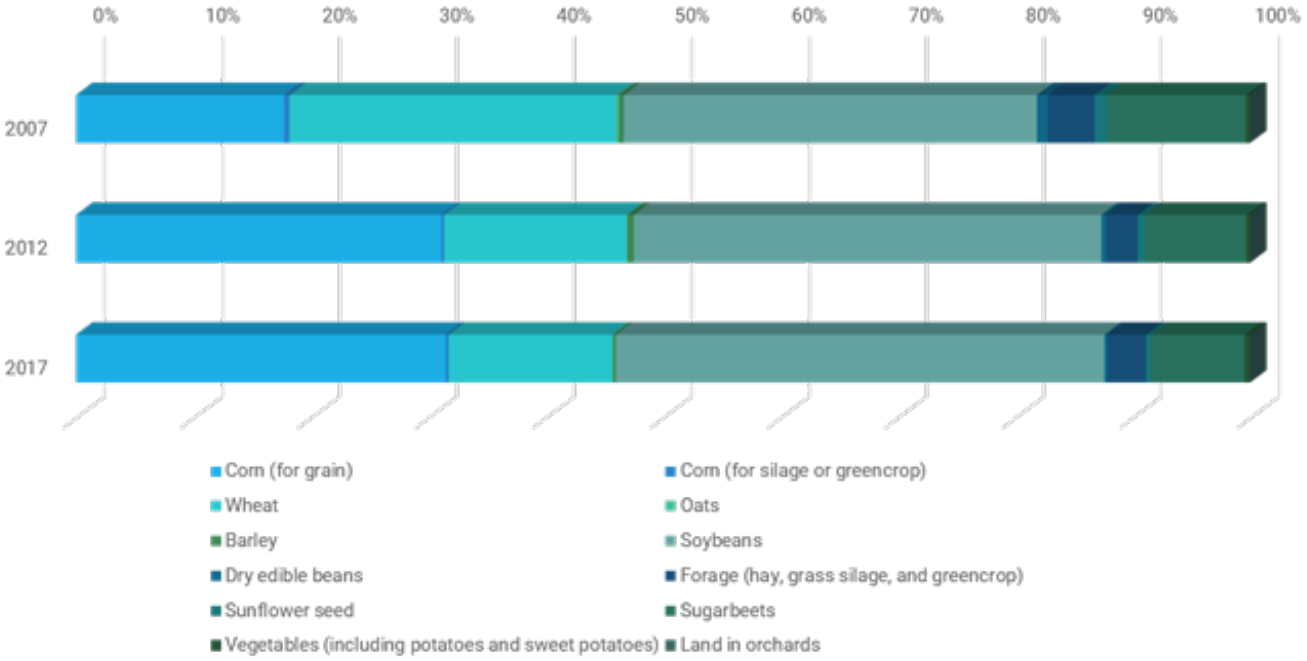


Figure 3.13 – Crops Grown in Clay County, 2007 to 2017

Table 3.17 – Number of Livestock and Poultry Farms in Clay County, 2007 to 2017

Livestock and Poultry	2007	2012	2017
Cattle and calves	151	155	167
Beef cows	108	123	123
Milk Cows	16	11	23
Hogs and pigs	32	17	23
Sheep and lambs	11	9	5
Poultry	18	27	48

Organic Agriculture

Organic agriculture is one of the most rapidly growing sectors in the food industry. There are more than 700 certified organic farms and more than 230 certified organic food processors in Minnesota.

In 2017, there were 12 organic farms certified by the USDA National Organic Program in Clay County. An additional four farms were identified as having acreage that was transitioning to organic production. Total sales from organic products was $2,790,000 in 2017, down from $5,045,000 in 2012 according to the Census of Agriculture.

Table 3.18 – Organic Production in Clay County, 2007 to 2017

Organic Agriculture	2007	2012	2017
USDA National Organic Program certified farms	5	8	12
Farms transitioning to organic production		2	4
Total organic product sales (in thousands)	$1,143	$5,045	$2,790

Eglon Township

Producer Demographics and Statewide Trends

According to the 2017 Census of Agriculture, there were 1,094 total producers in Clay County. Of these 73.9 percent were male and 26.1 percent were female. Nearly 61 percent were between the ages of 35 and 64, with over a quarter of producers 65 and older. A sizable percentage (21.5 percent) were identified as new or beginning farmers.

In 2017, the vast majority of farms in Clay County (97 percent) were family farms, with many being handed down from one generation to another. Approximately 37 percent of farms in the county had assistance from hired farm labor, including migrant and seasonal farmworkers.

Minnesota has the fifth largest agricultural economy in the country, contributing to the state's ranking as the eighth best in the nation for business. In Clay County, farmland acreage remained at 576,646 acres in 2017. This amounts to roughly 80.4 percent of the land area of the county. As new markets emerge or expand, Clay County can position itself as one of Minnesota's leading counties for business by capitalizing on new developments tied to farming.

Clay County should consider emerging markets when establishing economic initiatives that support local agriculture and farming businesses. Clay County should also be aware of the following trends that could impact the local economy positively or negatively:

- Minnesota agriculture will likely stay strong for the foreseeable future. Competition between different agriculture niches such as vegetable and grain crops and dairy have increased competition for farmland.
- National policies on tariffs continue to change, which may play a role in regional and local commodity prices, as well as the exporting of goods.
- Livestock farms (dairy and hogs) have grown in size creating concerns over manure management, noise, smells, water quality, and water quantity.
- Many farmers lack adequate physical and financial infrastructure on their farm and in their region for harvesting, processing, storing, and distributing food to nearby markets.

Table 3.19 – Additional Farm Statistics, 2017

Percentage of Farms That:	
Have internet access	85%
Sell directly to consumers	4%
Hire farm labor	37%
Are family farms	97%

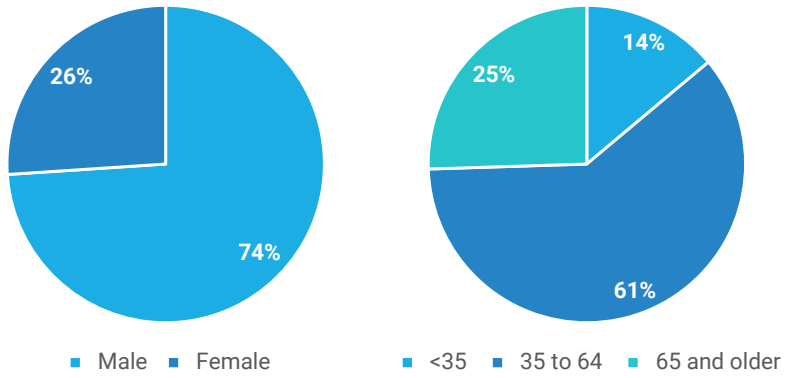


Figure 3.14 – Producer Demographics, 2017

Goose Prairie Township

Surface Water

Surface water includes rivers, streams, lakes, and wetlands throughout the county. Rivers in Clay County include the Red River of the North, the North and South Branches of the Buffalo River, and the South Branch of the Wild Rice River. Additional surface waters include several small, shallow lakes and 37,000 acres of scattered wetlands. Several lakes in the county include Turtle Lake, Lee Lake, and Lake Fifteen, each have a public access and a degree of recreational development around them. These three lakes, along with Silver Lake, have also seen moderate to extensive development.

Clay County is a partner in two Comprehensive Watershed Management Plans: The Buffalo-Red River Watershed and Wild Rice - Marsh River Watershed plans. Counties are encouraged to develop and implement a local water management plan under MN Statute 103B.311. Local government units, including counties, can participate collaboratively with SWCDs and Watershed Districts in comprehensive watershed management planning as defined in MN Statute 103B.801.

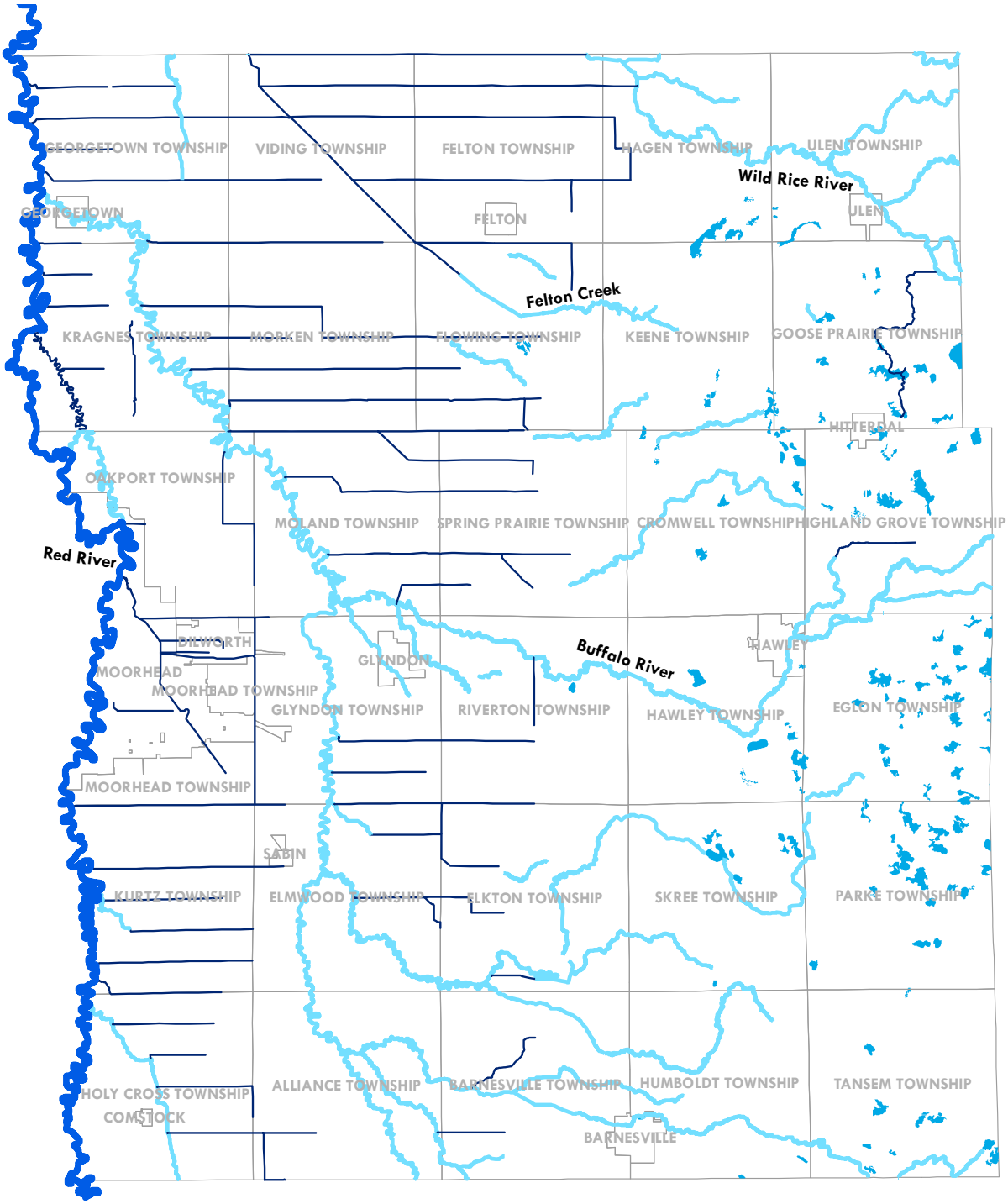
Most surface waters in Clay County are degraded, and several are listed as impaired waters according to the Minnesota Pollution Control Agency. As such, these waters do not meet water quality standards designed to protect human health and biological functions and, thus, must be restored to meet their intended use via locally developed Total Maximum Daily Load (TMDL) Plans. Groundwater quality and quantity are also of utmost importance to ensure clean, safe drinking water as well as adequate supply for agricultural and industrial uses.

Specifically, the Buffalo Aquifer, the emergency water supply source for over 70 percent of the county's population, is vulnerable to contamination from surface water (the South Branch of the Buffalo River and gravel pits exposing the water table), land use activities, abandoned wells and leaking storage tanks. In addition, the geology of the middle portion of the county causes the underlying groundwater resources to be very highly susceptible to contamination. As such, it is critical that future land uses be carefully considered to further protect the county's groundwater resources.

Watersheds

Two primary watersheds, the Buffalo River watershed and the Wild Rice River watershed divide Clay County. Three smaller, secondary watersheds, the Upper Red River of the North watershed, the Otter Tail River watershed, and the Red River of the North - Marsh River watershed, drain smaller portions of the county to the west, east and north respectively. In terms of water management, the Upper Red River of the North and Otter Tail River watersheds are managed by the Buffalo-Red River Watershed District. The Wild Rice River and the Red River of the North - Marsh River are managed by the Wild Rice River Watershed District.

Watershed district boundaries do not always mirror true hydrologic watershed boundaries. Organization boundaries determine the tax base for administration and activities for each organization, though hydrologic and management issues may cross organizational boundaries.



CLAY COUNTY
COMPREHENSIVE PLAN

Map 3.8 – Waterways in Clay County

Red River
Public Ditches
Public Waters
Lakes

N

The BRRWD encompasses a land area of 1,785 square miles. Approximately 75 percent of the geographic area of Clay County is in the BRRWD, which translates to 44 percent of the watershed area. The Buffalo River originates in Becker County, but transects Clay County where it enters the Red River of the North northwest of Georgetown. The main tributaries to the main branch of the Buffalo River include Hay Creek (originating in Becker County) and the South Branch of the Buffalo River. Several drainage ditches also contribute to this branch of the Buffalo River. Major tributaries of the South Branch of the Buffalo River include Hay Creek, Stony Creek, Spring Creek, Whisky Creek, and several drainage ditches. Wolverton Creek/ Comstock Coulee, although a direct tributary of the Red River, is also included in this watershed.

The WRWD encompasses a land area of 2,080 square miles. Approximately 25 percent of the geographic area of Clay County is in the WRWD, which translates to 12 percent of the watershed area. The South Branch of the Wild Rice River runs across the northeast corner of Clay County from east to west with its headwaters located in Becker County and its terminus in Norman County. Other surface waters in Clay County include Stiner Creek, Felton Ditch, Dalen Coulee and several drainage ditches that are tributaries of the Wild Rice River, or the Red River of the North.

Wetlands

Wetlands are formed when hydric soils, hydrophytes (water-loving vegetation), and wetland hydrology are present. All three factors must be established to define an area as a wetland. Wetland benefits include:

- Storage for excess water during flooding;
- Filtering sediments and nutrients before they enter rivers, streams, and lakes;
- Fish and wildlife habitat; and
- Public recreation

Nearly 98 percent of Clay County's original wetlands have been drained or filled. The presence of hydric soils often indicates where wetlands used to exist. Many areas with hydric soils no longer support wetlands. According to the Minnesota Wetlands Conservation Plan, restoration and maintenance of existing high quality wetlands should be the two primary wetland strategies for counties in Minnesota.

Calcareous Fens

Calcareous fens are rare and distinctive peat-accumulating wetlands that have been in Clay County and other parts of western Minnesota for 4,000 years. These environments support highly diverse and unique rare plants that tolerate low oxygen conditions, calcium carbonate deposits, low nutrient availability, and relatively cold organic soils (peat).

Calcareous fens typically occur on slopes where groundwater rises to the surface and saturates the peat before draining away, causing the area to be spongy and wet. Fens are connected to the larger groundwater system and are good indicators of groundwater sustainability, water quality, and ecological diversity.

Fens are extremely fragile and highly susceptible to disturbance by humans, livestock, groundwater supplies, flooding, invasive species, and land use conversions. They have special protection in Minnesota to prevent further loss (MN Statutes 103G.223).

Floodplains

A major physiographic feature making up the western half of Clay County is the Red River Valley. One of the main rivers in Clay County is the Red River of the North which flows northward along the county's western border. The Red River eventually empties into Lake Winnipeg in Canada, whose waters join the Nelson River and ultimately flow into Hudson Bay.

As one of the flattest regions on the planet, the plain of Lake Agassiz has a northward slope of 1.5 feet per mile and an westward slope ranging from two feet per mile near the Red River to 20 feet per mile farther east. The Buffalo River and Wild Rice River in Clay County both form its major surface drainage system. They are supplemented by county and judicial drainage ditches which move significant amounts of runoff into the rivers.

Flooding during the spring thaw is a common occurrence. The Red River's northerly flow and a spring thaw that progresses northward along the valley results in the southern valleys snow melt merging with fresh runoff as it moves north, increasing the total amount of water in the river. Furthermore, the river's inconsistent thaw can cause ice jams as large broken pieces of ice moves north reaching impassable frozen sections of the river creating ice dams retaining the water upstream. Additionally, as the river moves north, its gradient decreases causing the river to pool upstream.

The geological formations of the Red River Valley and its potential for flooding cannot be changed. With significant investments, flooding on already established neighborhoods and developments can be lessened, if just slightly. However, with a proactive approach, it is possible to lessen the damage of floods for new developments. This will not fix past mistakes, but can help to eliminate or lessen burdens created by flooding for future development. Allowing development in flood prone areas by adding fill or diking puts structures at risk of unanticipated flooding levels, and also reduces the natural storage area and creates bottlenecks in the flow of the river. Restricting growth in these naturally low-lying areas allows the storage areas to hold flood waters and helps lower the peak of the flood elevation.

The Red River has exceeded the National Weather Service flood stage of 18 feet in 52 of the past 114 years, and every year from 1993 through 2011. Flooding typically occurs in late March and early April. The flood of record in Fargo-Moorhead was the 2009 spring flood with a stage of 40.8 feet on the Fargo gage. With an estimated peak flow of 29,200 cubic feet per second (cfs), the 2009 flood was approximately a two percent chance (50-year) event.

Water Quality

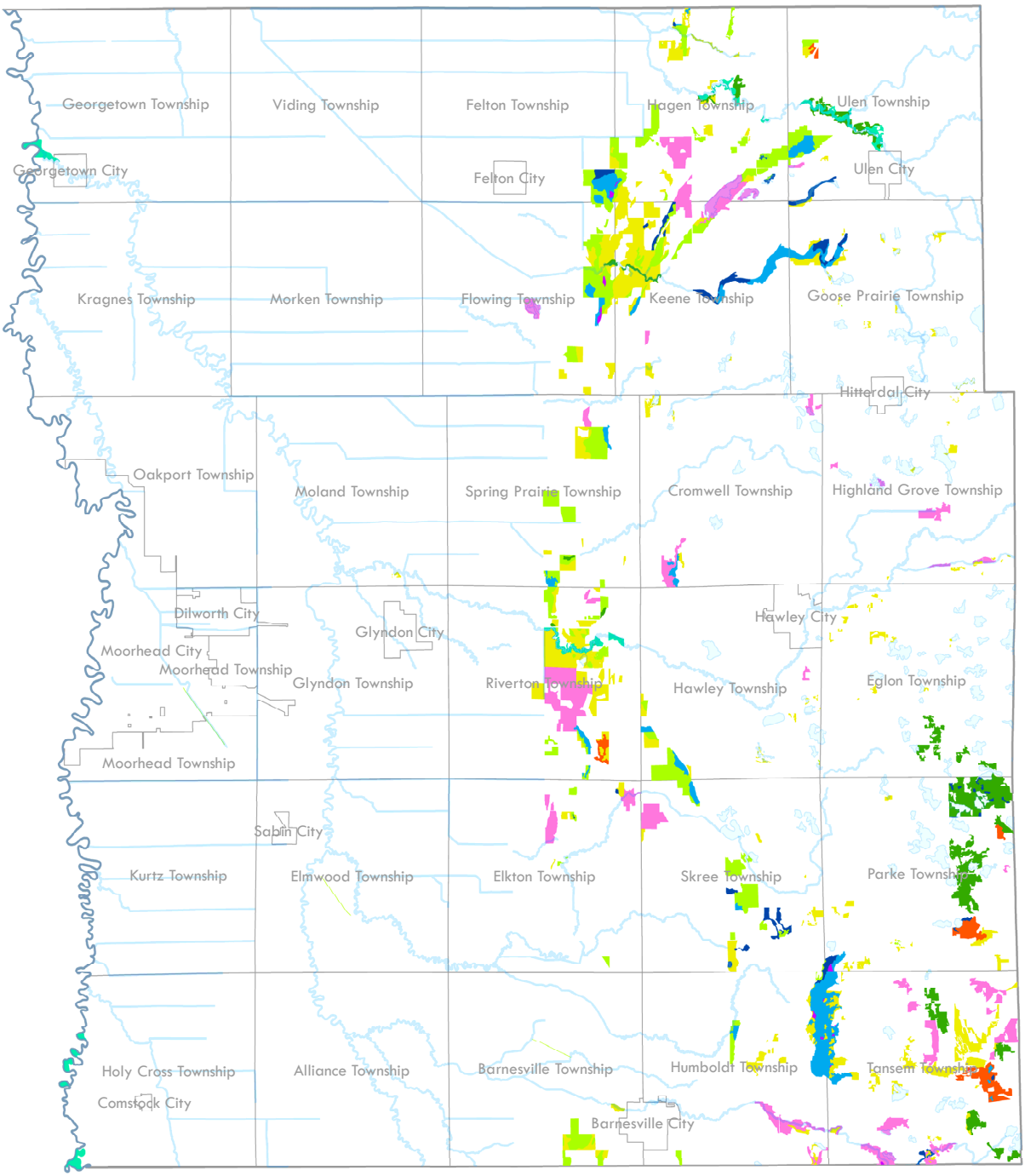
The Federal Clean Water Act requires states to adopt water quality standards that define pollutant quantities that can be present in surface water and/or groundwater, while still allowing the water to meet its designated uses (drinking water, fishing, swimming, irrigation, or industrial purposes). Every two years, the Minnesota Pollution Control Agency (MPCA) creates a list of impaired waters that do not meet water quality standards. The 2020 Impaired Waters List by the MPCA uses water sampling data to show exceedances of water quality standards in Minnesota and, more locally, the Red River Basin.

The potential for contamination by human activity is high in Clay County from several sources. Agricultural activities have the greatest potential to contribute pollutants to surface water resources. Pollutants include sediment, fertilizers, and pesticides. Industrial uses such as gravel extraction also have the potential to impact water quality in the county. Possible contaminations include sediment, toxic-waste spill and discharge of contamination to water sources. Urban areas also have a potential to pollute surface waters. Treated effluent, coliform bacteria, organics, pesticides, and fertilizers all would be possible pollutants. Transportation arteries and pipelines that transect the county also represent possible toxic-waste spill sites and discharges of contamination to water sources.

Although pesticides are used extensively in the Red River Valley, only small amounts have been detected in streams. Organic soils, flat land, pesticide degradation, and pesticide management limit the amount of pesticide contamination that reaches Red River Basin streams.

Each watershed district, as well as soil and water conservation districts, work to prevent and control water-related problems. Each district monitors the water quality within ditches, rivers, streams, creeks and lakes. Some projects the districts handle include: administration of public drainage systems, water quality improvement programs, and regulatory controls to protect water resources.

Hagen Township



CLAY COUNTY
COMPREHENSIVE PLAN

Map 3.9 – Native Plant Communities in Clay County

- Complex Community
- Fire-Dependent Forest
- Floodplain Forest
- Marsh
- Mesic Hardwood Forest
- Open Rich Peatland
- Wet Meadow
- Wetland Prairie

N

Native Plant Communities

A native plant community is a group of native plants that interact with each other and with their environment in ways not greatly altered by modern human activity or by introduced organisms. These groups of native plant species form recognizable units, such as prairies, savannas, woodlands, and wetlands, that tend to repeat over space and time. Native plant communities are classified and described by considering vegetation, hydrology, landforms, soils, and natural disturbance regimes. Examples of natural disturbances include severe droughts, windstorms, floods, and wildfires. High-quality examples can still be found throughout the state in every county, including Clay County, but in most areas they comprise just a small proportion of the total landscape. The Minnesota Biological Survey (MBS) systematically collects, interprets, monitors and delivers data on plant and animal distribution as well as the ecology of native plant communities and functional landscapes.

Prairie resources in Clay County vary in quality from those of low, modest, medium and high significance. The prairie with medium or high significance represents the best and least disturbed prairie in the county. About 14,290 acres of prairie with high or medium significance are found in Clay County. This includes some of the best prairie in the State and approximately 10 percent of the entire prairie remaining in Minnesota.

Some of the best prairie in the county is protected by designation as Scientific and Natural Areas (SNA's), Wildlife Management Areas (WMA's), Waterfowl Protection Areas (WPA's), State Parks, or through conservation efforts of private landowners or conservation organizations like the Nature Conservancy. In addition, other large tracts of the high quality prairie are owned by the county. Most of the remaining prairie remnants are in private ownership.

It should be noted that not all native plant communities have been mapped in Clay County. Unplowed pastures and other undisturbed areas have the potential to contain native prairie remnants or other rare native plant communities. When identified, the county should work to ensure that these areas are not disturbed and share updated mapping or parcel information with the DNR.

Spring Prairie Township

Spring Prairie Preserve

Three main concentrations of prairie found in Clay County are the Felton Prairie, Bluestem Prairie, and Blanket Flower Prairie. The Felton Prairie SNA is the most important dry-gravel prairie complex in Minnesota, its five units associated with beach ridges (former shorelines) of glacial Lake Agassiz. Mesic blacksoil prairie predominates, with gravel prairie on the ridges and wet black soil prairie occupying the swales. Among its rare features are a calcareous seepage fen, western prairie fringed orchids, Assiniboia and Dakota skippers, chestnut-collared longspurs, marbled godwits and loggerhead shrikes. The site is part of a designed Audubon Important Bird Area (IBA) and has long been a magnet for birders.

Bluestem Prairie SNA is located south of TH 10 near Buffalo River State Park and is one of the most significant northern tallgrass prairie sites in the nation. The 1,310-acre SNA lies within the 6,078 acre Bluestem Preserve owned by The Nature Conservancy, itself within a 23,600 acre critical core area identified in the state's Prairie Conservation Plan. Uplands in the area host mesic tallgrass prairie, while low swales contain wet black-soil prairie with sedge meadow and calcareous fen. Calcareous fens are a unique type of wetland that is protected by the Minnesota Wetlands Conservation Act (WCA). Rare species include the small white lady's-slipper, regal frittilary butterfly, prairie vole, and plains pocket mouse. Among more than 115 bird species are Wilson's Phalarope, Henslow's sparrow, marbled godwit and loggerhead shrike.

A third SNA is found in the southeastern corner of the county and is known as the Blanket Flower Prairie. Blanket Flower Prairie straddles the ecotone between the prairies to the west and the eastern deciduous forest. Hill's thistle (Minnesota species of special concern) and sky-blue aster are found here at the western edge of their range, while Hooker's oat-grass and blanket flower (both listed as Minnesota species of special concerns) are at their eastern most distribution. Dry prairie dominates the upper slopes of the rolling hills with mesic prairie in low areas interspersed with small groves of aspen. As the growing season unfolds, the slopes host pasqueflowers, purple prairie clover, dotted blazing star and silky aster among the native grasses with their own distinctive forms: prairie dropseed, blue grama grass, porcupine grass. The Minnesota Dragonfly Society has used the site to engage citizen scientists in surveys of Minnesota's dragonfly and damselfly populations; and students from the Natural Resources Management Club at North Dakota State University volunteer their time as site stewards. Ongoing management focuses on reconstruction of old fields to prairie vegetation with native seed collected from within the site.

Threatened and Endangered Species

The purpose of the Endangered Species Act (ESA) is to protect and recover imperiled species and the ecosystems upon which they depend. Threatened species are plants and animals that are likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Endangered species are those plants and animals that have become so rare they are in danger of becoming extinct.

There are four federally–listed threatened and endangered species in Clay County. These include:

- Northern long-eared bat: The northern long-eared bat is a medium-sized bat with a body length of 3 to 3.7 inches but a wingspan of 9 to 10 inches. During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). The northern long-eared bat is one of the species of bats most impacted by the disease known as white-nose syndrome. Due to declines caused by white-nose syndrome and continued spread of the disease, the northern long-eared bat was listed as threatened under the ESA in 2015.
- Dakota skipper: The Dakota skipper is a small butterfly that lives in high-quality mixed and tallgrass prairie. It has been extirpated from Illinois and Iowa and now occurs in remnants of native mixed and tallgrass prairie in Minnesota, the Dakotas and southern Canada. The Dakota skipper is listed as threatened under the ESA and critical habitat has been designated in a number of locations, including Clay County.
- Poweshiek skipperling: Poweshiek skipperlings are small butterflies most often found in remnants of native prairie in Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin and in fens in Michigan. However, this skipperling may have been extirpated from the Dakotas, Minnesota and Iowa within the last 10 years – an area that, until recently, contained the vast majority of the surviving populations. Many conservation partners are now working together to prevent extinction of the Poweshiek skipperling. They are focusing on the few remaining sites in Michigan and Manitoba, Canada where the Poweshiek can still be observed in the wild. Several zoos, including the Minnesota Zoo, are developing rearing strategies to bolster existing populations for both the Poweshiek skipperling and Dakota skipper.
- Western prairie fringed orchid: The western prairie fringed orchid is a federally threatened prairie wildflower. The heart of its historic range was the Red River Valley of Manitoba, Minnesota, and North Dakota, extending southeastward to Iowa and Missouri and westward to northeastern Oklahoma, eastern Kansas, central Nebraska and eastern South Dakota. The western prairie fringed orchid occurs most often in remnant native prairies and meadows. In the southern part of its range it is more likely to be found in mesic upland prairies and in the north more frequently in wet prairies and sedge meadows. It is also known from prairies and swales in sand dune complexes that are fed by shallow underground water.

Mineral Extraction

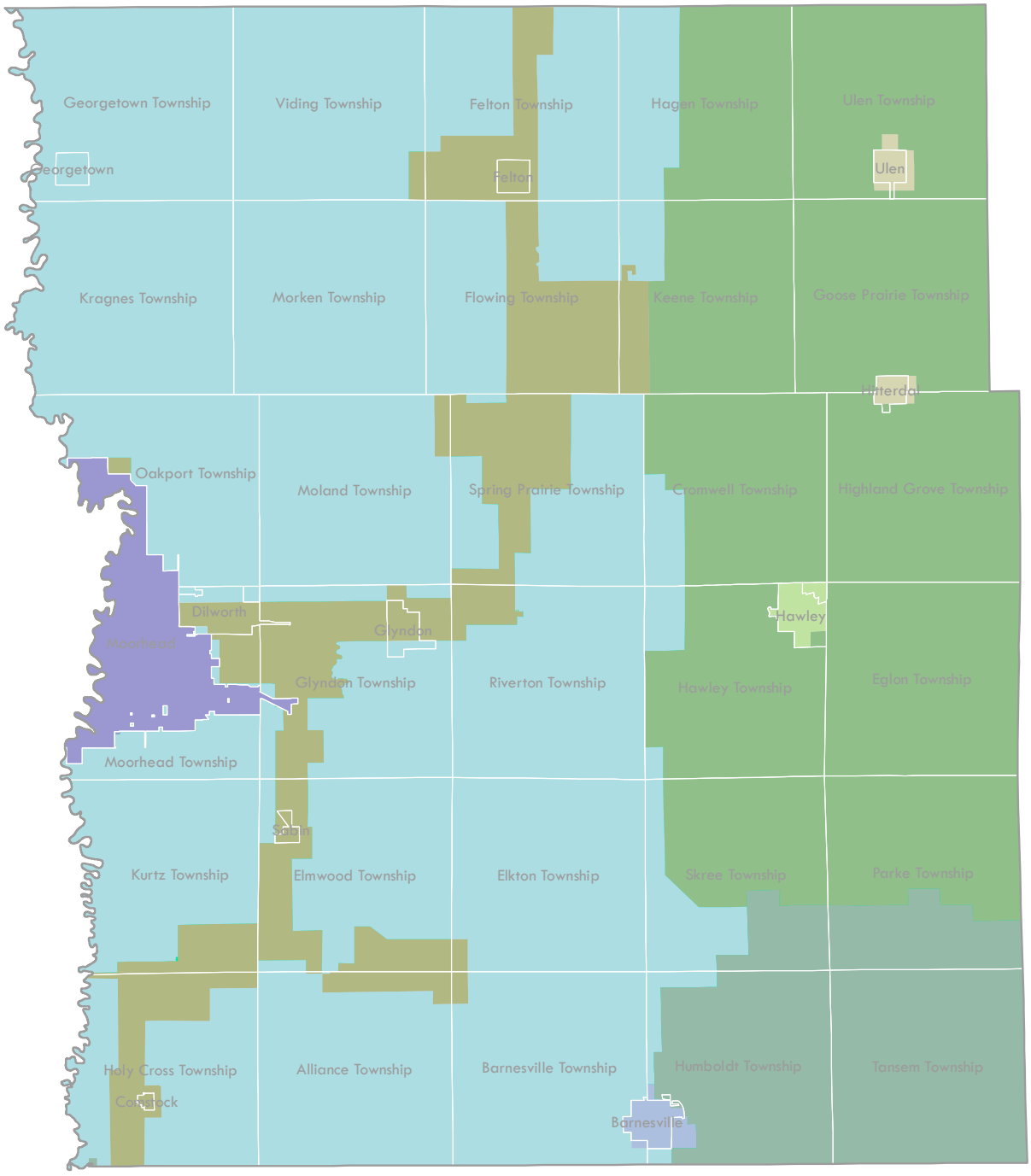
The extraction of natural resources such as aggregate is an important part of Clay County's economy. Locally extracted aggregate keeps costs of new roads and building foundations lower and aides in more cost efficient development in both Clay County and the greater Fargo-Moorhead metropolitan area.

Large portions of aggregate resources can be found in eastern parts of Clay County where glacial Lake Agassiz formed beach ridges and wave-cut scarps. In some of these places, waves and shoreline currents deposited sand and gravel in beach ridges, and in other places eroded preexisting sediments into scarps. The physical properties of the back sediments are dependent upon the type of previously deposited sediments upon which the waves and currents were striking. In general, these beach deposits have a low percentage of coarse gravel and limited overburden.

Another geological factor contributing to the characteristics of aggregate deposits in Clay County is the original source of the rock materials eroded by the glaciers. During the last Ice Age, western Minnesota was covered at different times by glaciers originating in areas to the northwest and in areas to the northeast.

The glacial advances from the northeast occurred earlier. Northeastern-source sediments contain a suite of durable rocks derived from the Canadian Shield in northeastern Minnesota and adjacent Ontario in addition to appreciable amounts of carbonate rocks (limestone and dolomite). This factor is important to aggregate producers, because the northeastern-source aggregate deposits yield products with low percentages of deleterious rock fragments. Aggregates with low percentages of deleterious rock fragments are required in the production of concrete products. Furthermore, these northeastern-source sediments locally contain abundant gravel-sized rock fragments, another desirable property of aggregate deposits.

Hawley Township



CLAY COUNTY COMPREHENSIVE PLAN

Map 3.10 – Energy Service Areas

- Xcel
- Red River Valley Coop
- Moorhead Public Service
- Barnesville Municipal Utility
- Hawley Public Utilities
- Otter Tail Power Company
- Wild Rice Electric Coop
- Lake Region Electric Coop

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Energy

Clay County is committed to promoting and expanding the use of renewable energy resources and energy efficient practices by reducing energy consumption and increasing the use of clean energy resources.

Energy Use

The electricity and natural gas needs of most rural residents and a majority of cities are served by two main providers: Xcel Energy and Red River Valley Cooperative. In addition, there are three municipal service providers including: Moorhead Public Service, Barnesville Municipal Electric Utility, and Hawley Public Utilities.

Moorhead Public Service (MPS) is a consumer-owned electric and water utility, serving more than 13,000 customers. Nearly $8 million in utility revenues are transferred each year to the City of Moorhead's general, capital improvement, and economic development funds. MPS is overseen by the Moorhead Public Service Commission, comprised of five customer-owners appointed by the Moorhead City Council. The Moorhead Public Service Commission approves the utility budget and establishes water and electric rates for consumers. MPS uses 100 percent renewable energy.

Barnesville Municipal Electric Utility serves approximately 1,050 residential customers and 125 commercial and large power customers. Barnesville's power supply is provided by the Western Area Power Administration (WAPA) under a fixed contract rate for delivery, and its supplemental power supply needs are provided by Missouri River Energy Services (MRES).

The charges for services are based on the utility's operating costs and not based on profit expectations. With this, net income is reinvested into infrastructure and equipment upgrades or placed into reserves for future expenditures.

Hawley Public Utilities is one of 12 participants in the Northern Municipal Power Agency (NMPA), a wholesale energy supplier for municipal utilities in western Minnesota and eastern North Dakota. NMPA is also a member of the Minnkota Power Cooperative joint system.

Transportation Energy Use

Transportation energy use in Clay County is almost exclusively attributable to car and truck travel, and is estimated by vehicle miles traveled (VMT) within a county's boundaries, regardless of through traffic or with an origin or destination in the county. VMT includes commercial and freight vehicles, personal cars, and transit vehicles. VMT does not capture energy attributable to rail and airplanes, but those are generally a tiny portion of transportation energy use.

Minnesota Department of Transportation (MnDOT) data show 795,215,011 vehicle miles traveled annually in Clay County in 2018. This is a 55 percent increase from 1992 to 2018, ranking it amongst one the highest county VMT growth rates in Minnesota. The greenhouse gas emissions associated with this travel are approximately 355,064 tonnes of CO2.Transportation fuels also represent a significant portion of total energy expenditures in the county and could provide an opportunity for cost-savings through efficiency and fuel-switching to less expensive or cost-volatile fuels.

Spring Prairie Township

Renewable Energy Resources

Renewable energy technologies are having an increasingly prominent role in energy systems in both Minnesota and Clay County. Utility-scale wind power is the cheapest form of electric generation in the world and the cost continues to go down. The cost of solar is expected to achieve parity with wind in the next couple of years. More projects will come to Clay County in the future and the county will continue to consider compatible land uses and community benefits as they do. The addition of renewable energy production technologies to a farmer/landowner's property as an accessory use can add value to the production of the property and make agricultural uses more feasible.

A good wind energy site needs to meet a number of characteristics, the most important of which is a good wind resource. Other characteristics include soils that can support the weight of the turbine; a site large enough to accommodate safety setbacks from neighboring properties, structures, or other uses; and surrounding land uses for which the visual impact and potential nuisances will not create a conflict, as well as natural resource considerations.

There are a number of state and national resources describing best practices for wind energy. One such resource is the U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines, which includes design considerations and best management practices for site construction and potential remediation of wildlife and habitat impacts.

Tansem Township

Solar is also beginning to become more common as a reliable renewable energy resource in Clay County. One megawatt of energy can be produced on as little as seven acres of land. Because of its relatively small footprint, solar has the potential to offer consistent, drought-resistant income for farmers who agree to have installations constructed on their property. As of 2021, solar costs $31-$42/MWh, making it a least-cost source of generating electricity in the Midwest. Solar is competitive with wind energy ($26-$54/MWh) and natural gas ($44-$73/MWh).

Clay County has seen an increase in one megawatt Community Solar Gardens (CSGs) in the county. CSGs are a subscription based program through Xcel Energy.

Clay County is part of SolSmart, a national designation program that recognizes cities, counties, and regional organizations for making it faster, easier, and more affordable to go solar. The county currently has a SolSmart Silver designation and is working towards a gold designation.

As the county continues to view these renewable energy systems as a benefit to the environment and its residents, it is also important to note that not all residents view these systems as positive additions to the area. Some residents may not view the addition of a large solar energy system or large wind turbines as aesthetically pleasing and may not want to live near them. It is important for the county to continue to provide an avenue for its residents and businesses to use renewable energy. However, it is also important that the county continually reviews its performance standards and their impacts to neighboring property owners.

Although wind and solar are currently the predominant sources for renewable energy in Clay County, as technological advances are achieved, it is possible that other renewable energy opportunities may be developed. The county should monitor and research these opportunities as they become available.

Cultural Resources

Clay County's history has evolved through many eras including Native American habitation, early European exploration, riverboat trade, territorial government and settlement, early agricultural expansion, and today's urbanization. A number of properties, buildings, and landscapes from these years remain today, and the county has been subject to a number of pre-settlement and archaeological surveys.

Historic properties are properties with features such as an archaeological site, standing structures, a site, district, or other property that are listed in the National Register of Historic Places or the State Register of Historic Places, locally designated as a historic site, or are determined to meet the criteria for eligibility.

Seventeen properties and one district within Clay County are listed on the National Register of Historic Places. In addition, 257 archaeological sites are protected by the Office of the State Archaeologist.

Clay County does not have a formal historic preservation commission or historic preservation ordinance that regulates historic structures, sites, or districts. However, the Historical and Cultural Society of Clay County is a nonprofit dedicated to promoting local history in Clay County, through its museum, archives, and programming located at Moorhead's Hjemkomst Center. The Historical and Cultural Society also manage historic sites throughout Clay County, including the Comstock House and the Bergquist Cabin.

Buffalo River State Park Historic District

Parke Township

Utilities and Community Facilities

Water Supply and Treatment

Groundwater supplies drinking water for a majority of residents and businesses in Clay County. The exception is residents living in the area of Moorhead, where the Moorhead Public Water System obtains its water supply from a blend of sources: surface water from the Red River and groundwater from seven wells that draw from aquifers.

There are three primary aquifers in Clay County: the Buffalo, Moorhead, and Kragnes aquifers. The Buffalo Aquifer is the primary source of groundwater in the county. It is approximately one to eight miles wide and 32 miles long. It lies about five miles east of Moorhead. Glacial sediments overlay more than half the aquifer at a depth from 20 to 120 feet. The thickness of the aquifer ranges from 0 feet at the edges to around 200 feet at the center with the flow generally northward or toward adjacent streams. Pump tests of the aquifer resulted in a decrease in the level of the Buffalo River indicating a direct link between the surface and groundwater resources, thus illustrating the potential for pollution in the aquifer.

Historically, the county's aquifers have had abundant water to serve the population. However, the amount of water available in the future may be limited even if aquifers are not completely depleted. Several factors affecting groundwater abundance are:

- The volume of replenishment to or recharge of aquifers from rainfall or snow melt;
- The volume of groundwater pumped out of aquifers; and
- The volume of groundwater naturally discharged to rivers, streams, wetlands, and lakes.

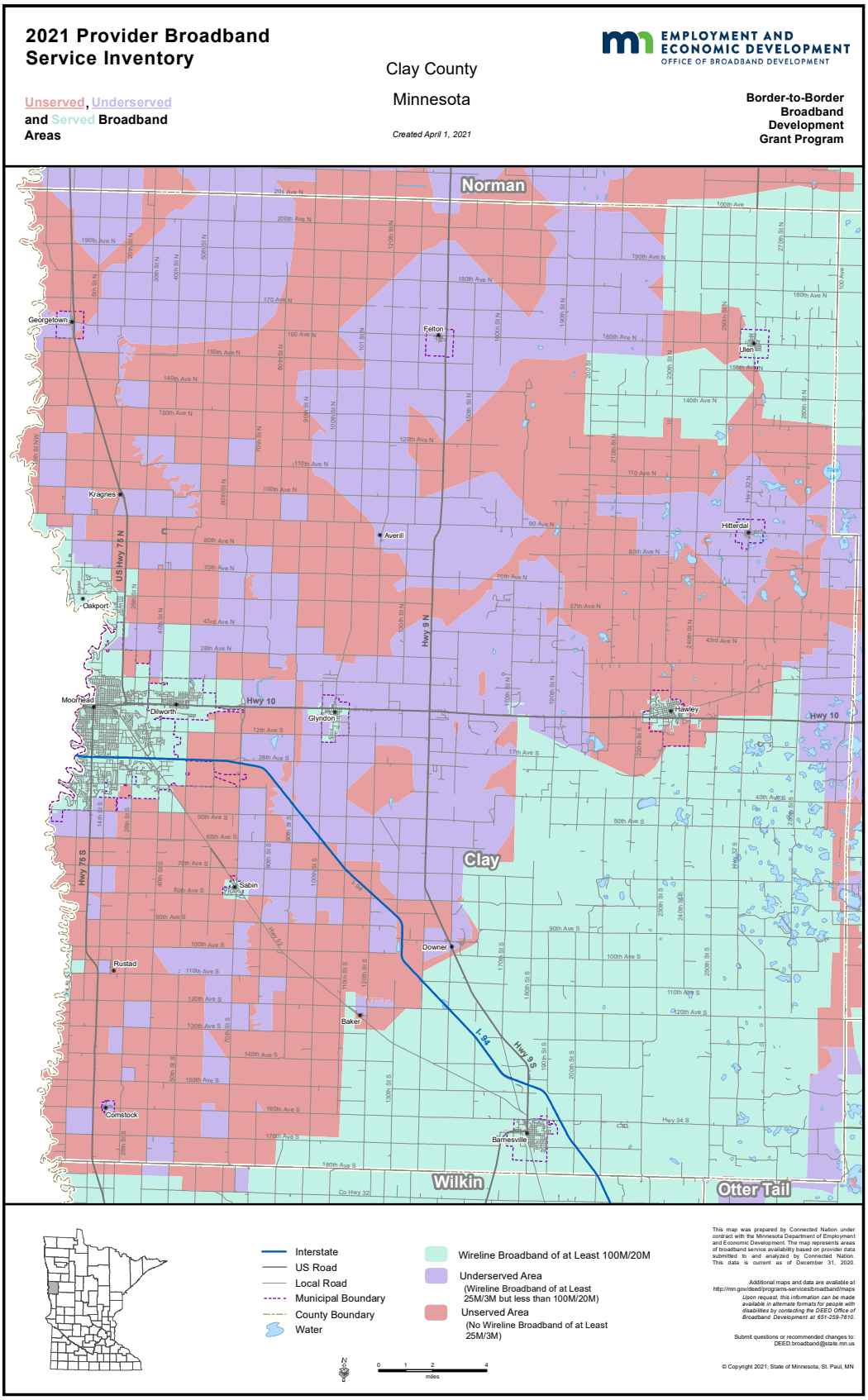
Wastewater and Treatment

In Clay County, wastewater is disposed of by two broad methods: municipal sewer systems or private on-site sewage treatment systems. Most of the county's population is located within cities and is served by a municipal sewer system. Most homes and businesses in the county's townships are served by a private on-site system. The more traditional, big-pipe public sewer service does not exist in the townships primarily due to the low density of homes. In the townships, there is generally sufficient lot area (one acre of non-hydric soil or larger) for an individual sewage treatment system and an average sized house.

Clay County Environmental Health inspects rural and urban septic systems, and issues permits and certifications.

Public Safety

The Clay County Sherriff's Office is the chief law enforcement agency in the county. The Sheriff's Office provides policing services to 30 townships and six incorporated cities. The Sheriff's Office responsibilities include: protecting life and property and preserving peace through programs designed to enforce laws, prevent crimes, and provide an efficient level of response to both emergency and non-emergency requests for law enforcement services; providing a secure and safe correctional facility; promoting coordinated and diverse programs, activities and services with other law enforcement agencies; and developing an effective, motivated workforce through education, training, and career opportunities.



Map 3.10 – Broadband Service Inventory Clay County

Communications

Reliable and affordable wireless and broadband internet plays a fundamental role in education and economic activity. Access to high-speed internet is vital for attracting businesses and helps support workers and students who telecommute or attend classes from home.

In late 2020, Clay County became one of just six test sites in the United States for Starlink, a satellite-based internet service. Starlink's network being currently developed by SpaceX aims to provide low-cost internet service to remote locations across the world. Starlink service is currently available in the eastern communities of Hitterdal and Hawley.

The Minnesota Department of Employment and Economic Development (DEED) reports on the number of households in counties across Minnesota that have access to broadband service. In Clay County:

- 95.7 percent of households are served by 25 megabytes per second (Mbps) download / 3 Mbps upload speeds
- 89.1 percent of households are served by at least 100 Mbps download / 20 Mbps upload speeds

The National Telecommunications and Information Administration (NTIA) also reports on key indicators of broadband access across the country, including U.S. Census information, speed test data, and environmental justice communities.

Higher Education

Clay County is home to three institutions of higher learning: Minnesota State University Moorhead (MSUM), Concordia College, and Minnesota State Community and Technical College (M State). All three institutions are located in Moorhead.

Minnesota State University Moorhead is a public university in Moorhead. The school had an enrollment of 7,534 students in 2019 and 266 full-time faculty members. MSUM is a part of the Minnesota State Colleges and Universities system and offers 76 undergraduate majors with 99 emphases and 114 graduate degree programs.

Concordia College is a private college founded in 1891 and offers 61 majors and 12 pre-professional programs. The college had 2,042 enrolled students in 2019.

Minnesota State Community and Technical College (M State) in Moorhead is a comprehensive community college offering both technical and career options and a full transfer degree program.

Ulen Township

Outdoor Recreation

State Parks

The State of Minnesota operates parks, management areas, and special recreational destinations throughout the state, with a mission of preserving natural areas and providing natural resource-based educational and recreational opportunities. Buffalo River State Park is characterized by large swathes of northern tall grasslands bisected by the wooded banks of the Buffalo River. Together with the adjacent Bluestem Prairie Scientific and Natural area owned by The Nature Conservancy, it protects one of the largest and highest-quality prairie remnants in Minnesota.

Buffalo River State Park was established in 1937 and developed by the Works Progress Administration (WPA). Three buildings and three structures built in the Natural Park Service rustic style were added to the National Register of Historic Places in 1989. The park was originally focused on providing outdoor recreation amenities like swimming. The park was expanded beginning in the 1960's as the quality and rarity of the surrounding prairie was recognized. The 6,078 acre Scientific and Natural Area (SNA) section is used for environmental education by local schools and regional colleges and universities including Minnesota State University Moorhead. The area is also a destination for viewing the spring courtship ritual of the greater prairie chicken.

Wildlife Management Areas

Wildlife management areas (WMAs) are part of Minnesota's outdoor recreation system and are established to protect those lands and waters that have a high potential for wildlife production, public hunting, trapping, fishing, and other compatible recreational uses. They are the backbone to DNR's wildlife management efforts in Minnesota and are key to:

- Protecting wildlife habitat for future generations;
- Providing citizens with opportunities for hunting, fishing, and wildlife watching; and
- Promoting important wildlife-based tourism in the state.

In 2021, there were 19 WMAs in Clay County.

Intergovernmental Coordination

Intergovernmental coordination may be defined as any arrangement through which two or more jurisdictions communicate visions and coordinate plans, policies, and programs to address and resolve issues of mutual interest. It can include sharing information, facilities, and equipment, or involve entering into formal intergovernmental agreements.

Minnesota Department of Health

The MDH has strong partnerships with a range of organizations, tribal governments, and local health agencies such as Clay County Public Health. The department's mission is to protect, maintain, and improve the health of all Minnesotans.

Minnesota Pollution Control Agency

The MPCA issues industrial stormwater permits, water permits, air emissions permits, and solid waste permits. The landfill and future Resource Recovery Campus are permitted by the MPCA. The MPCA also issues water quality permits for nonmetallic mining and associated activities. This permit is required at facilities that mine construction sand and gravel, operate hot mix asphalt production areas, and/or produce ready-mix concrete.

The Clay County Household Waste (HHW) Program operates with a permit from the MPCA. It is permitted to accept waste from Clay County households only and not from businesses, nonprofits, or institutions. Large feedlots, those requiring federal permits, are also regulated by the MPCA.

The MPCA also regulates construction site stormwater permits. These are required for projects disturbing one acre or more of soil, or where the MPCA determines that certain construction activities pose a risk to water resources.

Fargo-Moorhead Metropolitan Council of Governments

The Fargo-Moorhead Metropolitan Council of Governments (Metro COG) is the metropolitan planning organization (MPO) for Dilworth, Moorhead, Fargo, West Fargo, Horace, and parts of Clay County and Cass County.

Metro COG is governed by its Policy Board composed of local and state officials. In addition to a biannual Unified Planning Work Program (UPWP) providing descriptions of projects and studies the organization will pursue, the two main products of Metro COG are the Metropolitan Transportation Plan (MTP) and the short range plan, the Transportation Improvement Program (TIP). The MTP sets a long-term vision for transportation improvements in the metropolitan area. The four-year TIP serves to prioritize those improvements and sets more specific timelines for their implementation. Both plans are regularly reviewed and updated (MTP every five years; TIP every year).

Metro COG is an important partner when it comes to soliciting federal funding for local planning projects in Clay County. In many instances, Metro COG is able to provide up to 80 percent on local or regional studies impacting transportation and land use. As the community grows and as needs arise, Clay County should continue to partner with Metro COG on future planning studies.

West Central Initiative

West Central Initiative (WCI) is a regional community foundation that serves nine counties in west central Minnesota, including Clay County. WCI helps leverage resources in west central Minnesota communities by working with communities, assisting with funding and economic development tools for business development and early childhood initiatives, providing regional planning services for transportation and economic development planning, and offering a wide range of donor services and stewardship programs.

State Agencies

Clay County works with a number of state agencies such as the Minnesota Department of Transportation (MnDOT), Minnesota Department of Natural Resources (DNR), and the Minnesota Board of Water and Soil Resources (BWSR).

Clay Soil and Water Conservation District

A partner in education and conservation, the Clay Soil and Water Conservation District (SWCD) coordinates with several county departments to deliver conversation programs to protect and enhance the county's natural resources. The SWCD is the Wetland Conservation Act Coordinator and Agricultural Inspector for the Clay County. The SWCD also assists feedlot operators with registration, questions pertaining to feedlot regulations, and compliance checks.

Watershed Districts

Watershed districts are special purpose units of local government that have been created to solve water resource issues on a watershed basis. Clay County includes two primary watersheds and three smaller, secondary watersheds, all organized under two organized watershed districts – the Buffalo-Red River Watershed District and the Wild Rice Watershed District.

The county works with these districts to implement water quality improvement projects, as specified in local water management plans. Both the Buffalo-Red River Watershed Comprehensive Watershed Management Plan and the Wild Rice – Marsh River Watershed Plan were completed in 2020. The primary focus of these plans is to reduce erosion and flood damage in the watershed by retaining water, reducing runoff, and managing the land, with the secondary focus to enhance agricultural productivity and natural habitats. Both plans identify and prioritize issues and establish measurable short- and long-term goals.