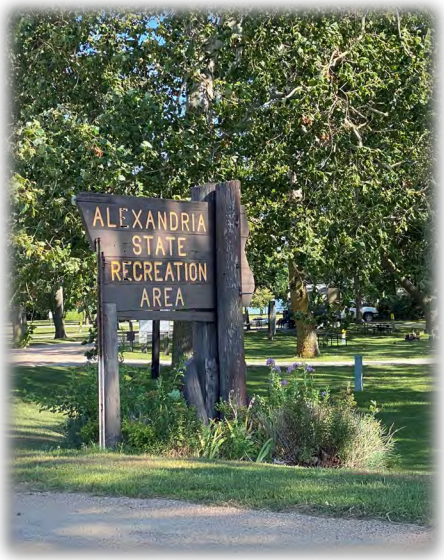
Jefferson County, Nebraska

Comprehensive Plan

2026

Jefferson County Est. 1871 Nebraska

MPC
MARVIN PLANNING CONSULTANTS
Specializing in Municipal, County and Neighborhood Planning



Plan Participants

County Board:

Michael T. Dux - Chairman
Mark Schoenrock - Vice Chairman
Danielle Schwab
Gale Pohlmann - Former County Board Member

Planning and Zoning Commission:

Randy Welsch - Chairman
Mike Hansmire - Vice Chairman
Dustin Fairley - Secretary
Andrew Snyder
Bruce Livingston
Damon Thomas
Ethan Thorp
James Hahn
Kevin Banahan
CJ Forsgren - Alternate

Board of Adjustment:

Brandon Pohlmann - Chairman
Vicki Haskell - Vice Chairman
Randy Saathoff - Secretary
Kevin Banahan - P&Z Commission Representative
Neal Onnen
Brian Hennerberg - Alternate Member

Kris Riggle - County Clerk
Joe Casson - County Attorney
John McKee, Planning & Zoning Administrator

Planning Consultant

MARVIN PLANNING CONSULTANTS
Specializing in Municipal, County and Neighborhood Planning

Marvin Planning Consultants, David City, Nebraska

RESOLUTION 2026 - 01

BE IT RESOLVED BY THE CHAIRMAN AND COUNTY BOARD OF COMMISSIONERS OF JEFFERSON COUNTY, NEBRASKA:

WHEREAS, that upon said hearing held the 27th day of January, 2026, the Jefferson County Board of Commissioners recessed the final consideration of said recommendations from the Jefferson County Planning and Zoning Commission pending a working review of said recommendations, and:

WHEREAS, the Jefferson County Board of Commissioners, after careful review and consideration, finds that the Comprehensive Plan as submitted by the Jefferson County Planning and Zoning Commission is adequate for the purpose prescribed by law and that the same should be approved.

BE IT FURTHER RESOLVED; That pursuant to the recommendation of the Jefferson County Planning Commission for Jefferson County, Nebraska, and after notice given and public hearing thereon, as required by *Nebraska State Statutes* § 19-901, the Jefferson County Board of Commissioners hereby adopts the Comprehensive Plan. A copy of said document shall be kept in the office of the Jefferson County Clerk.

BY ORDER OF THE CHAIRMAN AND COUNTY BOARD OF COMMISSIONERS OF JEFFERSON COUNTY, NEBRASKA THIS 24th DAY OF MARCH, 2026.

ATTEST:

Kristina Riggle, County Clerk

JEFFERSON COUNTY

Michael T. Dux, Chairman

The foregoing resolution was presented and after discussion it was moved by Schoenrock and seconded by Schwab that said resolution be adopted, and upon a roll call vote, the Jefferson County Board of Commissioners voted as follows:

Ayes: 3
Nays: Ø
Absent: Ø

The Chairman then declared said motion duly carried and said Resolution adopted this 24th day of March, 2026.

RECORD OF AMENDMENT

JEFFERSON COUNTY, NEBRASKA, COMPREHENSIVE PLAN

Chapter One
The Comprehensive Plan

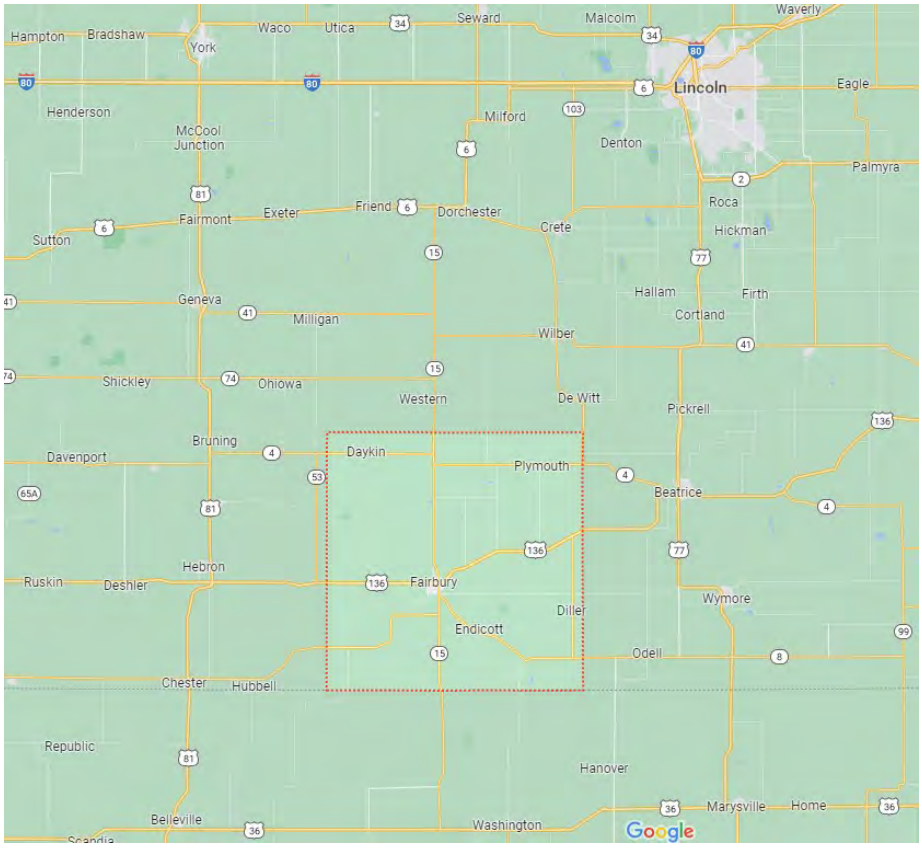
Jefferson County is home to about 7,136 residents in southern Nebraska on the Kansas state line. There are nine incorporated communities in the county:

- City of Fairbury (county seat)
- Village of Daykin
- Village of Diller
- Village of Endicott
- Village of Harbine
- Village of Jansen
- Village of Plymouth
- Village of Reynolds
- Village of Steele City

There are also unincorporated communities at Gladstone, Powell, and Thompson.

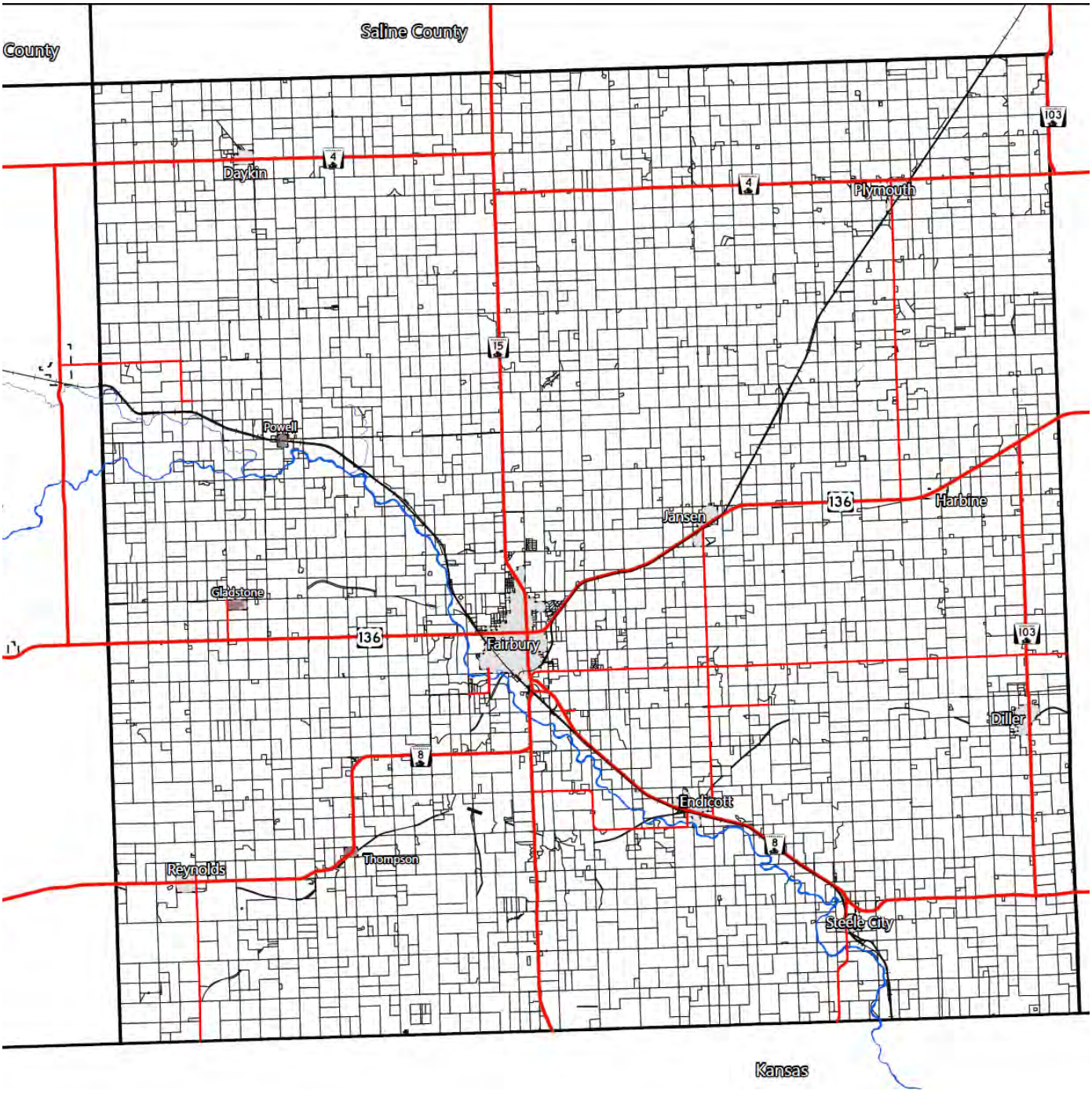
Jefferson County, Nebraska, is approximately 576 square miles, four townships by four townships tall and wide. Thayer County is to the west. Fillmore County to the northwest, Saline County to the north, and Gage to the east. Republic and Washington counties in Kansas, are to the south. Nebraska Highway 15

FIGURE 1.1: JEFFERSON COUNTY AND SOUTHEAST NEBRASKA



Source: Googlemaps

FIGURE 1.2: JEFFERSON COUNTY AND COMMUNITIES



Source: Marvin Planning Consultants and ESRI

crosses the county north-to-south, connecting with US Highway 6 and Interstate 80 south of Seward. US Highway 136 crosses east to west, between Beatrice and Hebron.

HISTORY

Jefferson County is a square with each side 24-miles long—four townships by four townships. The terrain consists of low rolling hills at an average elevation of about 1,200 feet above sea level. The Little Blue River flows southeastward through the county towards the Kansas River, and eventually the Missouri River. Big and Little Sandy Creeks water the northwest portion of the county. Rose Creek feeds into the Little Blue.

The prairie along the Little Blue River was once home to the Otoe and Pawnee tribes. It is said in 1832, the Pawnee fought a pitched battle against encroachment by the Sioux tribe at the junction of the Big Sandy and Little Blue Rivers, with many casualties on both sides. Two trappers by the names Moncreve and Conley lived with the Otoe tribe near there for over 20 years.

Beginning in 1834, emigrants from the eastern sates took to the Oregon Trail. They left the vicinity of Independence, Missouri, crossing northeast Kansas and following the Little Blue River across what was to become Nebraska on their way to the Platte River and further west. Ion June 22,1842, John C. Fremont and Kit Carson carved their name in rocks along Rock Creek while leading a survey of the Oregon Trail for the US Congress.

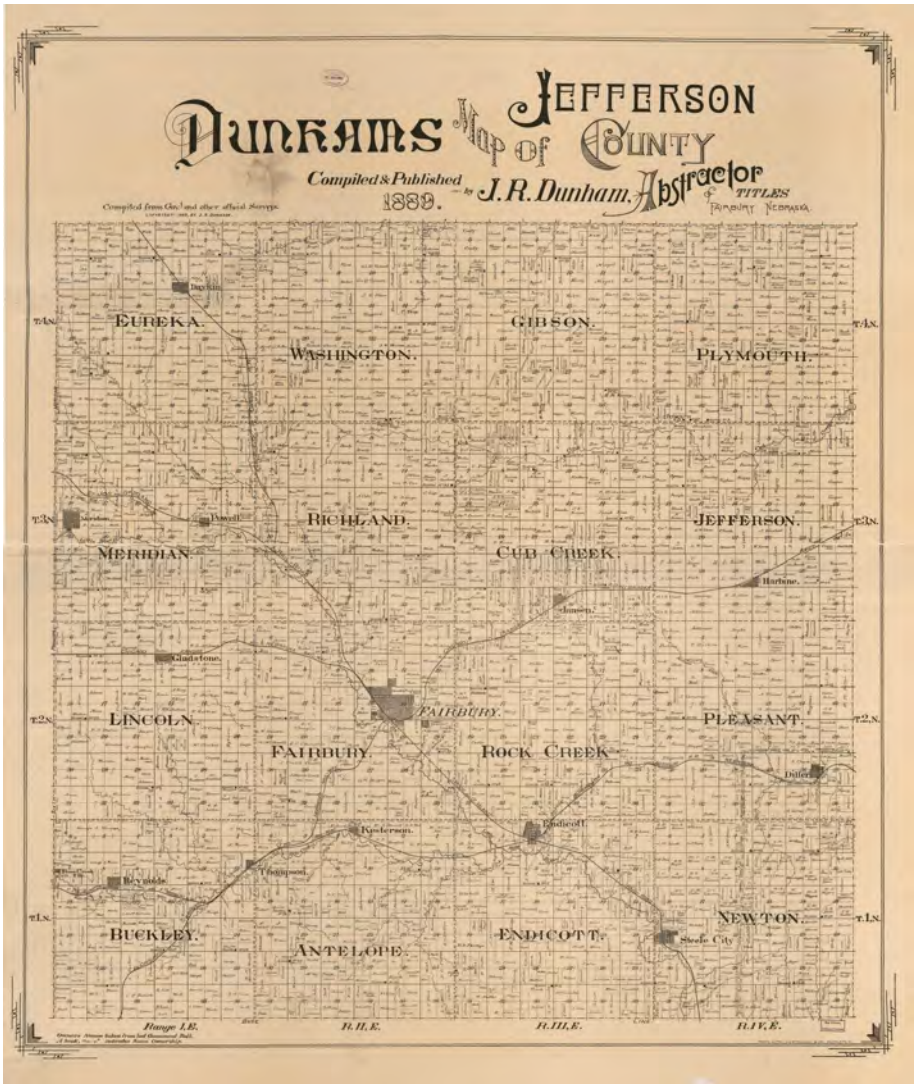
A settlement at Big Sandy was established in 1856 by Dan Patterson. Rock Creek Station (also known as Turkey Creek Station) was established by Newton Glenn in 1857 near the present site of Endicott.

In 1860-61, the Pony Express crossed the county, generally following the Oregon Trail route along the Little Blue River. In 1861, a prior owner-operator of Rock Creek Station was shot and killed by a young James Butler Hickok. The site was reconstructed in the twentieth century and serves as a State Historical Park.

There were also other stations in the county. Rock House Station on Caldwell's Ranch was located at the junction of the Oketo Cutoff and the Oregon-California Trail. Virginia Station was north of Fairbury, and Helvey Ranch Station was located at the junction of the Nebraska City Trail and the Overland Trail.

Settlements were reported on the Little Blue as early as 1854, and the first government surveys were made in 1857. Jefferson County was created by the Nebraska Territory Legislature on January

FIGURE 1.3: DUNHAM'S MAP OF JEFFERSON COUNTY, 1889



Source: Library of Congress

26, 1856, under the name of "Jones County" At the same time the adjoining county on the west, now Thayer County, received the name of Jefferson, third president of the United States. From 1857 to 1864, the county was attached to Gage County for judicial purposes. In 1860, the first land warrant was placed in present Jefferson County, by Dennis Myers on Cub Creek.

In 1864, Jefferson County organized by holding its first election at Big Sandy. An "Act to Enlarge Jefferson County" passed the Legislature on the 18th of February, 1867, uniting Jones to Jefferson County. The community of Big Sandy served as the county seat, until records were removed to Fairbury in 1868. Later the settlement's name was changed to Meridian.

The Legislature of 1870-71 again divided the two counties along the Sixth Principle Meridian with the east retaining the name of Jefferson and the west assuming the name Thayer. A county courthouse was constructed at Fairbury in 1872, which was replaced by the current courthouse in 1892.

Grace Lutheran Cemetery
Source: Marvin Planning Consultants

In 1872, the St. Joseph and Denver Railroad laid tracks from Kansas through Fairbury, extending to Hastings through Thayer County. The route ran through Steele City (founded in 1868) which ran through Endicott southeast of Fairbury. Many of the businesses at the community of Jenkin's Mill (established in 1867) and Freeport (1868) moved to Steele City. This railroad line was purchased by the Union Pacific in 1885 and renamed the St. Joseph and Grand Island, and is still in use today. UP interests built the affiliated Kansas City & Omaha Railroad line cross country north out of Fairbury through Daykin, connecting farm markets with Omaha.

About 1880, the Burlington and Missouri River Railroad (B&M)—a subsidiary of the Chicago, Burlington and Quincy Railroad (CB&Q)—built the Republican River branch line across the southern part of the county. This lead to the establishment of Diller, Reynolds, and other townsites on the "Burlington Route". Endicott is located at the junction of the UP and the old Burlington Route. Rose Creek City was established with a sawmill in 1862, but when the railroad bypassed the settlement many of the buildings moved to the new village at Reynolds.

The Chicago, Kansas & Nebraska Railway commenced construction at Fairbury in 1886, east to St. Joseph and west towards Colorado Springs. The villages of Jansen and Harbine were established east of the county seat. By 1891, this line was absorbed by the Chicago, Rock Island, and Pacific Railroad, also known as the "Rock Island Route". The Rock Island also constructed a line to Lincoln across the northeast portion of Jefferson County, which is still in use today by the Union Pacific. The community of Plymouth was relocated to the new rail line. The Fairbury Rock Island Depot and Freight House, built in 1913, housed the Western Division Headquarters for the Rock Island Line.

COMPREHENSIVE PLAN

The Comprehensive Plan is Jefferson County's primary policy guide concerning the location, character, and type of growth and development anticipated over the next 20 years. The Comprehensive Plan is a local initiative intended to:

I. Promote orderly growth and development in the county;
II. Provide policy guidance to enable citizens and elected officials to make better informed decisions about the future of the county;
III. Provide a guideline for the location of future development and uses within the planning jurisdiction of Jefferson County;
IV. Provide a vision and direction for the future planning period of the county, and;

The Plan is only one of several tools within the toolbox which helps guide the community into the future.

V. Act as an information and management tool for County leaders to use in their decision-making process when considering future developments.

The comprehensive plan is developed, reviewed, and implemented by the residents and property owners of Jefferson County, Nebraska. A strong local planning effort gives local leaders the tools to address national issues such as economic restructuring or renewable energy policy. The Comprehensive Plan is not an initiative of the Federal government. It is a local effort based in the laws of the State of Nebraska.

The Comprehensive Plan is a vision presented in text, graphics and tables representing the desires of the county and its residents for the future.

The Comprehensive Plan is not a static document; it should evolve as changes in the land use, population, or local economy occur during the planning period (2025 to 2045).

The Planning Process

The Comprehensive Plan process results in locally-important general goals and policies, based upon current and future issues faced by the County and its residents. These are intended to be practical guidelines for addressing existing conditions and guiding future growth.

In conjunction with the development of general goals and policies, the planning team performed data collection phase, with information providing a snapshot of the past and present conditions within the county. Analysis of data provides a basis for developing forecasts of future land use demands, as well as future needs regarding housing and facilities.

The *Jefferson County Comprehensive Plan* is a *blueprint* designed to identify, assess, and develop actions and policies in the areas of population, land use, transportation, housing, economic development, community facilities, communications, and utilities. The comprehensive plan contains recommendations to help the County and its residents improve their property and quality of life. Tools, programs, and methods necessary to carry out the recommendations are identified through the planning process.

This plan is not intended to sit idly on a shelf collecting dust. Implementation of development policies contained within the comprehensive plan is dependent upon adoption of the plan by the governing body and the leadership exercised by the present and future elected and appointed officials of Jefferson County.

Plan Preparation

This plan was prepared under the direction of Jefferson County Planning and Zoning Commission, with the assistance and participation of the Jefferson County Board of Commissioners, County staff, and citizens of Jefferson County.

Planned growth will make the County more effective in serving residents, more efficient in using resources, and able to meet the standard of living and quality of life every individual desires.

The *Jefferson County Comprehensive Plan* is intended to guide decision making over the next 20 years. The goals and action items are intended to be achieved over the long term. However, County decisionmakers should review the plan annually and update the document at least every 10 years (2035), or when major, unanticipated opportunity arises. Completing updates every ten years or so will allow the County to incorporate new ideas and trends not apparent at this time.

Plan Components

Nebraska State Statutes require the inclusion of certain elements in a Comprehensive Plan. A County "Comprehensive Development Plan," as defined in Neb. Rev. Stat. §23-114.02 (Reissue 1997), "shall consist of both graphic and textual material and shall be designed to accommodate anticipated long-range future growth."

The Comprehensive Plan is comprised of the following chapters:

1) Introduction
2) Community Engagement
3) Population
4) Housing
5) Economic Development
6) County Facilities
7) Parks and Recreation
8) Public Safety
9) Communications, Utilities, and Energy
10) Natural Resources and the Environment
11) Hazard Mitigation
12) Land Use
13) Transportation
14) Implementation

Analyzing past and existing demographic, housing, economic and social trends permit the projection of likely conditions in the future. Projections and forecasts are useful tools in planning for the future; however, these tools are not always accurate and may change due to unforeseen factors. Also, past trends may be skewed or the data may be inaccurate, creating a distorted picture of past conditions. Therefore, it is important for the County Planning Commission and other County leaders to closely monitor population, housing, and economic conditions impacting the region.

The Comprehensive Plan records where Jefferson County has been, where it is now, and where it likely will be in the future. The Comprehensive Plan is an information and management tool for County leaders to use in their decision-making process when considering future developments. The Comprehensive plan is not a static document; it should evolve as changes in the land-use, population or local economy occur during the planning period.

County Jurisdiction

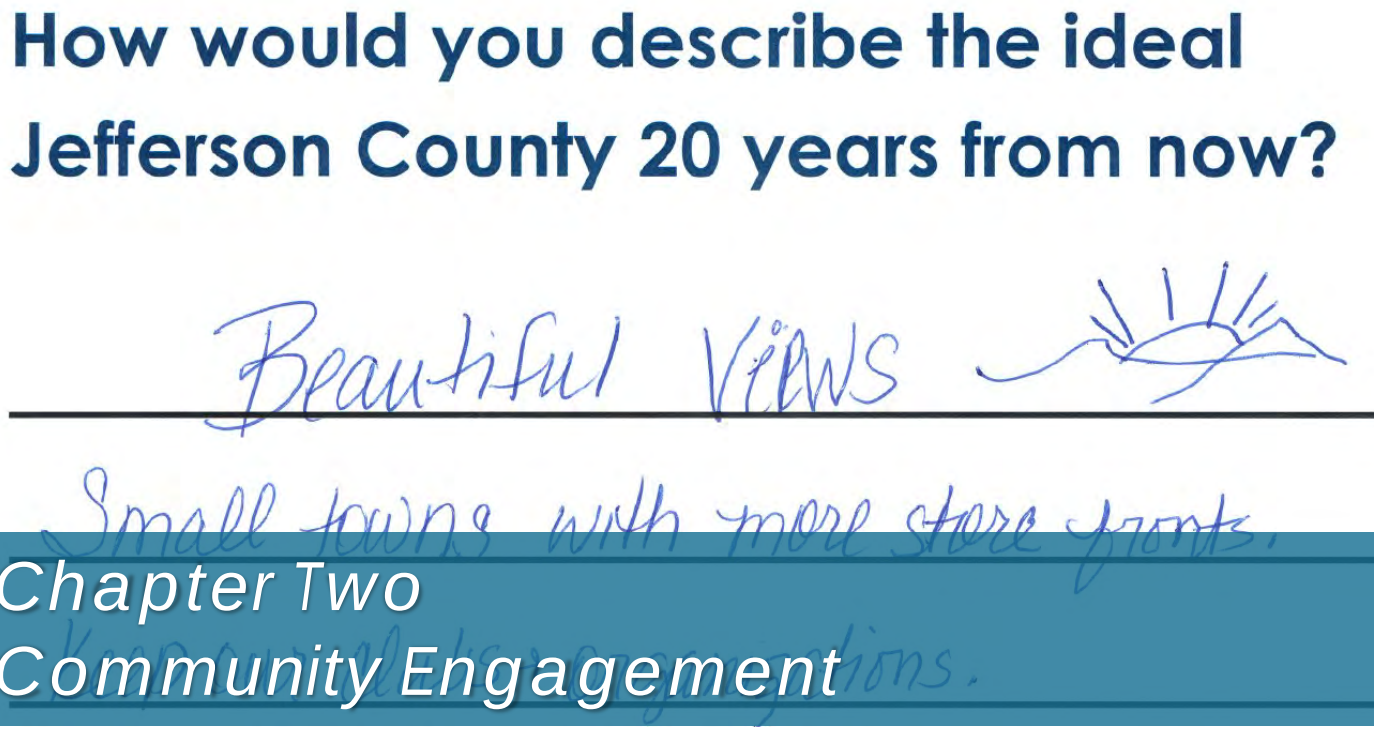
The Jefferson County Board of Commissioners, which is a board of elected officials, performs the governmental functions for the County. Each incorporated community in the county also has elected officials and officers overseeing how their community is governed. The planning and zoning jurisdiction of Jefferson County, pursuant to Neb. Rev. Stat. §23-114 (Reissue 1997), includes all of the unincorporated portions of the county, excluding the established extraterritorial jurisdiction (ETJ) of any incorporated city or village (Neb. Rev. Stat. §17-1001 (Reissue 1997)).

- Diller and Plymouth have zoned their full one-mile ETJ,
- City of Fairbury has zoned an ETJ inside their one-mile planning area, along property lines.

Every effort has been made to involve the incorporated municipalities of Jefferson County participated in preparation of this plan, and to coordinate plans and policies with those local jurisdictions.

PROCESS FOR ADOPTION

When it is time to adopt this Comprehensive Plan, the Board of Commissioners adopts the plan by Resolution. Adoption of the Comprehensive Plan requires both the Planning Commission and County Board to hold separate Public Hearings. After the Planning Commission Public Hearing, the Planning Commission makes a recommendation to the Board of Commissioners, who then holds their Public Hearing. Notice of both public hearings is required to be published in the newspaper of general circulation a minimum of ten days prior to each hearing, and as specified in Neb. Rev. Stat. §23-164 (Reissue 1997).



Chapter Two
Community Engagement

Community engagement is critical to a successful planning effort. Community engagement both provides essential information as the basis of the plan and policies, as well as determining the public's priorities for future action implementing the plan.

This chapter describes the community engagement efforts of the planning process, led by the Advisory Committee. This includes:

- Public Meetings
- Website
- Surveys

ADVISORY COMMITTEE

The Jefferson County Planning and Zoning Commission served as the advisory committee for the comprehensive plan update. Marvin Planning Consultants (MPC) worked with County staff, elected officials, and volunteers to review and update data and information for the Comprehensive Plan. The Planning and Zoning Commission also discussed implementation through zoning ordinance revisions and updates throughout the process.

The MPC planning team held a kick-off joint meeting with the Jefferson County Board of Commissioners and County Planning and Zoning Commission on October 3, 2023, at the County Courthouse in Fairbury. The planning team outlined the planning process, and discussed options for public involvement and community engagement.

After the regular Planning and Zoning Commission meeting in January was snowed out, the planning team gave the committee an update on February 8, 2024. They discussed community outreach and initial results of data analysis (Chapters Three, Four, and Five of this plan).

MPC staff continued to meet with County staff and officials throughout the planning process.

PUBLIC MEETINGS

Town Hall

A Town Hall public meeting was held on Tuesday June 6, 2024, at the Jefferson County Fairgrounds in Fairbury. The meeting and survey (following) were advertised by social media, and flyers were placed throughout the county. Local newspaper and broadcast media also published news stories in advance and with results of the meeting.

MPC and County staff opened the meeting with a brief overview of the Comprehensive Plan update process.

NEWS CHANNEL NEBRASKA SOUTHEAST

Region: Southeast >

NEWS

Jefferson County continues to prioritize listening to the opinions of its residents

Jefferson County asked its residents what they think Jefferson County will look like in 10 years

Wednesday, June 5th 2024, 7:14 PM CDT

By Kyle Mathas

Jefferson County continues to prioritize listening to the opinions of its residents
Courtesy: OI Red 99.5

FAIRBURY, Neb. -- Jefferson County asked its residents what they think and want the county to look like in 10 years.

In the Comprehensive Plan and Zoning Update Town Hall Meeting Tuesday, around 40 residents attended where they brainstormed ideas relating to the future of the county.

Marvin Planning Consultants was the organization running the event and asked some questions including:

- What do you love most about Jefferson County?

The residents live or have a business in the county because they are able to grow crops well and it has affordable housing.

- What are the biggest challenges with Jefferson County right now?

Some of the challenges residents presented was keeping young people in the county, financing EMS services and the problem of drug use.

- How would you describe the ideal Jefferson County in 20 years?

Residents want to see no property tax in the county, small businesses to return to the square, better roads, a growing population and good high speed broadband internet.

MPC will take the comments and requests, evaluate them and then have follow up conversations with organizations like the county board, businesses and the planning and zoning department.

The county has heard the requests and comments of its residents and will propose goals and actions that fit the county and its future.

Jefferson County Town Hall Meeting
Source: Marvin Planning Consultants

Participants engaged in a conversation facilitated by the planning team. After discussion, a member of each small group reported out highlights to the larger group. The Planning Team transcribed all answers to the five questions over both evenings, which informed all elements of this plan.

Why do you choose to live or have a business in Jefferson County?

- Good place to live, grow crops & family
- Good soil & water
- Not Lincoln/Omaha -- Geography
- Small Community
- Born & Raised Here
- Affordable (x2)
- Watch out for each other
- Moved back home

What are the biggest opportunities Jefferson County has for the future?

- Ag commodities/economy
- Recreation areas
- Libraries & Historical Society
- Land Bank
- Fresh Food
- Retain existing manufacturing
- Tourism

What are the biggest challenges Jefferson County has right now?

- Keeping young people here
- Keep kids busy
- EMS Services
- Bridges outdated
- Drug use
- Lack of daycare
- Capital to grow business
- Workforce--welfare/lack of employees
- Tax base
- Workforce housing
- Declining population
- Electronic communication & transparency

What do you love about Jefferson County?

- Cost of living
- Friendly
- Trees & Prairies
- Higher Ed opportunities
- Beautiful views
- Quiet
- History
- Hunting
- Events
- Smells like Bacon!
- Rural setting/small town values

How would you describe the ideal Jefferson County 20 years from now?

- Self sustaining
- Flat tax
- Medium size business growth
- Better roads
- Multiple land use
- Ag variety
- Property kept up
- Population growing
- Good local schools
- Good Broadband & Cell Service

Detailed notes from the Town Hall meeting are included in Appendix A.

Focus Groups/Interviews

The planning team met with community members in small groups and individually, in person and remotely, throughout the planning process. The qualitative data provided contributes to all elements of this plan.

Website

A special project website was established at the onset of the planning process. The project website served as a vehicle for community input on the project, and included a link to the survey.

Surveys

The Jefferson County, Nebraska, Comprehensive Plan Survey was developed in support of this planning effort, to encourage community engagement. The survey was open and advertised May through August, 2024, in conjunction with the Town Hall.

Residents were encouraged to complete the survey online on the SurveyMonkey website. Paper copies were also made available across the county.

There were 195 respondents to the survey, with 98% from Jefferson County. Over 1/3 (39%) live in rural Jefferson County, and almost as many (39%) live in Fairbury. All of the villages in the county were represented in the survey.

Over half (59%) stated they were employed full-time, 20% were self-employed, and 15% were retired. The largest number of respondents worked in agriculture (26%). The largest number (51%) work in Fairbury, while 20% work at home/online.

Survey Results

Respondents expressed a wide variety of opinions, including:

- More than half of respondents agree it is important to preserve and share Jefferson County history, Jefferson County has a likable rural and small-town atmosphere, and that Jefferson County is a good place to live.
- More than half (56%) agree retention and expansion of current business is key to Jefferson County's economic survival.
- About half of respondents (51%) replied neither high nor low to the question "Is Jefferson County a quality place to live?" while 27% replied "high quality", and 6% "very high quality".
- 64% strongly agree and 31% agree the aquifer (ground water) is an important asset and should be conserved.
- 57% strongly agree and 38% agree lakes, reservoirs, and streambeds are important assets.
- Over 70% go to Lincoln for dining sit-down service, and 2/3 (67%) for clothes.
- 94% stated water quality and availability are important; environmental concerns; 72% said soils, and 69% said agricultural land.
- Almost half (47%) replied they are confident in Jefferson County's future, while 38% stated they were not sure.

A summary of survey results is included in the appendices. Results of the survey, as well as all aspects of community engagement, inform each element of this plan.

GOALS AND ACTIONS

Planning for future land use and development is an ongoing process of goal setting and problem solving aimed at creating the conditions for a better quality of life. Planning focuses on ways of solving existing problems and providing an action-oriented tool for local leaders and residents to achieve their vision for the future.

The goals of the *Jefferson County Comprehensive Plan* are intended to address existing conditions and trends, as well as issues and concerns of citizens as expressed through community engagement.

Goals for the comprehensive plan are presented throughout the document. Following chapters contains goals and action items to address each element.

- Goals are statements of what the citizens of Jefferson County want to achieve. A goal should be stated in a manner allowing it to be accomplished. Goals in this plan may include specific policies for land use and development. Goals inform policies of the County.
- Action Items are specific statements in support of goals. Action items are future-focused measures, projects, plans, or activities proposed to implement the comprehensive plan in the real world.

It is important to establish goals and actions for a range of time including on-going activities. Goals and action items should be evaluated, reviewed, and updated regularly as conditions, resources and needs change.

TOOLS AND STRATEGIES

There are a variety of tools and strategies lending further support to achieving the County's goals beyond specific action items identified in the comprehensive plan. These activities should be reviewed during regular plan maintenance and included in the plan if and when appropriate.

PLAN MAINTENANCE AND REVIEW

As stated in the introductory chapter, the comprehensive plan is intended to address growth and development anticipated over the next 20 years. Goals are focused on the next 10 years, with specific action items identified for short-term and long-term implementation. As noted in the final chapter, Implementation and regular review are essential to bring this plan to life.

Chapter Three Population

Population affects every aspect of a county from jobs and income, housing, infrastructure, public services, and fiscal stability. Population grows and contracts as people are born and die, or move in and move out of the county. It is critical to understand what impacts population trends may have on the local area and the region. Understanding where the county has been and where it is currently, helps understand where it is likely to go moving forward

Understanding historic population trends aids in identifying where the population may grow in the future and in determining potential impacts on demand for goods, services, public safety, education, and other needs. Projections provide guidance for Jefferson County to base future land use and development decisions. However, population projections are only estimates and unforeseen factors will likely affect projections.

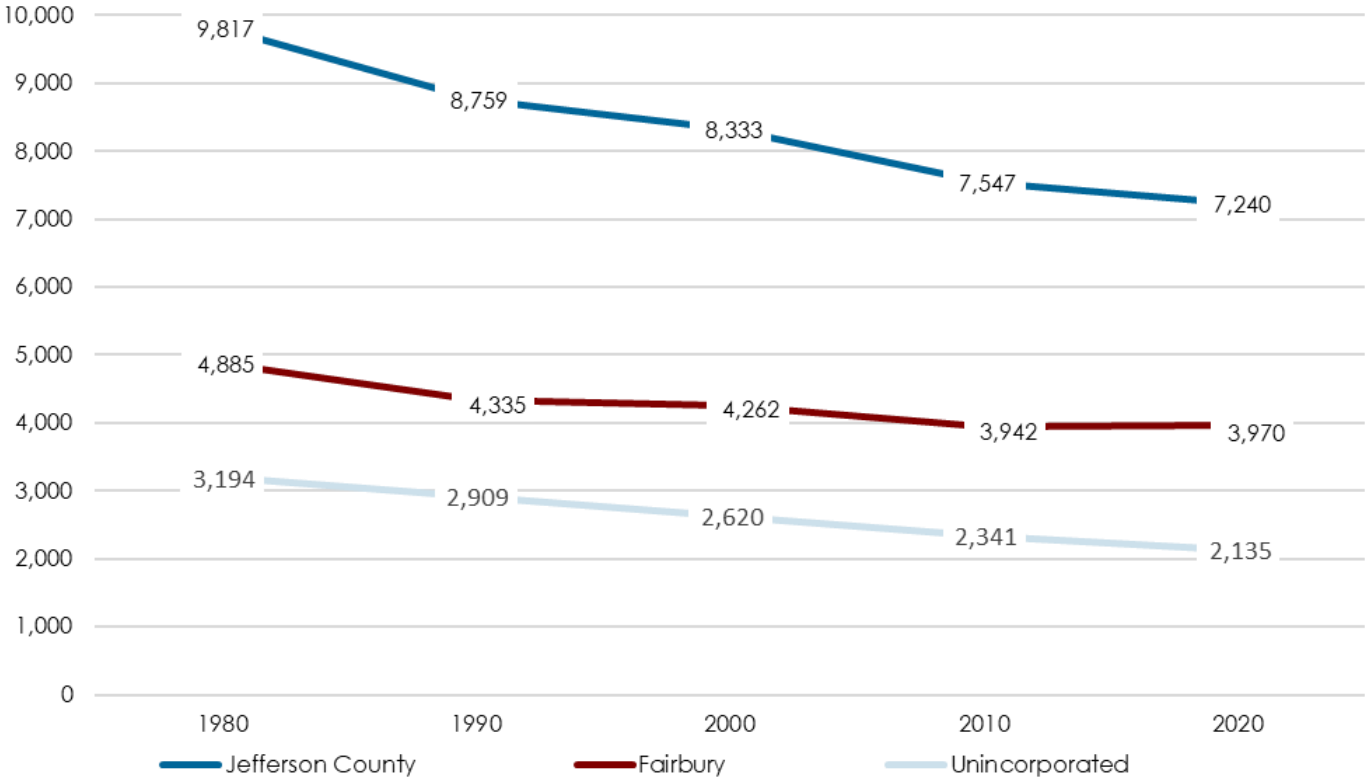
The analysis in this section relies mostly on American Community Survey (ACS) data which are estimates based on the US Census Bureau's five-year running survey of all Americans. The primary data sets are the 2009-2013 data series for 2013, and the 2019-2023 data series for 2023.

TRENDS ANALYSIS

The US Census Bureau's latest estimate of Jefferson County's population is 7,136 residents as of 2024, up year-on-year. The Census Bureau's official decennial population counts for 1980 through 2020 for Jefferson County and its municipalities are shown in Figures 3.1 and 3.2 following. These data provide a look at where the county has been and informs the projection

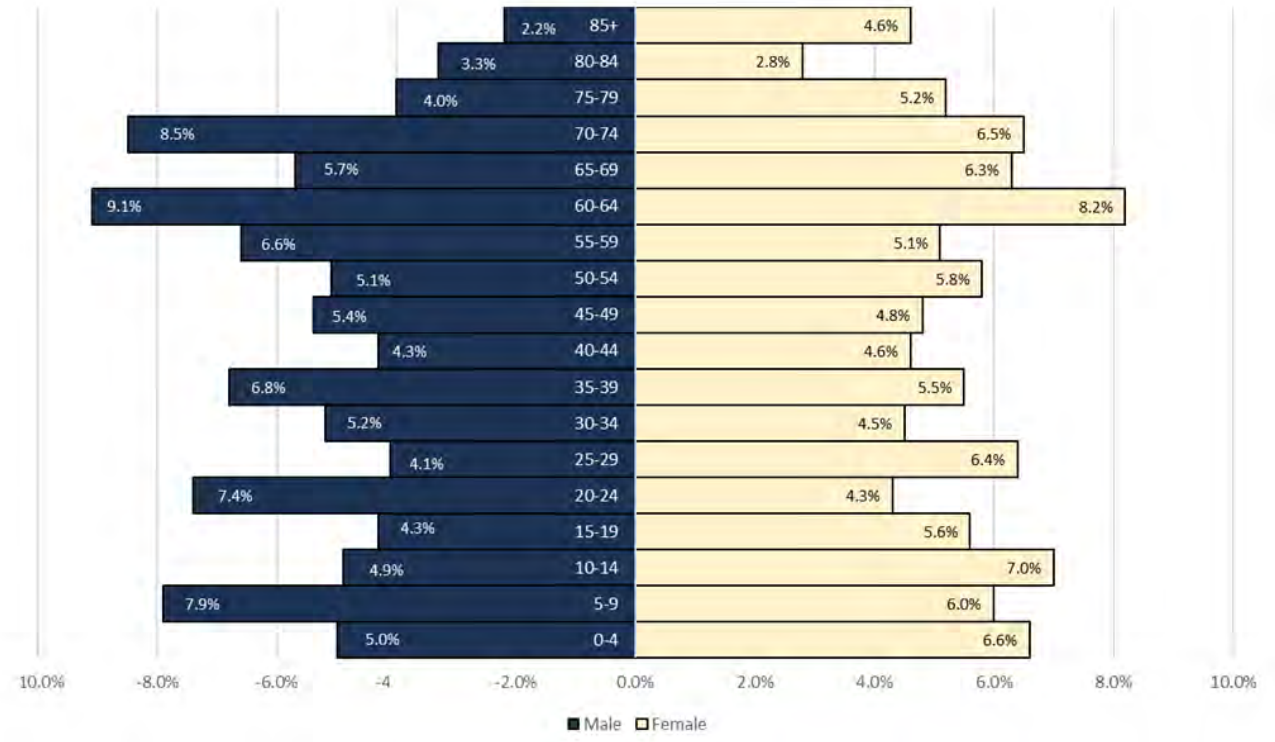
The United States Census Bureau's American Community Survey (ACS) is the primary source of data for this chapter. The most current, publicly available data is presented as appropriate. While the US Census Bureau's decennial census, which has taken place every 10 years since 1790, is well-known, difficulties with Census collection in 2020 delayed the release of more detailed information. Also, many demographic and economic indicators are not available at the local level, and the Census Bureau is disclosing less data with new "differential privacy" initiatives. If not otherwise specified, references are to Jefferson County overall.

FIGURE 3.1: POPULATION TRENDS 1980-2020 FOR JEFFERSON COUNTY, NEBRASKA



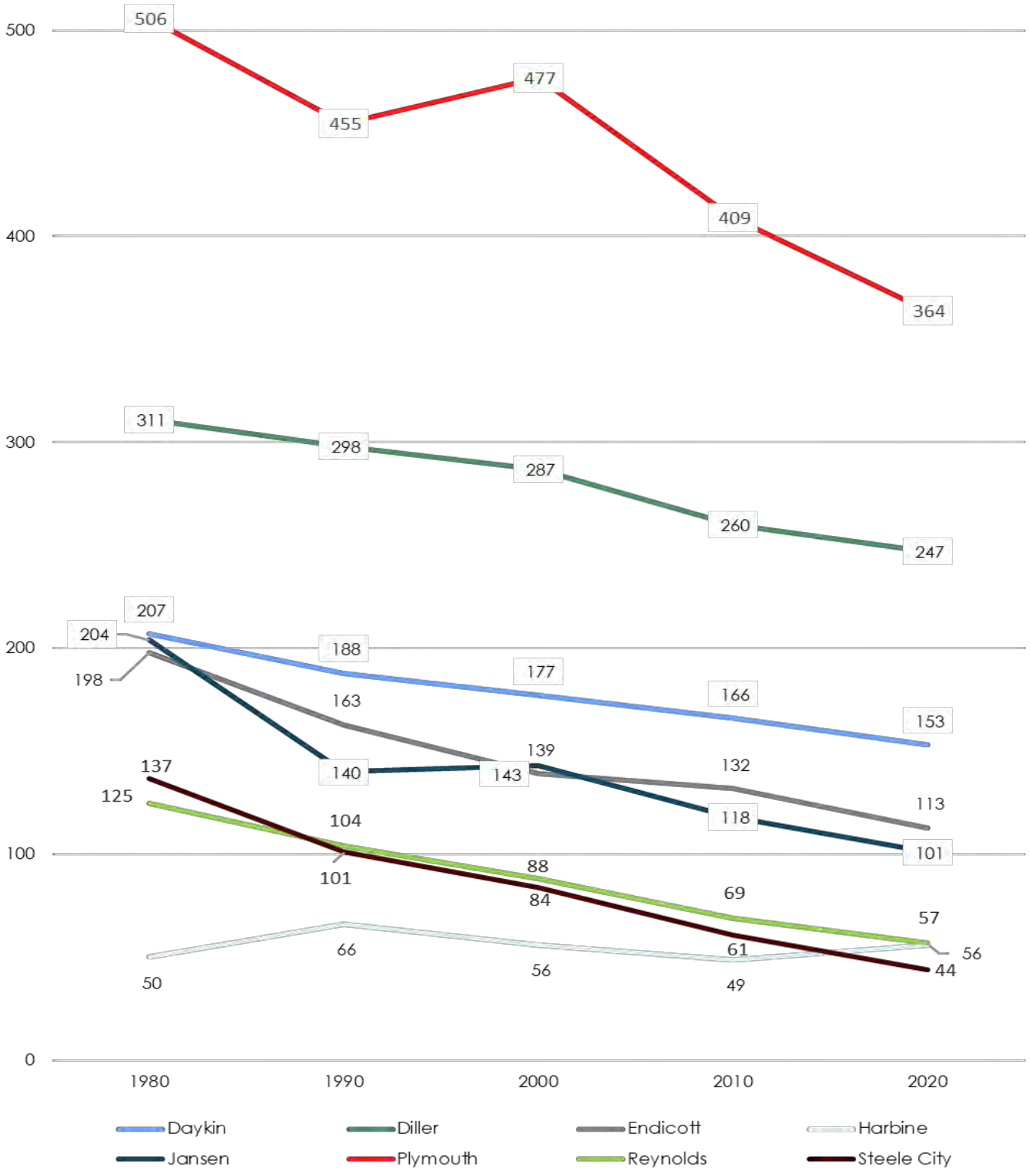
Source: U.S. Census Bureau 1980 - 2020.

FIGURE 3.3: POPULATION PYRAMID, 2023



Source: U.S. Census Bureau American Community Survey 2019-2023.

FIGURE 3.2: POPULATION TRENDS 1980-2020 FOR JEFFERSON COUNTY'S VILLAGES



Source: U.S. Census Bureau 1980 - 2020

of future population levels later in the chapter.

In Jefferson County, the county seat of Fairbury is the largest community with a population of 3,970 in 2020 (Figure 3.1). Steele City is the smallest, with a population of 44 residents (Figure 3.2).

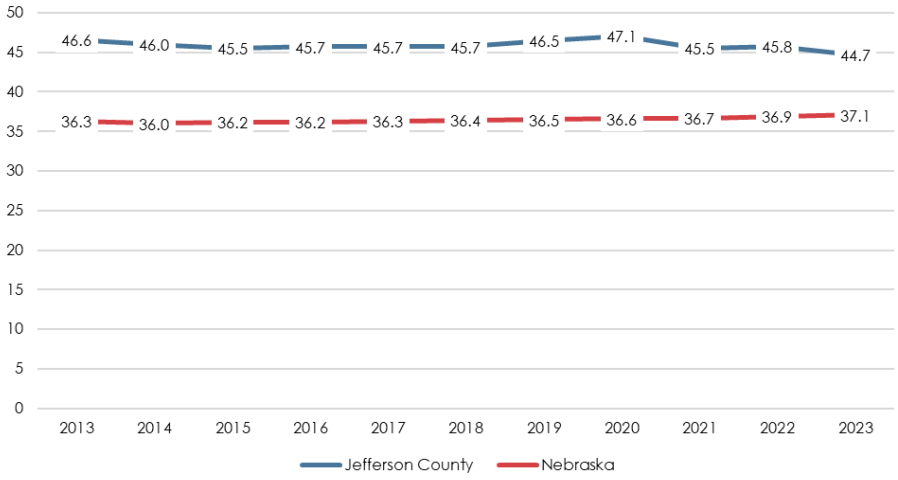
From 1980 to 2020, Jefferson County has experienced a –26.3% decline in population—a loss of 2,577 residents. From 2010 to 2020 alone, the decennial population fell by –4.1%. This decrease included both the unincorporated portions of the county and incorporated communities. Unincorporated portions of Jefferson County declined by -33.2% (1,059 people) from 1980 to 2020.

The City of Fairbury population decreased by 915 people or almost 19% of its 1980 population. However, from 2010 to 2020, Fairbury's population actually grew by 0.7%. All of the villages saw declines except for Harbine—the smallest municipality in the county in 1980, the community grew or stayed stable while others declined.

After the Census of 2020, the US Census Bureau changed the definition of "urban" vs "rural" areas. Fairbury retained an "urban" designation. While the population is below the new threshold of 5,000 residents, there were still over 2,000 housing units in the city (*see Chapter 4 Housing*).

Figure 3.3 shows a population pyramid of the current age structure of Jefferson County, as reported by the American Community Survey for 2019-2023. The largest cohort of men (9.1%) were age 60-64. The largest cohort of women were also age 60-64 (8.2%). There were also many more women (4.6%) than men (2.2%) age 85 and over. Service providers for senior citizens should take this gender discrepancy into account during program planning.

FIGURE 3.4: MEDIAN AGE 2013-2023



Sources: American Community Survey 2009-2013 & 2019-2023.

Dependency Ratio

The dependency ratio examines the portion of a community's population in the workforce, who can support age groups typically and historically dependent on the incomes of others.

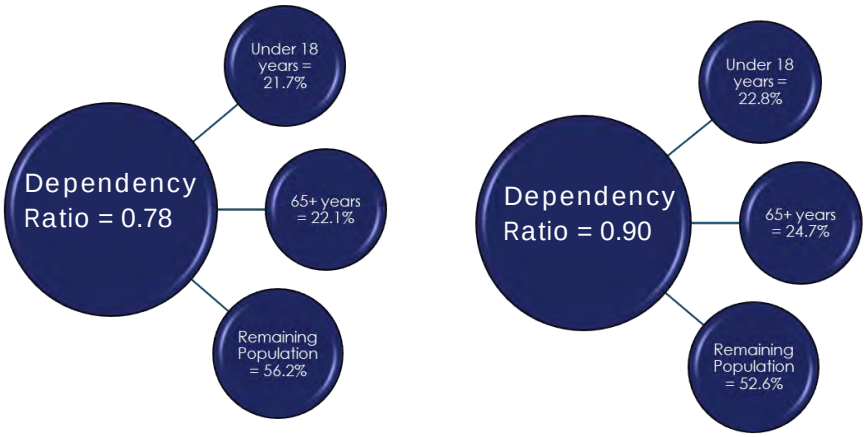
< 1: 1 Independent resident is able to support more than 1 Dependent resident

=1: 1 Independent resident able to support 1 Dependent resident

>1: 1 Independent resident able to support less than 1 Dependent resident

To calculate the dependency ratio, take the sum of the share18 years and younger plus the share 65 years and older, divided by share of remaining population.

FIGURE 3.5: DEPENDENCY RATIO 2013 AND 2023



Sources: American Community Survey 2009-2013 & 2019-2023.

TABLE 3.1: RACE AND ETHNICITY 2013-2023

	2013*		2023*		2013-2023	
Race	Number	% of total	Number	% of total	Net Change	% change
Estimated Population	7,563		7,155		(408)	-5%
White Alone	7,417	98.9%	6,680	93.4%	(737)	-7%
Black Alone	1	0.01%	45	0.6%	44	4,400%
American Indian Alone	23	0.3%	19	0.3%	(4)	-17%
Asian Alone	35	0.5%	2	0.03%	(33)	-94%
Some Other Race Alone	7	0.1%	68	1.0%	61	871%
Two or More Races	80	1.1%	341	4.8%	261	326%
Hispanic Origin (Any Race)	226	3.0%	379	5.3%	153	68%

Source: American Community Survey 2009-2013 & 2019-2023. *ACS Estimate

Among the working age population ages 20-64, the smallest cohort among women were age 20-24 (4.3%) and among men were age 25-29 (4.1%).

Median Age

The median age in Jefferson County increased from 46.6 years in 2013 to 47.1 years in 2020, then declined to 44.7 years by 2023 (Figure 3.4). The overall median age across Nebraska increased slightly during the same period, to 37.1 years of age.

DEPENDENCY RATIO

Dependency ratios examine the portion of Jefferson County's population supporting the age groups historically dependent upon others, including those under 18 years and those 65 years and older. (See the box to the left for details on calculating the ratio.) This ratio highlights the proportion of employed persons in the county who support themselves as well as older and younger dependent populations.

Figure 3.5 presents dependency ratios for 2013 and 2023 in Jefferson County. The share of persons less than 18 years of age increased while the share of persons 65+ also increased.

In 2013, Jefferson County had a Dependency Ratio of 0.78. By 2023, the Ratio had increased to 0.90. One positive aspect is the younger population decreased at a lesser rate than overall population decrease, which indicates there may be more school-aged children than might be expected.

ETHNICITY

During the past decade, Jefferson County has seen a shift in the race and ethnicity of residents like many other Nebraska communities. Race and ethnicity are self-identification terms in which residents choose how they identify themselves.

In 2023, 93% of Jefferson County residents identified as White, compared to 82% in Nebraska statewide. Among all residents, 5.3% identified as Hispanic or Latino of any race in 2023. While this was almost twice as high as in 2013, statewide 11.8% of all Nebraska residents currently identify as Hispanic.

The largest number of Jefferson County residents (39%) identify their ancestry as German.

VETERANS

Among Jefferson County residents 18 years and over, 7.1% are veterans, similar to 7.2% of Nebraskans overall. The largest group served during the Vietnam era. Approximately 3% of local veterans are women, compared to 10% statewide.

Almost half (47%) of veterans in the county are age 75 years and over. Among veterans, over half (56%) reported they had a disability, compared to 24% of the general civilian population age 18 years and older.

COMPONENTS OF CHANGE

Population change includes both natural increase or decline (the difference between births and deaths) and migration (the difference between people moving in and out of the county). For example, many places experience natural increase (more births than deaths) yet face a declining population due to out-migration.

AGE STRUCTURE ANALYSIS

Age structure of the county affects population change. For example, where there are relatively larger younger age groups (20-44 years), there is typically a greater ability to

TABLE 3.2: AGE AND SEX CHARACTERISTICS 2013-2023

Male and Female Population Estimates					
Age in 2013	2013 population*	Age in 2023	2023 population*	Cohort Change	% Change
		0-4	418	-	-
		5-9	497	-	-
0-4	406	*10-14*	430	24	6%
5-9	444	*15-19*	358	(86)	-20%
10-14	529	*20-24*	416	(113)	-21%
15-19	452	*25-29*	379	(73)	-16%
20-24	299	*30-34*	344	45	15%
25-29	360	*35-39*	441	81	22%
30-34	368	*40-44*	318	(50)	-14%
35-44	820	*45-54*	753	(67)	-8%
45-54	1,111	*55-64*	1,036	(75)	-7%
55-64	1,188	*65-74*	968	(220)	-19%
65-74	805	*75-84*	552	(253)	-31%
75 & older	889	*85 and over*	425	(644)	-72%
Total	7,6663		7,155	(508)	-7%

Source: American Community Survey 2009-2013 & 2019-2023. *ACS Estimate

sustain future population growth, since this age group tends to have children as well as participating in the workforce.

Table 3.2 presents the age group structure for Jefferson County in 2013 and 2023. Age structure provides an understanding of where some of the population shifts are occurring. Reviewing population in this manner also informs a more detailed analysis of which specific groups are moving in and out of the county. Negative changes in a group indicate out-migration or a combination of out-migration and deaths.

Jefferson County saw growth from 2013 to 2023 in three age groups—the 10-14, 30-34, and

FIGURE 3.6: POPULATION COMPONENTS OF CHANGE 2012-2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Change	-17	-25	-212	-75	-57	-6	-99	-42	79	-84	-6
Natural Change	-47	-39	-38	-39	-32	-8	-39	-7	-11	-29	-36
Net Migration	31	16	-179	-37	-24	3	-59	-36	91	-55	34

Source: U.S. Census Bureau

35-39 groups (present age). The 0-4 and 5-9 groups always show an increase, since these individuals were born between the two census survey periods. The 30-34 and 35-39 age groups contributed significant gains for the county. These age groups are typically young families, who may be returning to their hometown or are attracted by an opportunity to raise their families in a rural community.

The remaining age groups were reduced from 2013 to 2023, through natural decrease (deaths) and net negative migration. As might be expected, the largest decrease was in the 85 and over age groups, which typically experience decrease through migration to specialized care facilities in other communities and amenity migration, as well as natural decrease. The next largest decreases were older teens and young 20s, as young people left for higher education. There was also significant loss for middle age individuals.

Natural Change and Net Migration

Population shifts have two key components: migration and natural change (the difference between births and deaths). The components of change for Jefferson County are show in Figure 3.6, based on US Census Bureau annual population estimates.

Jefferson County experienced negative natural change—fewer births than deaths, in each year from 2010. Since 2011, net in-migration was only enough to result in total population growth in 2020.

Population Projections

Population projections are future estimates based upon past and present circumstances. There are different methods commonly used to project future population, with advantages and disadvantages for smaller and larger communities. Several factors (demographics, economics, social, etc.) also affect the relationship between projections and ultimate population levels, positively or negatively.

The University of Nebraska-Omaha Center for Public Affairs Research (the State Data Center) develops official population projections for Nebraska counties, based on trends with both natural change and migration rates. The most recent report, composed after the release of the US Census 2020 complete count, projects Jefferson County's population will continue to decrease, to:

- 6,375 by 2030,
- 5,805 by 2040,
- 5,386 by 2050.

Trend Line Analysis

Trend Line Analysis is a process of projecting future population based upon the rate of change during a specified period of time. For this analysis, several different Local population trend lines were reviewed, including 2010 to 2020, 2000 to 2020, 1990 to 2020, and 1970 to 2020. Results for Jefferson County are shown in the side bar.

For the purposes of this plan, three population projections were selected to illustrate growth scenarios (Figure 3.7).

Jefferson County Trend Line Analysis

Year	Ten Year Trend
2020	7,240 persons
2030	6,945 persons
2040	6,663 persons
2050	6,392 persons

Year	Twenty Year Trend
2020	7,240 persons
2030	6,748 persons
2040	6,290 persons
2050	5,863 persons

Year	Thirty Year Trend
2020	7,240 persons
2030	6,795 persons
2040	6,377 persons
2050	5,984 persons

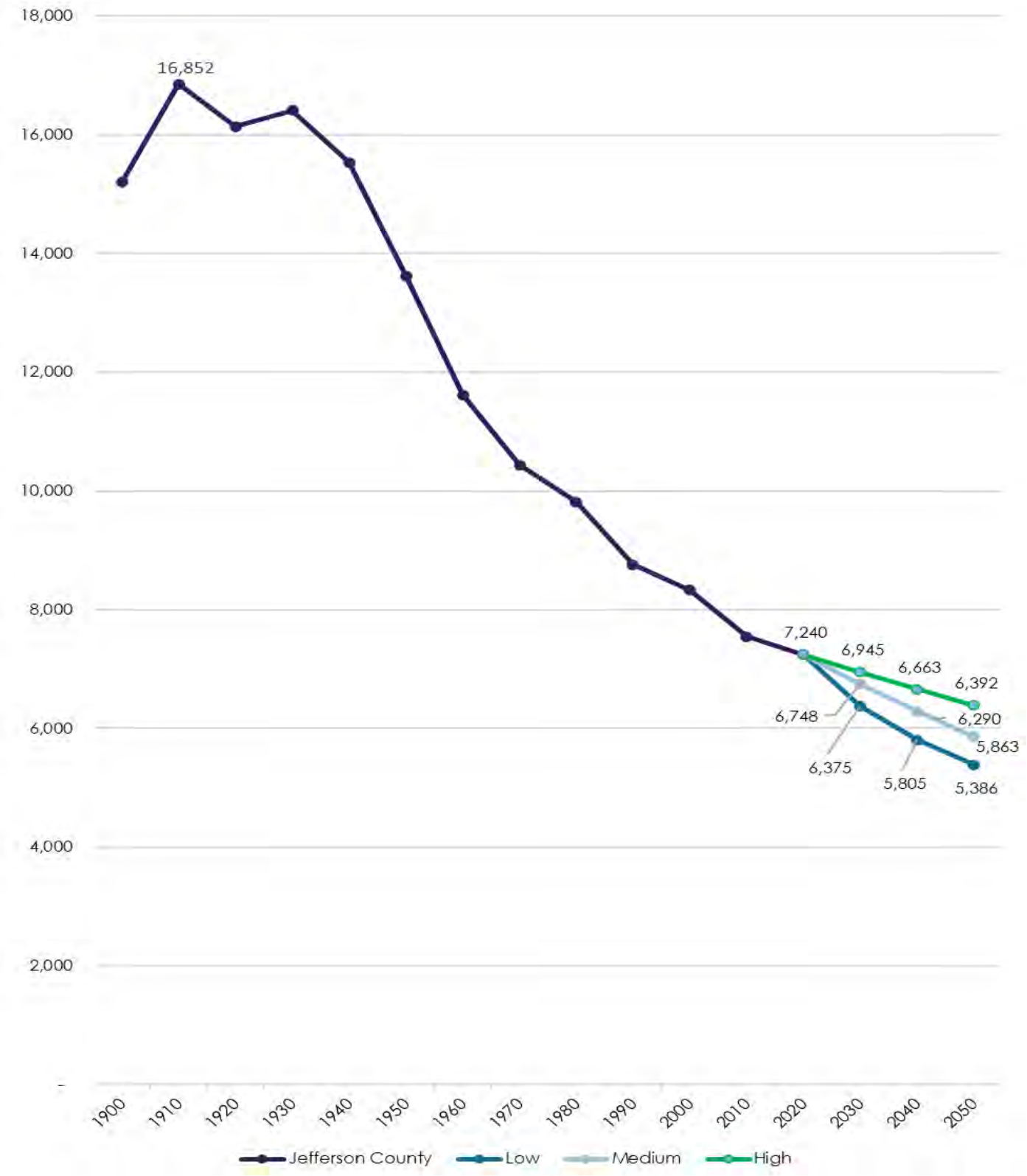
Year	Fifty Year Trend
2020	7,240 persons
2030	6,729 persons
2040	6,255 persons
2050	5,814 persons

LOW: The State Data Center projections were selected for the Low Series and may be considered a worst-case scenario, serving as a baseline for planning purposes.

MEDIUM: The 20-year trend serves as the Medium Series.

HIGH: The more-recent 10-year trend was selected as the High Series. This is an optimistic scenario which can also serve as a goal—to continue recent trends moderating historical contraction of population.

FIGURE 3.7: JEFFERSON COUNTY POPULATION AND PROJECTIONS



Sources: Nebraska State Data Center, Center for Public Affairs Research, University of Nebraska at Omaha, U.S. Census Bureau 1970 - 2020, Marvin Planning Consultants

Chapter Four Housing

INTRODUCTION

The housing profile presents data about current and historic housing conditions, while identifying potential needs including safe, decent, sanitary, and affordable housing for every family and individual residing within the county. Community members continually remark on the importance of affordable housing in keeping and attracting residents, in particular young families with school age children.

Projecting future housing needs requires consideration of factors such as population change, household income, employment rates, land use patterns, and residents' expectations. Although most housing is provided in municipalities, this information helps decisionmakers develop policies designed to assure housing needs are met for Jefferson County residents.

HOUSEHOLD CHARACTER

The US Census Bureau's American Community Survey (ACS) reported the total number of households in Jefferson County fell by approximately –6% between the surveys of 2009-2013 and 2019-2023 (Table 4.1). This includes all of the municipalities and the unincorporated areas of the county. It should be noted the ACS is a rolling survey used to estimate totals and is subject to margins of error which are more pronounced for smaller communities.

ACS reported number of households decreased about the same as the change in estimated population over the same time

TABLE 4.1: JEFFERSON COUNTY HOUSEHOLDS 2013-2023

	2013	2023	Change 2013-2023
Total Households	3,301	3,114	-6%
Average Household Size	2.25	2.26	-
Married-couple household	1,749	1,577	-10%
Householder living alone	1,064	1,175	10%
Households with one or more under 18 years	807	693	-14%
Households with one or more 65 years and over	1,139	1,271	12%
Householder living alone, 65 years and over	582	632	9%

Source: American Community Survey 2009-2013 & 2019-2023.

period. This resulted in a stable average household size of 2.26 persons.

The number of households with children under 18 decreased by –14%, while the number of households with residents aged 65 years or over increased by about 12%.

The Comprehensive Plan survey indicated a mix of opinions about housing in Jefferson County. More people disagree (33%) than agree (25%) Jefferson County has a variety of housing options. Over 1/3 disagree, and another 1/3 had no opinion whether or not public housing is adequate for Jefferson County's needs.

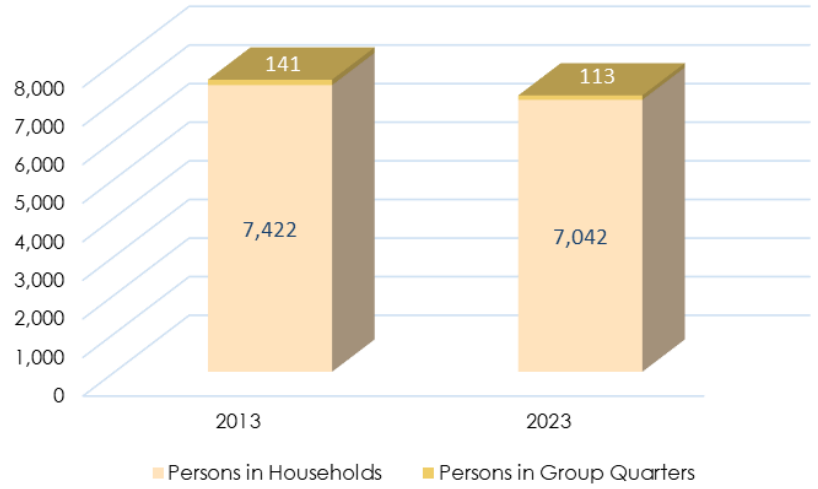
HOUSEHOLDS

In 2023, there were about –5% fewer people living in households in Jefferson County than in 2013 (Figure 4.1). The number of people living in group quarters went from 141 people in 2013 to 113 in 2023, a decrease of about –20%. Group quarters include such places as residential treatment centers, skilled nursing facilities, or group homes, among other places.

Figure 4.2 shows the average household size in the region. The trend nationally has been towards a declining household size. As previously noted, in 2023, there was an average of 2.26 persons in each household in Jefferson County, compared to 2.44 persons in Nebraska statewide.

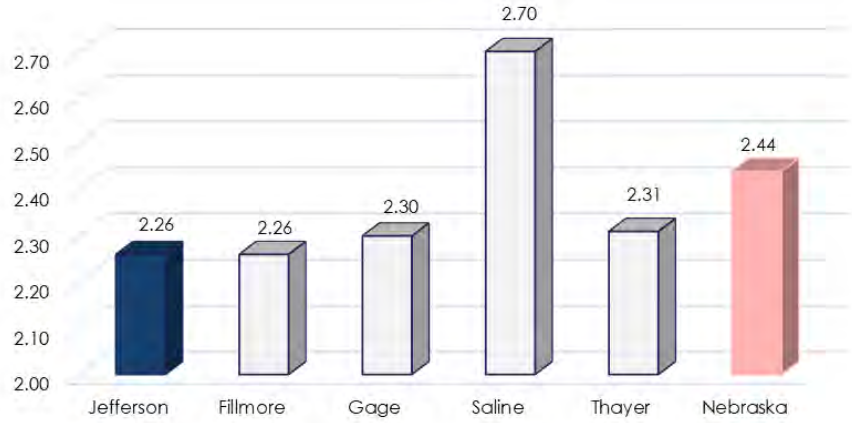
Two-person households were the largest group in owner-occupied housing in Jefferson County in 2021, representing almost 900 housing units (Figure 4.3). By comparison, the largest

FIGURE 4.1: HOUSEHOLD POPULATIONS 2013-2023



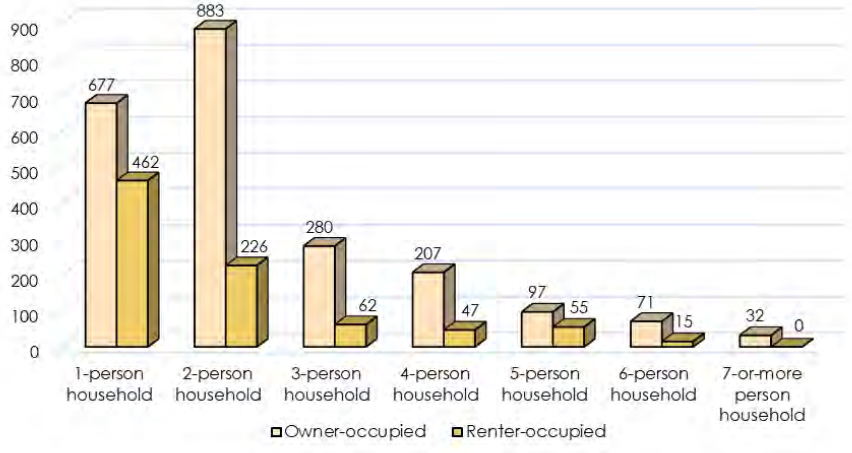
Source: American Community Survey 2009-2013 & 2019-2023.

FIGURE 4.2: AVERAGE HOUSEHOLD SIZE 2023



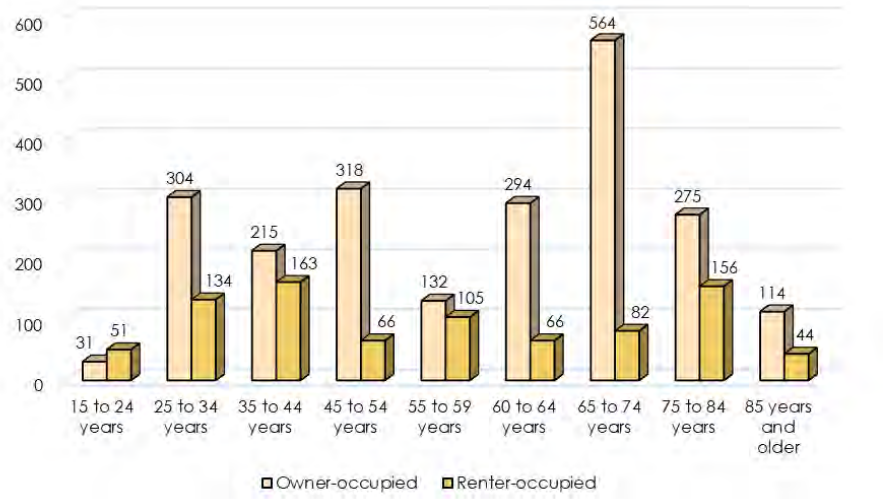
Source: American Community Survey 2019-2023.

FIGURE 4.3: PERSONS BY HOUSEHOLD TYPE 2023



Source: American Community Survey 2019-2023.

FIGURE 4.4: HOUSEHOLDER AGE BY HOUSEHOLD TYPE 2023



Source: American Community Survey 2019-2023.

household size for rentals was one-person households with 462 housing units.

The largest home ownership age cohort consists of those 65 to 74 years old (25%) (Figure 4.4). The largest renter-occupied age cohort were those 35 to 44 years (19%).

HOUSING STOCK

An analysis of the housing stock can reveal details about trends in population and economic conditions. Examining the housing stock is also important to understand the overall quality of housing in the county.

Residential Street, Fairbury
Source: Marvin Planning Consultants

The number of housing units counted in the US Census Bureau's decennial Census declined from 3,918 in 2010 to 3,665, a contraction of -6.5% (Table 4.2). This was more than the population loss of –4.1% in the same Census count. The community of Steele City experienced the largest relative loss of housing units, falling approximately 16% in the 2020 Census count, while losing –28% of its decennial population.

It should be noted the ACS surveys for 2009-2013 reported 3,914 housing units in Jefferson County compared to 3,918 in the 2010 decennial Census. The ACS surveys for 2019-2023 reported there were 3,664 housing units compared to 3,665 in the 2020 decennial Census. The difference between the two data sets is the decennial count is a single point in time (April 1), while ACS is a rolling average over five years,

TABLE 4.2: JEFFERSON COUNTY HOUSING UNITS 2010-2020

	2010	2020	Change 2010-2020
Jefferson County	3,918	3,665	-6.5%
Daykin	84	79	-6.0%
Diller	129	123	-4.7%
Endicott	72	70	-2.8%
Fairbury	2145	2005	-6.5%
Harbine	25	25	0.0%
Jansen	67	57	-14.9%
Plymouth	205	196	-4.4%
Reynolds	46	43	-6.5%
Steele City	55	46	-16.4%

Source: US Census Bureau Redistricting File, 2010 & 2020.

but remains up to date between decennial census counts. The potential discrepancy emphasizes the importance of working with the Census Bureau to identify every habitable dwelling unit in Jefferson County in preparation for the next decennial count.

The ACS also reports on types of housing units. In 2023, single family-detached homes accounted for 82% of Jefferson County's housing units. An additional 3% were 2-unit structures, about 4% were 3-4 or 5 -9 unit5s, 6% were large apartment complexes and 1.4% met the US Census definition of mobile home. Overall, the estimated number of multi-family structures across the county grew considerably from 2013 to 2023.

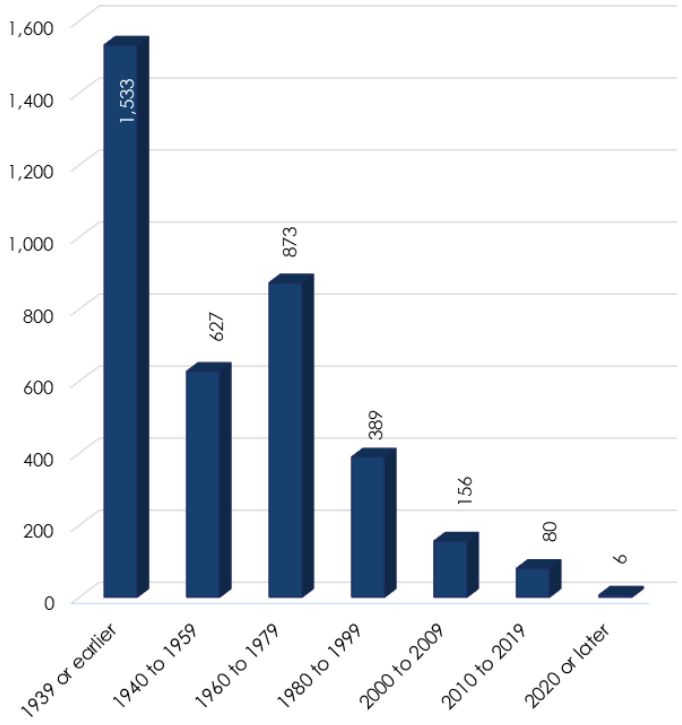
Age of Housing Units

Jefferson County's housing stock is aging. Figure 4.5 shows 1,53 homes, or 42% of the county's housing units (as covered by the ACS), were constructed prior to 1940. This statistic is county-wide, including each community, and includes older well-kept homes as well as homes likely in need of repair or rehabilitation.

Construction activity has been cyclical since 1940, with the next largest number of homes built between 1960 and 1979. These data reflect the fact the local economy was relatively prosperous during these decades. However, since 2000, the construction of new homes has slowed considerably.

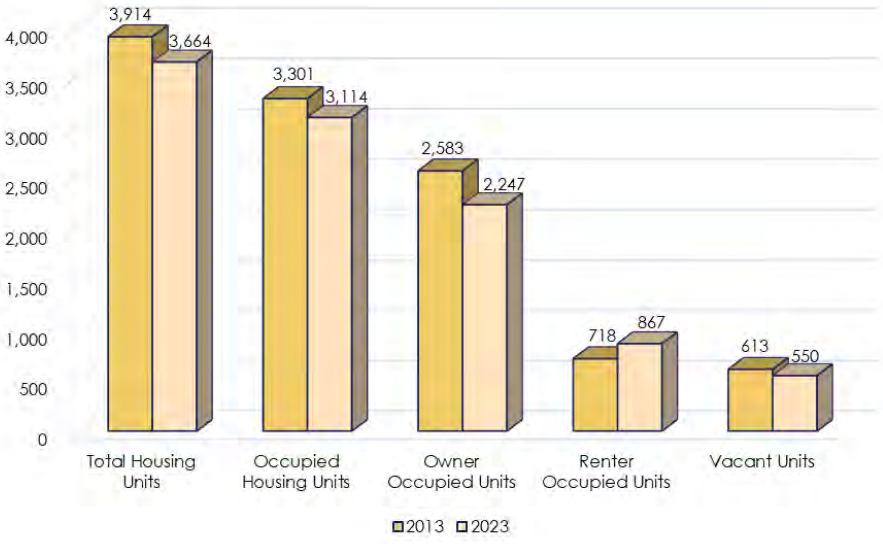
Due to the age of homes in the county, there may be a need for home improvement assistance. An example would be a weatherization program to bring older homes up to current energy efficiency standards.

FIGURE 4.5: AGE OF EXISTING HOUSING STOCK



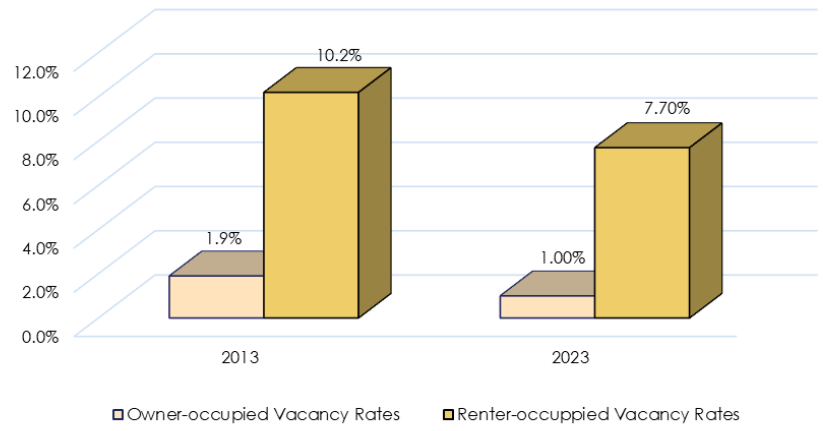
Source: American Community Survey 2019-2023.

FIGURE 4.6: OCCUPIED VS. VACANT HOUSING UNITS 2013-2023



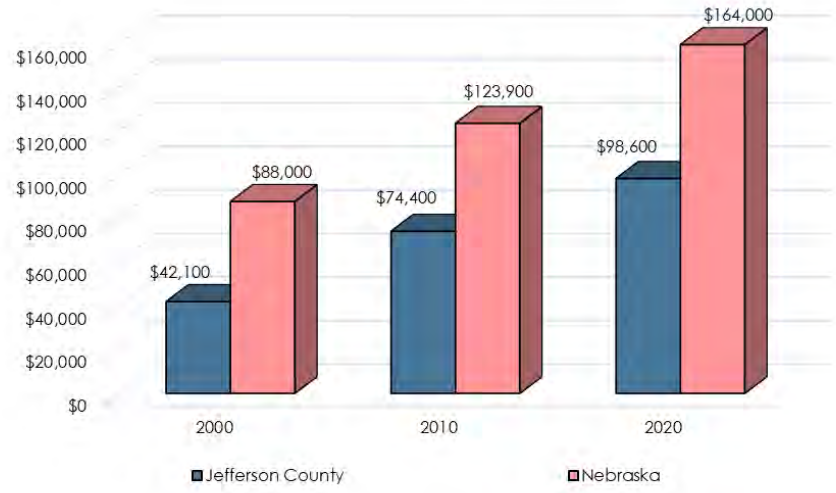
Source: American Community Survey 2009-2013 & 2019-2023.

FIGURE 4.7: VACANCY RATES BY TYPE OF UNIT 2013-2023



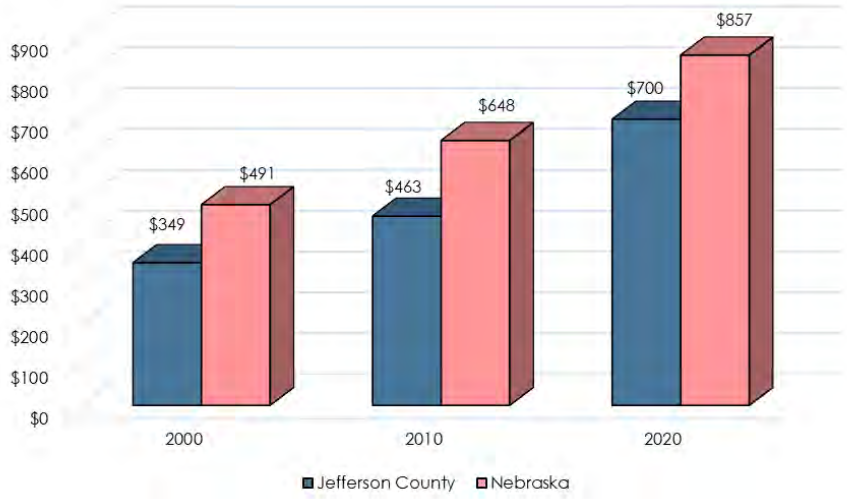
Source: American Community Survey 2009-2013 & 2019-2023.

FIGURE 4.8: MEDIAN VALUE OWNER-OCCUPIED UNITS 2000-2020



Source: U.S. Census Bureau 2000, American Community Survey 2006-2010 & 2016-2020.

FIGURE 4.9: MEDIAN GROSS RENT 2000-2020



Source: U.S. Census Bureau 2000, American Community Survey 2006-2010 & 2016-2020.

Occupied vs. Vacant Units

The ACS estimated the number of occupied and vacant housing units in Jefferson County declined from 2013 to 2023. The number of owner-occupied units decreased from 2,583 to 2,247, while the number of renter-occupied units increased from 718 to 867 (Figure 4.6).

The number of vacant units declined (Figure 4.7) The vacancy rate for owner-occupied units decreased from 1.9% to 1.0%, and the vacancy rate for renter-occupied units fell from 10.2% to 7.7%. The reasons reported to ACS for why housing was vacant included for seasonal/occasional use, for rent, sold (not occupied), for sale, or "other vacant" for which no reason could be determined by survey takers.

Median Value of Owner-Occupied Units

The median value of owner-occupied housing units in Jefferson County increased from $42,100 in 2000 to $98,600 by 2020 (Figure 4.8). Over the same time period, the State's median value had increased from $88,000 to $164,000.

Median Gross Rent

Jefferson County and the state of Nebraska have both seen significant growth in median gross rent since 2000. Median gross rent in the county increased from $349 in 2000 to $700 in 2020, an increase of 101% (Figure 4.9). Median gross rent in Nebraska increased by 75% to $857 by 2020. Rent in the county and state both grew faster than the Consumer Price Index, which only increased at a rate of 50.5% during the same period.

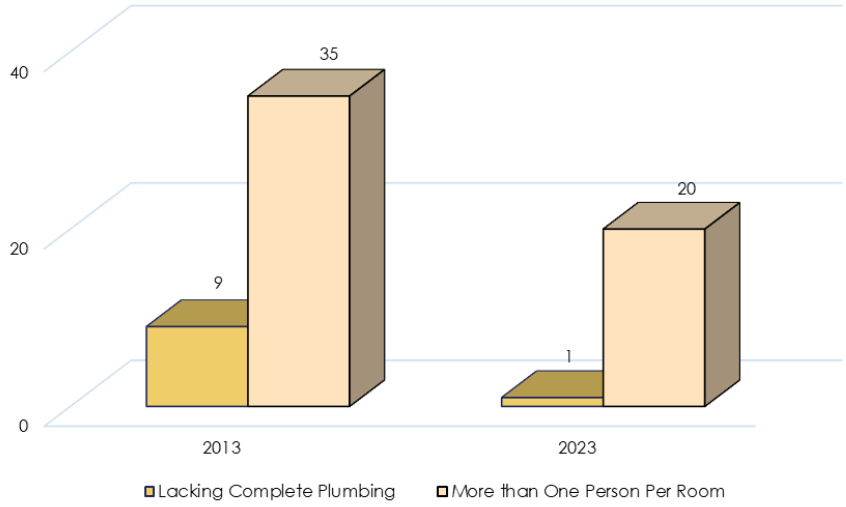
Substandard Housing

According to the U.S. Department of Housing and Urban Development (HUD) guidelines, housing units lacking complete plumbing *or* are overcrowded are considered substandard housing units. HUD defines a complete plumbing facility as hot and cold-piped water, a bathtub or shower, and a flush toilet; overcrowding is more than one person per room. In addition, anytime there is more than one person per room, the housing unit is considered overcrowded, thus substandard.

These criteria, when applied to Jefferson County, mean 44 units were considered substandard in 2013 and 21 units were substandard in 2023. (These data fail to consider housing units which met both criterion and may be counted twice.) Even so, it should not be assumed the number of substandard housing units are overestimated. Housing units containing major defects requiring rehabilitation or upgrades to meet building, electrical, or plumbing codes should also be included in an analysis of substandard housing.

A comprehensive assessment of the entire housing stock should be completed every five years to determine and identify the housing units which would benefit from rehabilitation or modernization work. This process will help ensure a county maintains a high quality of life for its residents through protecting the quality and quantity of its housing stock.

FIGURE 4.10: SUBSTANDARD HOUSING CONDITIONS 2013-2023



Source: American Community Survey 2009-2013 & 2019-2023.

HOUSING CONCERNS

HOUSING TYPES

Zoning and subdivision regulations should be reviewed to assure county homeowners have a variety of housing options available in appropriate locations. While most housing is located in municipalities with urban services, it is important for local leaders to work county-wide to facilitate safe and attainable housing for all residents.

Missing Middle Housing

"Missing middle" housing types provide diverse housing options, such as duplexes, fourplexes, cottage courts, and multiplexes. These house-scale buildings fit seamlessly into existing residential neighborhoods. They provide solutions along a spectrum of affordability to address the mismatch between the available U.S. housing stock and shifting demographics.

Many "missing middle" housing types are more suited to cities and villages, as they support walkability, locally-serving retail, and public transportation options. Some missing middle housing types, in particular duplex or single-family attached housing units, would help meet needs on many family farms ,and ease provision of community water and sewer treatment in unincorporated areas.

Source: missingmiddlehousing.com

Manufactured and Modular Homes

Prefabricated or manufactured homes are built off-site, typically in an enclosed factory, and transported as single or multiple units to the home site. The term "manufactured home" is defined by federal law (24 CFR 3280) as built under the federal building code administered by the US

Example of Modular/Manufactured Housing
Source: Marvin Planning Consultants

Department of Housing and Urban Development—the HUD Code—which went into effect in 1976. The term "mobile home" refers to older homes, built prior to 1976 which do not meet the HUD Code. "Modular homes" are also built off-site, typically to meet the International Residential Code (IRC) the same as a site-built home.

As noted in APA's Zoning Practice (April 2024):

> *Despite the dramatic improvement in quality of construction after National Manufactured Housing Construction and Safety Standards Act of 1974 and the Manufactured Housing Improvement Act of 2000, and the more recent implementation of state energy codes mandating increase energy efficiency, the "mobile" home continues to be treated as inferior housing at best, and too often undesirable housing, to be heavily restricted if not completely zoned out of communities.*

Prefabricated housing is often more affordable than site-built housing, and factory conditions may result in higher-quality as construction is sheltered from bad weather. Manufactured and modular homes are often placed on a basement or permanent foundation and should be treated similarly to standard site-built construction in zoning and subdivision regulations.

Source: www.hud.gov/OMHP

Long-Term Care Facilities

As our residents get older, their needs for housing and health care change. The range of housing options and varying levels of care offered within senior communities help ensure residents are not forced to leave the community. (*See also Chapter 6 Facilities.*)

Source: www.urmc.rochester.edu/senior-health/long-term-care.aspx

HOUSING RESOURCES

Jefferson County Housing Study

In 2018, the Fairbury Community Redevelopment Authority completed the *Jefferson County and Communities, Nebraska, County-Wide Housing Study with Strategies for Affordable Housing*, completed by consultants Hanna -Keelan Associates, PC. The housing study included a county-wide housing target demand and land use needs analysis, housing goals and action steps, and a housing action plan.

Source: www.fairburyne.org/152/Housing-Services

Fairbury Housing Authority

The Fairbury Housing Authority operates Parkview Apartments, a 60-unit income-based housing complex located adjacent to Fairbury City Park. Parkview Apartments are a place allowing residents an affordable but safe place to call home, with predictable monthly living expenses and a secured building.

Land Trusts

A community land trust (CLT) is a nonprofit corporation that owns land on behalf of a community. CLTs use public and private investment funds to acquire land. They hold land for the benefit of the community. In some places, CLTs have developed and maintained ownership of agricultural sites or commercial spaces for needed community services; in others, CLTs have created affordable residential properties.

In general, land banks are public authorities or non-profit organizations created to acquire, hold, manage, and sometimes redevelop property in order to return these properties to productive use to meet community goals, such as increasing affordable housing or stabilizing property values.

Source: nhc.org/policy-guide/land-based-solutions/land-banks-and-community-land-trusts

South Jefferson Land Bank

The South Jefferson Land Bank was created in 2024 to serve the city of Fairbury and village of Endicott. The Land Bank engages in multiple levels of review to determine the highest and best use of developable property.

The Land Bank's initial priorities include commercial use by new businesses, acquisition of multiple contiguous parcels, maintenance of green space, and the preservation and maintenance of historic structures. At least in the early stages, the Land Bank is relying on private developers to build on acquired lots. The Land Bank as organized is limited to operating inside Fairbury and Endicott.

Source: www.fairburyne.org/246/SOUTH-JEFFERSON-LANDBANK

Blue Valley Community Action

Blue Valley Community Action Partnership (BVCA) was incorporated in 1966 as a private, nonprofit organization. BVCA Partnership focuses on services which can help families and individuals emerge from poverty or a crisis, or prevent them from experiencing these conditions. It works to identify gaps in services needed and then creates solutions to meet those needs. It operates more than 30 programs, each interacting and complementing the others, that support the diverse communities and families throughout its service area, including Jefferson County.

BVCA is governed by a board of directors. a tripartite structure, which is a requirement for all Community Action Agencies nationwide. One third of the board represents the low-income community consumer sector), one-third represent local elected officials (public sector), and one third represent the general community (private sector). BVCA Partnership receives funding through the federal Community Services Block Grant to serve nine Nebraska counties

BVCA's main office is in Fairbury. They offer a variety of housing services in Jefferson County, including:

- Housing Counseling
- Homeownership Opportunity Program
- Purchase-Rehab/Lease-Purchase
- Owner-Occupied Housing Rehab
- Low Income Home Energy Assistance Program (LIHEAP) —Heating & Cooling Repair/ Replacement Assistance
- Weatherization Assistance

BVCA also owns affordable housing units. In Jefferson County, this includes:

- Below market rate 4-plex in Diller
- Income-restricted apartments in Fairbury (Valley Heights)

There were several comments in the countywide survey and during the planning process skeptical of the efficiency of current community action programs.

Source: www.bvca.net

Economic Development District

The Southeast Nebraska Economic Development District (SENDD—*see Chapter Five*) offers programs and funds to provide new housing and rehab well-loved homes throughout their region. Programs include Owner-Occupied Rehabilitation, Purchase-Rehab-Resale program, and upper story housing development.

Source: www.sendd.org/

HOUSING GOALS AND ACTIONS

HOUSING GOAL 4.1

A variety of housing is available throughout the county.

Actions

4.1.1 Development projects shall follow the goals and policies of the Comprehensive Plan.

4.1.2 Support implementation of action items in the Housing Action Plan.

4.1.3 Target redevelopment strategies toward vacant and abandoned properties.

4.1.4 Consider participation in an area-wide code enforcement program.

4.1.5 Promote the private renovation of vacant homes.

4.1.6 Support cities and villages in accommodating new housing.

4.1.7 Direct residential development away from prime farmland and environmentally sensitive areas.

4.1.8 Regularly review zoning codes to accommodate changing housing needs.

HOUSING GOAL 4.2

Jefferson County residents in need have access to affordable and attainable housing.

Actions

4.2.1 Jefferson County supports affirmatively furthering fair housing throughout the county.

4.2.2 Prioritize public funding for projects incorporating affordable, missing middle and/or workforce housing.

4.2.3 Work with affordable housing developers to create additional rental housing for very-low income families.

4.2.4 Investigate ways the County could partner with non-profits or public agencies to better support workforce housing.

4.2.5 Support the South Jefferson Land Bank

4.2.6 Explore creating other local Community Land Trusts, based on experience gained with the South Jefferson Land Bank.

4.2.7 Work with housing advocates to track data required for Community Development Block Grant (CDBG) funding and other programs for elimination of slum and blight and other community development needs.

Chapter Five
Economic Development

ECONOMIC PROFILE

Economic Development is a process setting the groundwork for future prosperity. It is more than a jobs program; it is an investment in growing the economy and enhancing the prosperity and quality of life for all residents. Economic development is a process to assist in the retention and expansion of existing businesses, to encourage new entrepreneurs, and to prepare to attract new employers.

The economic structure and demographic characteristics of rural counties vary significantly across the country. The USDA Economic Research Service (ERS) considers Jefferson County as having a balanced mix of industries, with no one sector dominating the local economy.

In this section, income and employment data and trends were reviewed for Jefferson County and Nebraska statewide. Data sources include the US Census Bureau, US Bureau of Economic Analysis (BEA), and US Bureau of Labor Statistics.

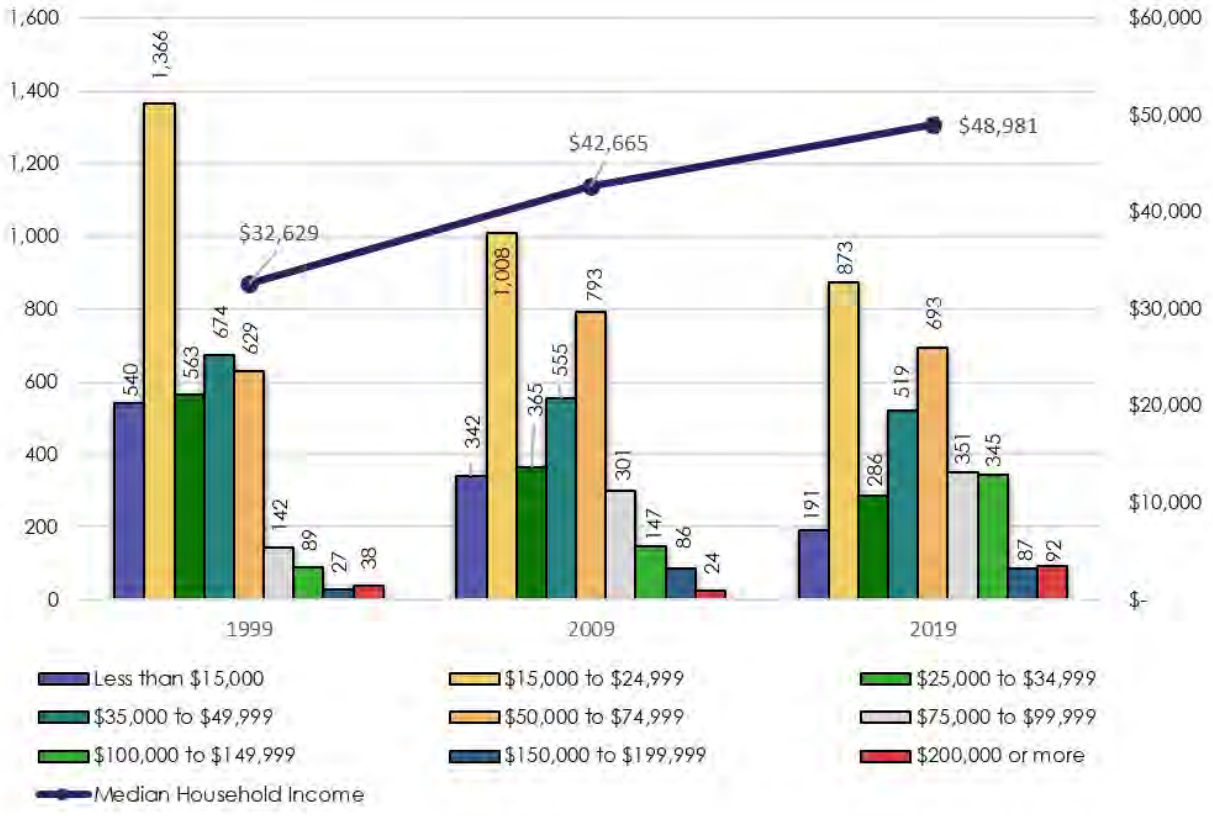
INCOME STATISTICS

Income statistics indicate the earning power of residents. The data below show personal and household income levels for Jefferson County in comparison to the state. These data were reviewed to determine whether households experienced increases in income at a rate comparable to the state of Nebraska and the Consumer Price Index (CPI).

Figure 5.1 shows the number of Jefferson County households in different income ranges in 1999, 2009, and 2019, according to US Census surveys. In 1999, the most common income range was $15,000 to $24,999. In 2009, the most common range was still $15,000 to $24,999 in the middle of the range, which remained the most common range in 2019. However, the $50,000 to $74,999 income range increased substantially in 2009 and 2019, indicating a growing middle class.

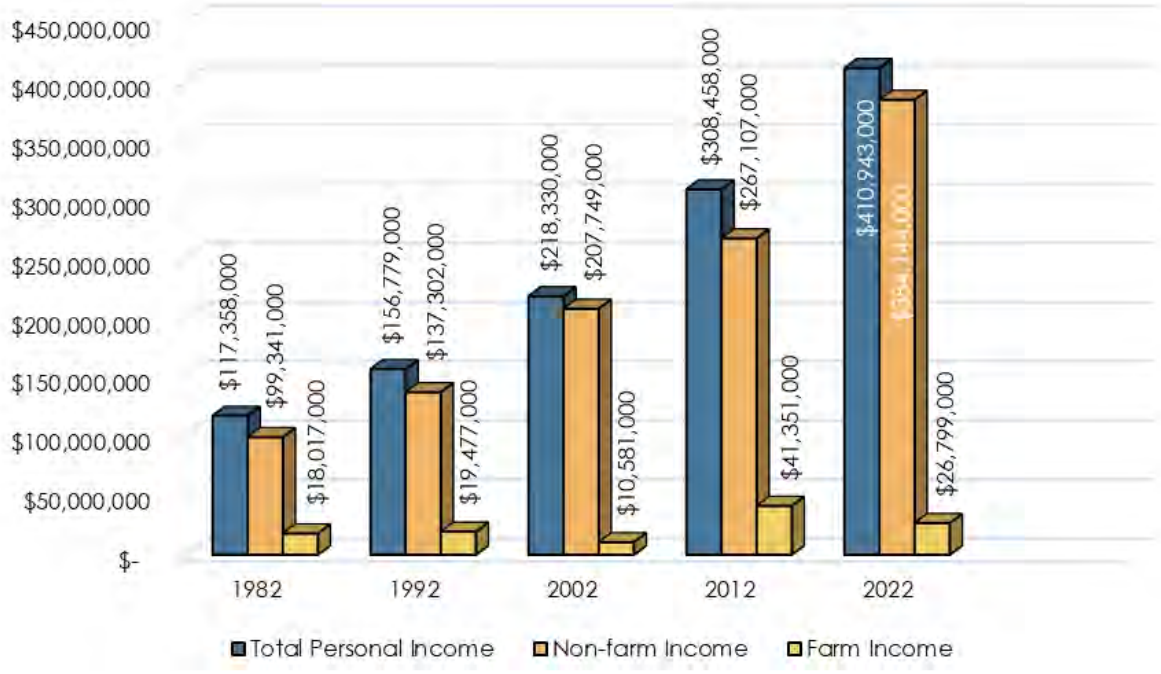
The median household income for Jefferson County was $32,629 in 1999, which was much less than the state's median income of $39,250. By 2009, the median household income increased to $42,665, also below the state's median household income of $49,342. Finally, in 2019, the median household income had risen to $48,981, compared to the state's median household income of $63,105.

FIGURE 5.1: JEFFERSON COUNTY HOUSEHOLD INCOME 1999 TO 2019



Source: U.S. Census Bureau 2000, American Community Survey 2006-2010 & 2016-2020.

FIGURE 5.2: INCOME BY SOURCE 1982 TO 2022



Source: BEA Regional Economic Accounts, 1982 - 2022

The county's median household income grew by approximately 50% from 1999-2019, lagging the state's median household income growth of 60%. The CPI for this period also increased by 50.5%, which indicates household income growth in Jefferson County at least kept pace with inflation. It should be noted the economic recession which occurred during the COVID pandemic starting in 2020 represented a significant disruption in long-range economic trends.

Income by Source

There are different primary sources of personal income, with the two primary categories being farm and non-farm income (Figure 5.2). Changes in these statistics can be compared to the CPI, to determine if increases are keeping pace with inflation. Between 1980 and 2020, the CPI increased by 214%.

According to the US Bureau of Economic Analysis (BEA), Total Personal Income in Jefferson County increased from $117,358,000 in 1982 to $410,943,000 in 2022 (Figure 5.2). This was an increase of approximately 250%.

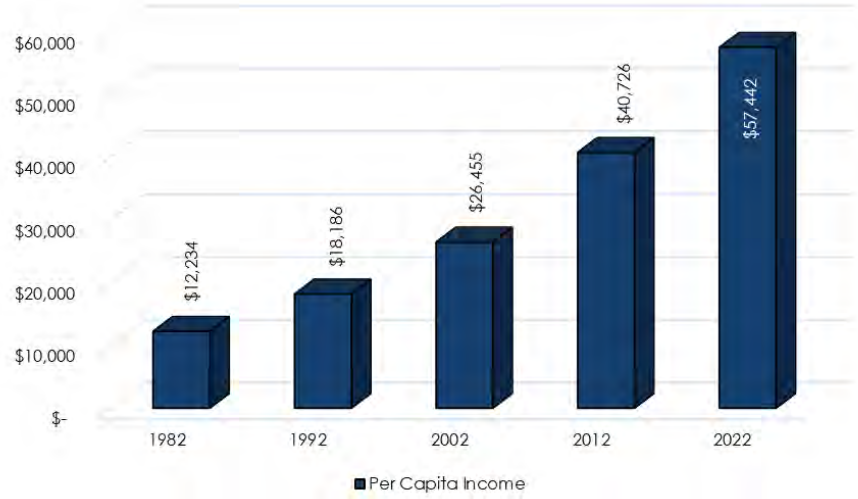
Non-farm and Farm Income

Non-farm income increased from $99,341,000 in 1982 to $384,144,000 in 2022. This was an increase of approximately 287%, which was greater than the rate of increase as the CPI. Farm income rose from $18,017,000 in 1982 to $41,351,000 by 2012, then fell to $26,799,000 in 2022.

Per Capita Income

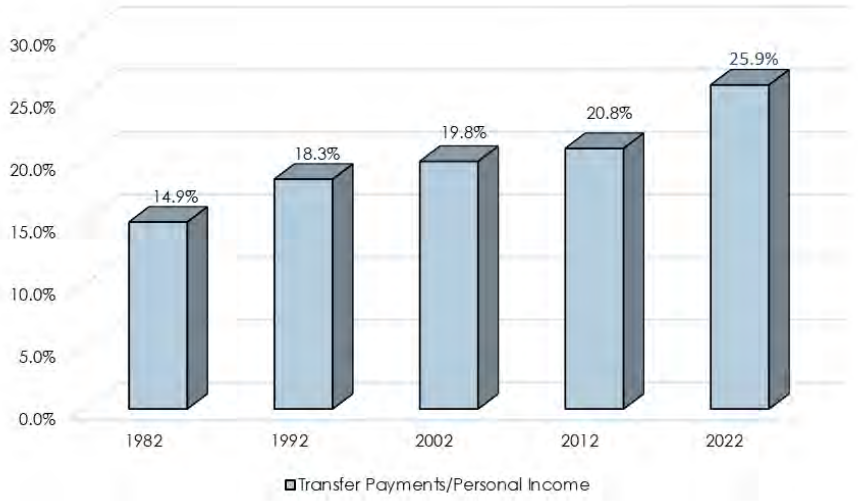
Per Capita Income is determined by dividing total personal income, earned by all of the

FIGURE 5.3: PER CAPITA INCOME 1982-2022



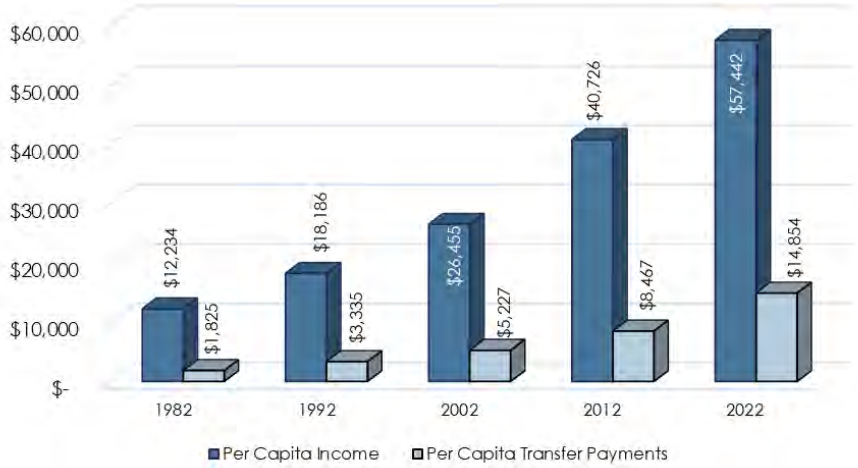
Source: BEA Regional Economic Accounts, 1982 - 2022

FIGURE 5.4: TRANSFER PAYMENTS AS A PROPORTION OF INCOME 1982-2022



Source: BEA Regional Economic Accounts, 1982 - 2022

FIGURE 5.5: PERSONAL INCOME AND TRANSFER PAYMENTS 1982-2022



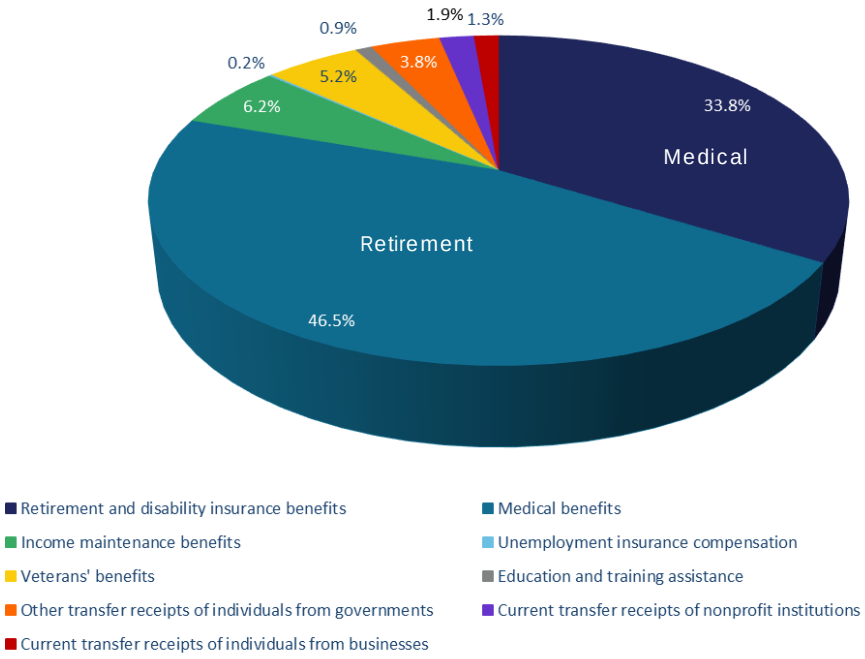
Source: BEA Regional Economic Accounts, 1982 - 2022

residents in an area, by the number of residents in an area. The per capita income in Jefferson County increased from $12,234 in 1982 to $57,442 in 2022, an increase of 370% (Figure 5.3). This was significantly higher than the CPI increase. The state of Nebraska's per capita income level was $64,268 in 2022.

Transfer Payments

Another income source is transfer payments, which are a component of non-farm income. Transfer payments as a proportion of personal income have risen considerably over the last fifty years. In 1982, transfer payments comprised 14.9% of total personal income (Figure 5.4). By 2022, transfer payments

FIGURE 5.6: TRANSFER PAYMENTS BY SOURCE 2022



Source: BEA Regional Economic Accounts, 2020

Transfer Payments

Government transfer payments span a wide range of uses and organizations. The funds for these payments also come from many different sources. However, the most common form of transfer payment is retirement and disability insurance benefits. These payments are made to those who qualify for OASDI benefits, railroad retirement and disability benefits, workers compensation programs and others.

Medical benefits are the second most common form of transfer payments. These types of benefits are government payments made through intermediaries to beneficiaries of medical care. Specifically, medical benefits come from either public assistance medical care or military medical insurance benefits. Public assistance is received by low-income individuals and payments come through the federally assisted, state-run Medicaid program and the Children's Health Insurance Program (CHIP). Military insurance is provided to military personnel through the TriCare Management Program.

Unemployment insurance is perhaps the third most common type of government transfer payments. This insurance includes state unemployment, federal unemployment and other organizations of unemployment compensation. Veterans' benefits are also a fairly common form of transfer payment. Transfer payments which surround these types of benefits are made up of veterans' pension and disability benefits, veterans' life insurance benefits and other types of veterans assistance.

Finally, education and training assistance is considered a type of government transfer payment. This government assistance consists of higher education student assistance, interest payments on student loans and state educational assistance. The combination of these benefits help individuals at all levels of education afford school. They also help people from all types of backgrounds. From Individuals who may only need a loan to people who need more assistance, all people can be helped with these transfer payments.

TABLE 5.1: TRANSFER PAYMENTS 1982-2022

Description	1982	1992	2002	2012	2022	Change	Change/ Year
Personal current transfer receipts (thousands of dollars)	17,504	28,749	43,136	64,131	106,262	507%	12.7%
Current transfer receipts of individuals from governments (thousands of dollars)	16,779	27,903	41,690	62,610	102,805	513%	12.8%
Retirement and disability insurance benefits	10,964	16,451	20,564	26,646	35,950	228%	5.7%
Social Security benefits	9,853	15,010	19,054	24,965	34,764	253%	6.3%
Excluding Social Security benefits	1,111	1,441	1,510	1,681	1,186	7%	0.2%
Medical benefits	3,356	8,297	16,253	27,312	49,417	1372%	34.3%
Medicare benefits	2,401	4,603	8,102	18,019	31,812	1225%	30.6%
Public assistance medical care benefits	915	3,633	8,098	9,032	17,368	1798%	45.0%
Military medical insurance benefits	40	61	53	261	237	493%	12.3%
Income maintenance benefits	808	1,646	2,530	4,392	6,604	717%	17.9%
Supplemental Security Income (SSI) benefits	221	456	607	886	1,004	354%	8.9%
Earned Income Tax Credit (EITC)	71	369	572	1,197	1,435	1921%	48.0%
Supplemental Nutrition Assistance Program (SNAP)	149	350	270	816	1,065	615%	15.4%
Other income maintenance benefits	367	471	1,081	1,493	3,100	745%	18.6%
Unemployment insurance compensation	586	326	829	888	186	-68%	-1.7%
State unemployment insurance compensation	540	322	798	883	178	-67%	-1.7%
Excluding state unemployment insurance compensation	46	4	31	5	8	-83%	-2.1%
Veterans' benefits	759	937	1,143	2,524	5,575	635%	15.9%
Education and training assistance	305	235	360	577	993	226%	5.6%
Other transfer receipts of individuals from governments	1	11	11	271	4,080	407900%	10197.5%
Current transfer receipts of nonprofit institutions	327	479	754	941	2,025	519%	13.0%
Current transfer receipts of individuals from businesses	398	367	692	580	1,432	260%	6.5%

Source: BEA, Regional Economic Information System 1982 - 2022 Data in thousands of dollars.

represented 25.9% of total personal income. Per Capita transfer payments rose to $14,853 by 2022 (Figure 5.5).

As seen in Figure 5.6, the majority of transfer payments are in the form of Medical Benefits and Retirement Benefits, indicating a major impact of the aging population. This may indicate an opportunity for economic development efforts to promote amenities for retiree retention and attraction, as well as balancing the demographic profile with youth retention and in-migration.

Table 5.1 (prior page) enumerates different categories of transfer payments from 1982 to 2022. The category "Other transfer receipts of individuals from governments" started at a minimal level in 1982. Otherwise, the largest increase in a specific category was in the Earned Income Tax Credit (EITC) benefits with a total increase of approximately 1,921%. Public expenditures during the COVID pandemic likely influenced 2022 transfer payments as well.

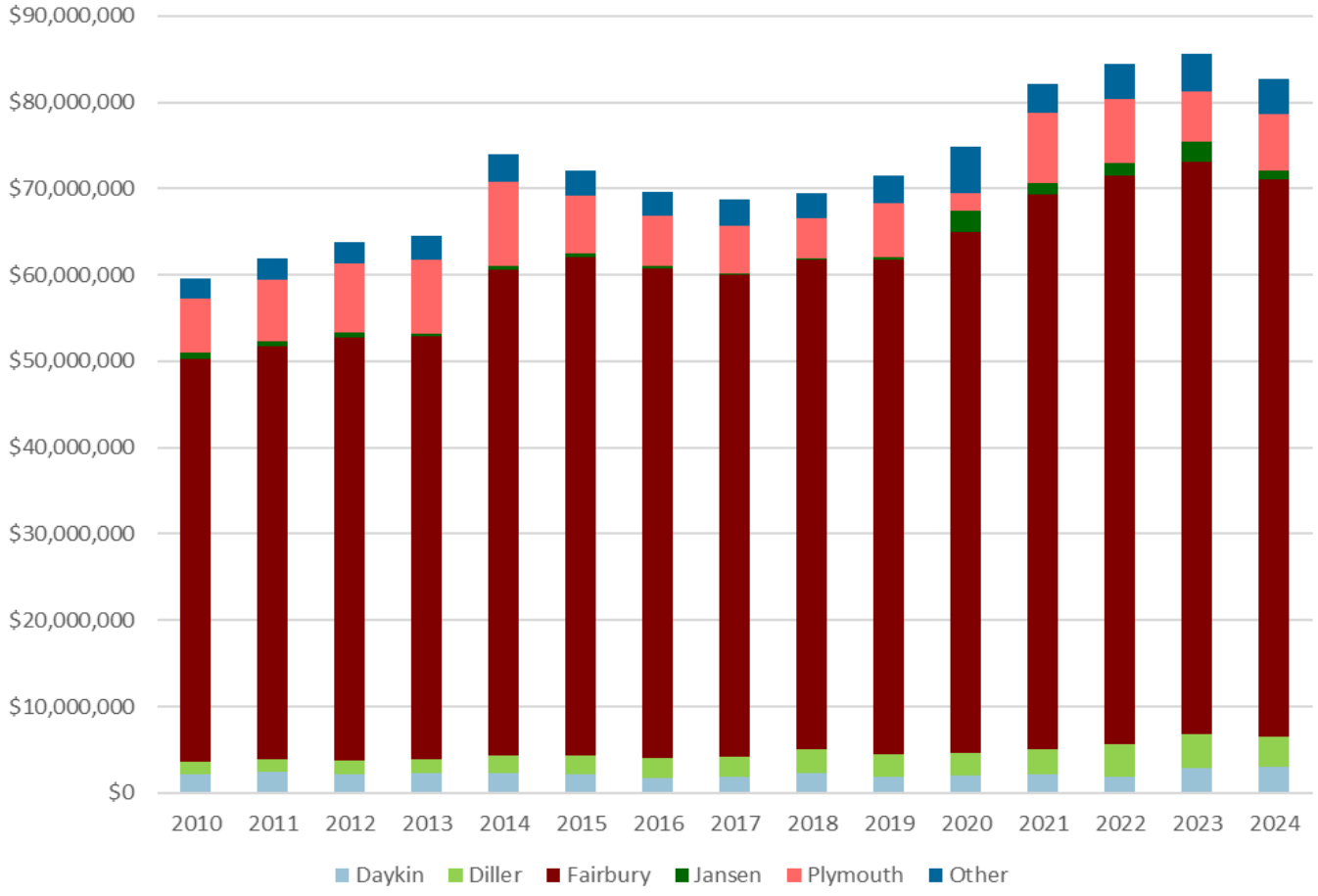
Sales Tax

Increasing income tends to result in increasing retail sales, providing a base for employment and income for local residents. Retail sales also drive local sales and use tax receipts for municipalities and the State of Nebraska.

According to the Nebraska Department of Revenue, Net Taxable Sales in Jefferson County have grown from $59,646,508 in 2010 to $82,718,156 in 2024, an increase of about 44% (Figure 5.7).

The City of Fairbury accounts for the majority of taxable sales in the county, realizing about $64.5 million in 2024, a retraction of –3% from the year before. Plymouth had $6.5 million in 2024, up almost 10%, Diller $3.5 million

Figure 5.7: Net Taxable Sales for Jefferson County and Municipalities, 2010-2024



Source: Nebraska Dept. of Revenue, Non-Motor Vehicle Sales Tax Collections

in sales, Daykin just over $3 million, and Jansen about $1 million.

Where many places across the state saw a sharp drop in retail sales during the COVID pandemic, sales in Jefferson County appear to have remained robust until a slight contraction in 2024.

EMPLOYMENT

Employment data assists in understanding the key generators of income. This section provides data on the types of jobs in Jefferson County and the type of employment and occupations of residents. Unfortunately, data for many employment sectors is not disclosed for small towns and rural areas.

INDUSTRY EMPLOYMENT

As shown in Table 5.2, the total number of jobs in Jefferson County fell from 4,967 in 2012 to 4,873 in 2022, according to the US Bureau of Economic Analysis (BEA). This was a contraction of –1.9%, with farm employment and non-farm employment both decreasing. Statewide, total employment in Nebraska grew by 9.7% in the same decade.

Manufacturing employment grew from 515 to 598, an expansion of 14% to become the largest private sector in Jefferson County in 2022. Manufacturing grew by 8.8% statewide. Real Estate was the fastest growing reported sector, up by 37.5%.

The Government sector contracted by –3.1%, yet remaining the largest employment group overall. Finance and Insurance dropped by –31%. As Real Estate is closely related to Finance and Insurance, there may have been reclassifications affecting these reported statistics.

Building on a strong economic base, manufacturing represented a greater share of local employment than would be expected in Nebraska, reflecting local strength in the sector. Wholesale trade also represents a greater share of local compared to statewide employment. Both sectors had a large Location Quotient, comparing local to statewide employment in each industry.

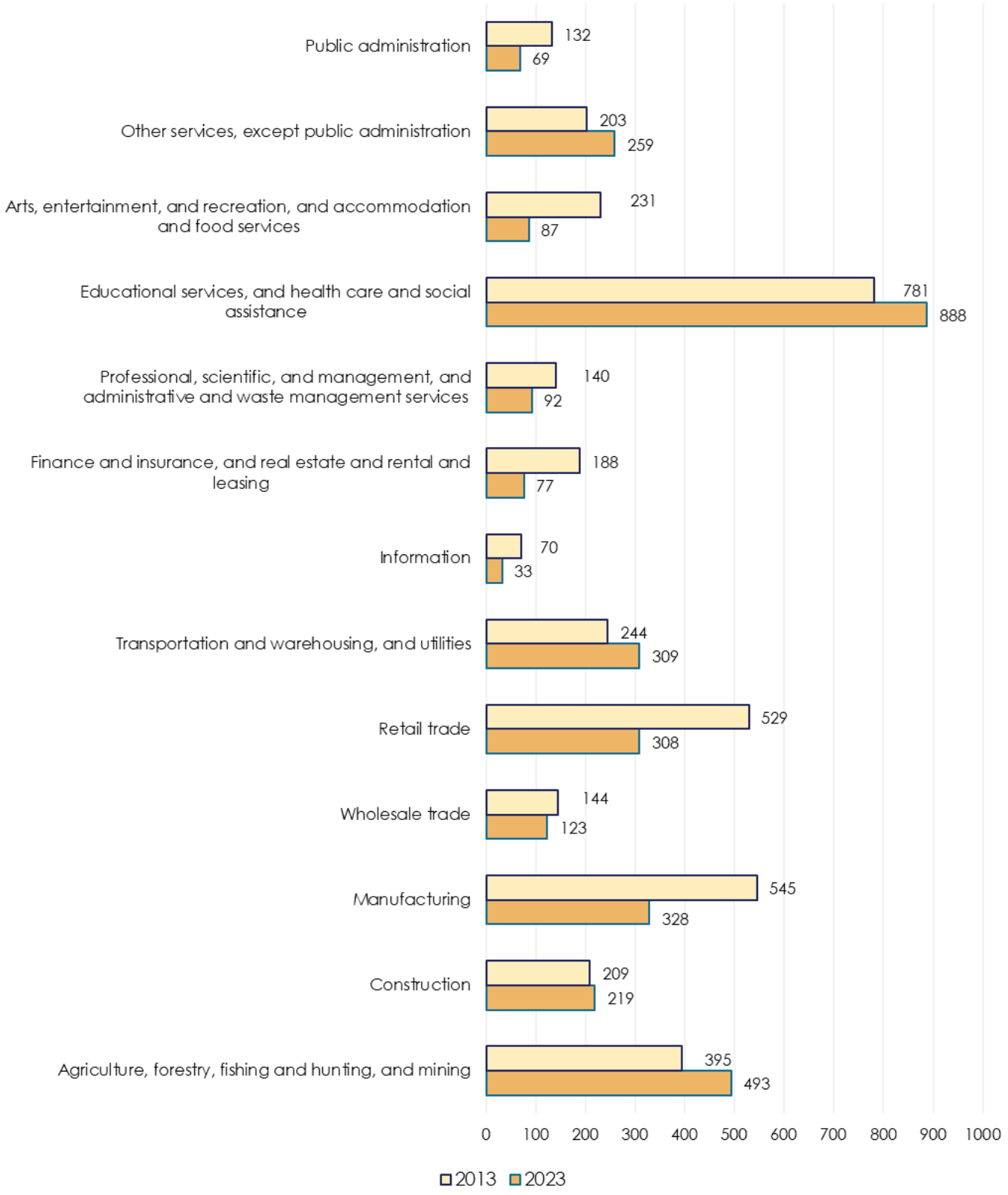
Health Care is the largest employment sector in Nebraska after Government jobs. In 2012, there were 582 jobs in Jefferson County in Health Care. The number in 2022 was not disclosed to avoid identifying any individual establishment.

TABLE 5.2: EMPLOYMENT IN JEFFERSON COUNTY 2012-2022

Industry	2012	2022	Change 20121-2022
Total Employment by Place of Work	4,967	4,873	-1.9%
Farm Employment	697	686	-1.6%
Non-Farm Employment	4,270	4,187	-2.0%
Forestry and Fishing	(D)	(D)	n/a
Mining, Quarrying, and Oil & Gas Extraction	23	(D)	n/a
Utilities	-	-	-
Construction	294	288	-2.1%
Manufacturing	515	598	13.9%
Wholesale Trade	207	260	20.4%
Retail Trade	675	589	-14.6%
Transportation and Warehousing	194	181	-7.2%
Information	65	58	-12.1%
Finance and Insurance	172	131	-31.3%
Real Estate	75	120	37.5%
Professional, Scientific, and Technical Services	97	(D)	n/a
Management of Companies	(D)	(D)	n/a
Administrative/Support/Waste Management	(D)	143	n/a
Educational Services	14	(D)	n/a
Health Care and Social Assistance	582	(D)	n/a
Arts, Entertainment, and Recreation	(D)	(D)	n/a
Accommodation and Food Services	(D)	(D)	n/a
Other Services (except Government)	300	248	-21.0%
Government	634	615	-3.1%

(D) Not Disclosed, n/a– Not Available
Source: BEA Regional Economic Accounts, 2012- 2022

FIGURE 5.8: RESIDENTS' EMPLOYMENT BY INDUSTRY 2013-2023



Source: American Community Survey 2009-2013 & 2019-2023.

TABLE 5.3: LABOR FORCE AND UNEMPLOYMENT RATES 2013-2023

	2013		2023	
	Labor Force	Unemployment	Labor Force	Unemployment
Jefferson County	4,332	3.6%	4,175	2.0%
Fillmore County	3,296	2.9%	3,307	1.9%
Gage County	11,088	4.5%	10,861	2.6%
Saline County	7,374	4.2%	7,152	2.4%
Thayer County	3,048	2.7%	2,690	1.8%
Nebraska	1,014,830	3.7%	1,054,681	2.3%

Source: US Bureau of Labor Statistics, Local Area Unemployment Statistics

The ACS estimates employment statistics for the people who live in an area. In 2012, 837 Jefferson County residents were employed in the Educational services, and health care and social assistances industry, the largest jobs sector (Figure 5.8). In 2022, this was still the largest sector, with 695 people employed in this sector.

LABOR FORCE

According to the US Bureau of Labor Statistics, Jefferson County's labor force declined from 4,332 in 2013 to 4,175 in 2023, an 3.6% reduction in available labor. The labor force also declined in most adjacent counties (Table 5.3).

Jefferson County's unemployment rate also dropped, from 3.6% to 2.0% over the same timeframe. In comparison, the unemployment rate for the State of Nebraska decreased from 3.7% to 2.3%. Fillmore and Thayer counties held their unemployment rate under 2.0%, while Gage and Saline were above the statewide average.

While a lower unemployment rate may imply more people are working, there are fewer people participating in Jefferson County's labor force than there were previously, shrinking the pool of labor available for new and expanded businesses. In many rural counties this is at least partly due to housing constraints.

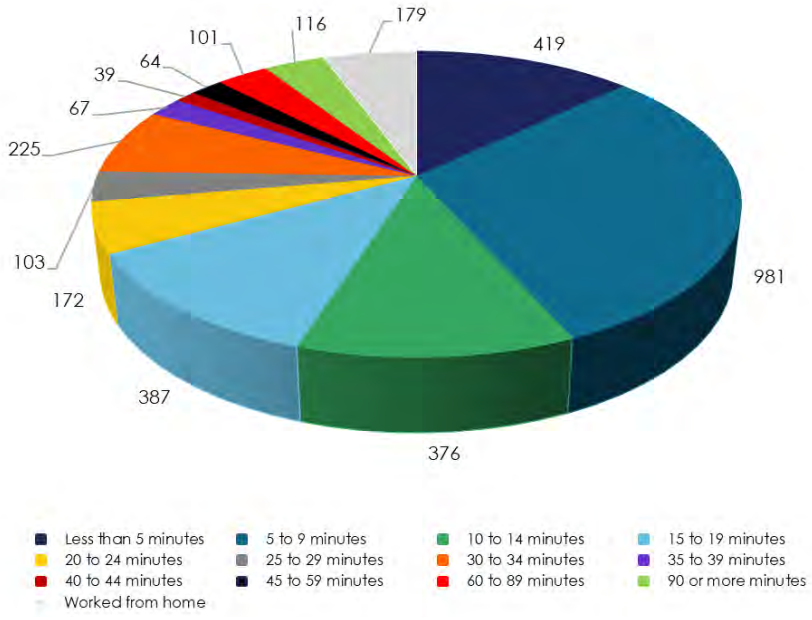
COMMUTER TRENDS

Jefferson County is part of a regional job market, with local residents commuting outside the county to work, while others commute into the county to work. The ACS estimates in 2023, 19.5% of residents who work left the county each day, and an additional 1.4% leave the state—an even larger number might be expected with Jefferson County's location on the Kansas state line.

According to the US Census Bureau's Longitudinal Employer-Household Dynamics database, about 1,444 people commute into Jefferson County each day while 1,788 commute out of the county daily. The largest number of inbound commuters drive from Beatrice, and the largest number of outbound commuters drive to Lincoln each day.

Travel time to work is a factor used to gauge if Jefferson County's workforce may want to find employment closer to home. The mean travel time to work for residents in 2023 was 18.8 minutes, compared to 19.1

FIGURE 5.9: TRAVEL TIME TO WORK 2023



Source: American Community Survey 2019-2023.

TABLE 5.4: BASIC/NON-BASIC EMPLOYMENT BY OCCUPATION - 2023

Location (County)	Management business, science, and arts occupations	Service occupations	Sales and office occupations	Natural Resources, construction and maintenance occupations	Production, transportation, and material moving occupations	Base Multiplier
Jefferson	31.6%	15.5%	16.8%	16.7%	19.5%	8.1
Fillmore	35.4%	14.4%	20.2%	13.1%	16.9%	16.9
Gage	32.6%	19.4%	16.7%	10.6%	20.6%	8.8
Saline	33.0%	13.2%	15.2%	15.1%	23.5%	6.9
Thayer	33.3%	14.8%	16.9%	18.5%	16.4%	9.3
Nebraska	40.8%	15.2%	19.8%	9.9%	14.2%	n/a

Source: American Community Survey 2019-2023.

minutes statewide. Figure 5.9 indicates in 2023, almost half (49%) of commuters were traveling 10 minutes or less to work, including 5.5% who worked from home. About 27% commuted 20 minutes or more to work. Those traveling 45 minutes or more only totaled 8.7%.

OCCUPATIONS

Industry is the type of activity at a person's place of work. Occupation is the kind of work a person does to earn a living. The following data examine five occupational areas established by the U.S. Census Bureau to evaluate trends in employment and the area economy. The five occupational categories used in the analysis are:

- Management, business, science, and arts occupations;
- Service occupations;
- Sales and office occupations;
- Natural resources, construction, and maintenance occupations, and;
- Production, transportation, and material moving occupations

In 2023, the ACS reported the largest number of Jefferson County residents (31.6%) worked in Management, business, science, and arts occupations (Table 5.4). This compares to 40.8% of Nebraska residents statewide.

ECONOMIC BASE

A community's economic base is made up of "basic sector" employers. Non-Basic employment relies on revenue brought into the area by basic sector firms.

In order to estimate the number of basic jobs in a local area, a comparative area must be selected. For purposes of this analysis, Jefferson County is compared to the state of Nebraska, as well as adjacent counties.

Basic Employment

Occupation categories are compared to the same categories for the state to determine "basic" employment. Where the percentage of county residents in a certain occupation exceeds the state's percentage, those jobs are considered "basic" employment with exports of goods or services bringing new income into the county. Table 5.4 indicates Jefferson County has exports in three occupational categories:

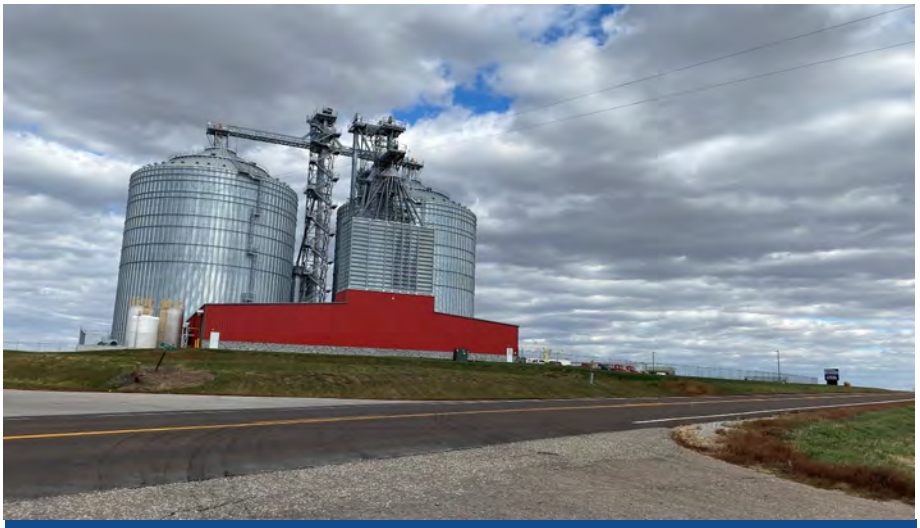
- Service Occupations
- Natural Resources, construction and maintenance occupations;
- Production, transportation, and material moving occupations.

With the largest base employment in production and natural resources, it would be advantageous for the local schools to support workforce training in these occupations.

Basic employment

Basic employment is business activity providing services primarily outside the area through the sale of goods and services, the revenues of which are directed to the local area in the form of wages and payments to local suppliers.

Non-Basic employment is business activity providing services primarily within the local area through the sale of goods and services, and the revenues of such sales re-circulate within the community in the form of wages and expenditures by local citizens.



Livingston Enterprises, Inc., facility, rural Jefferson County.
Source: Marvin Planning Consultants

Basic occupation data can be compared to basic industry data for additional economic insights. Both basic and non-basic occupations could be stronger. The County should continually work on existing business retention and expansion assistance to help employers stay and grow in Jefferson County.

Small-Scale Manufacturing

Manufacturing and exported services provide primary sector jobs and create new wealth in a community. Small-scale manufacturing, light industry, and professional services operate with a small number of employees and utilize local materials.

Jefferson County has a diverse manufacturing base, and many residents are skilled in agricultural production and related machinery. Small-scale manufacturers and exported services can operate from rural Nebraska and sell their products across the world.

The comprehensive plan can guide decisionmakers in evaluating the need for manufacturing sites outside city limits and mitigating impacts on existing residents.

Base Multiplier

A concept directly related to the basic/non-basic analysis is the base multiplier. The base multiplier is a number which represents how many non-basic jobs are supported by each basic job. A high base multiplier means the loss of one basic job will have a potential large impact on the local economy. Behind this analysis is if basic jobs bring new money into a local economy, money becomes the wages for other workers in the economy. Therefore, more money is brought in by basic jobs creating more non-basic jobs.

The information in Table 5.4 shows Jefferson County has a base multiplier of 8.1, which means for every job considered to be basic, just over eight other jobs in the county are supported and/or impacted. This indicates for every job tied to exportation of goods or services, there are about eight jobs created/supported by the dollars coming into the community. Therefore, if Jefferson County lost just one of the jobs tied to exports, then there is the potential to lose approximately eight jobs from the non-basic employment side.

There is no magical multiplier a county should aim to achieve. Every county is different and the dynamics involved are different. The unique and ever-changing dynamics are what make a particular county's economy unique and attractive to different employers.

It is critical to determine a future vision for business and industry and work towards this end. It is also critical to diligently work towards a successful business retention and expansion program to support those employers already located in the county. Some places become too focused on attracting the next big thing and forget about opportunities existing employers can offer through expansion of their operations.

A Legacy of Agriculture

The US Census of 1870 showed *15,134 bushels of potatoes raised in 1869; 4,070 bushels of oats; 25,734 of wheat; and 58,250 of corn. The pioneers had made 19,350 pounds of butter and owned 901 head of cattle, 714 swine, 507 milch cows, 529 horses, and 60 mules. A Grand Jury report in October, 1870,, also reported the financial affairs of the county in a "prosperous condition."*

—Fred H. Stafford, Jefferson County and Fairbury, Nebraska (1948)

TABLE 5.5: FARMS AND LAND IN FARMS 2002 - 2022

Agricultural Characteristics	2002	2007	2012	2017	2022	% Change 2002-2022
Number of farms	631	601	627	590	572	-9.4%
Land in Farms (acres)	363,575	325,577	352,233	358,869	285,075	-21.6%
Average size of farms (acres)	576	542	562	608	498	-13.5%
Total area of county (acres)	368,640	368,640	368,640	368,640	368,640	-
Percentage of land in farms	98.6%	88.3%	95.5%	97.3%	77.3%	-
Total cropland (acres)	260,131	232,700	270,681	283,739	225,103	-13.5%
Harvested cropland (acres)	231,392	213,731	253,323	267,279	211,203	-8.7%
Irrigated cropland (acres)	70,768	80,979	92,769	105,424	90,396	27.7%
Estimated Market Value of Land & Bldg (avg./farm)	$617,607	$970,708	$2,206,615	$2,525,053	$2,852,506	361.9%
Estimated Market Value of Machinery/Equipment (avg./farm)	$96,144	$124,799	$230,149	$262,657	$313,888	226.5%

Source: U.S. Census Bureau; USDA Census of Agriculture, 2002, 2007, 2012, 2017, 2022
Note: this data is self reported, and may reflect operations in more than one county.

AGRICULTURAL PROFILE

Agriculture has provided an economic base for Jefferson County since the first settlers arrived. Tables 5.5 to 5.8 examine the agricultural profile of Jefferson County. Table 5.5 examines the number of farms and their high-level characteristics for these farms. The data are from the US Census of Agriculture series 2002 through 2022.

Farms

The number of farms in Jefferson County decreased from 631 in 2002 to 572 in 2022, a fall of -9.4% (Table 5.5). A falling number of farms has been normal throughout the Great Plains region.

Each farm may have multiple owners and producers. The Census of Agriculture defines "producer" as "a person who is involved in making decisions for the farm operation… The producer may be the owner, a member of the owner's household, a hired manager, a tenant, a renter, or a sharecropper."

TABLE 5.6: NUMBER OF FARMS BY SIZE

Farm Size (acres)	2002	2007	2012	2017	2022	% Change 2002-2022
1 to 9	15	14	39	33	31	106.7%
10 to 49	67	87	98	86	99	47.8%
50 to 179	135	162	134	134	151	11.9%
180 to 499	161	126	148	111	130	-19.3%
500 to 999	136	96	84	108	74	-45.6%
1,000 or more	117	116	124	118	87	-25.6%

Source: USDA Census of Agriculture, 2002, 2007, 2012, 2017, 2022
Note: this data is self reported, and may reflect operations in more than one county.

Of the 572 farms in Jefferson County in 2022, 316 were operated by a full owner, 174 by a part-owner (on owned and rented ground), and 82 by a tenant farmer. There were 1,010 producers reported in the Census of Agriculture (Table 45), including 246 farms with one producer and 258 with two. There were 441 producers who reported farming was their primary occupation. There were 521 operators who reported their place of residence was on the farm operated. There were only 369 producers who reported they did not work off farm, and 620 producers who reported they did work off-farm at some point during the year.

From 2002 to 2022, total land in farms fell from 363,575 acres to 285,075 acres, an decrease of approximately -9% (Table 5.5). The average size of farms decreased from 576 acres in 2002 to 498 acres in 2022. The trend across Nebraska and the United States has been increasing size; however, the contraction in total land in farms offset that trend as the share of the county in farms fell from 98.6% to only 77.3%. This may also indicate that farmland

TABLE 5.7: FARMS AND LIVESTOCK BY TYPE

Type of Livestock	2002	2007	2012	2017	2022	% Change 2002-2022
Cattle and Calves						
farms	317	239	308	231	201	-36.6%
animals	35,736	29,005	28,705	34,658	24,761	-30.7%
average per farm	113	121	93	150	123	
Beef Cows						
farms	277	204	272	210	174	-37.2%
animals	12,547	8,865	10,762	11,082	6,118	-51.2%
average per farm	45	43	40	53	35	
Milk Cows						
farms	25	19	21	19	9	-64.0%
animals	3,047	2,952	3,325	3,180	2,388	-21.6%
average per farm	122	155	158	167	265	
Hogs and Pigs						
farms	31	23	21	7	9	-71.0%
animals	41,269	53,311	92,889	(D)	(D)	-
average per farm	1,331	2,318	4,423	-	-	
Sheep and Lambs						
farms	23	19	23	15	19	-17.4%
animals	667	531	529	624	1,154	73.0%
average per farm	29	28	23	42	61	
Chickens (layers and pullets)						
farms	14	19	41	24	32	128.6%
animals	(D)	(D)	(D)	(D)	(D)	-
average per farm	-	-	-	-	-	

Source: U.SDA Census of Agriculture, 2002, 2007, 2012, 2017, 2022
Note: this data is self reported, and may reflect operations in more than one county.
(D) Data Disclosure - Information Withheld

in Jefferson County is being farmed by operations headquartered outside the county for purposes of response to the Census of Agriculture.

Either way, total cropland in Jefferson County decreased from 260,131 acres in 2002 to 225,103 acres in 2022, which was a change of -13.5%. Harvested cropland decreased by about –9%, while irrigated cropland increased by about 28%.

Land and Buildings

Table 5.5 also shows the estimated market value of land and buildings, and market value of machinery and equipment. The average value of land and buildings increased from about $618,000 to over $2.8 million in 2022, more than a 360% jump. Average value of machinery and equipment increased from $96,000 to about $314,000 in 2022; an increase of approximately 227%. The CPI for this same period was approximately 58%; the average market values per farm increased significantly faster than the rate of inflation.

Farms by Size

In 2002, the largest number of farms were between 180 to 499 acres in size (Table 5.6). By 2022, the largest category were 50 to 179 acres or more. The number of small farms of 1 to 9 acres and 10 to 49 acres in size grew over the time period. The largest rate of contraction was in the number of farms between 500 to 999 acres.

Ag Products

Total sales of agricultural products were reported of $295,644,000 for 2022. This was an average of $516,859 per farm. There were 135 farms reporting less than $2,500 in sales on the low end, and 101 farms with sales of $500,000 or more on the high end. There were 259 farms reporting receipt of government payments in 2022, down from 449 in 2017.

The number of farms with cattle and calves decreased by about –37% from 2002 to 2022 (Table 5.7). The number of beef cows fell by –37%. There were nine farms with hogs and pigs in inventory, 19 with sheep and lambs, and 32 with chickens (layers and pullets) in 2022. Some data is not disclosed to avoid identifying individual producers, shown as a "(D)" in the table.

Table 5.8 (next page) reports on specific crops. Corn and soybeans have been the two most frequently raised crops in this region of Nebraska. In Jefferson County, an average of 381 acres of corn was raised per farm, and 338 acres of soybeans. The number of farms raising corn

TABLE 5.8: NUMBER OF FARMS AND CROPS BY TYPE

Type of Crop	2002	2007	2012	2017	2022	% Change 2002-2022
Corn for Grain						
farms	289	252	333	328	274	-5.2%
acres	77,060	87,144	119,797	129,239	104,305	35.4%
average per farm	267	346	360	394	381	
Corn for Silage						
farms	62	25	30	12	12	-80.6%
acres	5,949	1,927	1,398	1,288	812	-86.4%
average per farm	96	77	47	107	68	
Wheat						
farms	197	149	109	48	38	-80.7%
acres	22,569	25,085	11,526	5,483	3,740	-83.4%
average per farm	115	168	106	114	98	
Oats						
farms	41	14	4	10	3	-92.7%
acres	1,342	314	40	200	24	-98.2%
average per farm	33	22	10	-		
Sorghum for Grain						
farms	214	121	24	18	15	-93.0%
acres	26,742	14,953	1,364	1,015	783	-97.1%
average per farm	125	124	57	56	52	
Sorghum for Silage						
farms	22	12	7	2	2	-90.9%
acres	603	330	274	(D)	(D)	-
average per farm	27	28	39	-	-	
Soybeans						
farms	349	296	333	320	267	-23.5%
acres	82,761	73,760	104,497	118,018	90,349	9.2%
average per farm	237	249	314	369	338	
Hay/Forage						
farms	349	271	264	278	215	-38.4%
acres	19,929	13,289	14,121	11,884	10,461	-47.5%
average per farm	57	49	53	43	49	
Sunflower Seeds						
farms	8	7	4	N/A	4	-50.0%
acres	412	1,539	234	N/A	540	31.1%
average per farm	52	220	59	-	135	

Source: U.SDA Census of Agriculture, 2002, 2007, 2012, 2017, 2022
Note: this data is self reported, and may reflect operations in more than one county.
(D) Data Disclosure - Information Withheld

for grain, corn for silage, wheat, oats, sorghum for grain/silage, soybeans, and hay/forage crops decreased between 1997 and 2017. The number of acres of each of these crops also decreased in total, other than corn and soybeans, with a slight increase for sunflower seeds.

Agriculture has historically been a major part of the Jefferson County and Nebraska economy. Future land use policies will have a major impact on the animal and crop agriculture industry. As well, regional and national trends in agricultural production will continue to affect wholesale and value-added ag processing into the foreseeable future.

Value-Added Agriculture

While much of Jefferson County's agricultural production is sold at wholesale and exported around the world, local products can be processed locally so value is added closer to home (generally within a 400-mile radius of the home farm). Value-added enterprises today may be large scale, such as the ethanol and bio-diesel plants which have sprung up across central Nebraska. This may be small-scale—Nebraska has been able to support vineyards and winemaking, as well as other agri-tourism enterprises.

Farm-to-home operations can be as diverse as farmer's markets and community-supported agriculture. Direct food and fiber sales not only diversify on-farm income, but provide the benefit of healthy produce to area residents. Over 80% of respondents to the Comprehensive Plan survey agree or strongly agree with creating farm-to-home operations such as farmers' markets, community-supported agriculture, and on-farm stores.

Future regional land use policies will have impacts on animal and crop agriculture. Also, regional and national trends in agricultural production will continue to affect wholesale and value-added ag processing into the foreseeable future.

ECONOMIC DEVELOPMENT RESOURCES

Local Economic Development

Jefferson County relies on local communities to take the lead on local economic development. Some counties in the region have a formal local economic development office or non-profit organization dedicated to improving the quality of life of their residents. There were several comments in the county-wide survey and the town hall suggesting Jefferson County needs a county-wide economic development advocate.

Local schools and the regional community college (profiled in Chapter 6 Community Facilities) also have a large impact on workforce training, as well as college prep. For example, Fairbury Public Schools is exploring opportunities to restore their Construction Trades shop program, which would provide a tangible community benefit as well as preparing students for practical employment.

City of Fairbury

The Fairbury Community Development Department is responsible for administering a variety of programs geared toward the development and revitalization of the City of Fairbury. The Department is also tasked with guiding orderly growth for the community by enforcing compliance with applicable regulations to meet the quality of life, health, and safety needs of the community.

The Development Services Director administers the city's LB840 funding program and does grant writing and grant administration. The City has recently undertaken efforts such as the business design challenge to encourage property owners to upgrade their buildings, and the Elevate grant program to encourage entrepreneurialism.

Over half (56%) of Comprehensive Plan survey respondents agree and 35% strongly agree Retention and Expansion of current business is key to Jefferson County's economic survival.

Source: www.fairburyne.org/150/Community-Development

Fairbury Chamber of Commerce

In 1919, the Fairbury Booster Club and the Commercial Club merged to form the Chamber of Commerce. The Fairbury Chamber of Commerce is a voluntary organization of the business community. The chamber is a private, non-profit corporation.

Source: fairburychamber.org

Southeast Nebraska Economic Development District

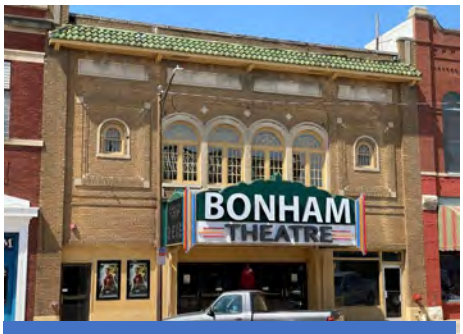
The Southeast Nebraska Economic Development District (SENDD) is a voluntary association of counties and municipalities formed under the Nebraska Interlocal Cooperation Act to identify common problems, their solutions, and to provide continuing support for efficient and effective government among its members.

SENDD is dedicated to place-making in the region through projects aimed at supporting local businesses, job creation, affordable and safe housing, education, health, and recreation. SENDD has also been active in supporting rural broadband development—across the nation, rural counties with high broadband utilization see increases in the number of new businesses.

SENDD also works with the US Economic Development Administration (EDA) on the regional Comprehensive Economic Development Strategy (CEDS), a continuous regional economic development planning process for southeast Nebraska. The most recent CEDS for 2021-2025 presents a wealth of social and economic data, and includes regional goals such as:

- Capital Facilities and Infrastructure
- Built Resources
- Regional Collaboration and Commitment
- Economy and Housing
- Natural Resources

Source: www.sendd.org



Downtown Fairbury
Source: Marvin Planning Consultants

Nebraska Department of Economic Development

The Nebraska Department of Economic Development (DED) is focused on growing and diversifying the state's economic base, bringing new dollars, new businesses, and new people into the state. DED functions to:

- Support communities with development efforts.
- Assist with starting, retaining, and expanding businesses.
- Promote the state for business locations and expansions.

DED efforts supporting community development include the Community Development Block Grant (CDBG) program, Civic and Community Center Financing Fund (CCFF), Economic Development Certified Community (EDCC), Leadership Certified Community (LCC), Local Option Municipal Economic Development Act (LB840), Nebraska Capital Projects fund, Nebraska Rural Projects fund, Site and Building Development found, and others. DED also provides resources for grant management and technical assistance with Enterprise Zones and Opportunity Zones.

Source: opportunity.nebraska.gov

LB840

The Local Option Municipal Economic Development Act (LB840, 1991) authorized incorporated cities and villages — if approved by local voters — to collect and appropriate local tax dollars, including sales and/or property tax, for economic development purposes.

To implement an LB840 program, communities formulate a written economic development plan which, if voter-approved, becomes the foundation for the collection and expenditure of local tax revenues for economic development under which the municipality's LB840 program operates.

In Jefferson County, the City of Fairbury has an authorized LB840 program.

Economic Development Goals and Actions

EconDev Goal 5.1

Jefferson County supports balanced local and regional economic development services.

Actions

5.1.1 Establish a county-wide public-private economic development working group.

5.1.2 Support local entrepreneurship, and small business retention and expansion.

5.1.3 Regularly review and update land use regulations for commercial plan review

5.1.4 Review and improve the County's online presence.

5.1.5 Continue to utilize the County website with regular updates to meeting agendas and minutes, regulations and permit forms, and community profile information.

EconDev Goal 5.2

There are sites available for commercial and industrial development.

Actions

5.2.1 Continue implementation of a clear and consistent development review process to ensure timely permit review.

5.2.2 Support local Tax Increment Financing (TIF) where appropriate.

5.2.3 Support municipalities extending public utilities to reduce the costs of development and encourage development in appropriate areas.

5.2.4 Work closely with Southeast Nebraska Economic Development District (SENDD) to access EDA and other funding sources for local economic development.

5.2.5 Buffer commercial and industrial sites from incompatible uses.

EconDev Goal 5.3

There is an accessible system in-place for workforce development.

Actions

5.3.1 Continue support of K-12 education to include skills-based training and creative partnerships with local businesses.

5.3.2 Encourage community college workforce training in Jefferson County.

Chapter Six
County Facilities

Government provides services to the people through public facilities. It is important for all levels of government to anticipate the future demand for their services if they are to remain strong and vital. This chapter reviews facilities plans, resources, and goals and action items.

Some public services are provided by non-governmental, private or non-profit organizations and institutions for the community as a whole. These are important service providers and are an integral part of the community.

FACILITIES PLAN

This element of the comprehensive plan, in conjunction with other chapters, is intended to meet requirements of Neb. Rev. Stat. §23-114.02, to address community facilities, including schools, libraries, and other public buildings.

FIGURE 6.1: JEFFERSON COUNTY COURTHOUSE SQUARE

Source: Google Earth

This chapter groups these facilities into the following categories:

- Public buildings;
- Historic sites and places;
- Education, and;
- Health care

Public Buildings

County Courthouse

The Jefferson County Courthouse is located at 411 4th Street in downtown Fairbury. The County Courthouse provides office and meeting space for many County offices. Jefferson County is served by the 1st Judicial District Court.

The historic Jefferson County Courthouse was built in 1892, designed by architect J.C. Holland in the Romanesque Revival style with a four-faced clock tower-cupola and four axial entrances. It is the third courthouse building—the first courthouse was built in 1873, then an opera house was used starting in 1882. The Courthouse was added to the National Register of Historic Places in 1972 (see below).

Beginning in 2020, the County has undertaken a full replacement of ceiling and light fixtures, along with renovation of several interior spaces. All work was completed in compliance with the Secretary of the Interior's standards.

Law Enforcement Center

The Jefferson County Sheriff's Office is located in the Law Enforcement Center at 606 3rd Street in downtown Fairbury (*see Chapter 8 Public Safety*).

County Highway Shop

The Jefferson County Highway Shop is located at 1415 A Street, on US 136 on the north side of Fairfield (*see Chapter 13 Transportation*).

Emergency Management

Jefferson County Emergency Management and the Planning and Zoning office is located at 313 South K Street in Fairbury, off of Highway 15. The Zoning Administrator also serves as the Weed Superintendent. (*See also Chapter 8 Public Safety.*)

Libraries

- Daykin Public Library, 201 Mary Avenue
- Fairbury Public Library, 601 7th Street (*listed on National Register*)
- Plymouth Public Library, 103 N. Jefferson Avenue

Blue Rivers Area Agency on Aging

Blue Rivers Area Agency (AAA) on Aging is a local resource for seniors age 60 and over. Their mission is to develop or support a system of coordinated and comprehensive services for older individuals promoting a safe, healthy, and independent lifestyle.

Blue Rivers AAA serves an 8-county area from their main office in Beatrice, with a public transportation office for Jefferson County in Fairbury (*see Chapter 13 Transportation*). The AAA administers 17 Senior Centers with nutrition services, including Fairbury, and arranges home delivered meals to Diller and Plymouth.

Source: www.braaa.org

USDA

A USDA Farm Service Agency (FSA) Service Center Office is located at 305 5th Street in downtown Fairbury.

US Postal Service

The USPS has post offices located in each of the municipalities in Jefferson County except for the village of Harbine. Post office

Figure 6.2: Jefferson County Highway Shop

Source: gWorks

facilities in some smaller communities remain open with limited retail hours.

Historic Sites and Places

As noted in the Introduction to this plan, Jefferson County, Nebraska, has a rich history, dating back to the days of the Oregon Trail and Pony Express. The overland trails were replaced by the railroads, and then the highways. Though it all, the county's residents remain proud of their rich heritage.

In 1997, the Nebraska Historic Buildings Survey (NeHBS) documented historic buildings and places across Jefferson County. At the time of the project, 1,028 properties were surveyed in municipalities and rural Jefferson County. The project identified 46 individual properties, the E Street residential historic district in Fairbury, and the Fairchild Farmstead rural historic district as potentially eligible for nomination to the National Register of Historic Places. Concurrent with the survey, a nomination for the Fairbury Commercial Historic District was prepared with 97 contributing and 20 noncontributing properties; the District being listed in June 1997.

Rock Creek Station

Rock Creek Station was a stagecoach and Pony Express station established in 1857 in rural Jefferson County. The site is preserved as Rock Creek Station State Historical Park (*see Chapter 7 Parks and Recreation*).

Jefferson County Historical Society

The Jefferson County Historical Society is a nonprofit organization dedicated to preserving and passing on the history and culture of Jefferson County, Nebraska. It operates a number of historical sites listed on the National Register of Historic Places, including:

- Historic Steele City, where visitors can see a working blacksmith shop, a livery barn, a school, a turn-of-the-century bank, and an 1880s stone church as well as an antique farm machinery display;
- The 1869 District 10 School;
- The 1872 W.C. Smith House and Lime Kiln, which features exhibits explaining the lime industry, as well as period furniture;
- The Rock Island Depot Railroad Museum in Fairbury, which displays rail history exhibits;
- The 1883 Diller Bank Building Museum, which displays artifacts from the history of Diller, Nebraska.

The Jefferson County Historical Society has been collecting, preserving, and teaching the history of Jefferson County, Nebraska since 1955.

Source: www.jeffersoncountyhistory.com

A County is Built: 1871

Tax valuations and assessments played an important part in determining the permanency of a settler's stay in a county. In 1871, for example, first class horses drew the highest valuation of livestock assessed in Jefferson county while the total valuation upon farm land was $1,437,886 (including Webster County, which contained only one precinct at the time)….

Evidence of the accumulation of property in the county was shown by Editor Cross [The Gazette] in his comparison of the 1871 total valuation with valuations for the preceding four years, which included: 1867, $62,965; 1868, $66,429; 1869, $134,913; and 1870, $723,193.

—Fred H. Stafford, Jefferson County and Fairbury, Nebraska (1948)

Historic Steele City
Source: Marvin Planning Consultants

Steele City

In historic Steele City, one can visit a working blacksmith shop, livery barn, school, a turn-of-the-century bank, and an 1880's stone church as well as an antique farm machinery display. Steele City was platted in 1873, by Abner Baker and Robert Crinklow, located on the St. Joe and Western Railway.

The Steele City Historic District in the Village of Steele City was added to the National Register of Historic Places in 1972 (see below). The buildings incorporate elements from various architectural styles, including Italianate and Romanesque Revival, and use wood, brick, and stone as building materials. Notable buildings in the district include the Baptist Church, a limestone building erected in 1882; the Zoellin House, an elaborate two-story frame dwelling, built around 1890; and the 1900 sandstone blacksmith shop.

The District No. 1 School of Jefferson County in Steele City was also listed in 1997.

District No. 10 School

District 10 was established in 1869. The school was housed in a building that also housed a church congregation and lodge meetings. In 1890, the school building was moved one mile north to its present location on a corner of the Dein farm. In 1898, the present building was built and was used as a one-room school until 1961, when the district merged with the Alexandria school district. The School was added to the National Register of historic places in 1978.

Historic Steele City
Source: Marvin Planning Consultants

Woral C. Smith Lime Kiln and Limestone House

W.C. Smith built his house of limestone about 1872, on the River Road northwest of Fairbury. Smith used the lime kiln for his livelihood, using the lime rock in the hilltop behind the kiln. Quicklime was packed in barrels and shipped on the adjacent St. Joseph and Grand Island Railroad.

The kiln was used for the last time in 1896. The kiln and house were added to the National Register of Historic Places in 1974. (Pictured on page 28.)

Rock Island Depot Railroad Museum

The Rock Island Depot Railroad Museum at 910 Second Street in Fairbury, one of two intact Rock Island depots, gives visitors a look at life when trains were the fastest and classiest way to go anywhere, from the billowing steam engine to the 1950's stream-lined Rock Island Rocket. The large two-story Renaissance Revival-style building served as a passenger/freight depot and as the Chicago, Rock Island and Pacific Railroad's Western Division headquarters through 1965.

The depot has been restored and is used as a railroad museum and offices for the Historical Society, complete with a model train room and gift shop. The garden outside, which was a showplace in the 1920's and 30's, has been restored and is home to the brick Memory Wall which honors those men and women who made train transportation an important part of Fairbury's history. It also serves as a way to remember all Rock Island employees and their families. The Fairbury Rock Island Depot and Freight House were added to the National Register of Historic Places in 1996.

Diller Bank Building Museum

The Diller Bank Building Museum houses a sampling of history from the Village of Diller's past. Originally the People's State Bank, built in 1892-1893 in the Renaissance Revival style, the building was listed on the National Register of Historic Places in 1984.

Rock Island Depot, Fairbury
Source: Marvin Planning Consultants

Fairbury City Museum

The Fairbury City Museum is located in the West Ward School, a former elementary school at 1128 Elm Street in Fairbury. The mission of the museum is to preserve, display and promote the history of Fairbury and Jefferson County.

Source: www.fairburyne.org/199/Fairbury-City-Museum

Unincorporated Communities

There are several communities in Jefferson County which are not incorporated municipalities. Some have faded into history, while others remain as rural settlements. These include:

- Gladstone, west of Fairbury, was platted in 1886 in Lincoln Township when the Chicago, Kansas and Nebraska Railway was extended to that point. It was named for William Ewart Gladstone, the Prime Minister of the United Kingdom.
- Helvey post office, established in the 1890s northwest of Fairbury and named for pioneer Thomas Helvey, was bypassed by the railroads.
- Powell was established in 1872 by the Powell Family between Fairbury and Alexandria in Lincoln Township. The townsite was located on the St. Joseph and Denver Railroad, later to become part of the Union Pacific.
- Thompson was established west of Endicott on the Burlington & Missouri River Railroad's Republican River line (southwest of Fairbury before the rail branches to Reynolds).

90% of Comprehensive Plan survey respondents agree or strongly agree it is important to preserve and share Jefferson County history.

National Register

The National Register of Historic Places is the official list of districts, sites, buildings, and structures deemed worthy of preservation for their historical significance. Private property listed in the National Register or located within a National Register Historic District, may qualify for tax credits for eligible rehabilitation costs.

Several locations in Jefferson County have been listed on the National Register since it was established in 1966. These include:

- Colman House, 501 Lavelle St, Diller
- Anna C. Diller Opera House, Commercial and Hilton, Diller
- District No. 1 School of Jefferson County, N. 2nd and Curtis streets, Steele City
- District No. 10 School, County 717 Road and 559 Avenue, rural Powell south of Alexandria State Lakes.
- Fairbury Commercial Historic District, downtown Fairbury
- Fairbury Jr/Sr High School and Gymnasium Auditorium, Fairbury
- Fairbury Public Carnegie Library, 601 7th Street, Fairbury
- Fairbury Rock Island Depot and Freight House, 910 2nd Street, Fairbury
- IOOF Temple Building, 523 E Street, Fairbury
- Jefferson County Courthouse, Courthouse Square, Fairbury
- John C. Kesterson House, 907 4th Street, Fairbury
- People's State Bank, Highway 103, Diller (Museum)
- Sixth Principal Meridian Memorial, Kansas-Nebraska State Line southwest of Reynolds

- Woral C. Smith Lime Kiln and Limestone House, 2 miles northwest of Fairbury
- Steele City Historic District in the village of Steele City

Sixth Principal Meridian Memorial

In 1855, Charles A. Manners surveyed the boundary between Nebraska and Kansas along the parallel 40° north, setting a cast iron monument at the Initial Point of the Sixth Principal Meridian. This point was the basis for all public land surveys of Nebraska and Kansas and parts of Colorado, Wyoming and South Dakota.

The line we use today was first surveyed in November and December 1854 by John Powers Jonson. A year later, when Manners was hired to extend the boundary, he found the first attempt was miles off track and he had to resurvey the boundary line from the Missouri River west.

On June 11, 1987, the Professional Surveyors of the 6th P.M. dedicated a memorial on the Nebraska-Kansas state line east of Hubbell, made of Colorado red granite with Wyoming and Nebraska rubble stone. The site is located off the beaten path—enhanced wayfinding signage from Reynolds and Highway 8 would help visitors better find the memorial.

Sixth Prime Meridian Memorial, south of Reynolds
Source: Marvin Planning Consultants

Oregon Trail, California Trail, and Pony Express

As noted previously, the Oregon Trail, California Trail, and Pony Express crossed Jefferson County in the nineteenth century. The National Historic Trails enter Nebraska from Kansas southeast of Steele City, following the north bank of the Little Blue and entering Thayer County south of Alexandria.

Other trade routes also joined the trails in Jefferson County. Historian Levi Bloyd described Frank Helvey's account of the 1859 Colorado gold rush: "We decided to go by the way of Beatrice, striking the Overland Trail near Big Sandy Station. Several other outfits decided to go the same route; so early in April we started... our journey through Tecumseh and Beatrice

Oregon/California Trails Memorial, south of Steele City
Source: Marvin Planning Consultants

was accompanied by few incident of note. Finally we pulled up on the bluffs that overlooked the Oregon Tral as it wound down thru Little Sandy valley and over the broad valleys of the Little Blue and Big Sandy. I shall never forget that sight. Endless lines of white-topped wagons, drawn by oxen, mules, and horses, winding and toiling along through blinding clouds of dust that hung in the air, and driven to their utmost energy by the goad and halooing of many men. I had never before seen such a sight, so we camped that night near by and watched the wonde3rful scene of the twinkling miles of camp-fires up and down the whole valley."

The trails fell into disuse with completion of the transcontinental railroads and cross-country telegraph lines in the late 1860s. As 1836 is generally considered the initial year of the Oregon Trail, there may be increased interest from tourists traveling the route leading up to the bicentennial year of 2036.

A marker was placed on the Nebraska side of the Kansas State line, where Jefferson and Gage counties meet, in memory of these cross-country travelers and the early settlers of Nebraska. The counties may want to consider improving and maintain the section roads to encourage tourism.

FIGURE 6.3: FAIRBURY "JEFFS" FEATURING THE CHARACTER FROM MUTT & JEFF

Source: Fairbury Public Schools

EDUCATION

Primary and secondary education, as well as post-secondary opportunities—have a large impact on a community's attractiveness to families and employers.

Diller-Odell Public Schools

The Diller-Odell Public Schools serve about 236 students in the Diller and Odell areas of Jefferson and Gage counties, including Steele City. The Elementary School is located at 315 Smith Street in Diller, and the Jr/Sr High School is located in Odell.

In the district, approximately 25% of students are in the free/ reduced lunch program, compared to 50% statewide; 18% are in special education, compared to 16% statewide.

Diller-Odell High School is classified by the Nebraska State Activities Association in Class D-1 for girls basketball, Class D-2 for boys basketball (2023-24,) and Class D-6 for football (2024-25).

Source: www.dillerodell.org

Fairbury Public Schools

The Fairbury Public Schools serve about 914 students in central Jefferson County—including the villages of Harbine, Jansen, Endicott and Reynolds, and unincorporated communities of Gladstone, Powell, and Thompson—and a small area in southeastern Thayer County. Fairbury Junior/Senior High School is located on 9th Street in Fairbury. Jefferson Intermediate School is located on K Street, and Central Elementary School is located on F Street in Fairbury.

In the district, approximately 56% of students are in the free/ reduced lunch program, compared to 50% statewide; 16% are in special education, the same as statewide; and 5% are classed as English learners, compared to 8% statewide.

Fairbury High School is classified by the Nebraska State Activities Association as a Class C-1 school for basketball (2023-24) and football (2024-25). The Fairbury "Jeffs" mascot is based on a character from the classic comic strip Mutt and Jeff.

Source: www.fairburyjeffs.org

Meridian Public Schools

The Meridian Public Schools serve about 224 students in the area around Daykin, including Alexandria in Thayer County and Tobias in Saline County. The Meridian Public School building is located at the intersection of 560th Avenue and 724th Road just west of Daykin.

In the district, approximately 52% of students are in the free/ reduced lunch program, compared to 50% statewide; 21% are in special education, compared to 16% statewide.

Meridian High School is classified by the Nebraska State Activities Association in Class D-2 for basketball (2023-24), and D-6 for football (2024-25).

Source: www.meridianmustangs.org

Meridian Public Schools, rural Daykin
Source: Marvin Planning Consultants

Tri-County Public Schools

Tri-County Public Schools serves 426 students in the Plymouth area of northeast Jefferson County, the area around DeWitt in Saline County, and Gage County northwest of Beatrice—the three counties for which the district is named. The elementary and high school campus is located at 72520 Highway 103, in rural unincorporated Jefferson County.

In the district, approximately 32% of students are in the free/ reduced lunch program, compared to 50% statewide; 14% are in special education, compared to 16% statewide.

Tri-County High School is classified by the Nebraska State Activities Association in Class C2 for boys basketball (2023-24) and Class D-1 for football (2024-25).

Source: www.tricountyschools.org

Tri-County Public Schools, School, rural Plymouth
Source: Marvin Planning Consultants

Nebraska Community College System

Jefferson County is served by Southeast Community College (SCC), with campus locations in Beatrice, Lincoln, and Milford. SCC has specialty locations, such as Education Square, the Entrepreneurship Center, and the Continuing Education Center. The college also has learning centers in Falls City, Hebron, Nebraska City, Plattsmouth, Wahoo, and York.

The college offers credit and leisure learning courses, GED/ English Language Learner classes, Nursing Assistant courses and continuing education hours for Registered Nurses (RNs) and Licensed Practical Nurses (LPNs).

Source: www.southeast.edu

Child Care

There are a number of child day care providers located throughout Jefferson County. In Nebraska, anyone who provides child care to four or more children from different families must be licensed as a child care provider, by the Department of Health and Human Services.

There are five license types:

- Child Care Center: This type of program is licensed for 13 or more children while following the staff to child ratio per the state regulations.
- Family Child Care Home I: This type of program is in the home of the provider. The maximum capacity is eight children of mixed ages and two additional school age children during non-school hours.
- Family Child Care Home II: This type of program is in the home of the provider or at another site. The maximum capacity is twelve children with two providers.
- Preschool: This type of program provides educational services where children do not nap and are fed a meal.
- School Age Only Center: This type of program is licensed for 13 or more children who are attending or have attended school.
- License Exempt: Home care provided outside the client's home to a maximum of six children from one family or three or fewer children from more than one family.

The need for quality child day care has been brought up repeatedly in community meetings.

TABLE 6.1: JEFFERSON COUNTY EARLY CHILDHOOD CAPACITY, 2025

	Facilities	Capacity
Child Care Center	1	120
Family Child Care Home I	7	70
Family Child Care Home II	5	58
Preschool	1	24
Provisional Center	1	22

Source: Nebraska Dept. of Health and Human Services, December 2025.

JCH&L Hospital, Fairbury
Source: Marvin Planning Consultants

HEALTH CARE

Public health addresses both maintaining health of residents and provision of health care. According to research sponsored by the Robert Wood Johnson Foundation, Jefferson County ranks #42 (of 79 counties evaluated) in Nebraska for Health Factors, and #26 for Health Outcomes.

The Rankings consider health factors based on physical environment (air and water quality, housing and transit), social and economic factors (community safety, family and social support, income, employment, education), clinical care (access to care, quality of care), and health behaviors (alcohol and drug use, sexual activity, diet and exercise, tobacco use). Health outcomes are measured by length of life (50%) and quality of life (50%) indicators such as share of people reporting poor or fair health, number of unhealthy days, and share of low -birthweight newborns. The measurements are, of course only as good as the publicly available data sets which may have large margins of error for smaller population communities.

Source: www.countyhealthrankings.org

Public Health

Public Health Solutions District Health Department (PHS) serves 54,3271 people within a five-county district comprised of Fillmore, Gage, Jefferson, Saline and Thayer counties in southeastern Nebraska. The mission of PHS is to prevent disease and injury, promote wellness, and protect the personal, community, and environmental health.

PHS conducts a Community Health Assessment (CHA) and Community Health Improvement Plan (CHIP) every five years. The CHA is a process of gathering and interpreting information from multiple and diverse sources in order to develop a deep

understanding of the health and wellbeing of a community/ jurisdiction. The CHIP - a five-year community-wide plan that outlines the priority health factors realized in the CHA—is developed based upon the CHA. The CHIP includes community-wide goals and objectives for addressing CHA priorities and applies evidence-based public health programs and strategies to address health priorities in the CHA.

Source: www.phsneb.org

Jefferson Community Health and Life

Jefferson Community Health and Life (JCH&L) operates a 17-bed, acute care Critical Access Hospital, located at 2200 H Street in Fairbury. JCH&L is designated as a Level IV (Basic) Trauma Center). They offer inpatient and outpatient services, including surgery, therapy, screenings, and emergency services. JCH&L has been named one of the top Critical Access Hospitals in the nation.

JCH&L also provides additional health and life services for the community, including Jefferson Community Health & Life Fairbury Clinic for family medicine, Jefferson Community Health & Life Gardenside for long-term care, Jefferson Community Health & Life Burkley Fitness Center, and Jefferson Community Health & Life Home Health services.

Source: www.jchealthandlife.org

Cedarwood Assisted Living

Cedarwood Assisted Living is located next to the campus of Jefferson Community Health & Life at 828-22nd Street in Fairbury. The facility is jointly owned by JCH&L and Bryan Health, and operated by a board of directors as a non-profit organization.

Source: www.cedarwoodal.org

Regional Medical Facilities

The statewide trauma program ensures Nebraska hospitals meet the standards to be designated as a trauma center. Trauma designation is based on the resources a hospital has available and by successfully meeting regulatory requirements.

Thayer County Health Services in Hebron and Crete Area Medical Center in Crete (Saline County) are also Level IV trauma centers. Level I and Level II trauma centers are located in Lincoln and Omaha.

FACILITIES GOALS AND ACTIONS

FACILITIES GOAL 6.1

Jefferson County provides accessible public buildings and facilities required to provide public services to the citizens of the county.

Actions

6.1.1 Continue maintenance and repair of the historic Jefferson County Courthouse and other county-owned facilities.

6.1.2 Coordinate facility needs with municipalities and look for opportunities for shared cost-savings.

6.1.3 Development projects shall mitigate impacts on public facilities.

FACILITIES GOAL 6.2

Historic sites and places are protected and maintained.

Actions

6.2.1 Support efforts to designate and preserve historic buildings.

6.2.2 Continue support of the Jefferson County Historical Society,

FACILITIES GOAL 6.3

Jefferson County's education system serves the needs of all residents.

Actions

6.3.1 Continue support of K-12 education and coordination with public and parochial schools.

6.3.2 Include public school districts in review of large development projects, to assure accommodation of future students.

6.3.3 Encourage community college workforce training in Jefferson County.

6.3.4 Encourage new and expanding daycare options.

FACILITIES GOAL 6.4

Jefferson County has a modern, efficient Health care system.

Actions

6.4.1 Continue support of Jefferson Community Health and Life in meeting health care needs of residents.

Jefferson County, Nebraska
COMPREHENSIVE PLAN
Fig 6.1 COUNTY FACILITIES MAP

Fillmore County
Saline County
Thayer County
Gage County
Kansas

Daykin
Powell
Plymouth
Jansen
Harbine
Gladstone
Fairbury
Diller
Endicott
Thompson
Reynolds
Steele City

11 6
8 15
14
18 3 7 9 5 1 2 4
12
13
16
17

4
15
103
136
8

Legend

County Facilities

- Public Building
- Health Care
- Railroads
- Highways
- Paved Roads
- Rivers
- Counties
- Jefferson County Municipalities
- Jefferson County Towns

1 Jefferson County Courthouse
2 Law Enforcement Center
3 County Highway Shop
4 Emergency Management
5 County Fairgrounds
6 Daykin Public Library
7 Fairbury Public Library
8 Plymouth Public Library
9 USDA FSA
10 Fairbury US Post Office
11 Daykin US Post Office
12 Diller US Post Office
13 Endicott US Post Office
14 Jansen US Post Office
15 Plymouth US Post Office
16 Reynolds US Post Office
17 Steele City US Post Office
18 JCH&L Health Center

N

MARVIN PLANNING CONSULTANTS
Specializing in Municipal, County and Neighborhood Planning

PROJECTION: NAD83 State Plane NE
DATUM: NAD 83
DATE: 3.24.26

0 0.75 1.5 3 Miles

Jefferson County, Nebraska
COMPREHENSIVE PLAN
Fig 6.2 HISTORIC FACILITIES MAP

Fillmore County
Saline County
Thayer County
Gage County
Kansas

Daykin
Plymouth
Powell
Jansen
Harbine
Gladstone
Fairbury
Diller
Endicott
Thompson
Reynolds
Steele City

4
103
136
8

Legend

- Historic Sites and Places
- Railroads
- Highways
- Paved Roads
- Rivers
- Counties
- Jefferson County Municipalities
- Jefferson County Towns

1 Rock Creek Station SHP
2 Seele City Historic District
3 District No. 10 School
4 W.C. Smith Lime Kiln and House
5 Rock Island Depot Museum
6 Diller Museum / People's State Bank
7 Fairbury City Museum
8 Colman House
9 Anna C. Diller Opera House
10 District No. 1 School
11 Fairbury Commercial Historic District
12 Fairbury Jr/Sr High and Auditorium
13 Carnegie Library
14 IOOF Temple Building
15 Courthouse Square
16 J.C. Kesterson House
17 6th Principal Meridian Memorial
18 Oregon/California Trails Memorial

N

MARVIN PLANNING CONSULTANTS
Specializing in Municipal, County and Neighborhood Planning

PROJECTION: NAD83 State Plane NE
DATUM: NAD 83
DATE: 3.24.26

0 0.75 1.5 3 Miles

Jefferson County, Nebraska

COMPREHENSIVE PLAN

Fig 6.3 EDUCATION MAP

Fillmore County

Saline County

Thayer County

Gage County

Kansas

Daykin

Plymouth

Powell

Jansen

Harbine

Gladstone

Fairbury

Diller

Endicott

Thompson

Reynolds

Steele City

4

15

103

136

8

Legend

- Railroads
- Highways
- Paved Roads
- Rivers
- Counties
- Jefferson County Municipalities
- Jefferson County Towns
- Parcels

School Districts

- Diller-Odell Public Schools
- Fairbury Public Schools
- Meridian Public Schools
- Tri-County Public Schools

N

MARVIN PLANNING CONSULTANTS

Specializing in Municipal, County and Neighborhood Planning

PROJECTION: NAD83 State Plane NE

DATUM: NAD 83

DATE: 3.24.26

0 0.75 1.5 3 Miles

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Chapter Seven
Parks and Recreation

Parks and recreation facilities include both public and semi-public places, all of which are used by both urban and rural residents and families. The parks and recreation element includes a brief description of the facilities located in Jefferson County, including the incorporated communities. Recreational opportunities tend to arise along the Little Blue River, the Pony Express/Oregon Trail corridors, and around the historic railroad industry. These factors should be considered in future land use decisions.

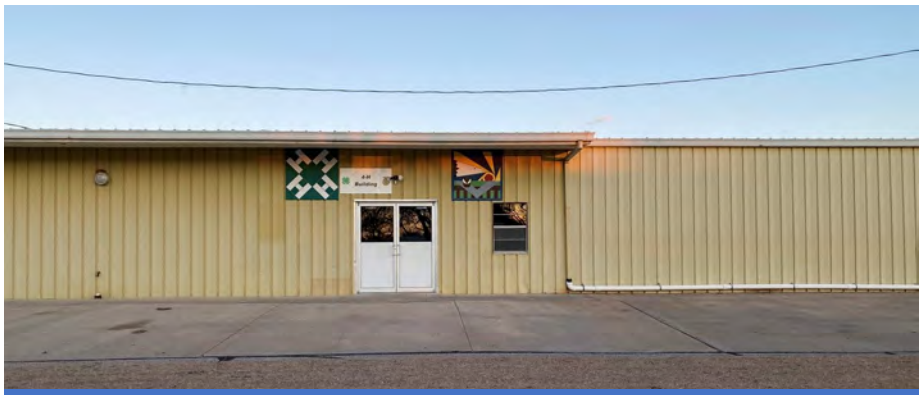
Although parks are typically located within municipalities, they also serve the needs of county residents residing outside of town. Parks and recreation provide residents with a variety of social, cultural, and recreational opportunities to lead to an improved quality of life.

Respondents to the Comprehensive Survey were split on the adequacy of parks and recreation activities. For example, 32% disagreed there are adequate adult and senior citizens' activities, while 35% disagree there are adequate cultural opportunities, events, and activities.

This chapter reviews the County Fairgrounds, community parks and recreation facilities, and other attractions, as well as goals and action items.

COUNTY FAIRGROUNDS

The Jefferson County Fairgrounds are located on the east side of the county seat of Fairbury, on PWF Road. Held in July each year, the Fair celebrated its 150th anniversary in 2023. There are races and concerts in the



Jefferson County Fairgrounds
Source: Marvin Planning Consultants

grandstands, as well as a variety of 4-H programs. The Horse Arena hosts stock rodeo events and horse shows at the fair and through the year. Over 62% of respondents to the Comprehensive Plan survey agree or strongly agree the County Fairgrounds are well-maintained and available for public use.

Jefferson County Speedway is a 1/5 mile dirt oval located at the Jefferson County Fairgrounds. The track plays host to the JayHusker Micro Series along with an annual stop on the USAC National Midget schedule. Races are generally on Saturday nights from April through September.

Source: jeffcofair.us

CITY PARKS

Many county residents are active participants in entertainment, indoor exercise, and swimming in one or more nearby communities. The county's quality of life depends on amenities in its cities and in unincorporated areas.

Crystal Springs Park
Source: Marvin Planning Consultants

FAIRBURY

Crystal Springs Park and Campground

Crystal Springs Park and Campground is located west of Fairbury on Crystal Springs Road. Spring water fills two natural lakes where visitors can fish, watch wildlife, and camp. Game and Parks stocks the center lake with approximately 900 trout each year.

The 73-acre park has 42 campsites, including one camp hose site, which are open year-round. Lakeside campsites require a reservation. Electricity is available throughout the year. Water is available April 15 - October 15. A dump station is located at the Fairbury City Park and can be used at no charge.

City Park

City Park is the primary park in Fairbury, located west of the Historic Downtown Square. The park has a 1930s Girl Scout cabin, available as a meeting place. The Frontier Fun Park, built in 1995 and funded entirely by community volunteers, is a fantasy playground recreating a pioneer town of the Old West.

The Fairbury Softball Complex is located on the west side of City Park, featuring four lighted fields and two adjacent practice fields. The complex has restrooms and full concessions on-site. The Legion Baseball Field is located on the northeast side of City Park.

Aquatic Center

The City of Fairbury Waterpark in City Park is open generally from

Fairbury Aquatic Center
Source: City of Fairbury

Memorial Day to mid-August when school returns to session each year. There is a charge for admission to the pool. Comments on the Comprehensive Plan survey praised the pool as a resource for Jefferson County residents.

Community Building

The Community Building in City Park provides a venue for Blue Rivers Aging to serve seniors lunch everyday (Monday - Friday) and is also available to the public as a rental for meeting space, family reunions, and parties.

McNish Park

In 1920, the City of Fairbury purchased a block and a half of ground between 12th & 13th at J Street, which became known as Highland Park. A Boy Scout cabin was built in the park and an outdoor sanctuary for religious meetings.

In the 1930s, Mrs. Sylvia McNish bequeathed several lots to the city to be used for a children's playground and for park purpose. In 1941, the name was changed to McNish Park in her memory. Today, the park is home to the Fairbury Disc Golf Course.

Historical Trail

The Fairbury Historic Trail Walk highlights historic features around the city, such as the County Museum, courthouse, public library, City Park, McNish Park, Rock Island Railroad Depot Museum, hospital, fairgrounds, cemetery, and schools.

Source: www.fairburyne.org/230/Parks

PLYMOUTH

Memorial Park in the Village of Plymouth offers a verdant respite to residents and travelers on Highway 4. The park takes up an entire block, with trees, swings, and a ball field. In 2019, the Village opened a new splashpad which has proven popular with families across the area.

RECREATION AND ATTRACTIONS

GOLF

Fairbury Country Club

Fairbury Country Club is located east of Highway 15 above the banks of the Little Blue River south of Fairbury. The 9-hole, 3,125 yard par 35 course was built in 1919. The hilly course features water hazards, severely sloping lies, two-tiered greens, oak tree chutes, blind tee shots, and heavily tree-lined fairways for a competitive experience. The Country Club also serves as a setting for outdoor weddings, business meetings, corporate dinners, and receptions.

Source: www.fairburyne.org/230/Parks

HISTORIC SITES

Historic Steele City

As noted in Chapter 6 County Facilities, the Jefferson County Historical Society supports Historic Steele City as a living history museum in the village of Steele City, southeast of Fairbury. The historic site includes a working blacksmith shop, livery barn, school, a turn-of-the-century bank and an 1880's stone church as well as an antique farm machinery display.

Rock Creek Station State Historical Park

Rock Creek Station State Historic Park (SHP) is located east of Fairbury and north of Endicott, on 353 acres in rural Jefferson County. The site was established in 1857, on the west bank of Rock Creek, and became a road ranch on the Oregon and California trails. Pioneer David McCanles stopped short on his way to the Colorado goldfields and took over the West Ranch. He then built a toll bridge and a stage station on the east bank, which became a stop on the Pony Express in 1860-1861.

Memorial Park, Plymouth
Source: Marvin Planning Consultants

Rock Creek Station became notorious one fateful day in July, 1861, when young stagehand James Butler Hickok killed McCanles at the East Ranch. Hickock was found not-guilty by a jury and earned his nickname of "Wild Bill". The stations continued in use to about 1867.

Development of Rock Creek Station as a state historical park began in 1980. Archaeologists investigated and excavated sites of the two ranches dating back to the 1858-1860 time period to determine building sites and to recover period artifacts. Some buildings have since been reconstructed.

Today, Rock Creek SHP encompasses 350 acres of prairie hilltops, timber-studded creek bottoms, and rugged ravines. Deep ruts carved by the many wagons that traveled through remain plainly visible. The park currently features biking, equestrian trails, hiking, and picnicking areas.

Source: outdoornebraska.gov/location/rock-creek-station-shp

Rock Creek Station State Historic Park
Source: Marvin Planning Consultants

Educational Facilities

Camp Jefferson

Camp Jefferson is perched atop a sandstone cliff overlooking the Little Blue River valley, about five miles southeast of Fairbury, in rural Jefferson County. According to local historians, the Old Camp Funston Trail crossed the river just below where the camp took root, near a sparkling, clear spring where wagon trains took their rest.

Founded in 1921, the Camp is a 40-acre retreat currently featuring 11 sleeping cabins, a modern food service building, a meeting hall, a large shower-house, a newer in-ground swimming pool, a fishing and boating lake, several picnic shelters, outdoor amphitheater, and wooded trails.

Since 1975, Camp Jefferson has been owned and operated by Camp Jefferson, Inc., a 501(c)(3) non-profit organization overseen by a volunteer board of directors whose mission is to provide for the general care and maintenance of Camp facilities for the benefit of the youth and other groups that make use of them. A YMCA camp at the start, Camp Jefferson has as its primary objective providing great outdoor experiences for the youth of southeast Nebraska and northeast Kansas.

Source: www.campjefferson.org

Whispering Acres Zoo

Whispering Acres Tails and Treasures is a located outside Jensen, Nebraska. The facility features a zoo with domestic and exotic animals, the High Hopes Equine Assisted Learning Center, and a retail shop. A non-profit board steers the organization.

Source: Whispering Acres Tails & Treasures

State Recreation and Wildlife Areas

State Recreation Areas (SRA) are areas of outdoor recreational value, managed by the Nebraska Game and Parks Commission. This includes all of the state's water-oriented parks.

Rock Creek Station SRA

Rock Creek Station SRA is a 40-acre campground adjacent to the State Historical Park. The campground has Electric Plus, Electric, and Basic campsites. There are 25 camping pads with 30-am hookups. Reservations are accepted for one-half of the electric campsites. The campground has a modern shower and restroom building, with drinking water and a dump station available.

There is also a Basic Equestrian horse camp area with 20 individual corrals. Riders can access the six miles of trails directly from the equestrian campground.

Source: outdoornebraska.gov/location/rock-creek-station-sra

Alexandria State Recreation Area
Source: Marvin Planning Consultants

Alexandria SRA

Located east of Alexandria in Jefferson County, Nebraska Game and Parks' Alexandria SRA is a peaceful, scenic recreation area encompassing 55 acres of land with two lakes totaling 46 acres of water. The area is fairly level with mature trees for shade and offers fishing and picnic shelters. The UP railroad mainline offers an attraction for rail fans. There are also Electric Plus, Electric, and Basic campsites.

Source: outdoornebraska.gov/alexandria

State and NRD sites

Wildlife Management Areas (WMAs) are managed by the Nebraska Game and Parks Commission's Wildlife Division for the enhancement of wildlife habitat and for public hunting, trapping and fishing. However, they also provide opportunities for many other activities, including hiking, bird watching, nature study and primitive camping. Motorized vehicles are restricted to roadways, parking areas or trails designated for such use.

WMAs in Jefferson County include:

- Alexandria WMA
- Flathead WMA
- Leisure Lake WMA
- Rose Creek WMA
- Rock Glen WMA

The Lower Big Blue NRD's Cub Creek Recreation Area (Southern) also offers public access to 139-acres of natural area in north east Jefferson County (*see also Chapter 10 Natural Resources*).

Source: outdoornebraska.gov/hunt/where-to-hunt and www.lbbnrd.net.

Regional Attractions

Homestead National Historical Park

The Homestead Act of 1862 was one of the most significant and enduring events in the westward expansion of the United States. Over 10 percent of the United States, or 270 million acres, was homesteaded. Homesteaders created settlements and farms, drove industrial advancement, and built the nation chasing the American Dream.

Homestead National Historical Park, located in Gage County outside of Beatrice, Nebraska, commemorates this Act and includes some of the first acres successfully claimed under the Homestead Act. The Homestead Heritage Center was dedicated in 2007. The site includes 211 acres and attracts about 123,000 visitors a year.

Source: www.nps.gov/home/

Great Plains Welsh Heritage Center

The Great Plains Welsh Heritage Centre, located in downtown Wymore, Nebraska, is the only cultural resource in the United States dedicated to interpreting the cultural legacy of Welsh immigrants on the Great Plains. Exhibits tell the story of immigration from Wales and the contributions of Welsh settlers to the development of the Great Plains region.

Source: greatplainswelsh.org

RECREATION RESOURCES

National Trail System

The National Trail System has been designated by Congress to recognize special and unique historic, recreation, and scenic trails. The California, Oregon, and Pony Express National Historic Trails are all important parts of Jefferson County's history and heritage. They are also a recreation resource for local residents, as well as an attraction for visitors from across the world.

Nebraska Regional Trails

Trails offer something for everyone—hiking, biking, horseback riding, snowmobiling and cross-country skiing , and more activities. Nebraska's state parks and recreation areas offer hundreds of miles of trails.

Several different types of trails are popular across the state and region, including:

- Hiking and Biking Trails
- Water Trails
- Equestrian Trails
- Snowmobile Trails

Source: outdoornebraska.gov/parks/explore-trails

See also Chapter 13 Transportation for more information on multi-modal trails.

PARKS AND RECREATION GOALS AND ACTIONS

Parks Goal 7.1

Jefferson County residents have access to a variety of parks and recreation facilities close to home.

Actions

7.1.1 Discuss drafting a county-wide parks and recreation master plan with municipalities.

7.1.2 Support municipalities in maintaining city and village parks.

7.1.3 Support municipalities in development and/or extending pedestrian, bike, and equestrian trails systems.

Parks Goal 7.2

The Jefferson County Fairgrounds remains a safe and active facility for county residents.

Actions

7.2.1 Work with the City of Fairbury to assure the Fairgrounds meet the needs of users while minimizing impacts on neighbors.

Parks Goal 7.3

Area attractions are well-promoted to local residents and regional visitors.

Actions

7.3.1 Support local and regional marketing of Jefferson County attractions.

Parks Goal 7.4

Public Lands are maintained for the enjoyment of local residents.

Actions

7.4.1 Work with the State of Nebraska on local access to and maintenance of State Recreation and Wildlife areas.

Crystal Springs Park Picnic Shelter
Source: Marvin Planning Consultants

Chapter Eight
Public Safety

Public safety is a primary responsibility of local government and key to residents' quality of life. The pattern of future growth and development can make the delivery of public safety services more efficient, or can stretch resources even more than in the past.

This chapter describes current Jefferson County law enforcement, fire protection, emergency medical services, and emergency management services.

LAW ENFORCEMENT

The Jefferson County Sheriff provides law enforcement across Jefferson County, including the municipalities. The Sheriff's Office is located in the Law Enforcement Center, 606 3rd Street, Fairbury, two blocks southeast of the courthouse.

In 2023, the Sheriff's Office had 16 sworn officers on staff compared to 15 in 2021 (Table 8.1). Jefferson County had a rate of 2.3 full-time officers per 1,000 population covered as calculated by the Nebraska Crime Commission. The statistics reported decreased from 4.4 officers per 1,000 in 2021. Surrounding jurisdictions varied from less then 1.0 officers in Filmore County to 2.8 officers in Saline County, all under the statewide average.

About 45% of respondents to the Comprehensive Plan survey agree or strongly agree the county has quality law enforcement protection.

TABLE 8.1: SWORN OFFICERS, 2021-2023

	2021		2022		2023	
Agency	Sworn Officers	Per 1,000	Sworn Officers	Per 1,000	Sworn Officers	Per 1,000
Jefferson Co. Sheriff	15	4.4	14	2.0	16	2.3
Fillmore Co. Sheriff	N/A	-	6	1.1	5	0.9
Gage Co. Sheriff	16	2.0	15	1.9	15	1.9
Lancaster Co. Sheriff	80	2.7	77	2.7	77	2.7
Saline Co. Sheriff	N/A	-	20	2.8	20	2.8
Thayer Co. Sheriff	N/A	-	7	1.4	6	1.0
State Average		3.7		3.6		3.5

Source: Nebraska Crime Commission, Commission on Law Enforcement and Criminal Justice
N/A—not available

FIRE PROTECTION

Jefferson County is covered by a number of fire departments and districts providing fire protection and response to each community and nearby rural areas.

These first responders include:

- Alexandria Volunteer Rural Fire Department (based in Thayer County)
- Daykin Volunteer Fire & Rescue
- Diller Rural Fire Department
- Gilead Volunteer Fire Department
- Fairbury City Fire Department
- Fairbury Rural Fire
- Jansen Rural Fire District 9
- Plymouth Volunteer Fire Department
- Steele City Rural Fire Department
- Swanton Volunteer Fire Department (based in Saline County)

Beatrice Rural Fire District and Odell/Wymore service areas also reach to the Jefferson County line on the east, Dewitt Fire District to the north and northeast,, Western to the north, Ohiowa to the northwest, and Hubbell to the far southwest.

Daykin Fire & Rescue
Source: Marvin Planning Consultants

Fire and EMS services rated very highly in the Comprehensive Plan survey. About 3/4 (78%) agree or strongly agree the county has quality fire protection and (75%) agree or strongly agree the county has quality EMS protection

Diller Rural Fire Department
Source: Marvin Planning Consultants

State Fire Marshal

The State Fire Marshal's office conducts fire safety inspections on most properties open to the public. The State Fire Code used in these inspections is outlined in Title 153, Chapter 1 of the Administrative Code. The fee structure used for these inspections is explained in Title 153, Chapter 20. The annual registration fees for Grain Elevators and Feed Mills and Underground Storage Tanks are explained in Titles 161 and 159 respectively.

With a few exceptions, the deputy will leave a fee card after doing an inspection. The owner/ operator sends card to the Lincoln office with a check or money order for the indicated amount. If any deficiencies are found during the inspection process, written orders will be mailed to the facility. A follow-up inspection may be scheduled to insure the deficiencies are corrected. If it is necessary to do a third inspection, an additional fee is charged. Once payment is received and any deficiencies are corrected a Certificate of Occupancy is issued.

EMERGENCY MANAGEMENT

Emergency management involves the coordination and integration of activities necessary to build, sustain, and improve the capabilities to prepare for, respond to, recover from, or mitigate against threatened or actual disasters or emergencies, regardless of cause. This includes man-made and natural disasters. The discipline and profession of emergency management applies science, technology, planning, and management to deal with extreme events which can injure or kill large numbers of people, do extensive damage to property, and disrupt community life.

Emergency management is integrated at the local, state, and federal levels. All disasters start at the local level. When a local disaster declaration is made because local resources have been overwhelmed, a request may be made for assistance from the Nebraska Emergency Management Agency (NEMA). When state resources become overwhelmed, a state disaster may be declared and the governor can request assistance

EMS

FIRE DISTRICTS

Several local fire districts also provide Emergency Medical Services (EMS). EMS response areas may be the same as the fire response areas or may cover a larger area. These include:

- Alexandria Fire & Rescue covers their fire district with EMS in Jefferson County
- Daykin Fire & Rescue covers their fire district with EMS plus an area in southwest Saline County
- Diller Fire & Rescue covers their district with EMS plus an area in Gage County
- Jefferson County Ambulance District #33 serves the Fairbury area, and also provides tiering with ALS for every department in the county, as well as into Kansas
- Jefferson County Ambulance District #33 also covers Gilead Volunteer Fire Department
- Plymouth Fire & Rescue covers their fire district with EMS; Beatrice ALS also covers an area near Plymouth
- Western—Swanton VFD service area in Jefferson County

from the Federal Emergency Management Agency (FEMA). Emergency response operates within the principles of the National Incident Management System (NIMS) and the In Incident Command Systems (ICS).

Jefferson County's Emergency Management office operates within a statewide framework within which communities work to reduce vulnerability to hazards and cope with disasters:

Mitigation: identify hazards and activities to prevent/lessen the impact of a disaster on lives and property

Preparedness: assist individuals and communities take steps to be ready for a disaster

Response: support and coordinate local agency emergency response activities

Recovery: work to restore public services and return the community to normal.

For more information on the Mitigation element of emergency management in Jefferson County, see Chapter 11 Hazard Mitigation.

PUBLIC SAFETY GOALS AND ACTIONS

SAFETY GOAL 8.1

Law Enforcement services are provided throughout the county.

Actions

8.1.1 Carefully review new development projects for potential impacts on public safety.

8.1.2 Support working cooperatively between municipalities and the County Sheriff for law enforcement.

8.1.3 Continue to regulate and mitigate nuisance and code enforcement cases.

SAFETY GOAL 8.2

Fire Protection services are provided throughout the county.

Actions

8.2.1 Carefully review new development projects for potential impacts on fire protection and response.

8.2.2 Continue to support volunteer fire departments.

8.2.3 Encourage creation of local jobs where first responders can be available for response.

SAFETY GOAL 8.3

Emergency Medical Services (EMS) are provided throughout the county.

Actions

8.3.1 Carefully review new development projects for potential impacts on emergency medical response.

8.3.2 Continue support for Emergency Medical Services.

SAFETY GOAL 8.4

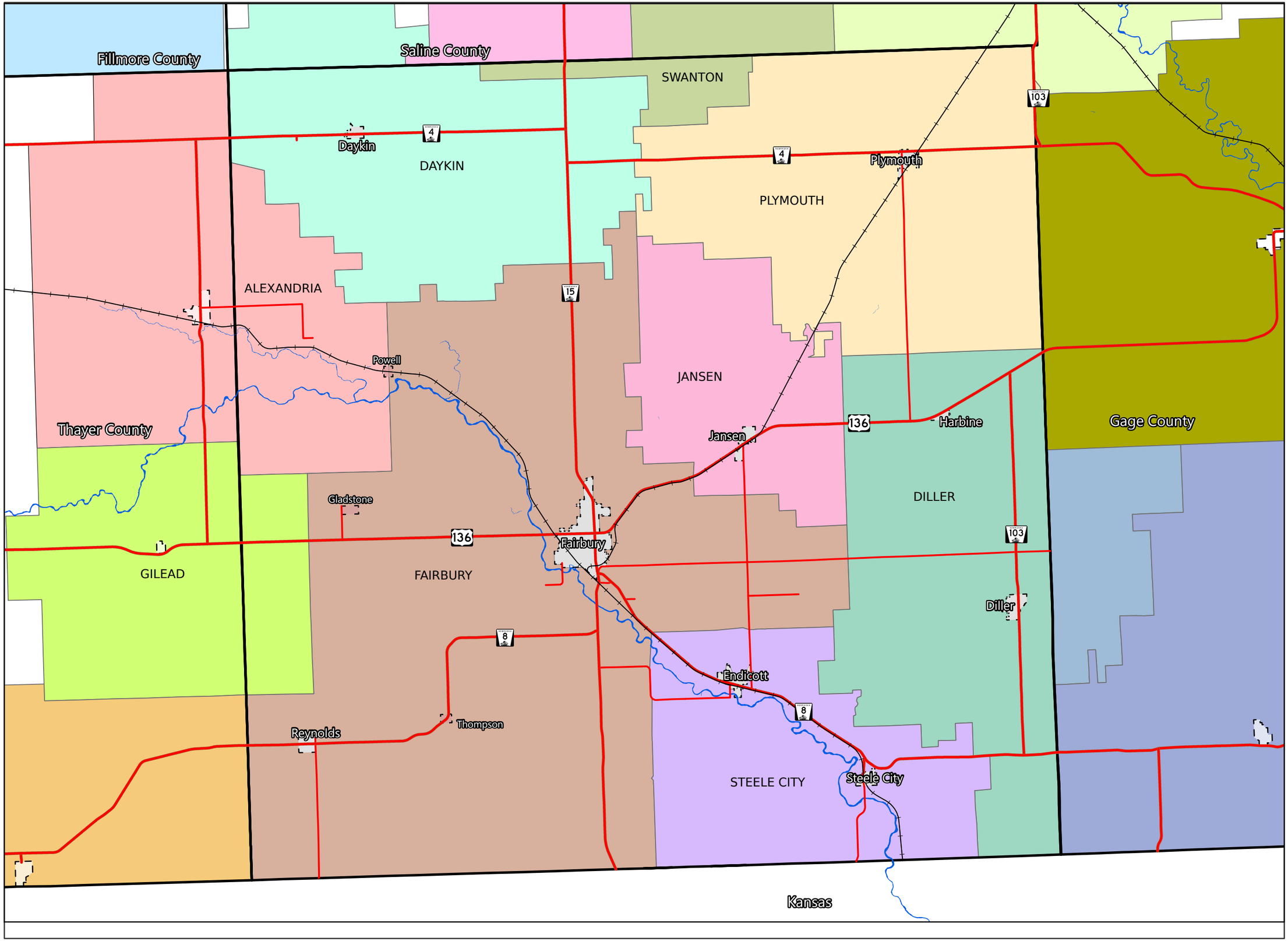
Emergency Management services are provided throughout the county.

Actions

8.4.1 Review new development projects for potential emergency management impacts.

8.4.2 Continue support for Emergency Management Director to provide services countywide.

8.4.3 Continue to participate in emergency management programs and exercises.



Jefferson County, Nebraska

COMPREHENSIVE PLAN

Fig 8.1 FIRE DISTRICTS MAP

Legend

- Railroads
- Highways
- Paved Roads
- Rivers
- Counties
- Jefferson County Municipalities
- Jefferson County Towns

Local Fire Districts

- Alexandria
- Alexandria (Thayer)
- Beatrice Rural FD/EXT
- Daykin
- Daykin FD (Saline)
- Dewitt FD/EXT (Gage)
- Dewitt FD
- Diller
- Diller FD/Wymore EXT
- Fairbury City
- Fairbury Rural
- Gilead
- Gilead (Thayer)
- Hubbell (Thayer)
- Jansen
- Odell FD/Wymore EXT
- Ohiowa (Fillmore)
- Plymouth
- Steele City
- Swanton
- Swanton FD (Saline)
- Western FD (Saline)

N

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PROJECTION: NAD83 State Plane NE

DATUM: NAD 83

DATE: 3.24.26

0 0.75 1.5 3 Miles

Jefferson County, Nebraska
COMPREHENSIVE PLAN
Fig 8.2 EMS DISTRICTS MAP

Fillmore County
Saline County
Thayer County
Gage County
Kansas

WESTERN
DAYKIN
PLYMOUTH
ALEXANDRIA
DILLER
GILEAD
DISTRICT 33

Daykin
Plymouth
Powell
Jansen
Harbine
Gladstone
Fairbury
Diller
Endicott
Thompson
Reynolds
Steele City

4
15
103
136
8

Legend

- Railroads
- Highways
- Paved Roads
- Rivers
- Counties
- Jefferson County Municipalities
- Jefferson County Towns
- Alexandra
- Alexandria (Thayer)
- BEATRICE AMB
- BEATRICE AMB/ODELL QRT
- Chester
- Daykin
- DAYKIN RESCUE (Saline)
- DEWITT AMB
- DEWITT RESCUE
- DILLER
- DILLER AMB (Gage)
- DILLER AMB/ODELL QRT
- DIST 33
- Hebron
- OHIOWA
- PLYMOUTH
- TOBIAS RESCUE
- WESTERN
- WESTERN RESCUE (Saline)

N

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0 0.75 1.5 3 Miles

Chapter Nine
Communications, Utilities, and Energy

Communications, utilities, and energy are essential local infrastructure. This chapter describes each of these service industries as they apply to Jefferson County, Nebraska.

Communications includes traditional media such as newspapers, television and radio, and telephone service, as well as new media including broadband internet. Utilities includes public and private services including electricity and natural gas, water, and wastewater service. Energy includes both traditional carbon-based fuels and renewable energy sources such as wind, solar, and biofuels.

COMMUNICATIONS

Dynamic communities rely on ever-evolving communication services, including print, over-the-air, and tele-communications.

NEWSPAPERS

There are currently 14 newspapers publishing daily or semi-daily print editions in Nebraska.

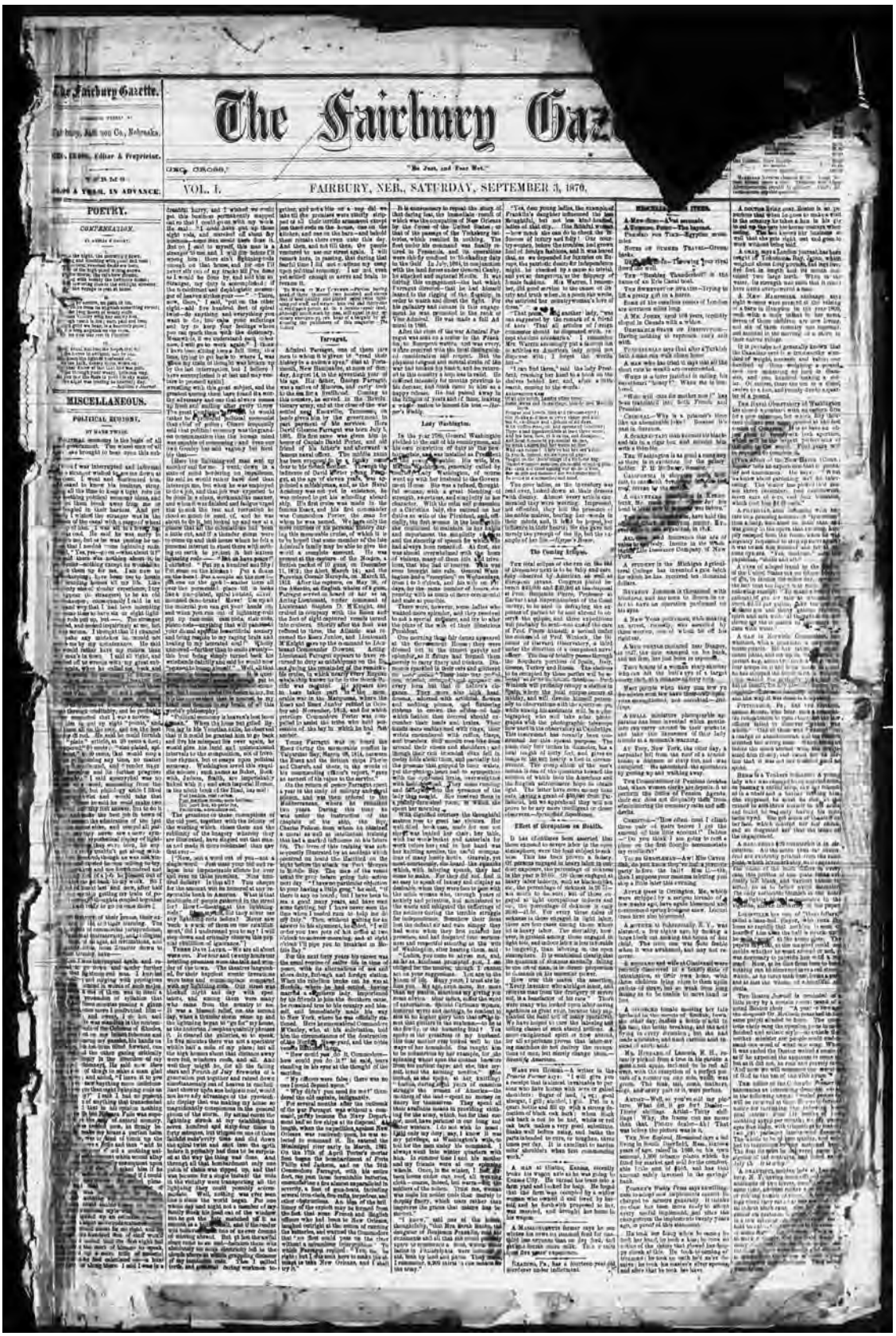
In 1869, Abner Baker started the first newspaper in Jefferson County, *The Western Sun*, at Freeport. The next year, in 1870, George Cross started *The Fairbury Gazette*. The *Jefferson County Record*, which became the *Diller Record*, and the *Daykin Recorder* both began publication in 1887. As of 1891, Fairbury hosted four newspapers, including the *Gazette*, *The Fairbury Enterprise*, *The Liberator*, and *Fairbury World*. Later, in 1892, the *Steele City Mail* began publication, and in 1893, the *Plymouth Enterprise* was established.

Fairbury Journal News

Today, the *Fairbury Journal-News* is one of the largest non-daily papers in Nebraska and serves all of Jefferson County and the surrounding area. In 1965, the *Fairbury Journal* merged with the *Fairbury Daily News*. The *Jefferson County Journal,* later the *Fairbury Journal*, was established in 1892, by Al Hammond, a veteran of the newspaper field. Hammond then began the *Fairbury News* in 1897. In 1911, the *Gazette* merged with the *Fairbury News* and today the Journal-News serves Jefferson County in print and online.

Source: fairburyjournalnews.com, fairbury.com and the Fairbury Public Library local history collection.

FIGURE 9.1: THE FAIRBURY GAZETTE, SEPTEMBER 3, 1870



The Fairbury Gazette.

The Fairbury Gaz

VOL. I. FAIRBURY, NEB., SATURDAY, SEPTEMBER 3, 1870.

POETRY.

CONTEMPLATION.

MISCELLANEOUS.

POLITICAL ECONOMY.

BY MARK TWAIN.

Lady Washington.

Effect of Occupation on Health.

Source: Newspapers.com.

George Cross, Pioneer Editor

[Jefferson County and] Fairbury attracted to itself in mid-1870, 29-year-old George Cross of Wisconsin, who decided to make this small community his home and was instrumental in founding its first weekly newspaper, The Fairbury Gazette, on September 3, 1870. Through his newspaper, Cross became one of the leading figures in Jefferson County history and played an important role in the development of Fairbury….

Forgoing the teaching profession for journalism, Cross began printing his newspaper in Fairbury with little capital and equipment,. According to the Wisconsin University Press, which noted the new enterprise, he was characterized as a "fine scholar, perfect gentleman, good writer and a patient, forbearing man."

An inveterate promoter of Fairbury, and of couse seeking new sources of revenue through outside advertising, Cross traveled extensively throughout t the Midwest, making trips to Waterville Kansas; St. Joseph; St. Louis; Marysville; Kansas City; Leavenworth; Atchison; and Iowa, Illinois, and Wisconsin.

—Fred H. Stafford, *Jefferson County and Fairbury, Nebraska* (1948)

Television and Radio

For broadcast marketing purposes, Jefferson County is assigned to the Southeast Nebraska internal state region, Lincoln and Hastings—Kearney designated market area (Nielsen). These areas include a large portion of central Nebraska.

Flood Communications of Beatrice owns and operates KUTT 99.5 FM and KGMT 1310 AM in Fairbury. The FM station currently plays country music and the AM station has an Oldies format.

Telephone and Internet

According to the US Census Bureau's ACS estimates, in 2013, there were 77 housing units in Jefferson County with no access to a telephone. This statistic declined to 58 by 2023.

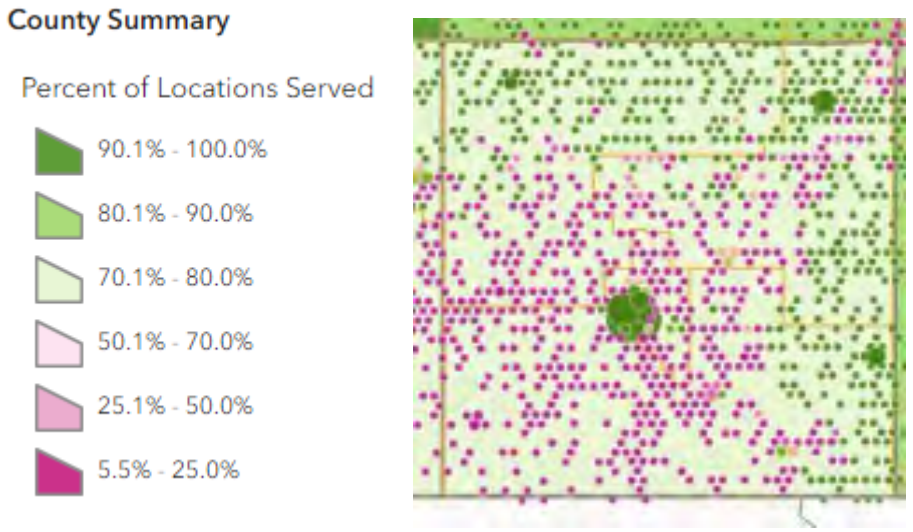
The ACS reported 2,475 of 3,114 households in the county have an internet subscription, including 2,091 with a cellular data plan, 1,957 with cable, fiber optic, or DSL hardwire, and 306 with satellite internet service (2023).

Windstream Nebraska is the Incumbent Local Exchange Carrier (ILEC) for telephone service in and around Alexandria, Daykin, Fairbury, Jansen, Plymouth, Steele City, Swanton, and Western, providing voice and data service. Great Plains Communications is ILEC for the Chester exchange (including Hubbell and southwest Jefferson County). Diller Telephone has offered phone services since 1899 to Harbine, Diller, Odell, and Virginia; today, Diode Communications also offers state-of-the-art digital communications services to those communities.

Broadband

Broadband is essential to local development. The Nebraska Broadband Availability Map indicates about 70-80% of households in Jefferson County are served by broadband, with some areas with much lower availability (Figure 9.2). Fiber service is available in Fairbury and along much of the eastern area of the county, in particular in areas served by Diode Communications. Cable modem service is available in Fairbury and Plymouth. Wired-line DSL, an older phone-based system, is only available in limited locations in the city of Fairbury and the villages of Daykin, Endicott, Janson, Plymouth, and Steele City.

FIGURE 9.2: BROADBAND SERVICE



Source: Nebraska Broadband Map, 2024

Cell Towers

Wireless cellular service is established in the area. New technologies, such as 5G cellular service, generally require a larger number of shorter wireless towers. Jefferson County, the cities, and villages, will likely be faced with an increasing number of requests to approve cellular and broadband antennae and towers. These requests must be reviewed in accordance with Federal Communications Commissions (FCC) rules and regulations, as well as the laws of the State of Nebraska. The Federal Communications Act also preempts local decisions premised directly or indirectly on the environmental effects of radio frequency (RF) emissions, assuming the provider is in compliance with the Commission's RF rules.

Towers meeting certain height and location criteria must also pass Federal Aviation Administration (FAA) review. This assures safe aircraft operations.

The FCC sets a "shot clock" as a reasonable period of time within which a wireless infrastructure siting application must be acted upon. As of 2018, the FCC adopted 60 days for review of collocation of small wireless facilities and 90 days for review of attachment of small wireless facilities to a new structure. A 150-day shot clock applies for review of other new wireless facility construction.

While local zoning regulations may apply standards similar to other similar structures, including aesthetics, zoning may not "materially inhibit" provision of services. Some jurisdictions even require "stealth" cell towers, which are designed to better match trees or structures such as silos, to reduce environmental impacts. Applications may be reviewed in a similar process as other projects, as long as the shot clock is maintained. Any adverse decision, however, must be accompanied by a substantial written record.

UTILITIES

Public and private utilities provide power, heat, and water to homes, businesses, and public places. They also treat wastewater, solid waste and recyclables.

Power and Natural Gas

According to the US Census Bureau's ACS estimates, approximately 38% of housing units in Jefferson County are heated by utility gas, compared to 60% statewide (Table 9.1). Approximately 19% use LP gas (propane), compared to 7% statewide. About 40% use electric heat, compared to 31% statewide.

The Norris Public Power District (PPD), based in Beatrice, provides electricity to much of Jefferson County. Norris Public Power District's electric system is a sub-transmission and distribution system consisting of 676 miles of 34.5 kV and 69 kV

Stealth Cell Tower
Source: Marvin Planning Consultants

Table 9.1: Jefferson County House Heating Fuel 2013-2023

	20123	2023	Change 2013-2023
Occupied housing units	3,301	3,114	-5.7%
Utility gas	1,222	1,163	-4.8%
Bottled, tank, or LP gas	646	578	-10.5%
Electricity	1,222	1,248	2.1%
Fuel oil, kerosene, etc.	40	24	-40.0%
Coal or coke	0	0	n/a
Wood	137	65	-52.6%
Solar energy	5	0	-100.0%
Other fuel	29	33	13.8%
No fuel used	0	3	n/a

n/a– Not Available
Source: Source: American Community Survey 2009-2013 & 2019-2023.

NRD water tower,, rural Gladstone
Source: Marvin Planning Consultants

transmission lines, 5,538 miles of primary distribution lines, 76 distribution substations and 15 industrial substations. Of the 6,214 miles of distribution and transmission lines the District owns and operates, 684 miles are underground.

The Fairbury Power District serves the city, the villages of Jansen and Steele City, and rural areas northeast, southeast, northwest, and southwest of the county seat. Endicott has its own service area, as does Reynolds.

Source: www.nebraskamap.gov

Norris PPD provides electric power supplied by Nebraska Public Power District. The 34.5 kV and 69 kV transmission system is arranged to interconnect between the major delivery points and provide for reliability of power supply and flexibility of system operation.

The Norris PPD serves approximately 24,700 customers in six counties, including 48 communities at retail service and five communities at wholesale service. Although half of Norris PPD's electric energy sales are from large industrial customers, the PPD's electric system is primarily a rural distribution system. .

Source: norrisppd.com

Black Hills Energy provides utility natural gas service in portions of Jefferson County, including the city of Fairbury, and the villages of Endicott and Plymouth.

Source: www.blackhillsenergy.com

There are several commercial propane suppliers in Jefferson County, as well as surrounding areas.

EV Charging

As the number of Electric Vehicles (EVs) on the road increases, annual demands for electricity to charge them will grow as well. There will be increasing demands on electrical infrastructure as home and public chargers are added to existing loads.

Additional information on traditional and renewable energy generation is presented later in this chapter. Additional information on EVs is presented in Chapter 13 Transportation.

Domestic Water

Drinking water and irrigation water in rural Jefferson County is typically supplied by groundwater using individual or shared wells. Nebraska state laws have provided for protection of groundwater supply under a permitting system for public water suppliers and industrial water users, along with a centralized repository of information about groundwater wells. The Nebraska Department of Natural Resources' Registered Groundwater Wells Database listed 1,824 records for wells entered since 1969 in Jefferson County (as of 7/27/2024) aside from public water supply wells regulated by the US Environmental Protection Agency.

Source: dnr.nebraska.gov/groundwater

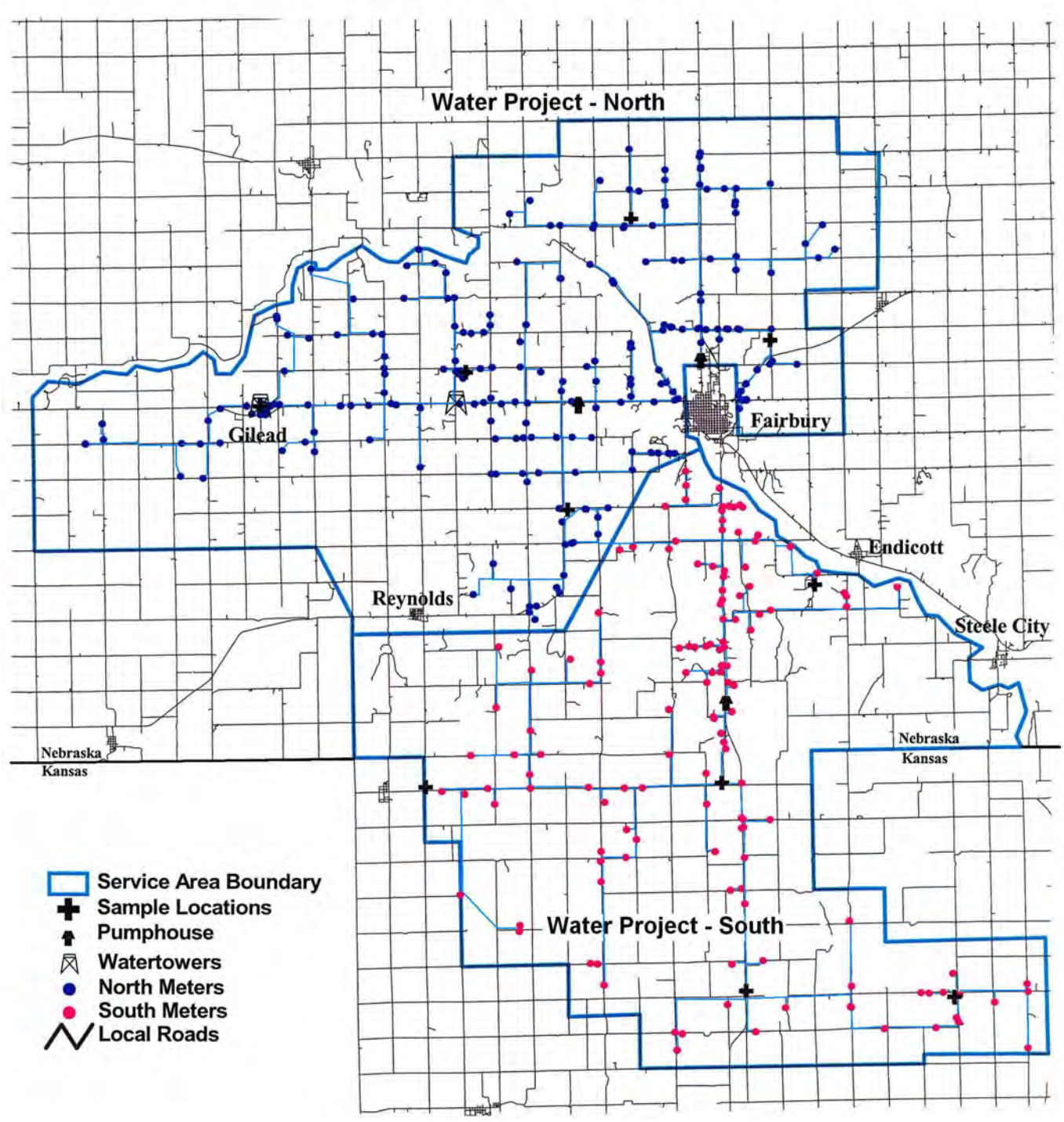
Each of the incorporated municipalities in Jefferson County provide domestic drinking water with groundwater from public water supply wells.

According to the State of Nebraska, there are several non-community water systems active in Jefferson County:

- Alexandria SRA
- Fairbury Country Club
- Meridian School District (Non-Transient)
- Tri-County School District (Non-Transient)
- Rock Creek Station SHP and SRA
- Walmart Supercenter, Fairbury

Source: www.epa.gov/ground-water-and-drinking-water and drinkingwater.ne.gov

FIGURE 9.3: LITTLE BLUE NRD RURAL WATER DISTRICTS



Source: Little Blue Natural Resources District

Little Blue Public Water

The Little Blue Public Water Project serves over 410 domestic, business, and livestock uses in Jefferson and Thayer counties in Nebraska and north central Washington County in Kansas. This includes the Gladstone townsite, rural churches, Endicott Clay, and numerous other service locations. Water is currently purchased from the City of Fairbury and piped through over 300 miles of buried lines to provide quality water service. The project utilizes three pumphouses and two water towers to deliver the water.

Low water availability and poor water quality were serious issues facing the residents of the Little Blue NRD's southeastern region and into Kansas. The rural population of this area had been exposed for some time to poor water quality problems such as sodium, iron and sulfur with extreme hardness and odor present. After being approached by the residents of Jefferson County, the need for a good quality water source became apparent, and the Little Blue NRD took action.

The Little Blue Public Water Project was completed in 1976 (north phase), with a major expansion in 1999 (south phase), to supply continuous, quality water service to residents of the area. The Project is financially self-supporting and operates almost exclusively (96%) on water sales income from the customers.

The Project is currently working to bring a dedicated groundwater source into production with a new wellsite proposed south of Daykin. A new wellhead protection area will need to be designated—at that time, this comprehensive plan should updated to reflect the new area needing land use protection.

Source: ittlebluenrd.org/rural-water/

WASTEWATER

Homes and businesses outside municipalities treat wastewater with individual septic systems. Onsite wastewater treatment systems (OWTS) include septic tanks, holding tanks, small lagoons, and other decentralized wastewater treatment systems.

Prior to construction of a development area where an OWTS is proposed on any lot less than three acres in size, the owner of the property must submit an application for subdivision review to the Nebraska Department of Environment and Energy (NDEE).

The State of Nebraska requires any building which generates wastewater to have an OWTS system, installed by a certified professional. Prior to construction of a development area where an OWTS is proposed on any lot less than three acres in size, the owner of the property must submit an application for subdivision review to the Nebraska Department of Environment and Energy (NDEE). Standards for the size of treatment systems and required setbacks are set by Title 124 of the Nebraska Administrative Code.

Most OWTS in Nebraska are constructed under "Authorization by Rule". However, some systems do require a construction and/or operations permit as a result of the quantity or quality of wastewater generated or side conditions not meeting "Authorization by Rule" requirements.

In new development, the use of environmentally sensitive methods of wastewater treatment should be encouraged. Water conservation helps reduce impacts on surface and groundwater. Also, conservation of common open space provides greater buffers between water sources and wastewater infiltration.

Sanitary waste within communities is typically addressed via community-wide collection and treatment systems. Construction permits for municipal, industrial, and commercial wastewater works are issued after NDEE engineers review and approve construction plans and specifications for the project. New development should connect to municipal sewers whenever possible.

Constructed Wetlands

Artificial wetlands are gaining growing acceptance for treatment of wastewater. This technique supplements rather than replaces septic treatment. The constructed wetlands provide further treatment for effluent and have been combined with aerobic treatment units (ATUs) before effluent is conducted to drainage areas.

Sanitary and Improvement Districts (SIDs)

Sanitary and Improvement Districts in Nebraska are a special authority which allows a development group and/or property owners' association to establish a special taxing district for purposes of installing or improving infrastructure such as a water system and/or a sanitary sewer collection and treatment system. SID's may also construct and/or maintain streets within such a district. The creation of an SID is controlled by the District Courts of Nebraska.

Solid Waste

There are currently no municipal solid waste landfill locations in Jefferson County. The City of Fairbury has a transfer station permitted by the Nebraska Department of Environment and Energy (NDEE). The closest landfill is Beatrice Disposal in Gage County. The Nebraska Ecology Systems, Inc. facility located near Geneva in Fillmore County, is non-operational.

The Land Management Division of the Nebraska Department of Environment and Energy has responsibility for waste management and remediation programs. The Division also administers the Waste Tire Management Program, and provides Waste Planning and Recycling programs.

ENERGY INFRASTRUCTURE

This section is intended to meet the requirements for an energy element in Neb. Rev. Stat. §23-114.02, which "assesses energy infrastructure and energy use by sector, including residential, commercial, and industrial sectors; evaluates utilization of renewable energy sources; and promotes energy conservation measures that benefit the community".

Energy Use by Sector

According to Nebraska Energy Statistics, electricity use in Nebraska rose to 31,172 million kilowatthours (kWh) in 2020, an increase of 2.6 percent from 30,383 million kWh in 2019. The industrial sector used 37.1 percent, the residential sector used 33.7 percent, and the commercial sector used 29.2 percent. The use of electricity produced off-site is ultimately constrained by transmission capacity. Distributed generation of electricity (from wind farms or solar farms) is also constrained by capacity of the regional transmission grid.

In 2020, Nebraska used 180.7 billion cubic feet of natural gas, a decrease of 2.8 percent from 2019. The industrial sector consumed 52.5 percent of total natural consumption in Nebraska in 2020. The residential sector consumed 20.5 percent, and the commercial sector consumed 17.5 percent. The electric power and transportation sectors accounted for the reminder of gas consumption.

Source: neo.ne.gov

Residential Energy Use

Energy is consumed in the residential sector primarily for space heating, water heating, air conditioning, refrigeration, cooking, clothes drying, and lighting. Fuel used for motor vehicles by household members is included in the transportation sector—electricity use will increase with increased use of electric vehicles (EVs) requiring home charging stations. Natural gas met almost one-half (47%) of residential energy needs in Nebraska in 2020, followed by electricity (42%).

As previously noted, Jefferson County residents primarily utilize natural gas and electricity for heating. The source of residential heating fuel varies by location. More rural residents reported using propane or LP gas.

Statewide, there were 555,618 residential natural gas customers in Nebraska in 2022, according to the Energy Information Administration.

Commercial Energy Use

Commercial uses include buildings such as retail stores, nonmanufacturing businesses, motels, health and education institutions for energy use reporting.. Government uses are included in this sector for these reports. Common uses of energy in the commercial sector include space heating, water heating, refrigeration, air conditioning, and cooking. Natural gas met almost one-half (47%) of commercial energy needs in Nebraska in 2020, followed by electricity (43%).

Statewide, there were 62,106 commercial natural gas customers in Nebraska in 2022, according to the Energy Information Administration.

Industrial Energy Use

Energy use in the industrial sector covers fuels for manufacturing, construction, mining, agriculture, and forestry. Energy to transport products is included in the transportation sector. Natural gas met 1/3 (34.6%) of industrial energy needs in Nebraska in 2020, followed by biofuels (32.7%), and electricity (13.5%).

Statewide, there were 5,624 industrial natural gas customers in Nebraska in 2022, according to the Energy Information Administration.

Energy Generation

According to the Energy Information Administration, In 2022, Nebraska obtained 49% of its total in-state electricity net generation from coal, 31% from wind, and 14% from nuclear power.

Nebraska Public Power District, provides local PPD customers with wholesale power generated by a diverse mix of sources, including coal, nuclear, gas and oil (for peak demand), wind, hydropower, and solar. NPPD is also a member of the Southwest Power Pool (SPP), a non-profit regional transmission organization in the central part of the United States.

New Nuclear Generation

Nuclear energy has played a vital role in safely and reliably powering Nebraska for more than 50 years. New technologies are in development for the next generation of nuclear, including advanced small modular reactors (SMR).

SMRs are built with modular components which offer the promise of mass production and easy shipping, decreasing costs of deployment. SMR designs are being refined, with many at a size similar to a school bus or shipping container.

According to the US Office of Nuclear Energy, SMRs represent a variety of sizes, technology options, capabilities, and deployment scenarios. "Advanced SMRs offer many advantages, such as relatively small physical footprints, reduced capital investment, ability to be sited in locations not possible for larger nuclear plants, and provisions for incremental power additions. SMRs also offer distinct safeguards, security and nonproliferation advantages."

Source: www.energy.gov/ne/advanced-small-modular-reactors-smrs

Renewable Energy

Renewable energy is energy from naturally replenishing sources; virtually inexhaustible in duration but limited in the amount of energy available in the short-term. Statewide, Nebraska is moving towards renewable and away from legacy fuel sources. For example, while almost 75% of the state's electricity was generated by coal in 2011, only 50% came from coal in 2021.

The major types of renewable energy sources are:

- Biomass
- Hydropower
- Geothermal
- Solar
- Wind

Capacity of long-range power transmission lines can be a limiting factor for renewable energy production, since the electricity generated must be transferred into the regional or national power grid. Local, distributed power generation may be more practical in areas with limited access to the transmission grid.

Biomass

Biomass is renewable organic material coming from plants and animals. Biomass was the largest source of total annual U.S. energy consumption until the mid -1800s. The use of biomass fuels for transportation and for electricity generation is increasing.

The Biomass category of renewable energy sources includes biofuels, such as ethanal and biodiesel, along with wood waste, landfill gas, and similar fuels. Most biofuels are used as transportation fuels, but they may also be used for heating and electricity generation. In 2021, there were 6 units in Nebraska producing electricity from biomass, and 11 from landfill gas.

Ethanol

Nebraska is the second largest producer of ethanol for fuel in the United States, after Iowa. There are several ethanol plants in Nebraska.

Biodiesel

Nebraska's first biodiesel plant recently broke ground in Adams County at Hastings. Cargill and Loves Family are pursuing a joint project to construct a biodiesel plant at Hastings. The Heartwell Renewables plant broke ground in late 2022 with planned completion in 2026.

Carbon Sequestration

Efforts are under way to capture and store carbon dioxide generated by Nebraska ethanol facilities. Carbon capture

equipment will extract CO_2 from the ethanol production process and transfer the gas via a carbon dioxide pipeline to an underground geologic sequestration site near the plant.

It is likely carbon capture and storage (CSS) systems will continue to expand in scope and size. Most carbon pipelines are used in oil fields for enhanced oil recovery. As noted by the Congressional Research Service (June 2022), "Transporting CO_2 in pipelines is similar to transporting fuels such as natural gas and oil; it requires attention to pipeline design, protection against corrosion, monitoring for leaks, and safeguards against overpressure… [the Pipelines and Hazardous Materials Safety Administration (PHMSA)] applies safety requirements to CO_2 pipelines similar to those for pipelines carrying hazardous liquids such as crude oil and anhydrous ammonia."

The US Department of Transportation and the State of Nebraska regulate interstate gas pipelines and hazardous liquid pipelines. As noted by the Center for Rural Affairs:

> *No legislation has been enacted that provides a permitting process at a state level in Nebraska. This leaves the responsibility of permitting to individual counties. Permits can cover everything that is not outlined in federal law, including the routing, construction mitigation, and abandoned pipelines.*
>
> *While there is no regulation for the permitting of carbon pipelines, companies are still able to secure eminent domain power for their projects.*

Biogas and Anaerobic Digestion

On-farm biogas production has a long history with recent technological innovation. A digester is a sealed vessel in which anaerobic digestion of organic matter occurs. The bacteria feed off manure and, in the process, release biogas (methane) as a by-product. Farmers can use digesters to improve the quality of manure and reduce odors, with the energy content of the methane being a by-product. Biogas generated from anaerobic digestion processes is a clean and environmentally friendly renewable fuel. There are many uses for this fuel, including use in engines, generation of electricity, heat and hot water systems, and even refrigeration.

Source: www.eia.gov/energyexplained/biomass

Hydropower

Hydropower was one of the first sources of energy used for electricity generation. Until 2019, hydropower was the largest source of total annual U.S. renewable electricity generation.

Nebraska has a long history of generating electricity with hydropower, which until recently was the largest source of renewable energy in the United States. In 2021, there were 20 units in Nebraska producing electricity with hydropower. Hydroelectric accounted for about 3% of Nebraska's annual electricity generation in 2021.

Source: www.eia.gov/energyexplained/hydropower

Geothermal

Geothermal energy is heat within the earth. Geothermal energy is a renewable energy source because heat is continuously produced inside the earth. Wells, ranging from a few feet to several miles deep, can be drilled into underground reservoirs to tap steam and very hot water that can be brought to the surface for use in a variety of applications.

People use geothermal heat for bathing, for heating buildings, and for generating electricity. Geothermal electricity generation requires water or steam at high temperatures(300° to 700°F). According to the U.S. Environmental Protection Agency (EPA), geothermal heat pumps are the most energy-efficient, environmentally clean, and cost-effective systems for heating and cooling buildings.

Source: www.eia.gov/energyexplained/geothermal

Solar

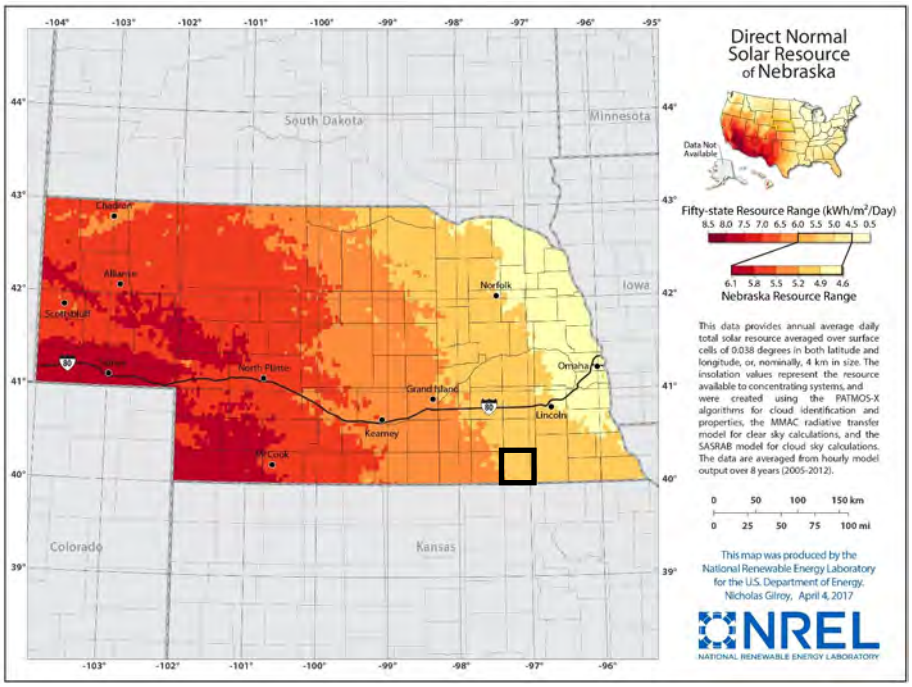
A photovoltaic (PV) cell, commonly called a solar cell, is a nonmechanical device which converts sunlight directly into

"Agrivoltaics" is the co-location of solar energy installations and agriculture beneath or between rows of photovoltaic panels.

There are over 2.8 GW of agrivoltaic sites in the U.S., the majority of which involve sheep grazing and/or pollinator habitat.

-US Office of Energy Efficiency & Renewable Energy

FIGURE 9.4: DIRECT NORMAL SOLAR RESOURCE OF NEBRASKA



Source: National Renewable Energy Laboratory, 2017

electricity. Some PV cells can convert artificial light into electricity.

Generally, it takes between 4 and 10 acres of land to generate one megawatt (MW) of electricity from a solar farm. The efficiency at which PV cells convert sunlight to electricity varies by the type of semiconductor material and PV cell technology. The efficiency of commercially available PV modules averaged less than 10% in the mid-1980s, increased to around 15% by 2015, and is now approaching 20% for state-of-the art modules. Experimental PV cells and PV cells for niche markets, such as space satellites, have achieved nearly 50% efficiency.

Rooftop solar has increasingly become an option for many homeowners and small businesses. The direction and pitch of the roof affect the amount of energy produced, as to nearby trees or other structures.

As of mid-2024, there were 24 projects in Nebraska producing electricity with utility-scale solar facilities. Only 0.2% of Nebraska's electricity was generated by solar in 2021, but the capacity doubled over just two years.

In general there is greater solar resource range in western Nebraska (Figure 9.4). However, solar is also being used to firm modulation in wind power generation and evening power flows on the electric transmission grids, as well as diversifying generation portfolios. The American Farmland Trust has developed general principles for siting solar development on active farm land::

1. Prioritize solar siting on buildings and land not well suited for farming;
2. Safeguard the ability for land to be used for agriculture;
3. Grow agrivoltaics for agricultural production and solar energy;
4. Promote equity and farm viability.

There are solar projects located nearby:

- Thayer County—NPPD 999 kW capacity, in operation 2023.
- Deshler (rural Thayer) 1.0 megawatt capacity in operation 2023.

Source: www.eia.gov/energyexplained/solar and farmland.org

Wind

The wind blows in Nebraska and an increasing share of Nebraska's energy comes from renewable wind energy. In 2021, there were 1,333 utility-scale wind turbines producing electricity in Nebraska. The state's wind generation grew from 3% of electricity generated in 2011 to 25% in 2021.

According to the US Department of Energy's Office of Energy Efficiency & Renewable Energy, "Areas with annual average wind speeds around 6.5 meters per second and greater at 80-m height are generally considered to have a resource suitable for wind development. Utility-scale, land-based wind turbines are typically installed between 80- and 100-m high although tower heights for new installations are increasing—up to 140 m—to gain access to better wind resources higher aloft." Figure 9.5 shows mapped windspeeds of approximately 7.5-8 m/s in Jefferson County.

Individual sites may be powered by Small Wind Energy Systems, a type of wind energy conversion system (WECS) with a rated capacity of 100 kilowatts or less.

Technological advancements are driving growth of the small wind power market by making turbines more efficient and cost-effective. Small wind turbines can operate efficiently on wind speeds of just 9 miles per hour.

The location of large commercial utility-scale wind farms must be carefully planned. There are currently two wind facilities in Jefferson County:

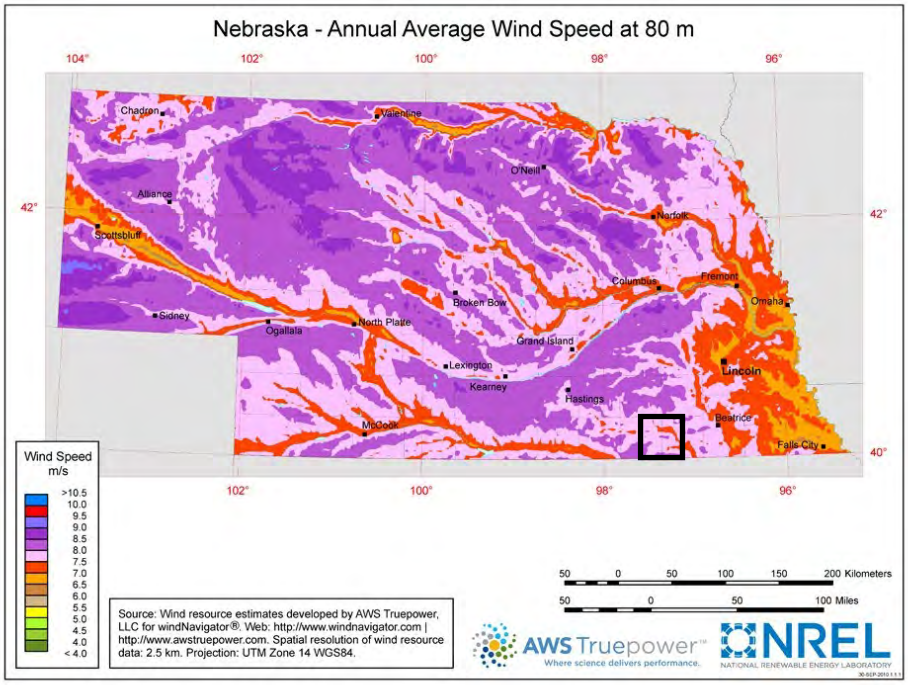
- Steele Flats Wind facility has 43 turbines rated at 76 MW capacity, in commercial operation since 2013, near Steele City and O'Dell in Jefferson and Gage counties. This project is going through repowering in 2024.
- Milligan 1 Wind Farm is located nearby in Saline County, with 99 turbines rated at 300 MW, in operation since 2021.

Renewable Energy Concerns

Concerns have been raised about land use conflicts between wind energy facilities and agricultural operations. For example, wind turbines limit the use of aerial application by fixed wing or helicopter operators. Concerns have also been raised about impacts on viewsheds and wildlife.

About 20% of Comprehensive Plan survey respondents strongly agree, agree, and had no opinion on renewable energy, while 14% disagree and 26% strongly disagree.

FIGURE 9.5: AVERAGE ANNUAL WIND SPEED AT 80M



Source: National Renewable Energy Laboratory, 2010

While there were many comments in the Comprehensive Plan survey about renewable energy, opinions were split. About 20% of respondents strongly agree, agree, and had no opinion whether agricultural producers should be allowed to have commercial-scale renewable energy systems as a means to generate additional revenue on the farm. One-quarter (26%) strongly disagreed and 14% disagreed. There was more support for small-scale solar and wind generation.

The Sierra Club estimates up to a million or more birds a year are killed by wind turbines each year, although many more are killed by power lines and other artificial causes. The American Bird Conservancy and wind energy experts are working to reduce the rate with alternatives such as "No-blade" wind turbines.

The University of Nebraska's Wind Energy and Wildlife Project recommends collaboration among stakeholders to reduce impacts on wildlife and habitat. "Guidelines for Avoiding, Minimizing, and Mitigating Impacts of Wind Energy on Biodiversity in Nebraska" have been developed by the Nebraska Wind and Wildlife Working Group.

Source: www.eia.gov/energyexplained/wind; wind-energy-wildlife.unl.edu

Battery Energy Systems

Experimental energy storage technologies, particularly battery energy storage systems ("BESS"), are growing rapidly and already play a role in enhancing the electrical grid by supporting deployment and integration of renewable energy sources — increasing reliability, controlling costs, and building a more resilient grid. Utility-scale batteries are also commonly used for price

arbitrage, frequency regulation, and system peak shaving.

As technology changes rapidly, zoning, environmental review, and sound level considerations are needed for the effective integration of energy storage systems in various locations and applications. The International Fire Code, NFPA fire codes, and other standards have been developed to ensure safety in manufacturing, construction, installation, and operations.

Source: eia.gov and cleanpower.org

Net Metering

Small-scale wind and solar generation facilities are typically front-of-the meter applications, intended to provide direct power to a home, farm, or business. These facilities tend to range from 20 kW or less up to 100 kW in size, although some manufacturers may be able to use larger generators on site.

Since 2009, private electricity generating facilities with capacity at or below 25 kilowatts may operate under Nebraska's net–metering statutes. Any excess generation produced by the system will be credited at the utility's avoided cost rate and carried forward to the next billing period. Any excess remaining at the end of an annualized billing period is to be paid out to the customer.

Solar/Wind Easements

Nebraska's solar and wind easement provisions allow property owners to create binding solar and wind easements for the purpose of protecting and maintaining proper access to sunlight and wind. Originally designed only to apply to solar, the laws were revised in March 1997 (LB 140, codified in Neb. Rev. Stat. §66-913 *et seq.*) to include wind. Counties and municipalities are permitted to develop regulations, or development plans protecting access to solar and wind energy resources if they choose to do so. Local governing bodies may also grant zoning exceptions to solar and wind energy systems which would be restricted under existing regulations, so long as the exception is not substantially detrimental to the public good.

LB 568, enacted in May 2009, made some revisions to the law and added additional provisions to govern the establishment and termination of wind agreements. Specifically, the bill provides the initial term of a wind agreement may not exceed forty years. Additionally, a wind agreement will terminate if development has not commenced within ten years of the effective date of the wind agreement. If all parties involved agree to extend this period, however, the agreement may be extended.

Conservation Measures

There are different strategies which can be undertaken to improve energy efficiency and usage. These strategies range from simple (often less costly) to complex (often more costly). Unfortunately, not all of the solutions will have an immediate return on investment. Individual property owners and tenants will need to find strategies fitting their budgets to harvest long-term savings.

Some common ways to make a structure more energy efficient include:

- Converting incandescent light bulbs to Compact Florescent Lights (CFL) or Light Emitting Diodes (LED).
- Installing additional insulation.
- Replacing windows.
- Changing out older, less-efficient air conditioners and furnaces to newer high-efficiency units.
- Changing out older appliances with new EnergyStar rated appliances.
- Adding solar panels
- Adding individual-scale wind energy conversion systems (WECS).
- Installing a geothermal heating and cooling system.

RESOURCES

Brownfields Assistance

A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

The State of Nebraska offers assistance with redeveloping brownfield sites. For example, Section 128(a) Assessments are Environmental Site Assessments (ESAs) providing preliminary environmental information to determine if there is contamination on a property. The NDEE offers these assessments to communities at no cost.

These assessments are performed in accordance with the "all appropriate inquiry" requirements but may include additional activities such as

nearby drinking water well sampling and testing building materials for asbestos, lead-based paint and/or mold. The first part of the assessment examines the background, setting and past uses of a property. It includes a records review, site reconnaissance, interviews, and, as a final product, a report documenting the environmental conditions at the property.

The second part of the assessment examines and evaluates the environmental conditions identified in the initial assessment. Soil and groundwater sampling and analyses are conducted to determine whether contamination associated with any environmental conditions has occurred on the site. The results of the sampling and analyses are evaluated in the Assessment Report.

Source: dee.ne.gov/

COMMUNICATIONS **UTILITIES AND ENERGY** INFRASTRUCTURE GOALS AND ACTIONS

CUE GOAL 9.1

Residents have options for broadband and remote work.

Actions

9.1.1 Continue to support local news—in print, on air, and online.

9.1.2 Support improvements in high-speed wired and wireless communications.

9.1.3 Periodically review zoning regulations for conformance with broadband technological advances and FCC mandates.

CUE GOAL 9.2

Utility Infrastructure is sufficient to meet the needs of county residents and employers.

Actions

9.2.1 Carefully review new development projects for potential impacts on utilities.

9.2.2 Work with municipalities as they maintain and extend powerlines to meet system needs.

9.2.3 Work with water providers to assure the quantity and quality of domestic water supply.

9.2.4 Assist property owners in conforming with State regulations for onsite wastewater treatment systems (OWTS).

CUE GOAL 9.3

Energy Infrastructure is sufficient to meet the needs of Jefferson County residents and employers.

Actions

9.3.1 Support Utility back-up and peaking generation facilities.

9.3.2 Promote consumer energy conservation measures, in partnership with utility providers.

CUE GOAL 9.4

Renewable energy facilities—biomass, geothermal, wind, solar—are carefully planned.

Actions

9.4.1 Provide for individual property owners utilizing small-scale, distributed renewable energy generation, eligible for net metering.

9.4.2 Limit utility-scale renewable energy facilities to minimize impacts on existing residents and property-owners.

9.4.3 Energy projects shall mitigate impacts on neighbors and the environment.

9.4.4 Periodically review zoning regulations for conformance with technological advances in renewable energy generation.

Jefferson County, Nebraska
COMPREHENSIVE PLAN
Fig 9.6 POWER DISTRICTS MAP

Fillmore County
Saline County
Thayer County
Gage County
Kansas

Daykin
Plymouth
Powell
Jansen
Harbine
Gladstone
Fairbury
Diller
Endicott
Reynolds
Thompson
Steele City

4
15
103
136
8

Legend

- Railroads
- Highways
- Paved Roads
- Rivers
- Counties
- Jefferson County Municipalities
- Jefferson County Towns
- Endicott
- Fairbury
- Norris PPD
- Reynolds

N

MARVIN PLANNING CONSULTANTS
Specializing in Municipal, County and Neighborhood Planning

PROJECTION: NAD83 State Plane NE
DATUM: NAD 83
DATE: 3.24.26

0 0.75 1.5 3 Miles

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Chapter Ten
Natural Resources and the Environment

Natural resources and the environment provide a foundation for land use and the local agricultural economy. They are also the foundation of residents' local quality of life. Local residents and property owners are the primary stewards of Jefferson County's land, natural resources, and the natural environment.

This chapter describes natural conditions of the county, water, wetlands, soils, and other factors. Much of this information is taken from the USDA Soil Conservation Service (SCS) *Soil Survey of Jefferson County, Nebraska*, published in 1975, and the online Natural Resources Conservation Service (NRCS) Web Soil Survey (Soil Survey Geographic Database—SSURGO at websoilsurvey.nrcs.usda.gov), with additional updated data where available.

NATURAL CONDITIONS

PHYSIOGRAPHY AND GEOLOGY

The ground under our feet and structures is divided into layers. The topsoil is a mix of mineral and organic elements. Then comes the soil, which is largely mineral. Below this is the fractured and weathered parent material, which has little or no biological activity and lies directly over bedrock.

Soil is not static. Soil is formed by the action of processes on parent material. The characteristics of soil are determined by:

- The physical and mineralogical composition of the parent material;
- The climate under which the soil material has accumulated;
- The plant and animal life on and in the soil;
- The relief, or lay of the land;
- The length of time these forces have been active.

Jefferson County, Nebraska, is located within the Loess Plains, which is part of the Great Plains physiographic province. The underlying bedrock indicate this area was once at the bottom of a large body of water—a sea or ocean. Glaciers moved across the eastern half of the county and brought large masses of soil material. Then as the glaciers receded northward, they left glacial till. At a lager period, the county was covered with varying depths of light-gray to yellowish-brown silty loess which still covers most of the county. Geologic erosion has worn away some of the till by wind and water action. Water erosion formed upland terraces and bottom land.

Elevation of land in Jefferson County ranges from about 1,540 feet in the west to 1,255 feet where the Little Blue River crosses into Kansas. The northern part of the county, around Daykin and Plymouth, are mostly nearly level uplands, while the strongest relief is in the bedrock area in the southern part of the county.

In general, drainage flows eastward and southeastward. The Little Blue River drains the western and central area of the county. Rose Creek, which drains the southern area, is a tributary to the Little Blue River, while tributaries Big and Little Sandy creeks drain the northwest area. Swan Creek drains the north-central area, and Cub Creek and Big Indian Creek drain the eastern area into the Lower Big Blue River.

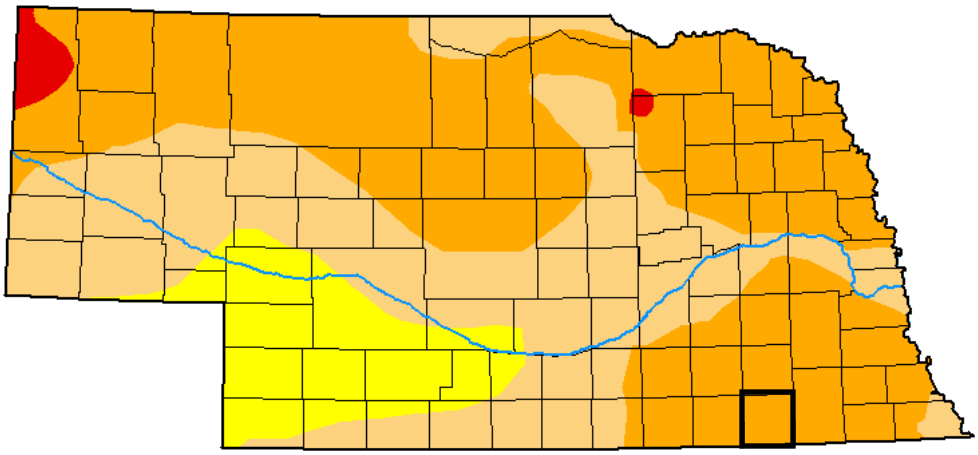
More information on soils and suitability for development is provided later in this chapter.

Climate

Jefferson County, like much of Nebraska, has a continental climate. Thundershowers occur in the warm summers and are followed by brief spells of cooler weather. Winters are generally cold and dry. Temperature and rainfall vary greatly from day to day and from season to season. Generally, over three-fourths of annual precipitation occurs from April to September, when prevailing winds are from a southerly direction.

Slow steady rains or rain mixed with snow characterize early spring. Snow is common during the first part of March—by April snow seldom remains on the ground for more than a day. By mid-May, most precipitation is from thundershowers, becoming more severe in mid-summer. Hail damage is extremely variable and spotted in pattern. June has the most precipitation of any month of the year.

US Drought Monitor



The U.S. Drought Monitor is a map released weekly, showing parts of the U.S. in drought. This is a typical map for 2024. The map is produced jointly by the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln, the National Oceanic and Atmospheric Administration (NOAA), and the U.S. Department of Agriculture (USDA)

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

The average daily maximum temperature in July is 90*F and the minimum temperature in January is 14*F. The average annual precipitation was 29.8 inches based on period 1939-1968, with an average of 38 days of snow cover of one inch or more. One year in 10 will have less than 20.4" of precipitation, while one will have more than 37.1".

Source: Soil Survey of Jefferson County, Nebraska, USDA 1975.

Drought

In October 2024, the USDA designated five Nebraska counties—Jefferson, Gage, Thayer, Nuckolls and Morrill—as primary natural disaster areas, based on the intensity of the ongoing drought during the growing season. An additional 14 counties were named as contiguous drought areas. As reported in the *Fairbury Journal-News*, a Secretarial disaster designation makes farm operators in primary counties and those counties contiguous to such primary counties eligible to be considered for Farm Service Agency (FSA) emergency loan assistance, provided eligibility requirements are met.

WATER

Jefferson County is located in the Blue River watershed. The Little Blue begins south of Minden, Nebraska, and flows east-southeast past Fairbury towards Marysville, Kansas. The Big Blue River begins in the hills south of the Platte River, flowing south through Beatrice, and is joined by the Little Blue River at Blue Rapids, Kansas.

SURFACE WATER

The Little Blue River, Rose Creek, and Big Sandy Creek, all perennial streams, are a source of water for livestock and recreation throughout the year and for summer irrigation. Other streams in the county are intermittent.

The Soil Survey of 1975 states there were 27 watershed reservoirs in the county, contributing approximately 1,020 acres of surface water. They ranged from 15 to 65 acres in size.

There is a USGS stream gauge on the Little Blue River near Fairbury, with over 100 years of recorded data. Minor flood stage is at 18.5 feet, with moderate flood stage at 20 feet and major flood stage at 23 feet. On May 7, 2015, the river gauge peaked at 25.48 feet with a flow of 71,200 cfs. From 2008 to 2024, the gauge median was 7.41 feet. On August 28, 2024, the gauge reached a year low of 6.13 feet, after peaking near 10 feet in May and again in June.

There is also a USGS stream gauge on the Little Blue River just across the state line at Hollenberg, Kansas, with 50 years of records. Flood stage is at 19 feet. On May 7, 2015, the river gauge read 22.97 feet. Earlier, on October 12, 1973,, the river gauge had peaked at 23.07 feet.

Source: waterwatch.usgs.gov

Little Blue NRD

The Little Blue Natural Resources District (NRD) is one of 23 Natural Resource Districts in Nebraska and covers all or portions of seven counties in the Little Blue watershed. The NRD is a local unit of government, working on a range of conservation works and programs such as soil conservation, flood control, groundwater and surface water management, pollution control, fish and wildlife habitat, recreation facilities, and forestry and range management, among other interests.

The Little Blue River is hydrologically connected to the principal aquifer from central Adams County to its discharge point at the Kansas State Line. The NRD's Long Range Implementation Plan (FY2021-2025) is intended to meet the requirements of state law, while providing the NRD's Board with an overview of objectives for orderly conservation and management of natural resources. The plan contains an overview of current programs and projects, and future objectives and plans of action across the district.

The Little Blue NRD *Voluntary Integrated Management Plan was completed* in cooperation with the Nebraska Department of Natural Resources (2019). The management plan is structured to assure the long-term viability of agriculture, business and industry, municipalities, fisheries and wildlife, and society as a whole.

The plan includes goals, objectives, and action items, including:

- Goal 1: Better and more scientific data and methods to support wise management of interconnected groundwater and surface water

- Goal 2: Scientifically sound, locally-based management actions to protect interconnected groundwater and surface water
- Goal 3: Education efforts to raise the level of awareness about finite, interconnected groundwater and surface water resources

The states of Nebraska and Kansas participate in the Blue River Basin Compact, entered in 1971. The compact is intended to achieve an equitable apportionment of the waters of the Basin, and encourage pollution-abatement programs in each state. The State of Nebraska grants surface water permits for both irrigation uses and storage uses, as well as one permit each for a domestic or industrial use.

Source: littlebluenrd.org

Lower Big Blue NRD

The Lower Big Blue Natural Resources District (NRD) is located in southeast Nebraska, in the lower portion of the Big Blue River Basin. The District consists of 1,644 sections totaling 1,052,160 acres and is approximately 45 miles wide at its widest point and approximately 50 miles in length. The main stream flowing through the District is the Big Blue River, with other important tributaries being Bear, Big Indian, Cedar, Cub, Little Indian, Mission, Mud, Plum, Swan, Turkey and Wolf-Wildcat Creeks.

Lower Big Blue NRD provides a number of services and public information. For example, these include:

- Programs—Well permitting, moisture sensors, chemigation, tree planting, flood control, and rural water

Kansas-Nebraska State Line
Source: Marvin Planning Consultants

- Groundwater—real-time groundwater monitoring, and moisture management
- Recreation—dam and reservoir projects, fish and wildlife habitat, and public recreation, including Cub Creek Recreation Area and Leisure Lake WMA near Plymouth
- Cost-Share—well decommissioning, nitrate sampling, irrigation flow meters, moisture sensos

Source: www.lbbnrd.net

Impaired Waters

There are several rivers and water bodies in the Blue River watersheds which have been identified as an impaired water under Section 303(d) of the Clean Water Act and are required to have a Total Maximum Daily Load (TMDL) developed. Aquatic life, water supply, and recreation were identified by the Nebraska Department of Environmental Quality (now Department of Environment and Energy—NDEE) as beneficial uses which are impaired due to atrazine and E. coli.

GROUNDWATER

Thick beds of water-saturated sand and gravel underlie much of the northern one-fourth of Jefferson County, the valleys of the Little Blue River and Rose Creek, and an area along an ancient valley extending east-west across the southern part of the county ranging one to five miles wide. The water in these areas has been o f good quality, with wells yielding from 250 to 1,500 gallons per minute.

Soils in the southern and central parts of Jefferson County are fairly shallow over bedrock. Water of good quality for domestic use has been available in this area from fairly shallow wells where water-saturated sands occur above bedrock. Water in which the mineral content is moderate to high has been available from wells which penetrate fractures and openings in the bedrock. Shallow wells generally have low yields of good quality water. Deep wells yield larger amounts of water yet in places are high in minerals.

(*See also discussion of utility domestic water supply in the previous chapter.*)

Source: Soil Survey of Jefferson County, Nebraska, USDA 1975.

Nebraska Statewide Groundwater Report

The "Nebraska Statewide Groundwater-Level Report", published by the Conservation and Survey Division at the University of Nebraska–Lincoln, indicates that groundwater levels in the eastern half of the state have continued to decline, particularly following several years of drought. While precipitation was above average in the western half of Nebraska, the state as a whole experienced an average decline of 0.52 feet in groundwater levels during spring 2024.

The *Fairbury Journal-News* reported, in May 2025, over the last ten years the City of Fairbury drinking water wells have "seen a drop in the water levels by more than ten feet."

Source: UNL Conservation and Survey Division and *Fairbury Journal-News*.

Wellhead Protection

Nebraska's Wellhead Protection Program (WHP) is a voluntary program which assists communities and other public water suppliers in preventing contamination of their water supplies. The Wellhead Protection Area Act sets up a process for public water supply systems to use if they choose to implement a local Wellhead Protection plan. The Nebraska Department of Environment & Energy (NDEE) is the lead agency for Wellhead Protection Plan (WHP) approval.

The goal of Nebraska's Wellhead Protection Program is to protect the land and groundwater surrounding public drinking water supply wells from contamination. Since approximately 85% of Nebraskans receive their drinking water from groundwater, preventing groundwater contamination is vital. The Wellhead Protection planning process includes identifying the land surrounding the public water supply wells to be protected, identifying potential sources of groundwater contamination within this area, and managing the potential contaminant sources

According to NDEE, ten communities in Jefferson County have Wellhead Protection Areas:

- Village of Daykin
- Village of DeWitt
- Village of Diller
- Village of Endicott (plan approved 2009)
- City of Fairbury (plan approved 2002)
- Village of Harbine
- Village of Jansen
- Village of Plymouth
- Village of Reynolds
- Village of Steele City (plan approved 2004)

Each responsible jurisdiction should take action to implement their WHP, including:

1. Establish and maintain performance standards to protect groundwater sources.
2. Participate in emergency, contingency, and lang-term planning for replacement sources of drinking water.
3. Work with state agencies to inform the public about the Wellhead Protection Plan.

Source: dee.ne.gov

As noted in Chapter Nine, Little Blue NRD's Little Blue Public Water Project is working on bringing a dedicated groundwater source online. When a wellhead protection area is designated, Jefferson County should update this comprehensive plan and work with the NRD to assure safety of groundwater in that area.

Floodplains and Floodways

A flood is a general and temporary condition of partial or complete inundation of normally dry land from flowing water, such as streams and rivers overflowing their banks, runoff from adjacent or surrounding slopes, or a combination of sources.

The floodplain, in general, contains three areas:

- Floodway, the channel of a watercourse and those portions of the adjoining floodplains which are required to carry and discharge a flood of 1-percent chance with no significant increase in the base flood elevation.
- Regulatory Floodplain, the low land near a watercourse which has been or may be covered by water from a flood event having a 1-percent chance in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. The regulatory floodplains is identified on Flood Insurance Rate Maps (FIRMs) as the Special Flood Hazard Area (SFHA).

- Flood Fringe, the portion of a floodplain which can be inundated by floodwaters but is not within the regulated floodway. The flood fringe serves as temporary storage for slow-moving or standing floodwaters.

The floodplain includes *both* the floodway and the flood fringe.

The floodplain area of greatest significance in terms of state and federal regulation is the 1% or 100 -year floodplain. This area is defined by the ground elevation in relation to the water elevation experienced during a base flood event. The 1% or 100-year floodplain is calculated to be the elevation level of flood water expected to be equaled or exceeded every 100 years on average. In other words, the 100 year flood is a 1% flood, meaning it defines a flood having a 1% chance of being equaled or exceeded in any single year.

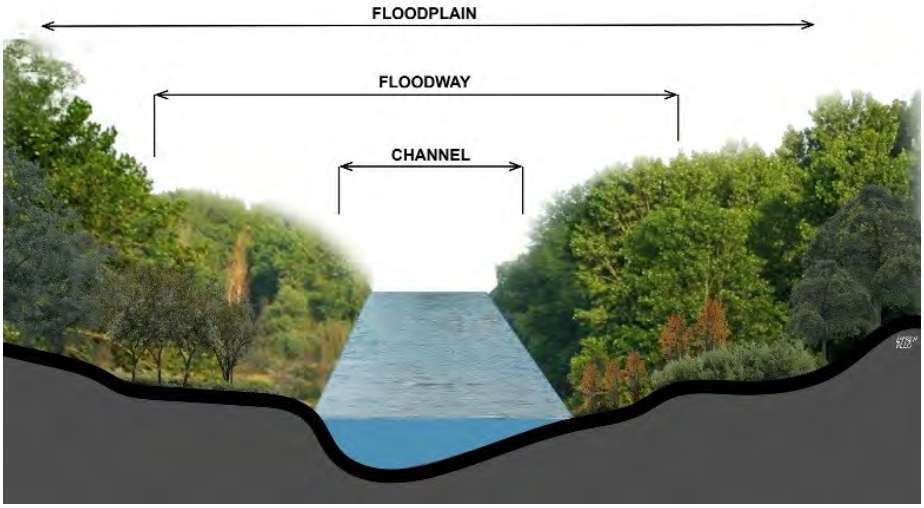
Preserving the floodway and flood fringe are critical to limiting the level of property damage which can occur as well as the risk to life of the occupants of the area. These lands when not flooded may seem to be harmless, but it is those rare times threatening life and property which need to be anticipated.

See Chapter 11 Hazards for more information on flood hazard mitigation and floodplain administration.

WETLANDS

Wetlands are areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods during the year, including during the growing season. Water saturation (hydrology) largely determines the soil development and the types of plant and animal communities living in and on the soil.

FIGURE 10.1: FLOOD PLAIN CROSS SECTION



Source: National Wetlands Inventory

Wetlands may support both aquatic and terrestrial species. The prolonged presence of water creates conditions favoring the growth of specially adapted plants (hydrophytes) and promote the development of characteristic wetland (hydric) soils. Wetlands vary widely because of regional and local differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors, including human disturbance. Two general categories of wetlands are recognized: coastal or tidal wetlands and inland or non-tidal wetlands.

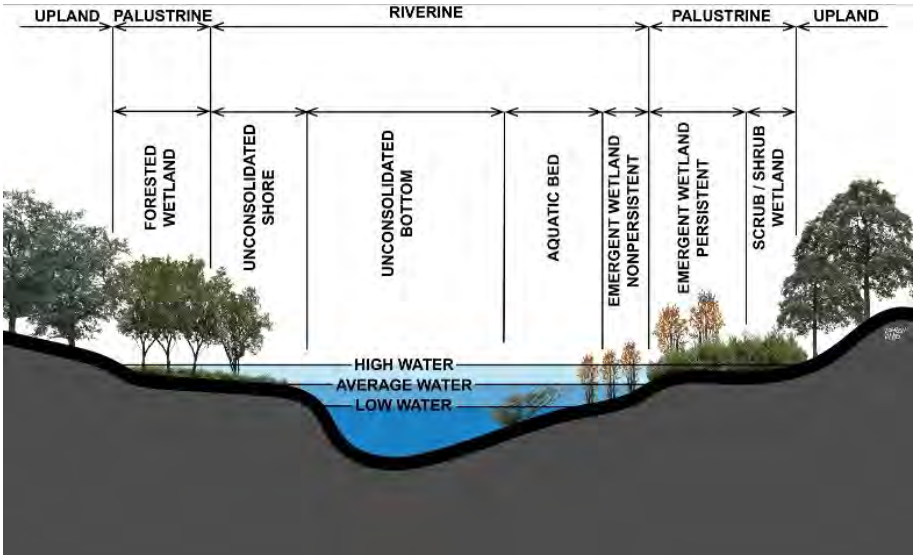
Many wetlands are seasonal (dry one or more seasons every year). The quantity of water present and the timing of its presence in part determine the functions of a wetland and its role in the environment. Wetlands can appear dry, at times, for significant parts of the year - such as vernal pools – and still provide habitat for wildlife adapted to breeding exclusively in these areas.

The federal government regulates certain types of wetlands under Section 404 of the Clean Water Act, depending on how "navigable waters" and "Waters of the United States" are defined. The US Supreme Court's 2023 decision in *Sackett et ux v. EPA et al* narrowed the definition in practice of the Waters of the United States.

The federal government offers incentives and disincentives, cooperative programs, and property acquisition programs to mitigate actual and potential harm to wetland resources.

Wetlands are home to many species of wildlife. Wetlands also provide an important service to nearby areas by holding and retaining floodwaters. These waters are then slowly released as surface water, or are used to recharge groundwater supplies. Wetlands also help regulate stream flows during dry periods.

FIGURE 10.2: RIVERINE WETLAND SYSTEM



Source: National Wetlands Inventory

NATIONAL WETLANDS INVENTORY

The U.S. Fish and Wildlife Service (FWS) compiles data on the characteristics, extent, and status of the Nation's wetlands and deep-water habitats. This information is compiled and organized in the National Wetlands Inventory (NWI).

Inland wetlands found in Jefferson County are most common along rivers and streams (riverine), including the Little Blue River. There are also sites with freshwater ponds, and freshwater emergent and forested/shrub wetlands.

Wetlands are categorized in several classifications, each more detailed and specific than the previous. The NWI uses five systems; marine, estuarine, riverine, lacustrine, and palustrine. Within each system, there are subsystems, classes, subclasses, and dominance types to describe different wetland characteristics. The system classification refers to wetlands sharing similar hydrologic, geomorphologic, chemical, or biological factors. The following are definitions and examples of three of the five systems used to describe wetlands. The Marine and Estuarine wetland systems are located in and near the open ocean; therefore, they do not occur in Nebraska. Further information, through NWI, on specific classifications is available.

Figures 10.2, 10.3, and 10.4 depict common examples of the riverine, lacustrine, and palustrine wetlands, respectively. These figures were produced by the United States Fish and Wildlife Service, and are taken from their 1979 publication entitled "Classification of Wetlands and Deepwater Habitats of the United States".

Riverine Wetlands

Figure 10.2 shows the riverine system including all wetlands occurring in channels, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergent, emergent mosses, or lichens, and (2) habitats with water containing ocean derived salts in excess of 0.5%. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water. Therefore, water is usually, but not always, flowing in the riverine system.

Springs discharging into a channel are also part of the riverine system. Uplands and palustrine wetlands may occur in the channel, but are not included in the riverine system. Palustrine Moss-Lichen Wetlands, Emergent Wetlands, Scrub-Shrub Wetlands, and Forested Wetlands may occur adjacent to the riverine system, often in a floodplain.

Lacustrine Wetlands

The Lacustrine System includes wetlands with all of the following characteristics: (1) situated in a topographic depression or a dammed river channel; (2) lacking trees, shrubs, persistent emergents, emergent moss or lichens with greater than 30% area coverage; and (3) total area exceeds 20 acres. Similar wetland areas totaling less than 20 acres are also included in the Lacustrine System if an active wave-formed or bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 6.6 feet (2 meters) at low water.

The Lacustrine System includes permanently flooded lakes and reservoirs (e.g. Lake Superior, Michigan), intermittent lakes (e.g.

playa lakes), and tidal lakes with ocean-derived salinities below 0.5% (e.g. Grand lake, Louisiana). Typically, there are extensive considerable wave action. Islands of Palustrine wetlands may lie within the boundaries of the Lacustrine System.

Palustrine Wetlands

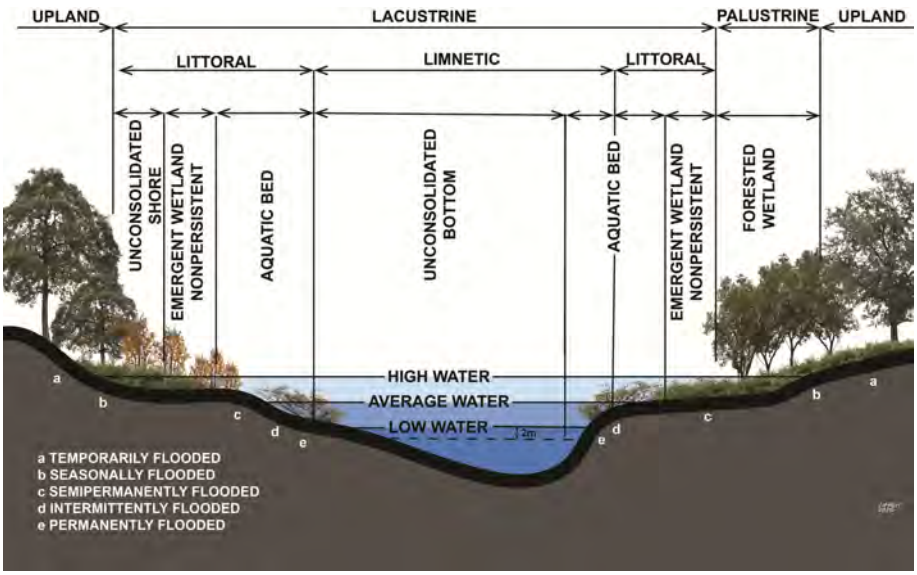
The Palustrine System includes all non-tidal wetlands dominated by trees, shrubs, persistent emergent, emergent mosses or lichens, and all such wetlands occur in tidal areas where salinity due to ocean-derived salts is below 0.5%. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area is less than 20 acres; (2) lacking active wave-formed or bedrock shoreline features; (3) water depth in the deepest part of basin is less than 6.6 feet (2 meters) at low water; and (4) salinity due to ocean-derived salts is less than 0.5%.

The Palustrine System was developed to group the vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, which are found throughout the United States. It also includes the small, shallow, permanent, or intermittent water bodies often called ponds. These wetlands may be situated shoreward of lakes, river channels, or estuaries; on river floodplains; in isolated catchments; or on slopes. They may also occur as islands in lakes or rivers.

USFW Classification System

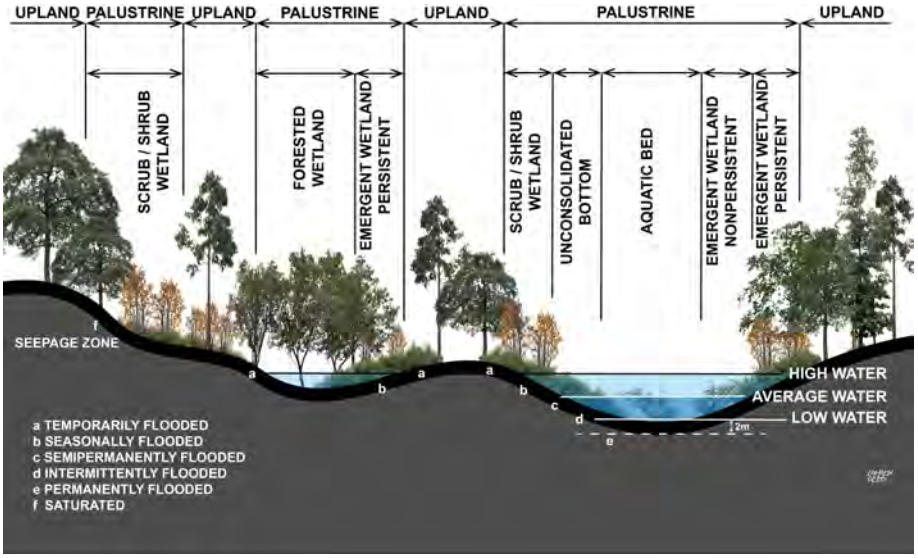
Stewart & Kantrud's developed a wetland classification system, published by USFW in the 1971. This system classifies wetland

FIGURE 10.3: LACUSTRINE WETLAND SYSTEM



Source: National Wetlands Inventory

FIGURE 10.4: PALUSTRINE WETLAND SYSTEM



Source: National Wetlands Inventory

communities into several types, including:

- Type I: Ephemeral wetlands
- Type II: Temporary
- Type III: Seasonal
- Type IV: Semipermanent
- Type V: Permanent

This system is similar to, but different than, the "Circular 39" system first published in 1956. Stewart & Kantrud's Types III, IV, and V have been considered generally as "public waters wetlands" for the purpose of land use regulation.

SOILS

The general soil map developed by the USDA SCS (now Natural Resources Conservation Service, NRCS) shows broad areas having a distinctive pattern of soils, relief, and drainage. Each map unit, or soil association, on the general

soil map is a unique natural landscape. Typically, an association consists of one or more major soils and minor soils.

The soil series is the lowest category of the national soil classification system. The associations are named for the major soils—each series has an identifying place name (where it was first found) and is divided by texture of the surface soil. The soils making up one association can occur in other associations but in a different series pattern.

Soil surveys can be used for general farm and site planning. Onsite investigation is typically needed, such as soil quality assessments and conservation and engineering applications. While the engineering classification is based on exact composition of a particular soil, soil survey is an essential basis for development site planning.

Source: websoilsurvey.nrcs.usda.gov

Soil Formations

Jefferson County has many different soil types. Some of these soils are similar; however, many are completely different from one another. The Jefferson County Soil Survey identifies key aspects of each soil.

A summary of soil series units and limitations on structures is included in Appendix B. In general, these include:

- Benfield Series
- Burchard Series
- Butler Series
- Cass Series
- Crete Series
- Deroin Series
- Geary Series
- Hastings Series
- Hedville Series
- Hobbs Series
- Jansen Series
- Kipson Series
- Lancaster Series
- Malmo Series
- Mayberry Series
- Morrill Series
- Nodaway Series
- Uly Series
- Wymore Series

Appendix B also includes summaries of soil suitability and limitations as described by NRCS, including for dwellings (with and without basements), septic tank and absorption fields, sewage lagoons, sanitary landfill, small commercial businesses; Most soil series in Jefferson County present limitations on buildings, including susceptibility to flooding and saturation, depth to bedrock, shrink-swell, slopes, ponding and slow water movement, filtering, seepage, or dust. Soil permeability by soil type is also described in Appendix B.

The text, graphics, tables, and maps included in Appendix B to this Comprehensive Plan are made part of this Comprehensive Plan by reference. A true and correct copy of said Appendix is on file in the Office of the County Clerk along with the true and correct copy of the Comprehensive Plan and all are available for public inspection during normal business hours.

Other Factors Impacting Land Use

Certain uses of land are specifically impacted by natural resources and environmental factors. These uses also affect multiple elements of the comprehensive plan, from economic development to transportation.

Prime Farmland

Prime farmland is directly tied to specific soils and their composition. According to the USDA, "prime farmland" is:

> land *that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. It must also be available for these uses. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.*

Prime farmland is generally the highest and best use of land meeting the nation's short- and long-range needs for food and

fiber. The acreage of high-quality farmland is limited. The USDA recognizes government at local, state, and federal levels must encourage and facilitate the wise use of the nation's prime farmland, and recognize individual efforts to this end.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils best suited to producing food, feed, forage, fiber, and oilseed crops. Such soils have properties which are favorable for the economic production of sustained high yields of crops. The soils need only to be treated and managed using acceptable farming methods. The moisture supply, of course, must be adequate, and the growing season has to be sufficiently long. Prime farmland soils produce the highest yields with minimal inputs of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be in use as cropland, pasture, or woodland, or they may be in other uses. They either are used for producing food or fiber or are available for these uses. Urban or built-up land and water areas cannot be considered prime farmland.

Prime farmland soils usually get an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and

are not subject to frequent flooding during the growing season. The slope ranges mainly from 0 to 6 percent.

Soils which have a high water table, are subject to flooding, or are droughty may qualify as prime farmland soils if the limitations or hazards are overcome by drainage, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information on the criteria for prime farmland can be obtained at the local office of the NRCS.

Conversion of prime farmland to urban and industrial uses has been a trend in land use in parts of the county. The loss of prime farmland to other uses tends to put pressure on marginal lands, which generally are wet, more erodible, droughty, or difficult to cultivate and less productive than prime farmland.

CAFOs

Confined Animal Feeding Operations (CAFOs) are agricultural operations where animals are kept and raised in confined situations. The US EPA regulates CAFOS (as defined by the Clean Water Act) through the NPDES permitting program as point sources of potential pollution. The State of Nebraska's manure regulations are spelled out in Title 130 of the Nebraska Administrative Code for Livestock Waste Control. The Department of Environment and Energy is the primary regulatory authority in Nebraska.

Livestock operations (AFOs) are typically categorized by the number of animals as small, medium or large, determining which rules apply. The need to obtain a State permit is based on the potential for contamination of the waters of the State. A nutrient management plan may be required or recommended depending on the situation.

Zoning Regulations

Currently, the *Jefferson County Zoning Regulations* list expansion or development of livestock confinement facilities/operations with 301 to 2,500 animal units (AUs) as a conditional use in the AG Agriculture District; however, approval is delegated to the Zoning Administrator. Over 2,500 AUs is listed as a "Special Use" for review by the Planning Commission and approval by the County Board after public hearings.

The regulations set certain minimum requirements, including separation between livestock facilities and residences, commercial and industrial sites, and churches, schools or other public facilities. Minimum distance increases from 1/4 mile to 1-1/4 mile as the number of animal units increases.

Livestock Friendly

Jefferson County is designated by the Nebraska Department of Agriculture (NDA) as a Livestock

Friendly County, and the NDA evaluates county zoning regulations which apply to livestock operations.

30x30

The federal government has a long history of conservation of public lands. The 30 by 30 initiative is a recent concept to designate 30% of land and water around the world as protected areas by 2030. In 2021, the Biden administration directed federal departments to recommend steps to achieve this goal in the United States.

In May 2021, a report was issued, *Conserving and Restoring America the Beautiful*. This document called for a locally led and voluntary, nationwide effort to conserve, connect, and restore public and private land, waters, and wildlife. As American Farm Bureau Federation President Zippy Duvall commented, "The report is a philosophical document that emphasizes important principles such as incentive-based voluntary conservation, protecting personal and property rights and continued ranching on public lands, but it lacks specifics."

In the first year, the administration reported progress in six focus areas:

- Creating more parks and safe outdoor opportunities
- Support for Tribally-led conservation and restoration priorities
- Expanding collaborative conservation of fish and wildlife habitats and corridors
- Increasing access for outdoor recreation
- Incentivizing voluntary conservation efforts of fishers, ranchers, farmers, and forest owners
- Creating jobs in restoration and resilience

The 30x30 initiative is a federal and international effort. It is not sponsored by the State of Nebraska, nor policy of the State or local government. There are a number of other initiatives for land conservation and wildlife stewardship which have found support by local elected officials in Nebraska.

ENVIRONMENTAL RESOURCES

Conservation Easements

Conservation easements have become a popular incentive-based strategy for land conservation. As the Lincoln Institute of Land Policy has noted, "Beyond tax credits, tax deductions, and other public subsidies that provide financial incentive for landowners to enter into conservation partnerships, this phenomenon is fueled by the perception that conservation easements are a win-win strategy in land protection, benefiting both landowners and the environment."

Agricultural easements are a valuable tool for farmers and ranchers, allowing them to exercise private property rights while keeping land in agricultural production. Yet the governing laws and conventions can be problematic. Easements can conserve sensitive lands, yet wildlife and land or water easements can also take productive farmland out of production.

Easements can also have impacts on tax revenues if the market value of land is reduced. Local school districts and units of government rely on these tax revenues to provide essential services. However, local service providers would face even greater impacts if these sensitive lands were converted to dispersed housing sites demanding the full range of public services. It should be kept in mind that the property could even be turned over fee simple to public entities such as the US Fish and Wildlife Service, in which case all tax revenue would be lost.

Review Process

Nebraska Revised States §76-2,111 *et seq.* (Reissue 1997) sets out a process for review of conservation easements under the Conservation and Preservation Easements Act.

- "Conservation Easement" is defined as "an easement, restriction, covenant, or condition...in real property" protecting "natural, scenic, or open condition, assuring its availability for agricultural, horticultural, forest, recreational, wildlife habitat, or open space use, protecting air quality, water quality, or other natural resources..."
- "Preservation Easement" is defined similarly, to protect "historical, architectural, archaeological, or cultural aspects of real property..."

§76-2,112(3) requires "each conservation or preservation easement shall be approved by the appropriate governing

body." If the property in question is partially or entirely within a city or village ETJ, then the city or village is the governing body for this review.

The process outlined is:

1. The governing body refers the proposed easement to the local planning commission with jurisdiction over the property.
2. The planning commission has 60 days to provide comments regarding the conformity of the easement to the comprehensive plan.
3. The governing body shall receive the comments of the local planning commission.

Approval of a proposed easement may only be denied upon a finding of fact the acquisition is "not in the public interest" when:

1. A comprehensive plan for the area which had been officially adopted and was in force at the time of the conveyance, or
2. Any national, state, regional, or local program furthering conservation or preservation, or
3. any known proposal by a governmental body for use of the land.

Any state agency can accept a conservation or preservation easement after soliciting comments from the local planning commission, without approval by the local governing body.

These issues require careful consideration of future land use impacts. For the purposes of this comprehensive plan, the following review criteria may be considered:

1. Agricultural easements protect and enhance farming and ranching operations and property rights as they currently exist. These activities are generally by-right under the zoning ordinance, and these easements should be considered conforming to the County Comprehensive Plan.
2. Wildlife and land or water easements generally restrict use of land. While the property owner is voluntarily separating their bundle of private property rights, taking land out of production also impacts the agricultural economy and property values. Potential impacts of these easements on adjacent property should be reviewed for the public record.
3. The alternative to an easement may be fee simple acquisition by a private non-profit entity or a governmental body, or development of the property. A conservation or preservation easement may have lesser community impacts than fee simple acquisition.

Review of a conservation easement must be based in a substantial evidentiary record. The Planning Commission comments must be made in writing.—statute specifies comments, not necessarily a recommendation. As well, the governing body's decision should be supported by evidence received. In the case of a decision to deny acquisition of an easement, there must be a clear statement of reasoning citing the criteria in statute, and how the proposed easement fails to meet the criteria.

Conservation Reserve Program

The Conservation Reserve Program (CRP) is a federal program overseen by the United States Department of Agriculture Farm Service Agency (FSA) paying a yearly rental payment in exchange for farmers removing environmentally sensitive land from agricultural production and planting species which will improve environmental quality.

Landowners can learn how CRP can increase their income with flexible programs fitting their land and operations by visiting their local USDA Field Office or talking with a Nebraska Game and Parks Commission or Pheasants Forever biologist. Biologists provide free one-on-one technical assistance.

Source: outdoornebraska.gov/crp

NATURAL RESOURCES AND ENVIRONMENT GOALS AND ACTIONS

NRE GOAL 10.1

Jefferson County continues to protect groundwater quantity and quality.

Actions

10.1.1 Development projects should demonstrate availability of domestic water supply.

10.1.2 Work with water providers to assure the quantity and quality of domestic water supply.

10.1.3 Assist property owners in conforming with State regulations for onsite wastewater treatment systems.

10.1.4 Work with NDEE and municipalities on implementation of Wellhead Protection Plans.

NRE GOAL 10.2

Jefferson County's watersheds are properly managed.

Actions

10.2.1 Work with Little Blue NRD on implementation of their goals, objectives, and action items.

10.2.2 Work with Lower Big Blue NRD on implementation of their goals, objectives, and action items.

NRE GOAL 10.3

Impacts of impaired waters are minimized.

Actions

10.2.1 Work with NDEE and other agencies on mitigation of Total Maximum Daily Loads (TMDLs) in Jefferson County.

NRE GOAL 10.4

Wetlands are protected to the extent required by Federal law.

Actions

10.4.1 Work with NDEE to maintain conformance with state and federal wetland regulations.

10.4.2 Carefully review new development projects for potential impacts on wetlands.

NRE GOAL 10.5

Soils are protected from degradation and erosion.

Actions

10.5.1 Work with NRCS on prevention of soil erosion.

10.5.2 Carefully review new development projects for potential impacts on soils.

NRE GOAL 10.6

Commercial crop and animal agriculture remains a viable, long-range land use.

Actions

10.6.1 Carefully review new development projects for potential impacts on agriculture and prime farmland.

10.6.2 Consider impacts of conservation easements on long-term agricultural operations.

10.6.3 Regularly review impacts of local regulations on agricultural operations and structures.

Jefferson County, Nebraska

COMPREHENSIVE PLAN

Fig 10.5 WELLHEAD PROTECTION AREAS MAP

Fillmore County

Saline County

Thayer County

Gage County

Kansas

Daykin

Plymouth

Powell

Jansen

Harbine

Gladstone

Fairbury

Diller

Endicott

Reynolds

Thompson

Steele City

4

15

103

136

8

Legend

- Railroads
- Highways
- Paved Roads
- Rivers
- Counties
- Jefferson County Municipalities
- Jefferson County Towns
- Parcels
- Wellhead Protection Areas

N

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PROJECTION: NAD83 State Plane NE

DATUM: NAD 83

DATE: 3.24.26

0 0.75 1.5 3 Miles

Jefferson County, Nebraska

COMPREHENSIVE PLAN

Fig 10.6 NATIONAL WETLANDS INVENTORY MAP

Fillmore County
Saline County
Thayer County
Gage County
Kansas
Daykin
Plymouth
Powell
Jansen
Harbine
Gladstone
Fairbury
Diller
Endicott
Reynolds
Thompson
Steele City
4
15
103
136
8

Legend

- Railroads
- Highways
- Paved Roads
- Rivers
- Counties
- Jefferson County Municipalities
- Jefferson County Towns
- Parcels

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Content: Item: U.S. Environmental Protection Agency, Office of Mission Support; Data Steward: U.S. Department of the Interior, U.S. Fish and Wildlife Service

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DATUM: NAD 83
DATE: 3.24.26

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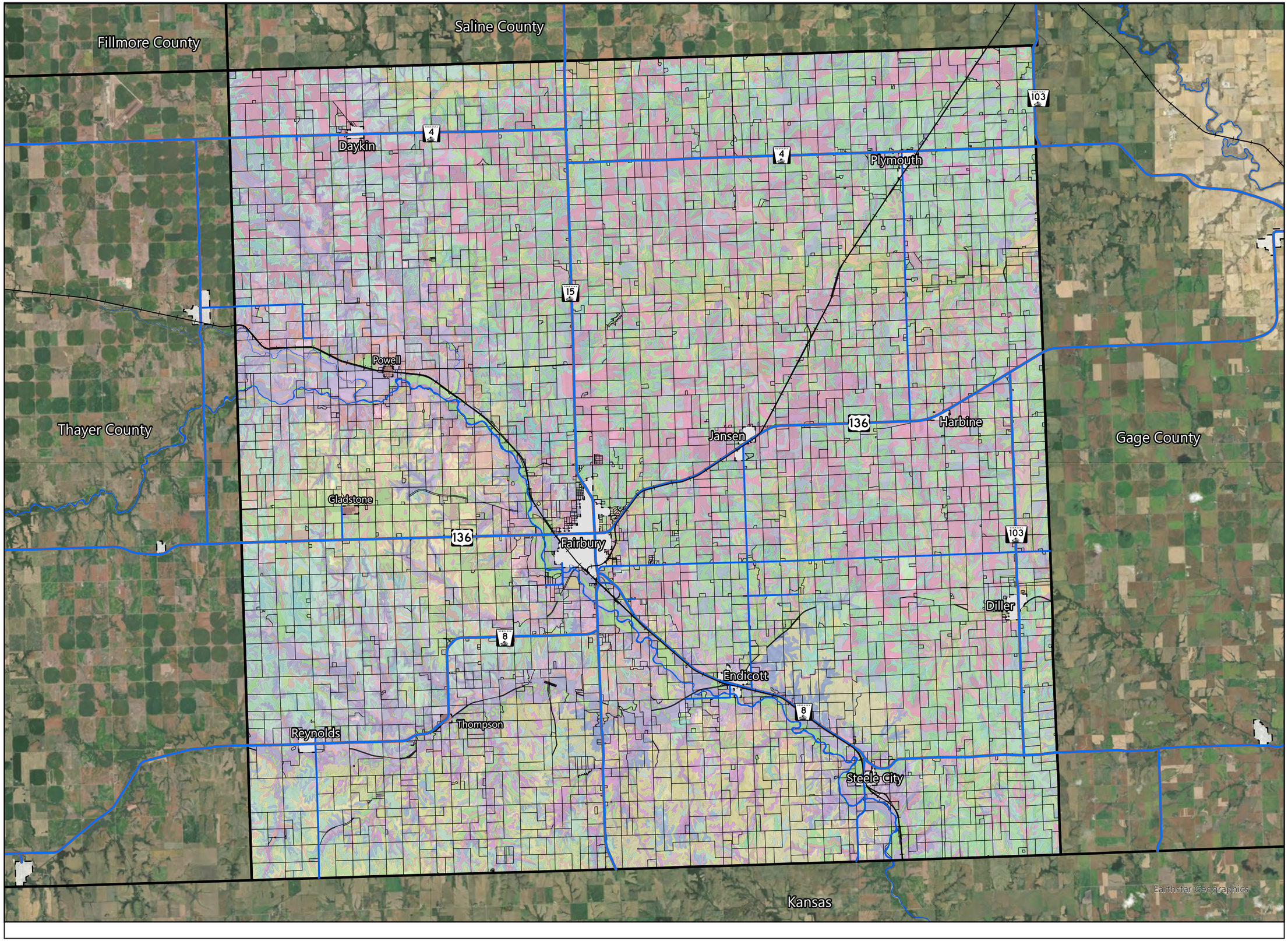

Jefferson County, Nebraska
COMPREHENSIVE PLAN
Fig10.7 GENERAL SOILS
Source: USDA Natural Resources Conservation Service

Legend

- Railroads
- Highways
- Paved Roads
- County_Boundaries
- Rivers
- Jefferson County Municipalities
- Jefferson County Towns

Parcels

- Parcels

See following page for complete Soils legend.

N

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PROJECTION: NAD83 State Plane NE
DATUM: NAD 83
DATE: 3.24.26

0 0.75 1.5 3 Miles

Legend

Soil Type

- Arents, earthen dam
- Benfield silty clay loam, 11 to 30 percent slopes
- Benfield silty clay loam, 3 to 11 percent slopes, eroded
- Benfield silty clay loam, 6 to 11 percent slopes, eroded
- Borrow pit
- Burchard clay loam, 11 to 30 percent slopes
- Burchard clay loam, 2 to 6 percent slopes
- Burchard clay loam, 6 to 11 percent slopes
- Burchard clay loam, 6 to 11 percent slopes, eroded
- Burchard-Steinauer clay loams, 11 to 17 percent slopes, eroded
- Burchard-Steinauer clay loams, 11 to 30 percent slopes
- Burchard-Steinauer clay loams, 6 to 11 percent slopes, eroded
- Butler silt loam, 0 to 1 percent slopes
- Cass loam, occasionally flooded
- Cass loam, rarely flooded
- Cortland-Malmo complex, 6 to 11 percent slopes, eroded
- Crete silt loam, 0 to 1 percent slopes
- Crete silt loam, 0 to 1 percent slopes, loess plains and breaks
- Crete silt loam, 1 to 3 percent slopes
- Crete silt loam, 1 to 3 percent slopes, loess plains and breaks
- Crete silt loam, 7 to 11 percent slopes
- Crete silty clay loam, 3 to 7 percent slopes, eroded
- Crete silty clay loam, 3 to 7 percent slopes, eroded, loess plains and breaks
- Hedville loam, 7 to 30 percent slopes
- Hobbs silt loam, channeled, frequently flooded
- Hobbs silt loam, channeled, occasionally flooded
- Hobbs silt loam, occasionally flooded
- Hord silt loam, 1 to 3 percent slopes
- Jansen loam, 2 to 6 percent slopes
- Jansen loam, 3 to 7 percent slopes, eroded
- Jansen loam, 6 to 11 percent slopes
- Judson silt loam, 2 to 6 percent slopes
- Kennebec silt loam, rarely flooded
- Kipson silt loam, 7 to 30 percent slopes
- Kipson soils, 11 to 30 percent slopes
- Lancaster and Edalgo soils, 11 to 30 percent slopes
- Lancaster loam, 3 to 7 percent slopes, eroded
- Lancaster loam, 7 to 11 percent slopes
- Lancaster soils, 7 to 11 percent slopes, severely eroded
- Longford silty clay loam, 3 to 7 percent slopes, eroded
- Malcolm silt loam, 6 to 11 percent slopes, eroded
- Malmo clay loam, 2 to 6 percent slopes, eroded
- Malmo clay, 3 to 11 percent slopes, eroded
- Malmo silty clay loam, 3 to 6 percent slopes, eroded
- Malmo silty clay loam, 6 to 11 percent slopes, eroded
- Malmo, eroded-Pawnee complex, 6 to 11 percent slopes
- Mayberry silty clay loam, 3 to 6 percent slopes, eroded
- Deroin silty clay loam, 2 to 6 percent slopes, eroded
- Deroin silty clay loam, 6 to 11 percent slopes, eroded
- Edalgo silty clay loam, 3 to 7 percent slopes, eroded
- Edalgo silty clay loam, 7 to 11 percent slopes
- Fluvaquents, sandy, frequently flooded
- Geary and Jansen soils, 11 to 30 percent slopes
- Geary and Jansen soils, 7 to 11 percent slopes
- Geary and Jansen soils, 7 to 11 percent slopes, severely eroded
- Geary silty clay loam, 11 to 17 percent slopes, eroded
- Geary silty clay loam, 11 to 30 percent slopes
- Geary silty clay loam, 11 to 30 percent slopes, severely eroded
- Geary silty clay loam, 3 to 11 percent slopes, severely eroded
- Geary silty clay loam, 3 to 7 percent slopes, eroded
- Geary silty clay loam, 7 to 11 percent slopes, eroded
- Gravel pit
- Hastings silt loam, 1 to 3 percent slopes
- Hastings silt loam, 3 to 7 percent slopes
- Hastings silt loam, 7 to 11 percent slopes
- Hastings silty clay loam, 3 to 11 percent slopes, severely eroded
- Hastings silty clay loam, 3 to 7 percent slopes, eroded
- Hastings silty clay loam, 7 to 11 percent slopes, eroded
- Hedville loam, 30 to 50 percent slopes
- Mayberry silty clay loam, 6 to 11 percent slopes
- Meadin loam, 6 to 30 percent slopes
- Mine or quarry
- Miscellaneous water, sewage lagoon
- Morrill clay loam, 11 to 30 percent slopes
- Morrill clay loam, 3 to 6 percent slopes, eroded
- Morrill clay loam, 3 to 7 percent slopes
- Morrill clay loam, 6 to 11 percent slopes
- Morrill clay loam, 6 to 11 percent slopes, eroded
- Morrill soils, 6 to 11 percent slopes, severely eroded
- Muir silt loam, 1 to 3 percent slopes
- Muir silt loam, rarely flooded
- Nodaway silt loam, channeled, occasionally flooded
- Nodaway silt loam, occasionally flooded
- Obert soils, occasionally flooded
- Otoe silty clay loam, 6 to 11 percent slopes, eroded
- Steinauer clay loam, 11 to 30 percent slopes
- Uly-Hobbs silt loams, 0 to 30 percent slopes
- Water
- Wymore silty clay loam, 0 to 2 percent slopes
- Wymore silty clay loam, 2 to 6 percent slopes

Jefferson County, Nebraska

COMPREHENSIVE PLAN

Fig 10.8 PRIME FARMLAND MAP

Source: USDA Natural Resources Conservation Service

Fillmore County
Saline County
Thayer County
Gage County
Kansas
Daykin
Plymouth
Powell
Jansen
Harbine
Gladstone
Fairbury
Diller
Endicott
Reynolds
Thompson
Steele City
Vantor
4
15
103
136
8

Legend

- Railroads
- Highways
- Paved Roads
- County_Boundaries
- Rivers
- Jefferson County Municipalities
- Jefferson County Towns

Parcels

- Parcels

Prime Farmland

- Not prime farmland
- Prime farmland if drained
- Farmland of statewide importance
- All areas are prime farmland

N

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PROJECTION: NAD83 State Plane
NEDATUM: NAD 83
DATE: 3.24.26

0 0.75 1.5 3 Miles

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Chapter Eleven
Hazard Mitigation

Hazard mitigation encompasses strategies and methods aimed at reducing both immediate and long-term risks associated with natural and human-induced hazards and disasters. Effective hazard mitigation plans establish a structured approach for decision-making within the community.

By implementing careful land use and development practices, the occurrence of hazards and the potential for damage can be prevented or significantly minimized. Hazard mitigation informs the entire emergency management cycle (*see Chapter Eight Public Safety*).

This chapter summarizes findings of the *Little Blue NRD and Lower Big Blue NRD Hazard Mitigation Plan* (2021), and references resources for mitigation planning. The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans be updated every five years to reflect changing conditions. This Comprehensive Plan should itself be updated to reflect any changes in the hazard mitigation plan.

HAZARD MITIGATION PLAN

The *Little Blue NRD and Lower Big Blue NRD Hazard Mitigation Plan* was updated in 2021 by JEO Consulting Group, and approved by FEMA in compliance with requirements of the Disaster Mitigation Act of 2000. Developing a hazard mitigation plan is not only good public policy for a resilient community, but participation in and adoption of a hazard mitigation plan is also required to become eligible for certain federal funding sources.

Little Blue Natural Resources District (NRD) and Lower Big Blue NRD sponsor the hazard mitigation plan process as independent jurisdictions. Jefferson County participated in the 2021 update, along with the municipalities of:

- Village of Daykin
- Village of Diller
- Village of Endicott
- City of Fairbury
- Village of Harbine
- Village of Jansen
- Village of Plymouth
- Village of Reynolds
- Village of Steele City
- Meridian Public Schools
- Tri-County Public Schools

The hazard mitigation plan includes goals, objectives, and action items, including:

- Goal 1: Protect the health and safety of the public
- Goal 2: Protect critical facilities, critical infrastructure, and maintain their operation after a hazard

- Goal 3: Protect existing properties and natural resources
- Goal 4: Promote multi-agency coordination and resources

Hazard Risk Assessment

The hazard mitigation plan identified historical incidents of different hazards in a risk assessment by county. From 1996 to April 2020, Jefferson County experienced the following hazard events, as documented by the NCEI Storm Events Database:

- Agricultural Disease: 64 incidents, 25,241 animals
- Dam Failure: 3 events
- Drought: 493 of 1,504 months
- Earthquakes: 1
- Extreme Heat: Average 7 days per year
- Flooding: 22 flash flood and 18 general flood events, with 1 death
- Grass/Wildfire: 235 incidents
- Hazardous Materials: 10 chemical spills
- Levee Failure (none)
- Public Health Emergency: 1 death
- Severe Thunderstorms: 220 incidents of hail, plus heavy rain, lightning, and wind
- Severe Winter Storms: 8 blizzard events, plus extreme cold, heavy snow, ice and winter storms
- Terrorism (none)
- Tornadoes and High Winds: 14 tornadoes with 1 injury, and 16 wind events with 1 injury

The hazards accounted for at least $12.5 million in property damage and over $36 million in crop damage over the time period.

Priority Hazards

Each participating entity ranked hazards with the potential to affect the specific jurisdiction.

Jefferson County
Flooding
Hazardous Materials
Severe Thunderstorms
Severe Winter Storms
Tornadoes and High Winds

Daykin
Hazardous Materials
Severe Thunderstorms
Severe Winter Storms
Tornadoes and High Winds

Diller
Hazardous Materials
Severe Thunderstorms
Severe Winter Storms
Tornadoes and High Winds

Endicott
Severe Thunderstorms

Fairbury
Flooding
Hazardous Materials
Severe Thunderstorms
Severe Winter Storms
Tornadoes and High Winds

Harbine
Severe Thunderstorms
Severe Winter Storms
Tornadoes and High Winds

Jansen
Hazardous Materials
Severe Thunderstorms
Tornadoes and High Winds

Plymouth
Hazardous Materials
Severe Winter Storms
Tornadoes and High Winds

Reynolds
Flooding
Hazardous Materials
Severe Thunderstorms
Tornadoes and High Winds

Steele City
Flooding
Severe Thunderstorms
Tornadoes and High Winds

Daykin
Hazardous Materials
Severe Thunderstorms
Severe Winter Storms
Tornadoes and High Winds

Meridian Public Schools
Severe Thunderstorms
Severe Winter Storms
Tornadoes and High Winds

Tri-County Public Schools
Hazardous Materials
Severe Thunderstorms
Severe Winter Storms
Terrorism
Tornadoes and High Winds

The following narrative is taken directly from the hazard mitigation plan's Jefferson County Community Profile:

Flooding

Flooding is a concern in Jefferson County, in part due to an unusual phenomenon. Per county officials, the 2003 Deshler tornado changed the flow of the Little Blue River, such that runoff from the diverted river flow poses a flood risk to neighboring communities.

Flooding throughout the county in May 2015 caused more than $5.5 million in property damage and killed one person. Six to 10 inches of rain fell along the Little Blue River basin during this episode, causing the river to crest at nearly seven feet above flood stage, and flood the home of an 86-year-old woman who was killed. Fairbury in particular was severely flooded. A month later, in June 2015, Fairbury and Daykin experienced additional flooding, leading to $60,000 in

property damage. In 2008, another massive flooding event due to two to four inches of rains caused more than $250,000 in damage, washing out several roads and a bridge near Daykin, and flooding farmland and Highway 15 near Fairbury. The March 2019 flood event did not significantly impact the county.

The County is concerned that flooding could block transportation routes in the county, resulting in disruptions to commerce, school closures, and an inability for police, fire, and rescue services to reach people in need during emergencies. In particular during heavy flood events, Highway 15 south of Fairbury becomes blocked and limits available transportation corridors.

Severe Thunderstorms

Jefferson County is concerned about the possibility of a significant chemical spill or leak along its transportation routes; and in particular, along the railways or pipelines that cross the county. In particular, hazardous materials such as crude oil and benzene are transported along the Union Pacific railroad that traverses the county; and natural gas is transported through a 40-inch pipeline in the county. The railroad crosses the western half of the county, and the pipeline crosses the southern half.

There have been no rail incidents in recent years, and only minor pipeline spills due to damage to pipelines caused by contractors. No county critical facilities are located in the immediate proximity of these transportation routes, though Steele City and other communities are sited nearby. The county has installed a reverse emergency notification system which can be used to notify residents when spill events occur. The county identified the need to conduct a public training or exercise for shelter in place or chemical spill events.

Improvements in the floodplain

There were 481 improved structures located in the county's mapped floodplain—approximately 12% of all improvements in Jefferson County—with a value of over $47 million. (JEO Consulting group analysis)

Severe Winter Storms

Like much of Nebraska, Jefferson County is prone to violent and damaging thunderstorms. Thunderstorms include impacts from hail, lightning, heavy rain, and strong winds. Per the National Climatic Data Center, storms with severe-criteria hail (quarter size or greater) and severe-criteria winds (58 mph or greater) are common occurrences in the county. In addition to the damaging storms of May and June in 2015, as described above, notable events in recent years include storms in Steele City and Thomson on June 23, 2015 that produced tennis ball size hail; a storm with 69 mph winds in Daykin on April 14, 2012 that caused $100,000 in damage, including to some homes and trees, and knocked over a welcome sign; and a storm in Plymouth on May 11, 2011 that generated 78 mph winds that damaged trees. Also, communication towers and the county law enforcement center have been struck by lightning in the past.

The county uses surge protectors and digital data backups to protect its municipal records. Law enforcement servers, in particular, are backed-up. Generators are used to ensure that the communication towers, law enforcement offices, and fire stations in the county maintain electric power during any outages. County critical facilities have weather radios, to keep track of dangerous weather conditions, and the county maintenance department is diligent in monitoring them. The law enforcement office does not have a weather radio and uses teletype to keep track of any severe weather developments. The county has installed a reverse emergency notification system which can be used to notify residents when hazardous conditions occur. The county has identified the need to purchase backup generators and build a safe room for 500 people.

Tornadoes and High Winds

Jefferson County has experienced damaging high winds and violent tornadoes. The infamous Hallam Tornado of May 22, 2004, which maxed out at F-4 intensity and killed one person, began in northern Jefferson County near Daykin, causing $220,000 in property damage as it crossed into Saline County at F-1 intensity. Other notable recent tornados include an EF-2 tornado that moved near Reynolds and Fairbury and caused $1.75 million in property damage; and an EF-1 storm near Diller on April 29, 2010 that caused $650,000 in damage. In May of 2014, an EF-1 tornado traveled through open country

near Daykin. As recent as May 6, 2015, a tornado once again passed near Daykin. A high wind event in 2009 caused poor visibility on roads and flipped two semi-trucks. One truck accident led to injuries.

The county's main concerns regarding tornadoes and high winds are damages to property and county infrastructure, such as airports, and the lack of shelter for residents. The county does not maintain a community safe room, meaning that persons needing shelter must use their own or a neighbor's safe room, basement, or storm shelter. The county has received a grant to build additional shelters, which is a project in progress. Of particular concern is the lack of safe rooms at the county fairgrounds. The county has also installed a reverse emergency notification system which can be used to notify residents or hazardous events. To mitigate this hazard, the county plans to obtain backup generators, and build a safe room for 500 people.

Other Hazards

Agricultural Disease

While not selected as a top hazard of concern, Agricultural plant and animal disease is always a concern in any rural area, even if there are limited tools for the County to mitigate the hazard. Agricultural diseases include any biological disease or infection that can reduce the quality or quantity of either livestock or vegetative crops.

Grass/Wildfires

Wildfires are any uncontrolled fire which occurs in the countryside or wildland. Wildfires range in size from a few acres to thousands of acres. Fire events can rapidly spread from their original source, change direction quickly, and jump gaps. Wildfire events are particularly dependent on local conditions. While some wildfires burn in remote forested regions, others can cause extensive destruction of homes and other property located in the wildland -urban interface (WUI).

In April 2023, the Rock Creek Fire burned an estimated 2,600 acres. Numerous homes were threatened or damaged, along with Rock Creek Station State Historical Park buildings. Multiple fire departments from across the region responded to the incident.

Mitigation Strategy

The primary focus of the mitigation strategy is to identify action items to reduce the effects and impacts from the identified top hazards of concern per community. These action items should help reduce impacts on existing infrastructure and property in a cost effective and technically feasible manner. A plethora of mitigation actions were considered in the mitigation plan development process. These range from adding additional personnel for emergency response and new alert sirens to zoning ordinance updates.

Actions to implement the Hazard Mitigation Strategy for Jefferson County are presented in Table 11.1. Each municipality which participated in the 2021 update to the hazard mitigation plan has its own mitigation strategy spelled out in the Jefferson County Appendix to the Hazard Mitigation Plan.

Plan Maintenance

The hazard mitigation plan should be reviewed and updated after major disaster events, and after no longer than five years from adoption. The local planning team is responsible for reviewing and updating the hazard mitigation plan's community profile as changes occur or after a major event.

This comprehensive plan should also be reviewed regularly and updated when the hazard mitigation plan is revised.

FLOODPLAIN ADMINISTRATION

The Jefferson County Zoning Administrator also serves as Floodplain Administrator for Jefferson County. The Floodplain Administrator works to review and update floodplain regulations to assure continued compliance with NFIP requirements and good planning process.

National Flood Insurance Program

Jefferson County has met the minimum requirements of the National Flood Insurance Program with several options in the regulations to better assure safety of life and property in the floodplain. The Initial Flood Insurance Rate Map (FIRM) for Jefferson County became effective 06/01/88. The currently effective map is dated 8/17/15 subject to map amendments.

Of particular concern are Repetitive Loss Structures, a structure covered by flood insurance which has incurred flood-related damage on two

TABLE 11.1A: HAZARD MITIGATION STRATEGY

Continued Mitigation Actions

MITIGATION ACTION	BACKUP GENERATORS
DESCRIPTION	Obtain a back-up power generator for the Hospital, Long Term Care, and Assisted Living Facility (150kW).
HAZARD(S)	All hazards
ESTIMATED COST	$130,000+
FUNDING	Facility funds, HMGP, BRIC
TIMELINE	1 year
PRIORITY	High
LEAD AGENCY	EMA, Hospital CEO, Board
STATUS	Currently exploring funding opportunities.

MITIGATION ACTION	BACKUP GENERATOR FOR FAIRGROUNDS (90KW)
DESCRIPTION	Obtain a back-up power generator for the county fairgrounds (90kW)
HAZARD(S)	All hazards
ESTIMATED COST	$60,000
FUNDING	General Fund, HMGP, PDM
TIMELINE	1 year
PRIORITY	Low
LEAD AGENCY	EMA
STATUS	This project has not yet been started.

MITIGATION ACTION	BACKUP GENERATOR FOR COUNTY COURTHOUSE (100KW)
DESCRIPTION	Obtain a back-up power generator for the county courthouse (100kW)
HAZARD(S)	All hazards
ESTIMATED COST	$120,000
FUNDING	General Funds, HMGP, BRIC
TIMELINE	1 year
PRIORITY	High
LEAD AGENCY	County Board
STATUS	This project has not yet been started.

MITIGATION ACTION	BACKUP GENERATOR FOR COUNTY DEPARTMENT OF ROADS BUILDING (60KW)
DESCRIPTION	Obtain a back-up power generator for County Department of Roads Building (60kW)
HAZARD(S)	All hazards
ESTIMATED COST	$20,000
FUNDING	General Fund, HMGP, BRIC
TIMELINE	1 year
PRIORITY	High
LEAD AGENCY	Dept of Roads
STATUS	This project has not yet been started.

Source: Little Blue NRD and Lower Big Blue NRD Hazard Mitigation Plan (2021).

TABLE 11.1B: HAZARD MITIGATION STRATEGY

MITIGATION ACTION	STORM SHELTER/SAFE ROOM
DESCRIPTION	Construct a storm shelter /safe room (500 people)
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	$619,000
FUNDING	County revenue, and revenue from the municipality where the shelter is to be located, HMGP, PDM
TIMELINE	2-5 years
PRIORITY	Low
LEAD AGENCY	EMA and municipality where shelter is to be located
STATUS	Currently exploring funding opportunities.

Removed Mitigation Actions

MITIGATION ACTION	NFIP CONTINUATION AND ENFORCEMENT
DESCRIPTION	Enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs).
REASON FOR REMOVAL	While the county will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA. Enforcement of floodplain policies is required as part of ongoing codes.

Source: Little Blue NRD and Lower Big Blue NRD Hazard Mitigation Plan (2021).

occasions during a 10-year period, each resulting in at least $1,000 claim payment.

Of the municipalities in the county, Diller, Fairbury, Reynolds, and Steele City participate in the NFIP. The villages of Daykin, Endicott, Harbine, Jansen, and Plymouth were sanctioned for non-participation by FEMA on 8/16/16. In Nebraska, responsibility for floodplain management is mapped for municipality's zoning extra-territorial jurisdiction (ETJ), yet may not change when the planning area and zoning ETJ change.

When a community has been identified by FEMA as an area with special flood hazards, and the community is not participating in the National Flood Insurance Program, the community may be sanctioned. In addition, financial assistance for acquisition or construction purposes, including, in some cases, federal disaster assistance, may not be available in those areas. The NFIP can provide flood insurance coverage only in those communities which adopt and enforce floodplain management measures meeting the minimum NFIP requirements set by Federal law.

Flood hazard impacts in Jefferson County include:

- Diller is impacted by the floodplain of a creek along the east and south parts of the village, as well as the ETJ.
- The east and south sides of Endicott, and a swath of the south side of the ETJ, are impacted by the Little Blue River floodplain.
- The city of Fairbury is impacted by the Little Blue River floodplain—there is Regulatory Floodway mapped in Fairbury, it's ETJ area, and an area outside in Jefferson County's jurisdiction.
- The south side of Reynolds, and the middle of the EJT, are impacted by the Rose Creek floodplain, while tributaries impact other parts of the ETJ. Highway 8 runs mostly through the Rose Creek floodplain from Hubbell in Thayer County to Reynolds then intermittently to Fairbury.
- The west side Steele City and the EJT are impacted by the Little Blue River floodplain.
- Floodplains impact the one-mile ETJ of Daykin, Harbine, Jansen, and Plymouth.
- Both Meridian and Tri-County school districts have facilities adjacent to the mapped floodplain.

RESOURCES

FEMA and the American Planning Association work together to provide resources to communities for hazard mitigation planning. Their report *Hazard Mitigation: Integrating Best Practices into Planning* (2010), identifies effective multi-jurisdictional hazard mitigation strategies and tools based on a series of case studies for large and small towns and rural jurisdictions across the United States.

In 2020, the APA adopted a Hazard Mitigation Policy Guide, which includes 13 Guiding Policies on hazard mitigation. The guide supplements and updates APA's earlier report, with a focus on recent severe hazard occurrences. Plans need to consider not just mitigation, but adaptation to changing conditions and situations.

Source: www.planning.org/nationalcenters/hazards

HAZARD MITIGATION GOALS AND ACTIONS

MITIGATION GOAL 11.1

Jefferson County and its communities provide adequate support for goals and objectives of the hazard mitigation plan.

Actions

11.1.1 See Table 11.1.

MITIGATION GOAL 11.2

Jefferson County and its communities maintain (or come into) conformance with the National Flood Insurance Program (NFIP).

Actions

11.2.1 Work with municipalities to provide consistent floodplain administration.

11.2.2 The Floodplain Administrator should pursue floodplain mapping with FEMA and the State of Nebraska for the county and municipalities.

11.2.3 The County Board should support participation by the Floodplain Administrator in specialized training opportunities for flood mitigation.

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Jefferson County, Nebraska

COMPREHENSIVE PLAN

FLOOD HAZARDS MAP

Fillmore County

Saline County

Thayer County

Gage County

Kansas

Daykin

Plymouth

Powell

Jansen

Harbine

Gladstone

Fairbury

Diller

Endicott

Reynolds

Thompson

Steele City

4

15

103

136

8

Legend

- Railroads
- Highways
- Paved Roads
- Rivers
- Counties
- Jefferson County Municipalities
- Jefferson County Towns
- Parcels

Flood Hazards

Flood Zone

- A
- AE
- X

N

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PROJECTION: NAD83 State Plane NE

DATUM: NAD 83

DATE: 1.08.26

0 0.75 1.5 3 Miles

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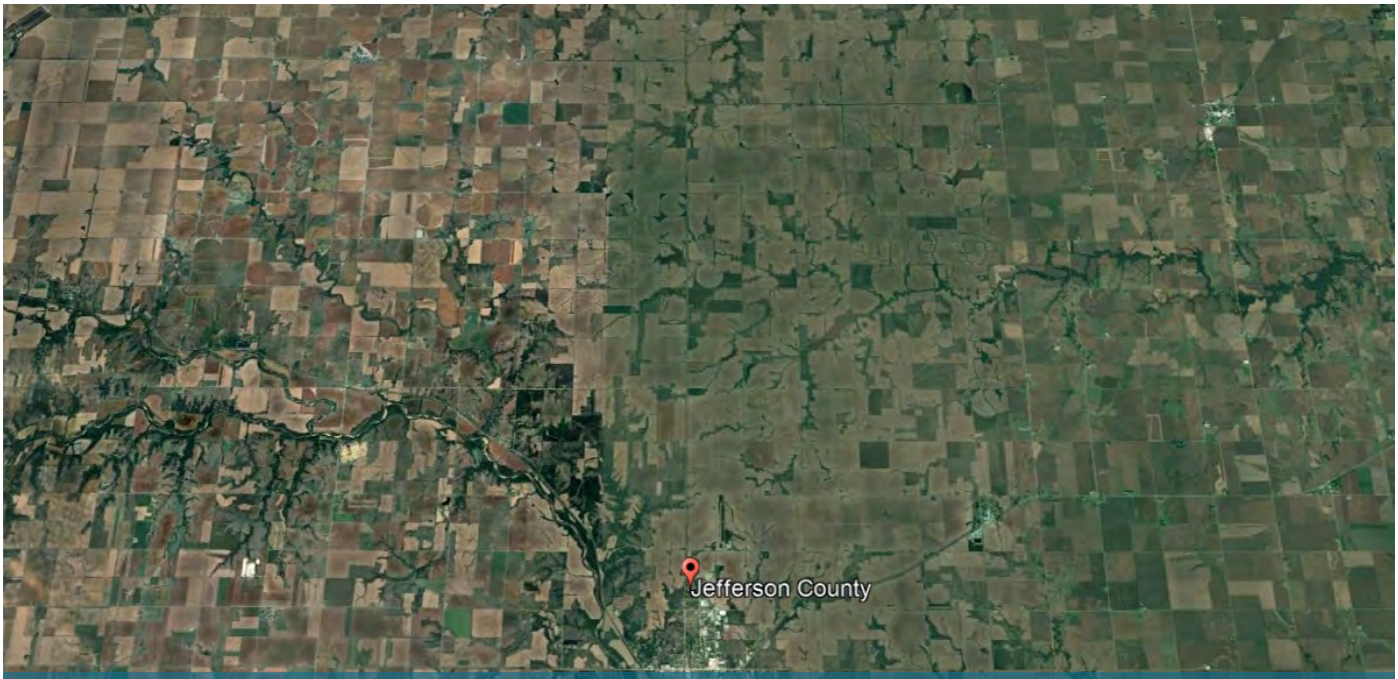


Chapter Twelve
Land Use

This chapter serves as a broad framework for guiding future decisions. While the Comprehensive Plan itself is not a regulatory document, it embodies the community's aspirations for the future. It serves as a crucial foundation for the regulations that put the plan into action, including zoning, subdivision, and floodplain management.

It is vital that the Land Use element accurately represents the needs and desires of Jefferson County's residents and property owners, while also clearly outlining the constraints on the land. This chapter addresses the statutory requirements of the land use element, describes existing land use, and presents the future land use plan.

LAND USE ELEMENT

This chapter is intended to meet the requirements for a land-use element in Neb. Rev. Stat. §23-114.02, "which designates the proposed general distribution, general location, and extent of the uses of land for agriculture, housing, commerce, industry, recreation, education, public buildings and lands, and other categories of public and private use of land."

The land use element is based on an understanding of the distribution, location, and extent of different types of existing land use. The other elements presented so far in this plan, from demographics to natural resources, inform the analysis of existing land use to determine recommendations for the future land use plan.

EXISTING LAND USE

Land in Jefferson County is used for many different purposes. Existing land use includes both the use of buildings and parcels of land. The use of land is constantly changing—this plan presents a snapshot in time of existing land use. Despite change, it is essential to have a solid understanding of existing land use at a point in time to carefully consider future land use plans.

Jefferson County's predominate land use is production agriculture and uses associated with agriculture. In 2020, there were 12.6 residents per square mile on average, countywide.

The majority of housing in the county, over 70%, is located within the cities and villages. However, there are many homes located on active farms and ranches, and some homes on small-acreage rural lots.

The Marvin Planning Consultants team analyzed data provided by the Jefferson County Assessor's Office to produce base maps of every parcel of land in the county. After consulting satellite

aerial mapping online, the team conducted windshield surveys in the county, and spot-checked locations in rural areas. Draft maps were provided to the County Zoning Administrator to spot check and verify. Every attempt was made to assure the Existing Land Use Map is as accurate as possible as of Autumn 2024.

Overall, development patterns in Jefferson County are influenced by topography, soils, water, and infrastructure including roads, power, water, and suitability for wastewater treatment. This is how all of the previous elements of the comprehensive plan come to implementation in land use policy.

Existing Land Use Categories

The most common land use patterns fall into several general categories. Some parcels may include multiple uses, in which case the primary use or use of the majority of the property is mapped. Some parcels are mixed use, in which case also the primary use is mapped. The use of land is constantly changing . As such, the short-and long-term success of the county is directly contingent upon maintaining flexibility while avoiding undue impacts on property rights and property values.

The utilization of land is best described in specific categories providing broad descriptions where numerous businesses, institutions, and structures can be grouped. For the purposes of the Comprehensive Plan, the following land use classifications are used:

- Agricultural
- Residential
- Commercial/Industrial
- Parks/Recreation
- Public/Institutional
- Right-of-Way
- Townsite

Agricultural

Agricultural land use covers the wide variety of farming and ranching operations and farmsteads. This includes row crops, alfalfa, and pastureland, as well as small and large animal feeding operations. Jefferson County is an agricultural-based county, accounting for the majority of land use. As discussed in Chapter 10, prime farmland is best suited to producing food, feed, forage, fiber, and oilseed crops—Agriculture should be considered the highest and best use for prime farmland in most cases.

Some areas of vacant land without structures or other uses are included in this category although they may not be actively farmed. These parcels are more common closer to municipalities, typically being held in anticipation of future development. Every effort was made to distinguish the most current use of property on the existing land use map.

Residential

Residential land use in the county is mapped for small parcels used primarily for housing,. This includes small parcels separated from an agricultural operation, since they could be sold separately. These parcels may be acreage tracts or rural residential subdivision developments.

The countywide land use map presents single-family and multi-family dwellings in one residential category. Land use maps for the individual municipalities show a greater level of detail between single-family and multi-family units.

Commercial/industrial

Commercial land use includes local retail and services facilities. This includes, for example, convenience stores or retail stores contained completely inside a structure. Commercial uses tend to be located near urban areas or in proximity to major roads for accessibility.

Industrial land use includes both light and heavy industry, ranging from manufacturing to outdoor storage, grain elevators, and salvage yards. Industrial uses tend to have external effects on neighbors, including sight impacts, smells, and other noxious effects. These uses require careful siting to mitigate impacts on infrastructure and adjacent residents and property owners.

Parks/Recreation

Parks and Recreation land uses cover public parks, dedicated open space, and state wildlife management areas. Most park property is located within the municipalities.

Public/Institutional

Public and Institutional land use accounts for public property (other than parks and recreation or rights-of-way). Public land use includes city/village property, as well as county, state, and federal facilities. Institutional land use includes property typically exempt from taxation, such as churches, as well as non-profit organizations which may or may-not be taxed.

Right-of-Way

The right-of-way existing land use category accounts for highway, road, and railroad rights-of-way.

Townsite

There are several townsites in Jefferson County which were platted many years prior to zoning. These communities did not incorporate as a village or city, yet have developed with small lots and a mix of land use.

Physical Character of Jefferson County

The topography, hydrology, and soil types, as modified by infrastructure—roads, bridges, utilities—make up the physical character of Jefferson County. This provides the foundation for use of the land now and into the future.

Defining characteristics of the county include:

- Prime farmland, both irrigated and dryland
- Floodplains along the Little Blue River and tributaries
- US 136 east-west corridor, through Fairbury, Jansen, and Harbine
- Highway 15 north-south highway corridor from I-80 through Fairbury to the Kansas state line
- Several historic unincorporated townsites under Jefferson County jurisdiction, with smaller buildable lots
- Rock Creek Station State Historical Park outside Endicott
- Potential impacts of industrial-scale renewable energy facilities

See Chapter 13 Transportation for more information on roads and highways.

FUTURE LAND USE PLAN

The Future Land Use Plan is the foundation of land use policy and regulations in the county. The Future Land Use Plan implements the goals and objectives of the residents and property owners of Jefferson County, as expressed in the Comprehensive Plan.

The Future Land Use Plan is based upon existing conditions and projected future conditions of the county. It both reflects those trends as well as assisting decision makers in determining the type, direction, and timing of future growth and development.

The Future Land Use Map illustrates the plan. Several factors contribute to this map:

- Current use of land within County jurisdiction, as well as Municipal jurisdictions (Extraterritorial Jurisdictions or ETJs)
- Desired characteristics of growth
- Future development patterns
- Physical character and constraints of the land as well as infrastructure
- Population and economic trends affecting the county.

Extraterritorial Jusrisdiction

Each of the incorporated communities in Jefferson County (as cities of the second class and villages) have the option to plan for and enforce land use regulations within one-mile of their corporate limits (see Neb. Rev. Stat. §17-1001 *et seq,).* While municipalities have jurisdiction over unincorporated property within their ETJs, this plan is intended to work cooperatively towards mutual goals and objectives of Jefferson County, its cities, and its villages.

Future Land Use Categories

The future land use areas are mapped based on categories of existing land use, with broad areas reflecting policy direction. These areas are intended to be aspirational, not regulatory, while providing the basis for current and future zoning districts.

Future land use categories include:

- Agricultural Production
- Agricultural Highway
- Agricultural Transition
- Rural Residential
- Townsite
- Commercial/Industrial
- Parks/Recreation
- Public/Institutional
- Airport Hazard Overlay
- Flood Hazard Overlay
- Wellhead Protection Overlay

The Future Land Use Plan is intended to be a general guide to future land uses balancing private sector development with the public interest, so the county can effectively and efficiently deliver public services to all citizens of Jefferson County.

—Continued on page 129

Agricultural Production

General Purpose

The Agricultural Production land use district provides for all types of agriculture. In this "ag first" district, agricultural activities should be given primary consideration. This area is where livestock production and feeding operations are allowed and non-farm residential development is discouraged.

Compatible Uses

1. By-right Agricultural use, including
   - Accessory ag buildings, and crop and grazing lands
   - Non-commercial grain, hay, and produce storage
   - Irrigation facilities
   - Wholesale tree farms, plant nurseries, and vineyards
   - Land application of manure within NDEE requirements
2. Livestock operations, within necessary setbacks
3. Commercial uses related to agriculture (such as grain storage and elevators, veterinary clinics, farm machinery repair, fertilizer plants, etc.) when odors and hazards are mitigated
4. Agri-Tourism activities (such as game farms, fishing, vineyards and wineries, etc.)
5. Residential dwellings associated with an Agricultural use.
6. Single acreage development, including home occupations
7. Public facilities (such as road maintenance storage, fire stations, public utility substations, wildlife areas, etc.)
8. Religious and educational facilities
9. Kennels, within performance standards
10. Commercial sand and gravel mining
11. Renewable Energy facilities (Biomass, geothermal, solar, wind), within performance standards
12. Adult entertainment where appropriate

Incompatible Uses

1. Residential/Acreages not associated with a farming operation
2. Large commercial development

Issues

1. Groundwater / Rural Water availability
2. Suitability for onsite wastewater treatment systems (septic)
3. Proximity of conflicting uses such as acreages near livestock confinements, mining, renewable energy facilities, etc.
4. Conservation easements
5. Soil conditions
6. Site drainage
7. Wetlands
8. Flood hazard areas
9. Wellhead protection areas
10. Site access (public roads)

Special Policies

1. Minimum lot sizes should be kept at the lowest possible size accommodating both private water and onsite wastewater treatment systems (OWTS).
2. Residential densities no more than 2 dwelling units per 1/4 section of land (160 acres), to allow room for continued ag operations.
3. Separation distances should be applied to rural acreages and uses with off-site impacts.

Agricultural Highway

General Purpose

The Agricultural Highway corridor category represents areas appropriate for low-density acreage residential development within reasonable access to major rural roads. This land use district is intended to allow development of non-ag uses while minimizing conflicts with agriculture.

Compatible Uses

1. By-right Agricultural use, including
   - Accessory ag buildings, and crop and grazing lands
   - Non-commercial grain, hay, and produce storage
   - Irrigation facilities
   - Wholesale tree farms, plant nurseries, and vineyards
   - Land application of manure within NDEE requirements
2. Livestock operations (smaller scale) within necessary setbacks
3. Commercial uses related to agriculture (such as grain storage and elevators, veterinary clinics, farm machinery repair, fertilizer plants, etc.) when odors and hazards are mitigated
4. Agri-Tourism activities (such as game farms, farmstands, vineyards and wineries, etc.), and public and private recreational uses.
5. Single acreage development, including home occupations
6. Public facilities (such as road maintenance storage, fire stations, public utility substations, wildlife areas, etc.)
7. Religious and educational facilities
8. Kennels, within performance standards
9. Commercial sand and gravel mining
10. Renewable Energy facilities, within performance standards
11. Adult entertainment where appropriate

Incompatible Uses

1. Large scale residential development
2. Larger livestock operations which cannot mitigate odor impacts
3. Large commercial development

Issues

1. Groundwater / Rural Water / Municipal water availability
2. Suitability for onsite wastewater treatment systems (septic)
3. Proximity to existing livestock confinements, mining, renewable energy facilities, etc.
4. Natural amenities such as trees, ponds, and streams
5. Conservation Easements
6. Site drainage
7. Wetlands
8. Flood hazard areas
9. Wellhead protection areas
10. Site access (public roads)

Special Policies

1. Lot sizes may vary depending upon the source of potable water and OWTS/sewer service.
2. Residential densities no more than 4 dwelling units per 1/4 section.
3. Dwellings shall be adjacent to improved all-weather roads (above minimum maintenance road).
4. Cluster developments should be considered and used whenever soils, topography, natural amenities warrant.
5. Separation distances should be applied to rural acreages and uses with off-site impacts.

Agricultural Transition

General Purpose

The Agricultural Transition category represents the area where agriculture is protected, but may be limited due to proximity to cities and villages. This land use district is intended to allow development of non-ag uses while minimizing conflicts with agriculture.

Compatible Uses

1. By-right Agricultural use, including
   - Accessory ag buildings, and crop and grazing lands
   - Non-commercial grain, hay, and produce storage
   - Irrigation facilities
   - Wholesale tree farms, plant nurseries, and vineyards
   - Land application of manure within NDEE requirements
2. Livestock operations (smaller scale) within necessary setbacks
3. Commercial uses related to agriculture (such as grain storage and elevators, veterinary clinics, farm machinery repair, fertilizer plants, etc.) when odors and hazards are mitigated
4. Agri-Tourism activities (such as game farms, farmstands, vineyards and wineries, etc.), and public and private recreational uses.
5. Single acreage development, including home occupations
6. Public facilities (such as road maintenance storage, fire stations, public utility substations, wildlife areas, etc.)
7. Religious and educational facilities
8. Kennels, within performance standards
9. Commercial sand and gravel mining
10. Renewable Energy facilities, within performance standards
11. Adult entertainment where appropriate

Incompatible Uses

1. Large scale residential development
2. Larger livestock operations which cannot mitigate odor impacts
3. Large commercial development

Issues

1. Groundwater / Rural Water / Municipal water availability
2. Suitability for onsite wastewater treatment systems (septic)
3. Proximity to existing livestock confinements, mining, renewable energy facilities, etc.
4. Natural amenities such as trees, ponds, and streams
5. Conservation Easements
6. Site drainage
7. Wetlands
8. Flood hazard areas
9. Wellhead protection areas
10. Site access (public roads)

Special Policies

1. Lot sizes may vary depending upon the source of potable water and OWTS/sewer service.
2. Residential densities no more than 8 dwelling units per 1/4 section.
3. Dwellings shall be adjacent to improved all-weather roads (above minimum maintenance road).
4. Cluster developments should be considered and used whenever soils, topography, natural amenities warrant.
5. Separation distances should be applied to rural acreages and uses with off-site impacts.

Rural Residential

General Purpose

The Rural Residential land use category represents areas in the county where small lot residential development may be appropriate, especially in proximity to cities and villages. There may also be areas which are, for demonstrable reasons, not well-suited to agriculture which are also not constrained by soils or floodplains. These areas should be designed as clustered developments to conserve agricultural land and open space.

Compatible Uses

1. Residential development
2. Mixed-use developments incorporating:
   - Residential as predominate use
   - Small-scale commercial in support of residential use
   - Public amenities such as parks, community centers, etc.
3. Ag production (smaller scale)
4. Agri-Tourism activities (such as farmstands, wineries, etc.)
5. Public facilities (such as road maintenance storage, fire stations, public utility substations, etc.)
6. Religious and educational facilities
7. Home occupations
8. On-Site Renewable Energy facilities, within performance standards

Incompatible Uses

1. Major agricultural operations
2. Livestock operations
3. Large commercial development
4. Industrial development

Issues

1. Groundwater / Municipal water availability
2. Suitability for onsite wastewater treatment systems (septic)
3. Proximity to existing livestock facilities and/or industrial sites
4. Natural amenities such as trees, ponds, and streams
5. Conservation easements
6. Site drainage
7. Wetlands
8. Flood hazard areas
9. Wellhead protection areas
10. Site access (public roads)

Special Policies

1. Lot size will vary depending upon the source of drinking water and OWTS/sewer service. Lots should be no smaller than 3.0 acres on well or septic.
2. Residential densities within this land use category should be maximized when community water/sewer service is provided.
3. Dwellings shall be adjacent to improved all-weather roads (above minimum maintenance road).
4. Cluster development should be considered whenever soils, topography, natural amenities warrant.

Townsite

General Purpose

The Townsite land use category is intended for areas in the county where small lots were created long ago at the unincorporated townsites of Gladstone, Helvey, Powell, and Thompson. The category is considered a mixed-use district allowing single-family and multi-family residential, commercial, and small-scale industrial uses to continue in these small communities.

Compatible Uses

1. Residential development
2. Mixed-use development
3. Small-scale commercial
4. Light industrial and warehousing
5. Public facilities (such as road maintenance storage, fire stations, public utility substations, etc.)
6. Religious and educational facilities
7. Home occupations
8. On-Site Renewable Energy facilities, within performance standards

Incompatible Uses

1. Major agricultural operations
2. Livestock operations
3. Large commercial development

Issues

1. Groundwater / Municipal water availability
2. Suitability for onsite wastewater treatment systems (septic)
3. Lot size
4. Natural amenities such as trees, ponds, and streams
5. Site drainage and wetlands
6. Flood hazard areas
7. Wellhead protection areas
8. Site access (public roads)

Special Policies

1. Lot size may vary depending upon the source of drinking water and OWTS/sewer service.
2. Residential densities within this land use category should be limited to legal lots existing at the time of adoption of zoning, until and unless community water and sewer service is provided.
3. Dwellings shall be adjacent to improved all-weather roads (above minimum maintenance road).
4. Cluster development should be considered whenever soils, topography, natural amenities warrant.

Commercial/Industrial

General Purpose

The Commercial/Industrial land use district is intended to provide for commercial and industrial uses, countywide.

Compatible Uses

1. General commercial uses, providing goods and services to local communities
2. Manufacturing and warehousing (including value-added agricultural processing)
3. Commercial grain storage and services (such as at locations along active and historic rail corridors)
4. Auto-oriented uses (such as auto sales or repairs) with sufficient buffering of neighboring property
5. Public facilities (such as road maintenance storage, fire stations, public utility substations, community centers, etc.)
6. Religious and educational uses and structures
7. On-Site Renewable Energy facilities, within performance standards
8. Continuation of pre-existing agricultural uses
9. Adult entertainment where appropriate

Incompatible Uses

1. Livestock operations
2. Single-family residential development

Issues

1. Groundwater / Municipal water availability
2. Suitability for onsite wastewater treatment systems (septic)
3. Topography
4. Site drainage
5. Wetlands
6. Flood hazard areas
7. Wellhead protection areas
8. Site access (public roads)
9. Need to buffer incompatible uses to mitigate off-site impacts (noise, smell, traffic, visual blight)
10. Off-site commercial advertising (billboards) may lead to blight conditions.

Special Policies

1. Minimum lot sizes based upon adequate space for vehicular movement, parking, and drinking water/wastewater treatment systems.
2. Developments of one acre or more may be required to meet the standards of NPDES permitting.
3. Developments which create more than a 5% increase in runoff may be required to construct a detention basin to control runoff.
4. Dwellings shall be adjacent to improved all-weather roads (above minimum maintenance road).

Parks/Recreation

General Purpose

The Parks and Recreation land use district provides for parks and recreation land uses. In the unincorporated county, these tend to be larger tracts such as wildlife management areas.

Compatible Uses

1. Local and County parks and recreation areas
2. Golf courses and accessory uses
3. Non-profit conservation lands
4. State and Federal recreation and wildlife management areas.

Incompatible Uses

1. Larger livestock operations which cannot mitigate odor impacts
2. Large commercial development
3. Industrial development

Issues

1. Conservation easements may have long-term impacts on property tax revenues.
2. Considerations for drinking water/wastewater treatment.

Public/Institutional

General Purpose

The Public and Institutional district provides for public land use. In the unincorporated county, these tend to be larger facilities owned and operated by a public or non-profit entity.

Compatible Uses

1. Local and County buildings and facilities
2. State and Federal buildings and facilities.
3. Non-profit buildings and facilities

Incompatible Uses

1. Larger livestock operations which cannot mitigate odor impacts

Issues

1. Public and non-profit land holdings may have long-term impacts on property tax revenues.
2. Considerations for drinking water/wastewater treatment.

Flood Hazard Areas (Overlay)

General Purpose

Flood Hazard Areas represent the regulatory floodplain as designated on FEMA's Flood Insurance Rate Maps (FIRMs), discussed in Chapter 11 Hazard Mitigation. Developers and residents should be aware flooding can (and does) occur outside of the mapped flood hazard area.

Compatible Uses

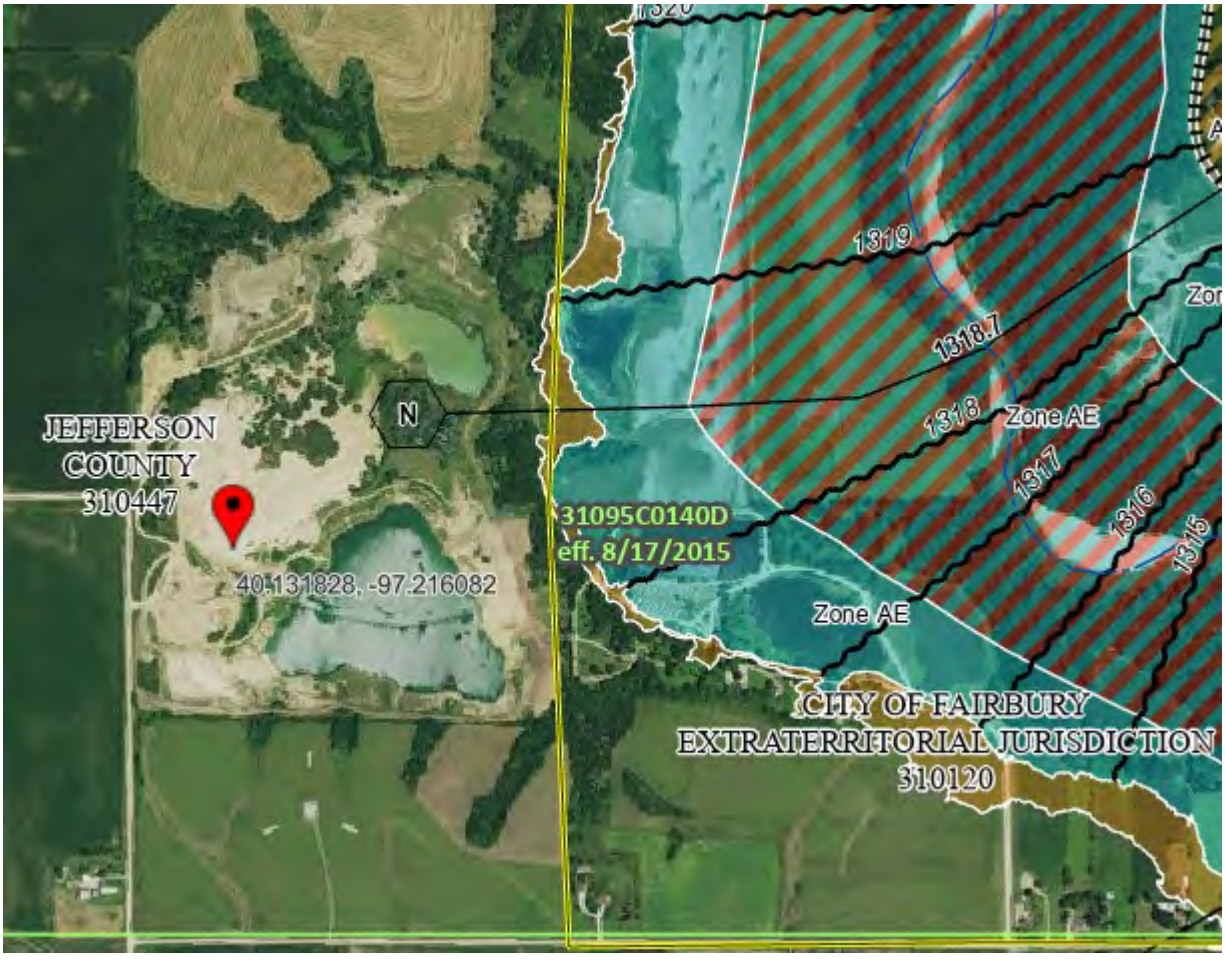
1. Determined by underlying zoning, in accordance with the adopted floodplain management ordinance
2. Passive parks, recreation, and open space
3. Drainage and stormwater impoundments

Incompatible Uses

1. Damage-prone development susceptible to damage by flooding or flood-related hazards.
2. Storage and use of hazardous materials, such as gasoline, pesticides, and chemicals.
3. Development which would impede water flow in the effective floodway.

Issues

1. New construction and substantial improvement requires structures to be brought into conformance with FEMA standards, as specified in the floodplain management ordinance.
2. Agricultural structures may be treated differently than residential and commercial structures.



Airport Hazard Area (Overlay)

General Purpose

Airport hazard areas recognize the need to protect aircraft and land use in airport approach paths. This area is identified to inform zoning and land use development decisions. The Federal Aviation Administration (FAA) establishes requirements for construction near airports.

Compatible Uses

1. Determined by underlying zoning
2. Uses which can coexist with aviation noise and navigation airspace (14 CFR Part 77 "imaginary surfaces")

Incompatible Uses

1. Towers and other large structures with the potential to create hazards to aircraft.
2. Visual obstructions such as open mining which produce dust, or uses creating glare and light emissions (including LED-illuminated billboards)
3. Wildlife and bird attractants
4. Residential development
5. Dense commercial development

Wellhead Protection Areas (Overlay)

General Purpose

Wellhead Protection Areas are established for the protection of public water supplies. These areas are identified to inform zoning and land use development decisions.

As noted in Chapter 10, tenmunicipalities in Jefferson County have Wellhead Protection Areas, with three approved Wellhead Protection Plans (WMPs):

- Village of Daykin
- Village of DeWitt
- Village of Diller
- Village of Endicott (plan approved 2009)
- City of Fairbury (plan approved 2002)
- Village of Harbine
- Village of Jansen
- Village of Plymouth
- Village of Reynolds
- Village of Steele City (plan approved 2004)

Each municipality or other publicly-owned water supply system shall execute an interlocal agreement with Thayer County for administration of regulations within the Wellhead Protection Overlay District, incorporated into the zoning ordinance.

Compatible Uses

1. Determined by underlying zoning, with certain exceptions

Incompatible Uses

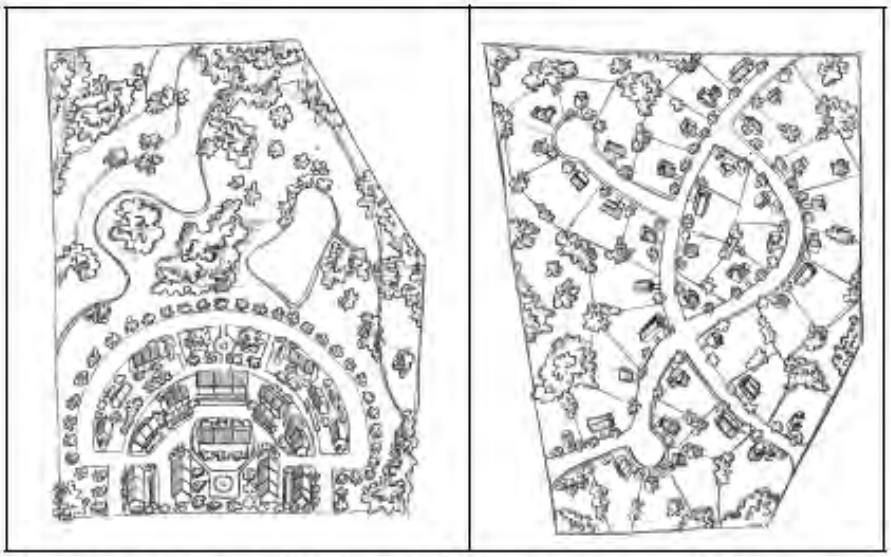
1. Common potential groundwater contaminant sources (agricultural, commercial, industrial)
2. Confined Animal Feeding Operations (CAFOs)
3. Landfills and refuse recycling centers

COMMUNITY CHARACTER

CONSERVATION DEVELOPMENT

Conservation development is a customized approach to residential or commercial subdivision of land, where parcels are clustered into a smaller area to conserve agricultural or natural areas. Conserved areas may be prime farmland, wetlands and floodplains, or areas with steep slopes or soils unsuitable for building. The smaller developed area reduces costs for infrastructure such as roads and provides a variety of lot options for home builders and buyers.

Implementation of Conservation Development is often accomplished through a specific stand-alone or overlay zoning district, or adoption of Planned Unit Development (PUD) zoning and subdivision ordinance provisions.



Conservation subdivisions (left) feature smaller lots with a high percentage of open space. Conventional subdivisions (right) feature large lots with little common open space. A conventional subdivision is subject to all of the base zoning district standards, such as minimum lot size, front setbacks, landscaping, and adequacy of public facilities.

Source: Robert H. Freilich and S. Mark White, 21st *Century Land Development Code*, APA Planners Press, 2008.

LAND USE AND ZONING

Jefferson County and several of the municipalities in the county have adopted zoning regulations. Some of the municipalities have also established an extraterritorial jurisdiction (ETJ) for zoning.

- The City of Fairbury and Jefferson County have established the city's ETJ so zoning districts follow property lines within the one-mile planning jurisdiction.
- The villages of Diller and Plymouth have zoned the municipal limits and one-mile ETJ.
- The Village of Jansen is zoned, though they have not established an ETJ.
- The villages of Daykin, Endicott, Harbine, Reynolds, and Steele City are not zoned and therefore have no ETJ.

County zoning applies up to the municipal limits where villages have chosen not to assert jurisdiction over an ETJ.

Zoning regulations require zoning permits for new development. The first implementation action of the comprehensive plan will be to review and update the County zoning regulations.

The Zoning Administrator should work with the villages in the county to update their comprehensive plans and zoning regulations, as an advocate for residents and property owners in the ETJs and to foster multi-jurisdictional cooperation. The Zoning Administrator should also monitor annexations and updates to municipal boundaries for effects on extra-territorial jurisdiction, as well as zoning in the County and to keep the Official Zoning Map up-to-date.

LAND USE RESOURCES

Small Area Planning

Small area plans are often used to guide changes for a particular area in a county or community. Small area plans are generally prepared for places which would benefit from a closer look—through focused attention, community dialogue, or technical assistance.

Targeted efforts may be useful in the Townsite communities of Gladstone, Helvey, Powell, and Thompson.

USDA NRCS

As discussed in Chapter 10 Natural Resources, the USDA NRCS provides resources for rural land use planning and land conservation. NRCS's intended role is to provide national leadership and technical assistance for the conservation of natural resources to ensure the continued production of food and fiber.

NRCS has—at least currently—specific resources for land use planning. These include, for example, the National Resources Inventory INRI)—a statistical survey of land use conditions and trends—as well as the Land Evaluation and Site Assessment (LESA) system. NRCS also works with the Farmland Protection Policy Act, which is intended to minimize the impacts of Federal Programs on premature conversion of farmland to non-agricultural uses.

Source: www.nrcs.usda.gov/conservation-basics/natural-resource-concerns

LAND USE GOALS AND ACTIONS

Land Use Goal 12.1

Future growth and development has adequate land available while avoiding land use conflicts and incompatible impacts.

Actions

12.1.1 Development projects shall follow the goals of the Comprehensive Plan.

12.1.2 Future rural development should work toward compact and/or conservation approaches.

12.1.3 Developers are prepared to pay the cost of necessary and required on-site and off-site improvement.

12.1.4 Work with property owners to clean up deteriorated and dilapidated properties.

12.1.5 Continue participation in the National Flood Insurance Program (NFIP).

12.1.6 Post planning & zoning requirements and other development information on the County website.

12.1.7 Regularly review and update land use regulations (zoning and subdivision ordinances) and application materials.

Land Use Goal 12.2

New development is focused within Jefferson County's cities and villages.

Actions

12.2.1 New development is encouraged and supported within cities and villages where urban services are available.

12.2.2 New development should be contiguous to existing developed areas, and avoid "leapfrog" patterns inefficient for public services.

12.2.3 Support annexation by cities and villages to minimize the County's cost of public services.

12.2.4 Work with NDEE and municipalities on implementation of Wellhead Protection Plans.

12.2.5 Work with municipalities which annex County land to update municipal boundary maps with the State of Nebraska and the US Census Bureau.

Land Use Goal 12.3

Agriculture is the predominate use in Agriculture land use districts.

Actions

12.3.1 Recognize production agriculture as the highest and best use of land in the Agriculture land use district.

12.3.2 Encourage development of value-added agricultural processing.

12.3.3 Carefully review new development projects for potential impacts on production agriculture.

12.3.4 Minimize regulatory burden of production agriculture in ag areas.

Land Use Goal 12.4

Agriculture is protected from premature development in the Agricultural Highway and Agricultural Transition land use districts.

Actions

12.4.1 Carefully review new development projects near communities and highways for transitional impacts on agriculture.

12.4.2 Mitigate impacts of development on existing land use near developed areas.

Land Use Goal 12.5

Residential development is protected from conflicting land uses in the Rural Residential and Townsite land use district.

Actions

12.5.1 Assure residential development is separated from more intensive uses.

12.5.2 Encourage development of "Missing Middle" housing types across the county where infrastructure is available.

13.5.3 Work with the US Census Bureau before the 2030 Decennial Census to designate Jefferson County townsites as Census Designated Places (CDP).

Land Use Goal 12.6

Employers have adequate land available in Commercial/ Industrial and other land use districts.

Actions

12.6.1 Work with municipalities to provide infrastructure for commercial and industrial development in appropriate locations.

12.6.2 Carefully review new commercial/industrial development projects for potential impacts on existing residents and property owners.

12.6.3 Regularly review zoning district standards and maps to provide locations for hazardous materials facilities buffered from other development.

Land Use Goal 12.7

Parks/Recreation and Public/ Institutional uses are provided by those land use districts and land in other appropriate districts.

Actions

12.7.1 Support municipalities in development of parks and trails systems.

12.7.2 Work with public school districts on long-term facilities siting.


ALEXANDRIA
STATE
RECREATION
AREA

Jefferson County, Nebraska
COMPREHENSIVE PLAN
Fig 12.1 Existing Land Use Map

Legend

- Airports
- Railroads
- Highways
- Paved Roads
- Rivers
- Counties
- Township-Range
- Jefferson Co Sections
- Jefferson County Municipalities
- Municipal Planning Areas
- Parcels

Existing Land Use

- AG
- R
- T
- CI
- PR
- PI
- ROW

Flood Hazards

- A
- AE
- X

N

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PROJECTION: NAD83 State Plane NE
DATUM: NAD 83
DATE: 3.24.26

0 0.75 1.5 3 Miles

Jefferson County, Nebraska
COMPREHENSIVE PLAN
Fig 12.2 Future Land Use Map

N05W02 N05W01 N05E01 N05E02 N05E03 N05E04 N05E05 N05E06
N04W02 N04W01 N04E01 N04E02 N04E03 N04E04 N04E05 N04E06
N03W02 N03W01 N03E01 N03E02 N03E03 N03E04 N03E05 N03E06
N02W02 N02W01 N02E01 N02E02 N02E03 N02E04 N02E05 N02E06
N01W02 N01W01 N01E01 N01E02 N01E03 N01E04 N01E05 N01E06

Fillmore County
Saline County
Thayer County
Gage County
Kansas

Daykin
Plymouth
Powell
Jansen
Harbine
Gladstone
Fairbury
Diller
Endicott
Thompson
Reynolds
Steele City

4 15 103 136 8

Legend

- Airports
- Railroads
- Highways
- Paved Roads
- Rivers
- Counties
- Township-Range
- Jefferson Co Sections
- Jefferson County Municipalities
- Municipal Planning Areas
- Parcels

Fairbury Airport

- Airport 3 Mile Turning Zone
- Concrete Runway Approch Zone (N)
- Concrete Runway Approch Zone (S)
- Grass Runway Approch Zone (NW)
- Grass Runway Approch Zone (SE)
- Operation Zone
- Proposed Concrete Runway Approch Zone (NE)
- Proposed Concrete Runway Approch Zone (SW)
- Transition Zone

Future Land Use

- Ag Primary
- Ag Highway
- Ag Transitional
- Rural Residential
- Townsite
- Commercial/Industrial
- Parks/Recreation
- Public/Institutional

Flood Hazards

- A
- AE
- X
- Wellhead Protection Areas

N

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PROJECTION: NAD83 State Plane NE
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0 0.75 1.5 3 Miles

Chapter Thirteen Transportation

Transportation plays a crucial role in shaping land use, more than most components of a comprehensive plan. It is often stated that the worth of land hinges on "Location, location, location!" In rural Nebraska, the transportation infrastructure encompasses highways, multi-modal, railroads, and air transport systems.

The relationship between land use and transportation establishes a framework for future development, with both elements being mutually dependent. For instance, improved roadways can lead to increased land use intensity in areas which may lack essential infrastructure or may not align with current land uses.

This chapter is intended to meet the requirements for a transportation element in Neb. Rev. Stat. §23-114.02, including "The general location, character, and extent of existing and proposed major streets, roads, and highways, and air and other transportation routes and facilities."

HIGHWAYS

Streets, roads, and highways are classified by function:

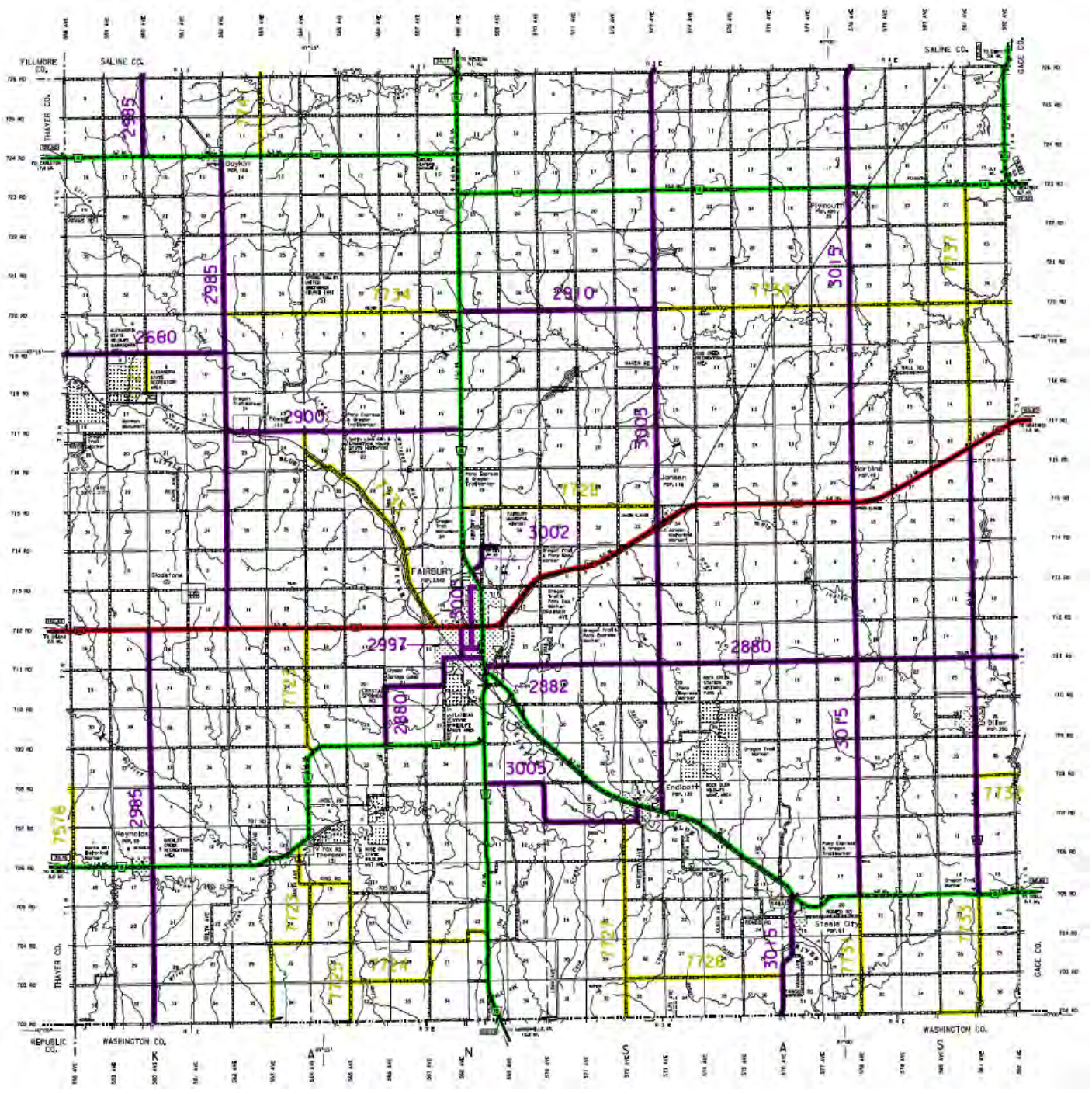
- Freeway—major roadway for state or regional access
- Arterial—major road with high volumes of traffic, primarily connecting places to each other
- Collector—street with less traffic, connecting local traffic to arterial roads
- Local—street with low traffic volumes and slow design speeds, primarily uses for direct access to property.

Jefferson County's primary road network is based on US Highway 136 running east and west and Nebraska Highway 15, with both intersecting at the county seat, Fairbury (Figure 13.1). US 136 is classified as a principal arterial through the county. This state highway runs across Fairbury, Jansen, and Harbine.

Also running east and west are State Highway 4 (a minor arterial) through the upper portion of the county; and Highway 8 (also a minor arterial) through the lower portion of the county. Highway 4 runs through Daykin and along the north side of Plymouth. Highway 8 runs through Thompson and Reynolds west of Fairbury, and through Endicott and Steele City east of Fairbury..

Highway 15 runs north and south through Fairbury, classified as a minor arterial. Highway 15 enters the county at the Kansas state line, crossing the Little Blue River and the east side of the county seat, then running north to I-80 at Seward.

FIGURE 13.1: JEFFERSON COUNTY NATIONAL FUNCTIONAL CLASSIFICATION



Source: Nebraska Department of Roads

Highway 103 runs north-south on the east side of the county, between US 136 and Highway 8 through Diller. This highway is classified as a major collector.

Crossing the County's
Rivers & Streams, 1871

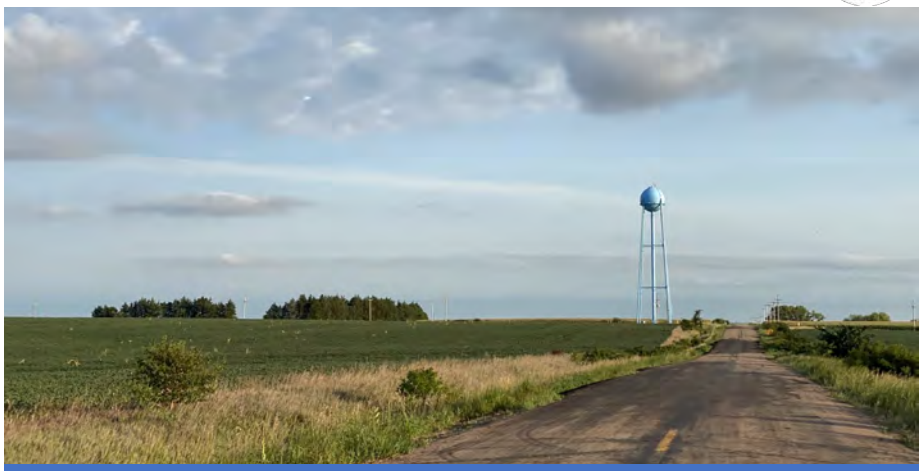
One deterrent to the settlers transportation which was partially met and settled during 1871 was the problem of crossing the county's several streams and rivers when they were swollen by high waters. First action on the matter was taken in March when 40 persons signed a call for a public meeting in Fairbury to push the building of a bridge across the Little Blue at that place. It was believed that the work could be done mainly by subscriptions of work and material...

The estimating committee presented two plans., one providing for a center pier and two stone abutments, the other for two piers with a span of 60 feet across the channel of the river. Estimated cost of the bridge was $1,500. A third of the sum was pledged before the meeting adjourned.

[The plan] fell through, though, and it was October before the county commissioners undertook to solve the problem.

At their October 3 meeting, the commissioners levied a tax of 5 mills on the dollar valuation for the erection of three bridges in the county—at Meridian, Jenkins Mills, and Fairbury—the tax to be levied from year to year, east of the Sixth Principal Meridian, until the bridges were paid for.

—Fred H. Stafford, Jefferson County and Fairbury, Nebraska (1948)



County Road outside Gladstone
Source: Marvin Planning Consultants

County Roads

Several County Roads are functionally classified as major or minor collector roads. As documented in *The Little Blue NRD and Lower Big Blue NRD Hazard Mitigation Plan* (2021), Jefferson County's major transportation corridors—including US 136, Highway15, and Highway 4—would likely serve as evacuation routes in case of a natural or man-made disaster.

Frontage on a Public Road

New homes should have access to an existing public road, other than a roadway designated by the Jefferson County Board of Commissioners as a minimum maintenance road or other unimproved roadway.

Billboards

Off-site commercial advertising, commonly referred to as "billboards" advertise goods or services which are not sold or produced on the premises where the sign is located. The Federal Highway Beautification Act (HBA) of 1965 regulated the location of billboards on federal-aid highways. The "Kerr Amendment" allowed outdoor advertising in commercial and industrial zones. Many communities do not allow billboards, due to concerns with distracted driving and visual blight as a form of visual pollution. The National Association of Realtors has reported nearby billboards hurt residential property values.

In 2022, the US Supreme Court ruled in the case of City of Austin v. Reagan National Advertising local sign codes may continue to strictly regulate off-premise advertising. Thayer County may want to revisit current zoning for signage to offer greater protection to adjacent property values.

One and Six-Year Plans

Long-range transportation planning allows decisionmakers to proactively address future transportation needs by anticipating population growth, economic shifts, and infrastructure changes.

Jefferson County

The Jefferson County Roads Superintendent develops the *One and Six-Year Road Plan* for the county, which is adopted by the County Board. The most recent plan includes a combination of road and bridge projects across the county.

As a type of Capital Improvements Plan (CIP), the Planning Commission should review the Jefferson County One-and-Six plan for conformance with this comprehensive plan.

NDOT

NDOT's Surface Transportation Program Book for Fiscal Year (FY) 2025 specifies how the Department plans to preserve and modernize existing assets, increase safety of the transportation system and expand capacity of the network. Jefferson County is located in NDOT District 1, based in Lincoln.

The proposed Construction Program includes one project in Jefferson County:

- US 136 Fairbury West Bridge $5,600,000

NDOT also proposes several asset preservation projects over the five-year planning program:

- Highway 4 Daykin East & West (11.0 miles) resurfacing
- Highway 4 Plymouth West (10.5 miles) resurfacing

Off-site Commercial Advertising on
Source: Marvin Planning Consultants

- Highway 8 Endicott (11.6 miles) resurfacing
- Highway 15 Kansas Line (7.7 miles) resurfacing
- Highway 103 Diller North (7.0 miles) resurfacing)
- US 136 Gilead East Culverts
- US 136 Fairbury urban streets

Transit

Blue Rivers Public Transportation System serves Jefferson County on a demand-response, portal-to-portal basis. They require 24-hours advance notice to schedule rides from the Fairbury Transportation Office. Route times 8:30 a.m. to 10:00 a.m. and return 3:00 p.m. to 4:30 p.m., Monday through Friday (2024).

Inter-City (West) provides transportation to Lincoln, Fairbury, and Beatrice.

Source: www.braaa.org

MULTI-MODAL

Multi-modal transportation planning creates communities where it is possible to get around by walking, bicycling and public transport. Many State and county roads are designed to favor high-speed motorized traffic, without considering those walking and bicycling. As the community ages, building streets for multiple modes of transportation becomes all the more important.

Young people need to be able to get around town without relying on drivers. As well, many older people may prefer not to drive, or may become unable to drive. Trail development is becoming an economic development attraction as young families consider options for where to live. It is said designing transportation systems for those 8 years old and those 80 years old assures safe options for all of a community's residents.

Union Pacific Railroad, Steele City
Source: Marvin Planning Consultants

TRAILS

Many communities have invested in good places to walk or ride a bicycle. A complete network creates safe, comfortable, and accessible multimodal routes for people walking and bicycling.

Most of the county's municipalities have a basic sidewalk network. However, many of these sidewalks are aging and segments are often missing, forcing people to walk in the streets. Also, too few intersections have accessible curb ramps, creating an obstacle for users with strollers and wheelchairs, or who simply find curbs difficult to maneuver.

Multi-user trails are becoming a popular piece of infrastructure for everyday transportation as well as exercise and recreation. In Jefferson County, Rock Creek Station State Historical Park contains six miles of hiking and nature trails.

Nearby, the Homestead Rail-Trail provides 40 miles of crushed stone off-road trail between Lincoln and Beatrice. The Chief Standing Bear Trail extends south along the same former rail county. In Marshall County, Kansas, the Blue River Rail Trail provides 12.7 miles of concrete and crushed stone off-road trail for users of all abilities between the Nebraska state line and Marysville.

Source: www.gptn.org/the_trails/homestead_trail.html

(*see also Chapter Seven Parks and Recreation*).

Accessibility

The Americans with Disabilities Act (ADA) was signed by President George H.W. Bush in 1990. The ADA is intended to make sure people with disabilities have the same rights and opportunities as everyone else.

The NDOT Roadway Design Manual (May 2022) provides guidance for design of pedestrian and bicycle facilities in conformance with ADA. This includes having a transition plan when structural modifications are required to provide accessibility, including curb ramps.

Sidewalks on rights-of-way and bridges must be at least four-feet wide, provided there are larger passing spaces every 200 feet. (Driveways may be considered as passing spaces.) A shared-use path must be a minimum 10 feet wide, with 11-14 feet preferred in certain situations.

RAILROADS

The Union Pacific (UP) Railroad, headquartered in Omaha, Nebraska, operates the rail line running east and west through Jefferson County, passing through the communities of Fairbury, Endicott, and Steele City. As noted earlier, for many years Fairbury was the Western Division Headquarters for the Rock Island railroad line.

The railroad through Fairbury connects the UP's Heartland division at Marysville, Kansas, to Gibbon Junction on the UP mainline west of Grand Island in the Great Plains division. This section is approved for heavy axle rail cars which can handle up to 286,000 lbs. or 315,000 lbs. gross weight.

The old Rock Island rail line from Lincoln is still operated by UPRR, originating in southwest Lancaster County. This line crosses the BNSF from Beatrice then runs through Plymouth and Jansen before terminating on the UP mainline at Fairbury.

UP provides a number of community-oriented programs in their service area. This includes the UP Foundation, economic development, and sustainability programs. UP also provides a

comprehensive public safety program.

Source: www.up.com

Railroad Crossings

US 136 and Highway 15 have grade-separated crossings over the UP Railroad on the west and south sides of Fairbury. There are at-grade railroad crossings throughout the county, as well as in the villages of Endicott and Steele City on the UP mainline, as well as Jansen and Plymouth on the old Rock Island line.

AIR TRAVEL

The Federal Aviation Administration regulates air travel and provides funding for airport improvements. Through federal grant assurances, airport sponsors and owners are obligated to pursue all reasonable and appropriate actions to secure and promote compatible land use and development within their local areas.

Careful land use planning benefits air travel by preservation of aircraft operations, protection of airport approaches, reduced potential for litigation, and avoidance of hazardous wildlife attractants.

AIRPORTS

Fairbury Municipal Airport (KFBY) is a public-use facility located north of the city of Fairbury, on Highway 15, operated by the Fairbury Airport Authority. The airport is at an elevation of 1,749 feet. Runway 17/35 is 3,700 x 75 ft concrete surface, with single wheel 12,000 lbs. weight bearing capacity. Runway 11/29 is 2,487 x 150 foot turf surface.

Fairbury Municipal Airport
Source: Marvin Planning Consultants

FIGURE 13.2: OMAHA SECTIONAL AERONAUTICAL CHART

Source: Federal Aviation Administration

Jefferson County Memorial Hospital also has a 40 x 40 ft concrete helicopter landing pad, at their facility in Fairbury.

Other nearby airports with instrument procedures include:

- KHJH Hebron Municipal Airport, 19 nm W
- KBIE Beatrice Municipal Airport, 20 nm E
- K38 Washington County Veteran's Memorial Airport, 27 nm S

The nearest scheduled passenger air service is available at Lincoln and Omaha, Nebraska.

RESOURCES

Electric Vehicle Charging Stations

Electric vehicles (EVs, also known as battery-electric vehicles) require off-board electric charging stations. Although the majority of EV owners charge at home, public charging and workplace charging stations are necessary for trips away from home.

There are currently three types of EV charging stations:

- Level 1 chargers use typical electric outlets (120V);
- Level 2 chargers are typically freestanding or hanging, and require a higher level of service (240V);
- Level 3 or DC fast chargers are freestanding stations. They can take around 30 minutes to charge a vehicle but require a very high level of service (480V).

General public charging uses Level 2 or DC fast charging, while Level 1 stations are typically located in a home garage or place of business. Charging stations should typically be located where vehicle owners are highly concentrated and parked for long periods of time. Public charging stations should also be located along highway corridors. A Level 2 charging station typically provides approximately 25 miles of range per hour of charging, while DC charging stations provide 100 to 200 miles range for 30 minutes of charging.

According to the US Department of Energy and Nebraska DOT, there are no public EV charging station locations in Jefferson County, yet. The closest locations at this time are:

- 81 Express East Station, 1375 Dove Rd, Hebron (on US 81), DC Fast charge
- TVFHNM Station, 24405 Highway 4, Beatrice (west), Level 2 charge
- Premier GM, 206 S 6th St, Beatrice, Level 2 charge
- Norris PPD Station 1, 630 Irving St, Beatrice, Level 2 charge

There are also chargers at Crete and Seward to the north. Currently, NDOT is focusing electric charging infrastructure funding on the designated Alternative Fuel Corridor (AFC) along I-80 and in the Omaha area. Additional state and federal funding programs may be available in the future.

Source: afdc.energy.gov/fuels/electricity-basics

Electric Vehicle Charging Stations, Hebron
Source: Marvin Planning Consultants

TRANSPORTATION GOALS AND ACTIONS

TRANSPORT GOAL 13.1

Jefferson County's highway network continues to meet the needs of local users and those passing through the county.

Actions

13.1.1 Annually review the County's One and Six Year Plan for conformance with the Comprehensive Plan.

13.1.2 Continue regular maintenance of roads countywide.

13.1.3 Prioritize paving and drainage improvements in growth areas

13.1.4 Work with Nebraska DOT on improving State roads and highways.

13.1.5 New development should be located on existing improved roads, while limiting direct access on arterial routes

13.1.6 Continue to restrict development on designated Minimum Maintenance roads.

13.1.7 As the industry evolves, review zoning requirements of EV charging stations.

TRANSPORT GOAL 13.2

Multi-modal transportation infrastructure is provided for walking, bicycling, and public transportation where appropriate.

Actions

13.1.1 Support Blue Rivers Public Transportation System.

13.2.2 Support municipal investments in sidewalks and trails countywide.

13.2.3 Assure County facilities meet ADA accessibility requirements.

TRANSPORT GOAL 13.3

Commercial rail service continues to be available to Jefferson County agriculture and industry.

Actions

13.3.1 Support efforts to work with UPRR to assure service continues in the county.

13.3.2 Work with UPRR to improve railroad crossing safety.

TRANSPORT GOAL 13.4

The public airport is protected from conflicting uses.

Actions

13.4.1 Support maintenance and improvement of Fairbury Municipal Airport.

13.4.2 Review projects near airports for compliance with Airport Hazard Overlay requirements.

13.4.3 Discourage new tall structures in the county, including towers, near airports.

Kansas-Nebraska State Line
Source: Marvin Planning Consultants

Chapter Fourteen Implementation

Successful community plans have the same key ingredients: "2% inspiration and 98% perspiration." This section of the plan contains the inspiration of the many county officials and residents who have participated in the planning process. However, the ultimate success of this plan remains in the dedication offered by each and every resident.

There are numerous goals and actions in this plan. These items should inform annual workplans and budget setting to assure progress continues to bring the plan to life.

ACTION PLAN

The Comprehensive Plan is not intended to sit on a shelf. The plan is intended to be put into action.

The action plan for County implementation is a combination of goals and action Items, with provisions to bring the plan to life while evaluating development proposals. Goals and action items specific to each plan element are included in the relevant chapter.

CAPITAL IMPROVEMENTS PROGRAM (CIP)

A Capital Improvements Program (CIP) is an annual plan assessing capital needs and prioritizing tasks to meet these needs in the County's budget. Programming in the CIP should cover facilities (county courthouse, Sheriff's office, highway shop, etc.), capital equipment, parks and recreation, utilities, trails, transit, and other capital facilities. The process should be coordinated with the One-and-Six Year plan for roads.

EVALUATION OF DEVELOPMENT PROPOSALS

Development proposal applications should be carefully reviewed against the goals and policies of the Jefferson County Comprehensive Plan, as well as the specific requirements of the development regulations. This plan is not regulatory; however, the underlying regulations are based on compatibility with this plan. Each development application should address how the specific proposal meets the policies of the comprehensive plan.

In cases in which a proposal is counter to the policies of this plan, the developer should be

encouraged to bring the proposal into conformance. On the other hand, approval of a proposal which is not in conformance would point to the need to review and update the plan to better serve the county.

Comprehensive Plan Maintenance

Annual Review of the Plan

A relevant, up to date plan is critical to the on-going planning success. To maintain both public and private sector confidence; evaluate the effectiveness of planning activities; and, most importantly, make mid-plan corrections on the use of county resources, the plan must remain current. The annual review should be performed each January to begin the calendar year. This review should result in a report from the Planning Commission and Staff to the County Board and the citizens of Jefferson County.

Unanticipated Opportunities

If major new, innovative development and/or redevelopment opportunities arise which impact any number of elements of the plan and which are determined to be of importance, a plan amendment may by proposed and considered separate from the Annual Review and other proposed Comprehensive Plan amendments. The Comprehensive Plan amendment process should adhere to the adoption process specified by Nebraska law and provide for the organized participation and involvement of citizens.

Ten Year Review

As discussed in the Introduction, the Jefferson County Comprehensive Plan is a 20-year plan. However, the County should review the plan annually and update the document at least every 10 years (2034), or when major, unanticipated opportunity arises. Completing updates every ten years or so will allow the County to incorporate ideas and developments not known at the time of the comprehensive planning process.

Implementation Goals and Actions

Implementation Goal 14.1

Development regulations are updated and maintained.

Implementation Goal 14.2

The Planning Commission reviews this plan regularly.

Action Items

This plan recommends several immediate tasks as implementation action items. These include:

1. Zoning Regulations
2. Subdivision Regulations
3. Floodplain Regulations & Mapping
4. Capital Improvements Program
5. Plan Maintenance

The County Board will have a critical role in implementation of this plan through the annual budgeting process. County elected officials, staff, and volunteers take the primary role in implementation of the comprehensive plan.

Other action items are referenced in support of activities by other entities supporting implementation of this plan.

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Appendix A: Public Participation

As noted in Chapter Two, there were several ongoing efforts to support Community Engagement in this Comprehensive Plan update process. Additional details on these efforts are included here.

TOWN HALL MEETING

A county-wide town hall meeting was held Tuesday June 6, 2024, at the Jefferson County Fairgrounds in Fairbury. Attendees came from all over the county. This meeting was an integral part of the planning process.

PUBLIC COMMENTS

Participants engaged in a conversation regarding growth and development in Jefferson County. Marvin Planning Consultants staff facilitated and recorded comments.

Why do you choose to live or have a business in Jefferson County?

- It is a good place to grow crops, raise livestock, & raise a family
- Good soil & water
- Close to family
- Good schools
- Close to large cultural centers-Lincoln
- Good healthcare
- Our established roots, farm owners
- Infrastructure: Good highways/broadband, electrical service
- History--Rock Creek
- Recreation: Kayak trail-Little Blue-Camp Jefferson
- Work Ethic: Have retirees filling jobs/Have welfare people working
- Born & raised in Plymouth
- Like the rural setting
- Affordable place to live
- Good place to raise a family (though not what it was)
- Grew up here/moved to area early in life
- Did not want to be in Lincoln & Omaha
- Small community
- Geographical location
- Walmart
- Property values
- Business opportunities that can grow
- Cost of living
- Ag friendly
- Choice of public schools
- Cattle-friendly, cattle producers
- We are in Jefferson County because we chose to be here because of the people
- Small communities, friendly neighbors, family farms
- We enjoy the small schools
- The sunsets, sunrise, and peaceful quiet
- We have life-long, born-here, family units
- People who love it here, want to give back to their communities

- Excellent chiropractor, vet, electricians, implements, farmers, local tavern, and small restaurants
- Open countryside
- My GGp bought farm here (x4)
- Married & moved here
- Moved here--kids go to school here
- Rural setting
- Safe place
- Smaller schools
- Good job
- Cost of living
- Smaller communities
- Watch out for each other
- Came back for community where we watch out for each other
- 4-Seasons
- Fell in love with a house where I found a job

What are the biggest opportunities Jefferson County has for the future?

- Add value to Agriculture/ Livestock Friendly -- dairy, Livingston hogs, waste products
- Tourism--4th of July Flea Market, Rock Creek
- New packing plants
- Highway 4 wind energy
- Ag economy runs everything, directly or indirectly
- Ag is the biggest asset we have
- Retain/attract more manufacturing
- Geographically located-close to Lincoln
- Using Crystal Springs for camping & cookouts
- Recreation areas for fishing, hiking, swimming, picnics, family gathering, boating
- Fourth of July Flea market/ County Fair
- Trail of Treasures on 136
- Frost Frolic
- Sprint Car races
- Trail riders (horse) at Rock Creek
- Rock Creek Station--Rock Creek Days
- Community picnics
- Fairbury Concert Series
- Libraires & Historical Society
- 4-H
- Farmers Market
- Young people do come & try to stay
- Wind/Alternative energy
- Livestock production
- Empty business buildings
- Land bank--to clear old & create new
- Animal agriculture
- More fresh food--growth

What are the biggest challenges Jefferson County has right now?

- Workforce -- too many on welfare / finding employees
- Not enough tax base
- Public transportation lacking
- Broadband
- Workforce housing livable
- Adequate child care--after school programs
- Maintaining infrastructure
- Quality & quantity of water--nitrates
- Drugs & crime
- The way we finance EMS service
- Bridges outdated
- Poor schools run by teachers union
- Poor road conditions
- Drug use problem
- Rising property taxes
- Illegal substances & crime
- Poor leadership/lack of transparency
- Increase electronic communication & resources--to include public office information
- Lack qualified/highly-trained individuals
- Keep "Green" energy/ windmills out of the county
- Population decline
- Decline of Fairbury
- A big challenge is bringing in new businesses
- Keeping young people here
- Adequate infrastructure
- Housing options
- Good medical & quality options
- Good paying jobs
- Keeping kids busy with activities
- Drug use
- Parenting skills
- Law enforcement
- Decreasing population
- Not enough new businesses
- More technology-based businesses
- Access to capital to grow a business
- Fed Gov does not understand our size
- Lack of day care & facilities
- Communications E911 for communities
- Not enough stuff to draw young people here
- Difficult to get connected in the community and feel included
- Health care is too expensive--too many farmers have to go to work for health care

What do you love about Jefferson County?

- Trees! Various views of prairie and fields--sunsets & sunrise
- People--lots of privacy if desired
- Nature-wildlife -- always assorted views - rivers
- Close to Lincoln & urban offerings (shopping, cultural activities
- Higher education opportunities
- Rural setting w/small town values
- Fairbury smells like Bacon
- Cost of living

- Friendly patrons
- Small community
- Good farming/land
- One stop light
- History--Rock Creek
- Less high crime
- Close to necessities/business
- Hunting & Fishing / outdoors
- St. Paul's Lutheran School in Plymouth
- Agriculture
- We love our country spaces--beautiful views, and quiet
- People care about each other
- The new high optic internet
- The radio station
- Rock Creek Station
- The Reservoirs
- Camping at Crystal Springs
- Long open roads to walk or run
- Rural character
- History
- Game & Parks Recreation Areas
- Walk-in hunting
- Diller thinks different--Pro-Growth
- Plymouth--trying to improve
- Lots of events

How would you describe the ideal Jefferson County 20 years from now?

- Thriving--family-owned agricultural economy
- Population--maintain or growing
- Continuing good local schools
- Value-added Agriculture
- Agricultural equipment repair facilities & dealerships
- Good internet--100% connected to high-speed broadband
- Good cell phone service that works consistently
- Paved County Roads! Or at least passable gravel roads
- An improved tax base--fair taxes. Taxes that are not discouraging people from living here
- Business growth--small, medium, and large
- Continue to recognize veterans who have served our country. The Veterans Office is an important service in this county.
- Small business around the square
- Medium size business growth
- Better roads
- Self-sustaining
- No property tax
- Increasing population 20%
- More industry/ manufacturing
- Improve public education
- Improve county roads
- No drug addiction
- No crime
- Beautiful views
- Small towns with more store fronts
- Keep our clubs and organizations
- Sports for families, trunk or treat
- Home upkeep, properties are kept up
- A great school system
- Great food
- Keep generations of farm families
- Affordable taxes, less death taxes
- Beautiful views!
- Seeing the stars in the dark sky
- I want my kids to want to come back and be able to do it
- Jobs designed for the changing world economy
- More tolerance for opposing views
- Diverse businesses throughout the county
- Tolerating multiple land use ideas
- More Ag variety--more niche ag
- Healthcare is more affordable

COMPREHENSIVE PLAN SURVEY

The countywide survey was released in May and held open through the first of August, 2024. This time period coincided with the Town Hall meeting on June 5th, 2024.

The survey used the SurveyMonkey online platform. Paper copies were also made available across the community. There were 195 respondents to the survey. Surveys received after the closing date were hand entered.

Respondents represent a wide variety of residents:

- 98% of respondents were from Jefferson County, including 39% from rural Jefferson County, 38% from Fairbury, 7.5% from Plymouth, about 3% each from Daykin, Diller, and Endicott, as well as others from Harbine, Jansen, Reynolds, and Steele City.
- Almost 20% of those who answered have lived in Jefferson County for 50+ years, 11-18% for 21 to 40 years; and 12% for 6 to 10 years.
- One-quarter (26%) were age 55 to 64 years, and 12% to 17% were in age groups from 35 to 54. Almost 12% were 65 to 74 and 8% were over 75.
- The largest number of families, 31%, have/had 2 children, 29% had 3 children, 15% had one, and 14% had none.

- Of those with children, over half (58%) replied their children were grown, 23% in grades K-5, 21% in grades 9-12, 15% in college, 13% in grades 6-8.
- Of those with children, almost half (48%) stated their children were at home, 37% said grown-living in Nebraska, 24.5% grown-living out-of-state, 23% grown-living in Jefferson County.
- Of those with children, 92% said their children were educated in public schools, 15% stated private schools, and 8% stated at-home schooling (multiple replies were allowed).
- Over half (59%) of respondents stated they were employed full-time, 20% said self-employed, and 15% responded retired.
- One-quarter (26%) were employed in Agriculture or forestry; 11% in Educational, health, and social services; 7% in Construction, 6% in other services, 5% Finance/ insurance/Real estate, and 5% in Professional services.
- About 1/3 (37%) commute less than 10 minutes, while 21% work at/from home; 11% commute 15-29 minutes, and 9% commute 10-14 minutes.
- One-third (33%) have a community/technical/ vocational education, 29% have graduated from a 4-year college or university, 25% have a high school diploma or GED, and 17% have a graduate/advanced degree.
- The largest number of respondents (51%) work in Fairbury, followed by 20% at home/online. About 6% work in Plymouth..

Respondents expressed a wide variety of opinions, including:

- Over half (54%) agree and one-quarter (27%) strongly agree Jefferson County is a good place to live.
- Over half (53%) agree and 29% strongly agree Jefferson County has a likable rural and small-town atmosphere.
- Over half (51%) agree and 39% strongly agree it is important to preserve and share Jefferson County history.
- Over half (56%) agree and 35% strongly agree retention and expansion of current business is key to Jefferson County's economic survival.
- Over half (53%) agree and one-quarter (27%) strongly agree growth and development should be carefully managed.
- More agree (27%) or strongly agree (23%) Developers should be required to locate in existing communities than disagree (18%) or strongly disagree (4%).
- Over two-thirds (68%) agree or strongly agree Developers should be required to improve roads.
- While there were many comments about renewable energy, opinions were split. About 20% strongly agree, agree and had no opinion whether agricultural producers should be allowed to have commercial-scale renewable energy systems as a means to generate additional revenue on the farm. One-quarter (26%) strongly disagreed and 14% disagreed. There was more support for small-scale solar and wind generation.
- About 70% agree or strongly agree protecting farmland should be the County's top priority.
- About 2/3 (63%) strongly agree the aquifer (ground water) is an important asset and should be conserved, while 58% strongly agree the lakes, reservoirs, and streambeds are important assets.
- About 70% of respondents go to Lincoln when dining out with sit-down service, if not dining locally. Two-thirds (67%) shop for clothes in Lincoln, and 65% do other shopping there also.
- Almost 70% go to Beatrice for fast food, compared to 55% to Lincoln.
- Half of respondents plan to stay in Jefferson County for retirement.
- Respondents ranked Agriculture most highly to focus for economic development.
- Only 6% of respondents replied "Very high quality" and 27% who replied "High quality" to the question "Is Jefferson County a quality place to live?" 50% replied "neither high nor low quality" and 13% responded low or very low quality.
- Comments indicated concerns with water rights and nitrate in drinking water.
- Almost half (47%) stated they are confident in Jefferson County's future. Just over 1/3 (37%) replied they were not sure.

Regarding public facilities and offices:

- Over half (55%) agree the County Fairgrounds are well maintained and available for public use.
- About 89% agree or strongly agree State parks and recreation areas are important to our quality of life.
- Opinions were split on the condition of county roads and highways, with few willing to pay additional taxes for road improvements.
- Over half agree the county has quality fire and EMS protection.
- The County Treasurer's office rated very highly for excellent customer service.

Regarding the most important quality to be preserved, answers varied, such as:

- Keeping wind turbines and solar out
- Rural setting
- Small town atmosphere, feel and landscape
- History, historical buildings
- Agriculture and livestock
- Family farms
- Natural resources
- Water
- Property rights for landowners

Regarding one thing which needs to be changed, answers again varied, including:

- Keeping wind turbines and solar out
- Open mindedness
- Leadership
- Nitrates
- Housing
- High speed internet
- Small business startup assistance
- Substance abuse
- County roads

Regarding what makes the county a comfortable place to live, answers included:

- Beautiful landscape, quiet and being in nature
- Rural setting
- Plenty of open spaces
- Small town living
- Mostly affordable
- The people

Regarding outdoor recreation, answers included:

- Local State/County/City parks
- Public access to water
- Youths sports,
- Camping, hunting
- Swimming, horseback riding, walk/bike trails

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Appendix B: Soil Survey

SOIL SURVEY OF JEFFERSON COUNTY, NEBRASKA

Much of the information in this Appendix is taken from the *Soil Survey of Jefferson County, Nebraska* (1975) and online sources as summarized in Chapter 10 Natural Resources and Environment.

SOIL CHARACTERISTICS

Soil properties are based on field examination of soils and by laboratory index testing of benchmarks. The National Cooperative Soil Survey system of soil classification has six categories, leading from broad associations to more specific series. (See Table B1 Soil Types)

Benfield Series

The Benfield series consists of moderately deep, well drained soils formed in pedisediment over residuum weathered from shales. Benfield soils are on hillslopes on uplands in Bluestem Hills. Slopes range from 3 to 35 percent.

Most areas are used for rangeland with some gentler slopes cultivated to wheat or grain sorghum. Native vegetation is tall prairie grasses.

Burchard Series

The Burchard series consists of very deep, well drained soils that formed in till on uplands. Slopes range from 2 to 40 percent.

Approximately one-half the acreage is cultivated and the remainder is in native range. The principal crops are corn, grain sorghum, winter wheat and alfalfa hay. The native vegetation is mostly big and little bluestem, Indiangrass, switchgrass and sideoats grama.

Butler Series

The Butler series consists of very deep, somewhat poorly drained soils formed in loess. Butler soils are on flat or slightly concave swales on loess uplands and loess -covered stream terraces on river valleys in the Central Loess Plains. Slopes are 0 to 2 percent.

Nearly all is cultivated. Sorghum and winter wheat are the principal dryland crops. Corn, soybeans, sorghum, and alfalfa are the principal crops where the soils are irrigated.

Cass Series

The Cass series consists of deep, well drained soils. They formed in alluvium on floodplains in Central Nebraska Loess Hills. Slopes range from 0 to 3 percent.

Most areas are cultivated, and much of it is irrigated. The main crops are corn, alfalfa, and sorghum. The native vegetation is tall prairie grasses and deciduous

TABLE B1A: SOIL TYPES

Map Unit	Soil Unit Name	Acres	Percent of County
2834	Uly-Hobbs silt loams, 0 to 30 percent slopes	8.6	0.00%
3184	Jansen loam, 2 to 6 percent slopes	1,133.80	0.30%
3185	Jansen loam, 3 to 7 percent slopes, eroded	924.6	0.30%
3186	Jansen loam, 6 to 11 percent slopes	388.3	0.10%
3247	Meadin loam, 6 to 30 percent slopes	1,863.30	0.50%
3361	Edalgo silty clay loam, 3 to 7 percent slopes, eroded	419	0.10%
3392	Lancaster loam, 3 to 7 percent slopes, eroded	3,428.30	0.90%
3404	Longford silty clay loam, 3 to 7 percent slopes, eroded	91.7	0.00%
3545	Hobbs silt loam, channeled, frequently flooded	15.3	0.00%
3557	Hobbs silt loam, channeled, occasionally flooded	6,834.30	1.90%
3561	Hobbs silt loam, occasionally flooded	6,855.80	1.90%
3775	Muir silt loam, rarely flooded	10,105.90	2.70%
3776	Muir silt loam, 1 to 3 percent slopes	4,914.80	1.30%
3800	Crete silt loam, 0 to 1 percent slopes, loess plains and breaks	7,192.90	2.00%
3801	Crete silt loam, 1 to 3 percent slopes, loess plains and breaks	9,922.30	2.70%
3802	Crete silty clay loam, 3 to 7 percent slopes, eroded, loess plains and breaks	10,011.30	2.70%
3820	Butler silt loam, 0 to 1 percent slopes	4,873.40	1.30%
3824	Crete silt loam, 0 to 1 percent slopes	36,303.10	9.90%
3825	Crete silt loam, 1 to 3 percent slopes	36,808.20	10.00%
3831	Crete silty clay loam, 3 to 7 percent slopes, eroded	43,898.00	11.90%
3832	Crete silt loam, 7 to 11 percent slopes	865.7	0.20%
3834	Geary silty clay loam, 3 to 11 percent slopes, severely eroded	5,115.40	1.40%
3839	Geary silty clay loam, 11 to 30 percent slopes	4,142.20	1.10%
3840	Geary silty clay loam, 7 to 11 percent slopes, eroded	1,635.20	0.40%
3841	Geary silty clay loam, 11 to 30 percent slopes, severely eroded	6.1	0.00%
3846	Geary silty clay loam, 3 to 7 percent slopes, eroded	13,748.90	3.70%
3855	Edalgo silty clay loam, 7 to 11 percent slopes	412.6	0.10%
3857	Geary and Jansen soils, 7 to 11 percent slopes	2,615.10	0.70%
3860	Geary and Jansen soils, 11 to 30 percent slopes	4,991.50	1.40%
3861	Geary silty clay loam, 11 to 17 percent slopes, eroded	2,803.10	0.80%
3862	Geary and Jansen soils, 7 to 11 percent slopes, severely eroded	2,514.10	0.70%
3866	Hastings silt loam, 1 to 3 percent slopes	1,491.30	0.40%
3867	Hastings silty clay loam, 3 to 11 percent slopes, severely eroded	5,712.50	1.60%
3868	Hastings silt loam, 3 to 7 percent slopes	1,521.80	0.40%
3869	Hastings silt loam, 7 to 11 percent slopes	394.3	0.10%

Source: USDA Natural Resources Conservation Service.

TABLE B1B: SOIL TYPES

Map Unit	Soil Unit Name	Acres	Percent of County
3870	Hastings silty clay loam, 3 to 7 percent slopes, eroded	15,677.80	4.30%
3962	Hastings silty clay loam, 7 to 11 percent slopes, eroded	186.1	0.10%
4108	Hedville loam, 30 to 50 percent slopes	2,170.00	0.60%
4110	Hedville loam, 7 to 30 percent slopes	2,959.70	0.80%
4161	Kipson silt loam, 7 to 30 percent slopes	5,513.60	1.50%
4162	Kipson soils, 11 to 30 percent slopes	5.5	0.00%
4170	Lancaster and Edalgo soils, 11 to 30 percent slopes	11,698.20	3.20%
4173	Lancaster loam, 7 to 11 percent slopes	2,402.60	0.70%
4175	Lancaster soils, 7 to 11 percent slopes, severely eroded	1,890.80	0.50%
6365	Obert soils, occasionally flooded	52.1	0.00%
7153	Kennebec silt loam, rarely flooded	3,339.20	0.90%
7217	Burchard clay loam, 11 to 30 percent slopes	1,288.00	0.30%
7226	Burchard clay loam, 2 to 6 percent slopes	405.2	0.10%
7227	Burchard clay loam, 6 to 11 percent slopes	2,224.70	0.60%
7228	Burchard clay loam, 6 to 11 percent slopes, eroded	1,671.40	0.50%
7231	Judson silt loam, 2 to 6 percent slopes	3,718.20	1.00%
7257	Deroin silty clay loam, 2 to 6 percent slopes, eroded	4	0.00%
7258	Deroin silty clay loam, 6 to 11 percent slopes, eroded	48.7	0.00%
7266	Burchard-Steinauer clay loams, 11 to 17 percent slopes, eroded	24.5	0.00%
7267	Burchard-Steinauer clay loams, 11 to 30 percent slopes	48.5	0.00%
7268	Burchard-Steinauer clay loams, 6 to 11 percent slopes, eroded	62.6	0.00%
7297	Malcolm silt loam, 6 to 11 percent slopes, eroded	245.1	0.10%
7344	Malmo, eroded-Pawnee complex, 6 to 11 percent slopes	334.9	0.10%
7347	Malmo silty clay loam, 6 to 11 percent slopes, eroded	233.7	0.10%
7348	Malmo silty clay loam, 3 to 6 percent slopes, eroded	106.6	0.00%
7349	Malmo clay loam, 2 to 6 percent slopes, eroded	31.9	0.00%
7350	Malmo clay, 3 to 11 percent slopes, eroded	5,215.50	1.40%
7411	Cortland-Malmo complex, 6 to 11 percent slopes, eroded	97.8	0.00%
7417	Morrill clay loam, 11 to 30 percent slopes	5,378.90	1.50%
7418	Morrill clay loam, 6 to 11 percent slopes	2,866.60	0.80%
7422	Morrill clay loam, 6 to 11 percent slopes, eroded	138.9	0.00%
7423	Morrill clay loam, 3 to 7 percent slopes	2,321.30	0.60%
7425	Morrill clay loam, 3 to 6 percent slopes, eroded	5,783.90	1.60%
7432	Morrill soils, 6 to 11 percent slopes, severely eroded	3,514.80	1.00%
7464	Otoe silty clay loam, 6 to 11 percent slopes, eroded	291	0.10%

Source: USDA Natural Resources Conservation Service.

TABLE B1C: SOIL TYPES

Map Unit	Soil Unit Name	Acres	Percent of County
7550	Benfield silty clay loam, 11 to 30 percent slopes	1,976.40	0.50%
7551	Benfield silty clay loam, 3 to 11 percent slopes, eroded	4,281.90	1.20%
7552	Benfield silty clay loam, 6 to 11 percent slopes, eroded	2,851.90	0.80%
7611	Steinauer clay loam, 11 to 30 percent slopes	13	0.00%
7666	Mayberry silty clay loam, 3 to 6 percent slopes, eroded	13,675.90	3.70%
7667	Mayberry silty clay loam, 6 to 11 percent slopes	1,729.80	0.50%
7689	Wymore silty clay loam, 0 to 2 percent slopes	5,057.20	1.40%
7693	Wymore silty clay loam, 2 to 6 percent slopes	2,765.80	0.80%
7750	Nodaway silt loam, occasionally flooded	7,858.50	2.10%
7868	Nodaway silt loam, channeled, occasionally flooded	5,696.80	1.50%
8435	Cass loam, rarely flooded	462	0.10%
8436	Cass loam, occasionally flooded	1,702.90	0.50%
8870	Hord silt loam, 1 to 3 percent slopes	260.2	0.10%
9903	Fluvaquents, sandy, frequently flooded	188.1	0.10%
9971	Arents, earthen dam	165.2	0.00%
9975	Mine or quarry	87.8	0.00%
9976	Borrow pit	11.5	0.00%
9983	Gravel pit	517.6	0.10%
9986	Miscellaneous water, sewage lagoon	52.1	0.00%
9999	Water	3,078.40	0.80%

Source: USDA Natural Resources Conservation Service.

trees along streams.

Crete Series

The Crete series consists of very deep, moderately well drained soils formed in loess. Crete soils are on interfluves and hillslopes on loess uplands and loess-covered stream terraces on river valleys in Central Loess Plains. Slopes range from 0 to 11 percent.

Most areas are cropped. The main crops are corn, soybeans, sorghum and wheat.

Deroin Series

The Deroin series consists of very deep, well drained soils that formed in reddish colored silty material, presumed to be Loveland loess. Deroin soils are on uplands. Slopes range from 2 to 17 percent.

Most areas of Deroin soils are in cropland. Corn, soybeans, grain sorghum and winter wheat are the principle crops.

Geary Series

The Geary series consists of very deep, well drained soils formed in loess. Geary soils are on hillslopes on uplands in the Central Kansas Sandstone Hills. Slopes range from 0 to 30 percent.

Most areas are cultivated. The principal crops are wheat and grain sorghum.

Hastings Series

The Hastings series consists of very deep, well drained soils formed in loess. Hastings soils are on interfluves and hillslopes on loess uplands in the Central Loess Plains. Slopes range from 0 to 17 percent.

Most areas are cultivated. Common crops are corn, grain sorghum, winter wheat, soybeans, and alfalfa.

Hedville Series

The Hedville series consists of shallow and very shallow, somewhat excessively drained soils that formed in residuum weathered from sandstone. Hedville soils are on hillslopes of uplands in the Central Kansas Sandstone Hills Slopes range from 3 to 40 percent.

Nearly all is in rangeland. Native vegetation is tall and mid grass prairie.

Hobbs Series

The Hobbs series consists of very deep, well drained soils formed in stratified, silty alluvium. These soils are on flood plains, foot slopes, and alluvial fans in river valleys of Central Loess Plains. Slopes range from 0 to 6 percent.

Where the areas are sufficiently wide and flooding is not too severe, these soils are used for cultivated crops, both dryland and irrigated. The main crops are corn, soybeans, grain sorghum, and alfalfa. The native vegetation species are big bluestem, switchgrass, western wheatgrass, and little bluestem, with scattered deciduous trees.

Jansen Series

The Jansen series consists of very deep, well drained moderately permeable soils formed in loamy sediments over alluvial sand and gravel. These upland soils have slopes ranging from 0 to 30 percent.

Cropped to milo, wheat and alfalfa. Some areas are irrigated. Native vegetation is short, mid and tall grasses, and includes big bluestem, little bluestem, switchgrass, sideoats grama, western wheatgrass, blue grama and sand dropseed.

Kipson Series

The Kipson series consists of shallow and very shallow, somewhat excessively drained soils formed in residuum weathered from calcareous silty shales. Kipson soils are on hillslopes on uplands in the Central Kansas Sandstone Hills. Slopes range from 1 to 70 percent.

Mostly used for native rangeland. Native vegetation is mid and short grasses with some tall grasses.

Lancaster Series

The Lancaster series consists of moderately deep, well drained soils formed in residuum from sandstone and sandy shales. Lancaster soils are on hillslopes on uplands in Central Kansas Sandstone Hills. Slopes range from 1 to 20 percent.

Most gentle slopes are cultivated. Principal crops are wheat and sorghums. Steeper slopes are usually in range. Native vegetation is dominated by mid and tall grasses; big bluestem, Indian grass, and little bluestem are most common.

Malmo Series

The Malmo series consists of very deep, moderately well drained, slowly permeable soils on uplands. They formed in weathered glacial till. Slopes range from 2 to 11 percent.

More than one-half of the areas of Malmo soils are cultivated. The principle crops are introduced grasses, grain sorghum and winter wheat. The remaining areas are in reseeded native grasses used for rangeland.

Mayberry Series

The Mayberry series consists of very deep, moderately well drained soils on uplands. They formed in reworked, weathered till. They have slopes ranging from 2 to l5 percent.

Most of the acreage is used to grow wheat, grain sorghum, and introduced grasses. A smaller acreage is in native vegetation, mostly big and little bluestem, switchgrass, and some forbs.

Morrill Series

The Morrill series consists of very deep, well drained soils that formed in loamy till. Morrill soils are on uplands. Slopes range from 1 to 30 percent.

The less sloping areas are cultivated. The principal crops are corn, grain sorghum, and winter wheat. The more sloping areas are used mainly for pasture or range. Native vegetation is tall prairie grasses.

Nodaway Series

The Nodaway series consists of very deep, moderately well drained soils formed in alluvium. These soils are on flood plains, upland drainageways, and alluvial fans. Slope ranges from 0 to 5 percent.

Most areas are cultivated. The principal crops are corn and soybeans. Some areas are in pasture with bluegrass and some cottonwood, willows, and hardwood trees and some areas are forested. The native vegetation is big bluestem, little bluestem, Indian grass, switchgrass, other grasses of the tall grass prairie and scattered deciduous trees.

Uly Series

The Uly series includes very deep, well drained formed in loess on uplands. Slopes range from 0 to 30 percent.

Most of the acreage of these soils is in native grass. Big bluestem, little bluestem, sideoats grama, blue grama, and western wheatgrass are the dominant species. Cultivated areas are cropped mainly to corn, winter wheat, sorghum, and alfalfa.

Wymore Series

The Wymore series consists of very deep, moderately well drained soils that formed in loess. These soils are on uplands and have slopes ranging from 0 to 9 percent.

Most areas of Wymore soils are cultivated. Wheat, corn, soybeans and sorghum are the principal crops. Native vegetation is mostly tall and some mid grasses.

Source: Soil Survey of Jefferson County, Nebraska, USDA 1975.

Soil Suitability and Limitations

The characteristics of soils play a major role in determining the potential compatibility of certain uses on the land. Soil limitations do not generally prohibit certain uses of land; however, they indicate the need for site-specific study and often special engineering solutions to overcome those limitations.

USDA NRCS' Web Soil Survey (based on county-level soil surveys) includes data on suitability and limitations of use. The ratings are identical to these shown by the Soil Data Viewer tool. A selection of data is shown here for categories most relevant to land use and development. Additional information is available at the NRCS website.

Soil limitations for distinct soil types in Jefferson County are shown in Table B2. These interpretations by NRCS are based on the engineering properties of soils, on test data for soils in the survey area and others nearby or adjoining, and on the experience of engineers and soil scientists. Soil limitations are indicated by the ratings Not Limited, Somewhat Limited, and Very Limited.

- Not Limited means soil properties are generally favorable for the stated use, or in other words, which limitations are minor and easily overcome (green).
- Somewhat Limited means some soil properties are unfavorable but can be overcome or modified by special planning and design (yellow).
- Very Limited means soil properties may be so unfavorable and difficult to correct or overcome as to require various degrees of soil reclamation, special designs, or intensive maintenance (red).

Dwellings without Basements

Soil limitations for dwellings without basements are shown in the first column of Table B2. The table provides the suitability and conditions by soil types.

Very Limited Conditions

Several soil types in Jefferson County are considered Very Limited for a Dwelling Unit without a Basement, with red shading in Table B2. There are six major conditions impacting the soils (not all are present in any one soil type).

Conditions present in the different soils include:

- Flooding
- Shrink-Swell
- Slope
- Depth to saturated zone
- Ponding
- Depth to Bedrock

These conditions may or may not eliminate the ability of a land owner to build a slab-on-grade dwelling, but specific conditions will need to be engineered to overcome potential problems in the future. As well, all structures must comply with floodplain requirements.

Somewhat Limited Conditions

Besides the Severe soils, there are several soil series considered Somewhat Limited, with yellow shading in Table B2. These conditions which are contributing to the Somewhat Limited classification, which are less of a concern for development, include:

- Shrink-Swell
- Slope
- Depth to saturated zone

Not Limited Conditions

The Jansen loam #3185 and Hord silt-loam #8870 soil types only present general limits to construction of dwellings without basements, with green shading in Table B2. It should be noted other units of these soil types do present different profiles for soil suitability and limitations.

TABLE B2A: SOIL LIMITATIONS

Jefferson County Soil Symbol/ Soil Name	Dwellings without Basements		Dwellings with Basements		Septic tank and absorption fields		Sewage Lagoons		Sanitary Landfill		Small Commercial Businesses	
	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions
2834 - Uly-Hobbs	2	1,2,	2	1,2,3	2	1,3,7	2	1,3,8	2	1,3,10	2	1,2,3
3184 - Jansen	1	2	0	-	2	7,8	2	3,8	2	8,10	1	2,3
3185 - Jansen	0	-	0	-	2	7,8	2	3,8	2	8,10	1	3
3186 - Jansen	1	2,3	1	3	2	3,7,8	2	3,8	2	3,8,10	2	3,4
3247 - Meadin	2	3	2	3	2	3,8,9	2	3,8	2	3,8,10	2	3
3361 - Edalgo	2	2	2	2,6	2	6,7	2	3,6,8	2	6,10	2	3,4
3392 - Lancaster	1	2	1	2,6	2	6,7	2	3,6,8	2	6,10	1	3,4
3404 - Longford	2	2,4	1	2	2	4,7	1	3,8	1	10	2	2,3,4
3545 - Hobbs	2	1,4	2	1,4	2	1,4,7	2	1,4,8	2	1,10	2	1,4
3557 - Hobbs	2	1,4,5	2	1,4,5	2	1,4,5,7	2	1,4,5,8	2	1,10	2	1,4,5
3561 - Hobbs	2	1,2,4	2	1,4	2	1,4,7	2	1,4,8	2	1,4,10	2	1,2,3,4
3775 - Muir	2	1,2,4,5	2	1,2,4,5	1	1,7	1	1,8	1	1,10	2	1,2,4,5
3776 - Muir	2	1,2,4,5	2	1,2,4,5	1	1,7	1	1,8	1	1,10	2	1,2,4,5
3800 - Crete	2	2,4,5	2	2,4,5	2	4,5,7	1	8	1	10	2	2,4,5
3801 - Crete	2	1,2,4,5	2	1,2,4,5	2	1,4,5,7	1	8	1	10	2	1,2,4,5
3802 - Crete	2	1,2,4,5	1	2,6	2	1,4,5,6,7	1	3,8	1	10	2	1,2,3,4,5
3820 - Butler	2	2,4,5	2	2,4,5	2	4,5,7	2	4,5,8	2	4,5,10	2	2,4,5
3824 - Crete	2	2,4,5	2	2,4,5	2	4,5,7	1	8	1	10	2	2,4,5
3825 - Crete	2	2,4,5	2	2,4,5	2	4,5,7	1	8	1	10	2	2,4,5
3831 - Crete	2	1,2	1	2,3	2	1,7	1	3,8	1	10	2	1,2,3
3832 - Crete	2	2,3	2	2,3	2	3,7	2	3,8	1	3,10	2	2,3
3834 - Geary	1	2	1	2	1	7	2	3,8	1	10	1	2,3
3839 - Geary	2	1,2,3	2	1,2,3	2	3,7,8,9	2	1,3,8	2	1,3,8,10	2	1,2,3
3840 - Geary	1	2,3	1	2,3	1	3,7	2	1,3,4,8	1	3,10	2	1,2,3,4
3841 - Geary	2	2,3	2	2,3	2	3,7,8	2	3,8	2	3,8,10	2	2,3
3846 - Geary	1	2	1	2,6	1	7	1	3,8	1	10	1	2,3
3855 - Edalgo	2	2,3,6	2	2,3,6	2	3,6,7	2	3,6	2	3,6,10	2	2,3,6

Source: USDA Natural Resources Conservation Service.

TABLE B2B: SOIL LIMITATIONS

Jefferson County Soil Symbol/ Soil Name	Dwellings without Basements		Dwellings with Basements		Septic tank and absorption fields		Sewage Lagoons		Sanitary Landfill		Small Commercial Businesses	
	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions
3857 - Geary-Jansen	1	2,3	1	2,3	2	3,7,8,9	2	3,8	2	3,8,10	2	2,3
3860 - Geary-Jansen	2	1,2,	2	1,2,3	2	1,3,7,8,9	2	1,3,8	2	1,3,8,10	2	1,2,3
3861 - Geary	1	2,3	1	2,3	1	3,7	2	3,8	1	3,10	2	2,3
3862 - Geary-Jansen	1	2,3	1	2,3	2	3,8,9	2	3,8	2	3,8,10	2	2,3
3866 - Hastings	2	2,4,5	1	2	2	4,5,7	1	8	1	10	2	2,4,5
3867 - Hastings	1	2	0	-	2	7	2	3,8	1	10	1	2,3
3868 - Hastings	1	2	1	2	2	1,4,7	1	3,8	1	10	1	2,3
3869 - Hastings	2	2,3	1	2,3	2	1,3,4,7	2	3,8	1	3,10	2	1,2,3,4
3870 - Hastings	1	2	1	2	2	1,4,7	1	3,8	1	10	1	2,3
3962 - Hastings	2	2,3	1	2,3	2	1,3,4,7	2	1,3,4,8	1	3,10	2	1,2,3,4
4108 - Hedville	2	2,3,6	2	2,3,6	2	3,6,7	2	3,6,8	2	3,6,10	2	2,3,6
4110 - Hedville	2	2,3,6	2	2,3,6	2	3,6,7	2	3,6,8	2	3,6,10	2	2,3,6
4161 - Kipson	2	3,6	2	3,6	2	3,6,7	2	3,6,8	2	3,6,10	2	3,6
4162 - Kipson	2	3,6	2	3,6	2	3,6	2	3,6,8	2	3,6,10	2	3,6
4170 - Lancaster-Eldago	1	2,3	1	2,3,6	2	1,3,6,7	2	1,3,6,8	2	3,6,10	2	1,2,3,6
4173 - Lancaster	1	2,3,6	1	2,3,6	2	3,6,7	2	3,6,8	2	3,6,10	2	2,3,6
4175 - Lancaster	1	2,3	1	2,3,6	2	3,6,7	2	3,6,8	2	3,6,10	2	2,3
6365 - Obert	2	1,2,4,5	2	1,2,4,5	2	1,4,5,7	2	1,4,5,8	2	1,4,5,10	2	1,2,4,5
7153 - Kennebec	2	1,2,4	2	1,2,4	2	1,4,7	1	1,4	2	1,4,10	2	1,2,4
7217 - Burchard	2	2,3	2	2,3	2	3,7	2	3	2	3,10	2	2,3
7226 - Burchard	1	2	1	2	2	4,7	1	3,4,8	1	4,10	1	2,3
7227 - Burchard	1	2,3	1	2,3	2	3,4,7	2	3,4	1	3,10	2	2,3,4
7228 - Burchard	1	2,3	1	2,3	2	3,4,7	2	3,4	1	3,10	2	2,3,4
7231 - Judson	1	2	1	2	2	1,4,7	1	3	1	10	1	1,23
7257 - Deroin	1	2	1	2	2	4,7	1	3,4	1	4,10	1	2,3,4
7258 - Deroin	1	2	1	2	2	3,4,7	2	3,4	1	3,4,10	2	2,3

Source: USDA Natural Resources Conservation Service.

TABLE B2C: SOIL LIMITATIONS

Jefferson County Soil Symbol/ Soil Name	Dwellings without Basements		Dwellings with Basements		Septic tank and absorption fields		Sewage Lagoons		Sanitary Landfill		Small Commercial Businesses	
	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions
7266 - Burchard-Steinauer	2	2,3,4	2	2,3,4	2	3,4,7	2	3,4	2	3,4,10	2	2,3,4
7267 - Burchard-Steinauer	2	1,2,3	2	1,2,3	2	1,3,7	2	1,3,8	2	1,3,10	2	2,3,4
7268 - Burchard-	1	2,3	1	2,3	2	3,4,7	2	3,4	1	3,10	2	2,3,4
7297 - Malcolm	1	2,3	1	3	2	3,7,8	2	3,8	2	3,8,10	2	2,3,4
7344 - Malmo-Pawnee	2	2,3,4	2	2,3,4	2	3,4,7	2	3,4	1	3,4,10	2	2,3,4
7347 - Malmo	2	2,3,4	2	2,3,4	2	3,4,7	2	3,4	1	3,4,10	2	2,3,4
7348 - Malmo	2	2,4	2	2,4	2	3,4,7	1	3,4	1	3,4,10	2	2,3
7349 - Malmo	2	2,4	2	2,4	2	4,7,8	1	3,4	1	4,10	2	2,3,4
7350 - Malmo	2	2,4	2	2,4	2	4,7	1	3,4	1	4,10	2	2,3,4
7411 - Cortland-Malmo	1	2,3	1	3	2	3,4,7,8	2	3,4,8	2	3,8,10	1	2,3
7417 - Morrill	2	2,3	2	2,3	2	3,7,8	2	3,8	2	3,8,10	1	2,3
7418 - Morrill	1	2,3	1	2,3	2	3,7,8	2	3,4,8	1	3,4,10	2	2,3,4
7422 - Morrill	1	2,3	1	2,3	2	3,4,7,8	2	3,4,8	1	3,4,10	2	2,3,4
7423 - Morrill	1	2	1	2	2	4,6,7,8	1	3,4	1	4,10	2	2,3,6
7425 - Morrill	1	2	1	2	2	4,7,8	1	3,4	1	4,10	2	2,3,6
7432 - Morrill	1	2,3	1	2,3	2	3,4,7,8	2	3,4,8	1	3,4,10	2	2,3,6
7464 - Otoe	2	2,3,4	2	2,3,4	2	3,4,7	2	3,4	1	3,4,10	2	2,3,4
7550 - Benfield	2	2,3,6	2	2,3,6	2	3,6,7	2	3,6,8	2	3,6,10	2	2,3,4
7551 - Benfield	2	2,3,6	2	2,3,6	2	3,6,7	2	3,6,8	2	3,6,10	2	2,3,4
7552 - Benfield	2	2,3	2	2,3,6	2	3,6,7	2	3,6,8	2	3,6,10	2	2,4,5
7611 - Steinauer	2	2,3,4	2	2,3,4	2	3,4,7	2	3,4	2	3,4,10	2	2,3,4
7666 - Mayberry	2	2,4	2	2,4	2	4,7	2	3,4	2	4,10	2	2,3,4
7667 - Mayberry	2	2,3,4	2	2,3,4	2	3,4,7	2	3,4	2	3,4,10	2	2,3,4
7689 - Wymore	2	2,4,5	2	2,4,5	2	4,5,7	1	4	1	4,10	2	2,4,5
7693 - Wymore	2	2,4	2	2,4,5	2	4,7	1	3,4	1	4,10	2	2,3,4

Source: USDA Natural Resources Conservation Service.

TABLE B2D: SOIL LIMITATIONS

Jefferson County Soil Symbol/ Soil Name	Dwellings without Basements		Dwellings with Basements		Septic tank and absorption fields		Sewage Lagoons		Sanitary Landfill		Small Commercial Businesses	
	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions	Suitability	Conditions
7750 - Nodaway	2	1,2,4	2	1,2,4	2	1,4,7	2	1,4	2	1,4,10	2	1,2,4
7868 - Nodaway	2	1,4	2	1,4	2	1,4,7	2	1,4,8	2	1,4,10	2	1,4
8435 - Cass	2	1,4	2	1,4	2	1,4,7,8	2	1,4,8	2	1,8,10	2	1,4
8636 - Cass	2	1,4	2	1,4	2	1,4,7	2	1,4,8	2	1,8,10	2	1,4
8870 - Hord	0	-	0	-	1	7	1	8	1	10	0	-

Source: USDA Natural Resources Conservation Service.

Legend for Table B2.

Suitability	Limiting Conditions
Green = Not Limited	1. Flooding
Yellow = Somewhat Limited	2. Shrink-Swell
Red = Very Limited	3. Slope
	4. Depth to Saturation
	5. Ponding
	6. Depth to Bedrock
	7. Slow Water Movement
	8. Seepage
	9. Filtering Capacity
	10. Dusty

Soil Limiting Conditions

Depth to Bedrock means typically a soil that has limited distance to bedrock of some kind.

Depth to Saturated Zone refers to soils which do not drain well or have a low permeability. This conditions creates an above average existence of wet soils.

Dusty conditions occur when soil particles detach easily and cause dust.

Flooding is defined as soils located in areas which are prone to flooding.

Filtering Capacity means soils with rapid permeability or an impermeable layer near the surface, the soil may not adequately filter effluent from a waste disposal system.

Ponding means soils subject to frequent floods and ponding.

Seepage means the movement of water through the soil. Seepage adversely affects the specified use.

Shrink-Swell means the shrinking of soil when dry and swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Slope means the inclination of the land surface from the horizontal. Class of slopes are:

Nearly level	0 to 1 percent
	0 to 2 percent
Very gently sloping	1 to 3 percent
Gently sloping	2 to 6 percent
	3 to 6 percent
Strongly sloping	6 to 9 percent
	6 to 11 percent
Moderately sloping	9 to 20 percent
	11 to 15 percent
Steep	15 to 30 percent

Slow Water Movement means soils that do not allow reasonable downward movement of water, with limited permeability.

Dwellings with Basements

Soil limitations for dwellings with basements are shown in Table B2. Suitability and conditions for basements are similar to dwellings without basements.

Very Limited Conditions

Most soil types in Jefferson County are Very Limited for a Dwelling Unit with a Basement. There are several major conditions impacting the soils (not all are present in any one soil type), similar to Dwellings without Basements yet to less of a degree.

Conditions present in the different soils are the same as without basements, including:

- Flooding
- Shrink-Swell
- Slope
- Depth to saturated zone
- Ponding
- Depth to Bedrock

These conditions may or may not eliminate the ability of a land owner to build a dwelling subgrade, but specific conditions will need to be engineered to overcome potential problems in the future. All structures must comply with floodplain requirements.

Somewhat Limited Conditions

Many soils are considered Somewhat Limited which is less of an issue for development. The conditions contributing to the Somewhat Limited classification also include:

- Shrink-Swell
- Slope
- Depth to Bedrock

One variety of Longford soils, two of Crete, and one of Hastings are somewhat limited for basements where they are very limited for slab construction (without basements).

Not Limited Conditions

A few soils present only general limits to construction of dwellings without basements. One variety of Jansen soils and on of Hastings are not limited for basements where they are somewhat limited without basements.

Septic Tank and Absorption Fields

Soil limitations for dwellings with basements are shown in Table B2.

Very Limited Conditions

Over 90% of soil types in Jefferson County are considered Very Limited for septic tanks and absorption fields. There are several major conditions impacting the soils (not all are present in any one soil type).

Conditions present in the different soils include:

- Flooding
- Slope
- Depth to saturated zone
- Ponding
- Depth to Bedrock
- Slow Water Movement
- Seepage
- Filtering Capacity

These conditions may or may not eliminate the ability of a land owner to use a septic tank and absorption field, but specific conditions will need to be engineered to overcome potential problems. All structures must comply with floodplain requirements.

Somewhat Limited Conditions

Only seven soil types are considered Somewhat Limited which is less of an issue. The conditions are contributing to the Somewhat Limited classification include:

- Flooding
- Slope
- Slow water movement

No soil type presented not-limited conditions.

Sewage Lagoons

Soil limitations for sewage lagoons are shown in Table B2.

Very Limited Conditions

Many soil types in Jefferson County are considered Very Limited for sewage lagoons. There are several major conditions impacting soils (not all are present in any one soil type).

Conditions present in the different soils include:

- Flooding
- Slope
- Depth to saturated zone
- Ponding
- Depth to Bedrock
- Seepage

These conditions may or may not eliminate the ability of a land owner to use a sewage lagoon, but specific conditions will need to be engineered to overcome potential problems. All structures must comply with floodplain requirements.

Somewhat Limited Conditions

Besides the Severe soils, there are some soils considered Somewhat Limited which is less of an issue. The conditions are contributing to the Somewhat Limited classification include:

- Flooding
- Slope
- Depth to saturated zone
- Seepage

No soil type presented not-limited conditions for sewage lagoons.

Sanitary Landfill

Soil limitations for sanitary landfills are shown in Table B2.

Very Limited Conditions

Many soil types in Jefferson County are considered Very Limited for a sanitary landfill. While these include fewer soil types than for other infrastructure, there are many major conditions impacting soils (not all are present in any one soil type).

Conditions present in the different soils include:

- Flooding
- Slope
- Depth to saturated zone
- Ponding
- Depth to Bedrock
- Seepage
- Dusty

These conditions may or may not eliminate the ability to construct a sanitary landfill, but specific conditions would need to be engineered.

Somewhat Limited Conditions

There are some soils considered Somewhat Limited for a Sanitary Landfill. The conditions contributing to the Somewhat Limited classification include:

- Flooding
- Slope
- Depth to saturated zone
- Dusty

No soil type presented not-limited conditions for a sanitary landfill.

Small Commercial Businesses

Soil limitations for small commercial businesses are shown in Table B2.

Very Limited Conditions

A majority of the soil types in Jefferson County are considered Very Limited for a Small Commercial Business. There are several major conditions impacting the soils (not all are present in any one soil type).

Conditions present in the different soils include:

- Flooding
- Shrink-Swell
- Slope
- Depth to saturated zone
- Ponding
- Depth to Bedrock

These conditions may or may not constrain the ability of a land owner to construct small commercial structures, but specific conditions will need to be engineered to overcome potential problems. All structures must comply with floodplain requirements.

Somewhat Limited Conditions

There are some soils considered Somewhat Limited which is less of a concern for development. The conditions contributing to the Somewhat Limited classification include:

- Flooding
- Shrink-Swell
- Slope
- Depth to saturated zone

Not Limited Conditions

Only the Hord #8870 soil type presents non-limited conditions to construction of small commercial structures.

Soil Permeability

USDA NRCS divides soils into hydrologic soil groups (HSGs), based on low to high runoff potential. Each official soil series description includes drainage and saturated hydraulic conductivity (permeability) based on the characteristics of water movement through soil.

Shrink-swell potential is a related factor, based on the volume change occurring as a result of changes in moisture content of the soil. The ability of soil to drastically change volume can cause damage to existing structures, such as cracks in foundations.

Table B3 presents the NRCS permeability ratings and shrink-swell potential by soil type. High shrink-swell potential is highlighted by red text. These include types of soil such as:

- Edalgo-silty clay loam,
- Longford-silty clay loam,
- Crete-silt loam and silty clay loam,
- Butler-silt loam,
- Hastings silt loam and silty clay loam,
- Lancaster-Eldago,
- Malmo silty clay loam,
- Cortland-Malmo complex,
- Otoe silty clay loam,
- Wymore silty clay loam

It should be noted, some soil types exhibit the full ranges of low-medium-high shrink-swell potential at different depths and soil characteristics. For example, Crete-silt loam, 7 to 11 percent slopes, presents low shrink-swell potential at 0-10" depth and high to very high below 13".

TABLE B3A: SOIL PERMEABILITY BY SOIL TYPE

Soil Symbol	Soil Name	Depth (inches)	Permeability (inches/ hour)	Shrink-Swell potential
2834	Uly-Hobbs - silt loams, 0 to 30 percent slopes	0-9	.6-2	Low
		9-25	.6-2	Low
		25-79	.6-2	Low
		0-6	.6-2	Low
		6-79	.6-2	Low
3184	Jansen - loam, 2 to 6 percent slopes	0-8	.6-2	Low
		8-26	.6-2	Moderate
		26-60	20-100	Low
3185	Jansen - loam, 3 to 7 percent slopes, eroded	0-5	.6-2	Low
		5-24	.6-2	Moderate
		24-60	20-100	Low
3186	Jansen - loam, 6 to 11 percent slopes	0-8	.6-2	Low
		8-26	.6-2	Moderate
		26-60	20-100	Low
3247	Meadin - loam, 6 to 30 percent slopes	0-5	2-6	Low
		5-18	6-20	Low
		18-60	20-100	Low
3361	Edalgo - silty clay loam, 3 to 7 percent slopes, eroded	0-8	.2-.6	Moderate
		8-23	0-.06	High
		23-28	0-.06	High
		28-79	-	-
3392	Lancaster - loam, 3 to 7 percent slopes, eroded	0-10	.6-2	Moderate
		10-22	.6-2	Moderate
		22-30	.6-2	Low
		30-40	-	-
3404	Longford - silty clay loam, 3 to 7 percent slopes, eroded	0-6	.2-.6	Moderate
		6-24	.06-.2	High
		24-35	.2-.6	High
		35-43	.2-.6	Moderate
		43-79	.2-.6	Moderate
3545	Hobbs - silt loam, channeled, frequently flooded	0-6	.6-2	Low
		6-79	.6-2	Low
3557	Hobbs - silt loam, channeled, occasionally flooded	0-7	.6-2	Low
		7-51	.6-2	Low
		51-60	.6-2	Low
3561	Hobbs - silt loam, occasionally flooded	0-6	.6-2	Low
		6-79	.6-2	Low
3775	Muir - silt loam, rarely flooded	0-7	.6-2	Low
		7-18	.6-2	Low
		18-36	.6-2	Low
		36-48	.6-2	Low
		48-79	.6-2	Low
3776	Muir - silt loam, 1 to 3 percent slopes	0-7	.6-2	Low
		7-18	.6-2	Moderate
		18-36	.6-2	Moderate
		36-48	.6-2	Moderate
		48-79	.6-2	Low
3800	Crete - silt loam, 0 to 1 percent slopes, loess plains and breaks	0-6	.6-2	Low
		6-15	.2-.6	Moderate
		15-25	.06-.2	Very High
		25-33	.06-.2	High
		33-40	.2-.6	Moderate
		40-79	.6-2	Moderate
3801	Crete - silt loam, 1 to 3 percent slopes, loess plains and breaks	0-6	.6-2	Low
		6-12	.2-.6	Moderate
		12-23	.06-.2	Very High
		23-31	.06-.2	High
		31-39	.2-.6	Moderate
		39-79	.6-2	Moderate
3802	Crete - silty clay loam, 3 to 7 percent slopes, eroded, loess plains and breaks	0-6	.2-.6	Moderate
		6-15	.06-2	Very High
		15-24	.06-2	High
		24-30	.2-.6	Moderate
		30-79	.6-2	Moderate
3820	Butler - silt loam, 0 to 1 percent slopes	0-9	.6-2	Low
		9-13	.6-2	Low
		13-34	.06-.2	Very High
		34-41	.2-.6	High
		41-79	.6-2	Moderate
3824	Crete - silt loam, 0 to 1 percent slopes	0-6	.6-2	Low
		6-15	.2-.6	Moderate
		15-25	.06-.2	Very High
		25-33	.06-.2	High
		33-40	.2-.6	Moderate
		40-79	.6-2	Moderate
3825	Crete - silt loam, 1 to 3 percent slopes	0-6	.6-2	Low
		6-12	.2-.6	Moderate
		12-23	.06-.2	Very High
		23-31	.06-.2	High
		31-39	.2-.6	Moderate
		39-79	.6-2	Moderate
3831	Crete - silty clay loam, 3 to 7 percent slopes, eroded	0-6	.2-.6	Moderate
		6-15	.06-.2	Very High
		15-24	.06-.2	High
		24-30	.2-.6	Moderate
		30-79	.6-2	Moderate
3832	Crete - silt loam, 7 to 11 percent slopes	0-10	.6-2	Low
		10-13	.2-.6	Moderate
		13-29	.06-.2	Very High
		29-60	.06-.2	High
3834	Geary - silty clay loam, 3 to 11 percent slopes, severely eroded	0-6	.6-2	Moderate
		6-17	.2-.6	Moderate
		17-25	.6-2	Moderate
		25-32	.6-2	Moderate
		32-79	.6-2	Moderate
3839	Geary - silty clay loam, 11 to 30 percent slopes	0-11	.6-2	Moderate
		11-27	.2-.6	Moderate
		27-34	.6-2	Moderate
		34-42	.6-2	Moderate
		42-79	.6-2	Moderate
3840	Geary - silty clay loam, 7 to 11 percent slopes, eroded	0-6	.6-2	Moderate
		6-22	.2-.6	Moderate
		22-33	.6-2	Moderate
		33-38	.6-2	Moderate
		38-79	.6-2	Moderate
3841	Geary - silty clay loam, 11 to 30 percent slopes, severely eroded	0-6	.6-2	Moderate
		6-17	.2-.6	Moderate
		17-25	.6-2	Moderate
		25-32	.6-2	Moderate
		32-79	.6-2	Moderate
3846	Geary - silty clay loam, 3 to 7 percent slopes, eroded	0-6	.6-2	Moderate
		6-22	.2-.6	Moderate
		22-33	.6-2	Moderate
		33-38	.6-2	Moderate
		38-79	.6-2	Moderate
3855	Edalgo - silty clay loam, 7 to 11 percent slopes	0-7	.06-.2	Moderate
		7-11	.06-.2	Moderate
		11-24	0-.06	High
		24-28	0-.06	High
		28-79	-	-
3857	Geary-Jansen - soils, 7 to 11 percent slopes	0-7	.6-2	Moderate
		7-11	.6-2	Moderate
		11-27	.2-.6	Moderate
		27-34	.6-2	Moderate
		34-42	.6-2	Moderate
		42-79	.6-2	Moderate
3860	Geary-Jansen - soils, 11 to 30 percent slopes	0-8	.6-2	Low
		8-13	.6-2	Low
		13-30	.6-2	Moderate
		30-37	20-100	Low
		37-79	20-100	Low
		0-7	.6-2	Moderate
		7-11	.6-2	Moderate
		11-27	.2-.6	Moderate
		27-34	.6-2	Moderate
		34-42	.6-2	Moderate
		42-79	.6-2	Moderate
		0-8	.6-2	Low
		8-13	.6-2	Low
		13-30	.6-2	Moderate
		30-35	20-100	Low
		35-79	20-100	Low

Source: USDA Natural Resources Conservation Service.

TABLE B3B: SOIL PERMEABILITY BY SOIL TYPE

Soil Symbol/Soil Name		Depth (inches)	Permeability (inches/ hour)	Shrink-Swell potential
3861	Geary - silty clay loam, 11 to 17 percent slopes, eroded	0-6	.6-2	Moderate
		6-22	.2-.6	Moderate
		22-33	.6-2	Moderate
		33-38	.6-2	Moderate
		38-79	.6-2	Moderate
3862	Geary-Jansen - soils, 7 to 11 percent slopes, severely eroded	0-6	.6-2	Moderate
		6-17	.2-.6	Moderate
		17-25	.6-2	Moderate
		25-32	.6-2	Moderate
		32-79	.6-2	Moderate
		0-6	.6-2	Low
		6-23	.6-2	Moderate
		23-29	20-100	Low
		29-79	20-100	Low
3866	Hastings - silt loam, 1 to 3 percent slopes	0-6	.6-2	Moderate
		6-11	.2-.6	Moderate
		11-14	.2-.6	High
		14-31	.2-.6	High
		31-38	.2-.6	Moderate
		38-79	.6-2	Low
3867	Hastings - silty clay loam, 3 to 11 percent slopes, severely eroded	0-5	.2-.6	Moderate
		5-30	.2-.6	Moderate
		30-60	.2-.6	Low
3868	Hastings - silt loam, 3 to 7 percent slopes	0-10	.6-2	Low
		10-1	.2-.6	Moderate
		14-32	.2-.6	High
		32-38	.2-.6	Moderate
		38-79	.6-2	Low
3869	Hastings - silt loam, 7 to 11 percent slopes	0-8	.6-2	Low
		8-14	.2-.6	Moderate
		14-32	.2-.6	High
		32-38	.2-.6	Moderate
		38-79	.6-2	Low
3870	Hastings - silty clay loam, 3 to 7 percent slopes, eroded	0-8	.2-.6	Moderate
		8-14	.2-.6	Moderate
		14-32	.2-.6	High
		32-38	.2-.6	Moderate
		38-79	.6-2	Moderate
3962	Hastings - silty clay loam, 7 to 11 percent slopes, eroded	0-8	.2-.6	Moderate
		8-14	.2-.6	Moderate
		14-32	.2-.6	High
		32-38	.2-.6	Moderate
		38-79	.6-2	Moderate
4108	Hedville - loam, 30 to 50 percent slopes	0-9	.6-2	Low
		9-15	.6-2	Low
		15-79	-	-
4110	Hedville - loam, 7 to 30 percent slopes	0-9	.6-2	Low
		9-15	.6-2	Low
		15-79	-	-
4161	Kipson - silt loam, 7 to 30 percent slopes	0-8	.6-2	Low
		8-13	.6-2	Low
		13-16	.6-2	Low
		16-39	-	-
4162	Kipson - soils, 11 to 30 percent slopes	0-8	.6-2	Low
		8-13	.6-2	Low
		13-16	.6-2	Low
		16-39	-	-
4170	Lancaster-Eldago - soils 11 to 30 percent slopes	0-9	.6-2	Low
		9-16	.6-2	Low
		16-25	.6-2	Moderate
		25-35	.6-2	Low
		35-45	-	-
		0-7	.2-.6	Moderate
		7-12	.2-.6	Moderate
		12-25	0-.06	High
		25-32	0-.06	High
		32-79	-	-
4173	Lancaster - loam, 7 to 11 percent slopes	0-9	.6-2	Low
		9-16	.6-2	Low
		16-25	.6-2	Moderate
		25-35	.6-2	Low
		35-45	-	-
4175	Lancaster - soil, 7 to 11 percent slopes, severely eroded	0-4	2-6	Low
		4-24	.6-2	Moderate
		24-60	-	-
6365	Obert - soil, occasionally flooded	0-3	.6-2	Low
		3-60	.2-.6	Moderate
7153	Kennebec - silt loam, rarely flooded	0-6	.2-.6	Low
		6-41	.2-.6	Low
		41-54	.2-.6	Low
		54-79	.2-.6	Low
7217	Burchard - clay loam, 11 to 30 percent slopes	0-6	.2-.6	Moderate
		6-10	.2-.6	Moderate
		10-25	.2-.6	Moderate
		25-35	.06-.2	Moderate
		35-47	0-.06	Low
		47-79	0-.06	Low
7226	Burchard - clay loam, 2 to 6 percent slopes	0-6	.2-.6	Moderate
		6-9	.2-6	Moderate
		9-13	.2-.6	Moderate
		13-25	.2-.6	Moderate
		25-35	.06-.2	Moderate
		35-47	0-.06	Low
		47-79	0-.06	Low
7227	Burchard - clay loam, 6 to 11 percent slopes	0-6	.2-.6	Moderate
		6-9	.2-6	Moderate
		9-13	.2-.6	Moderate
		13-25	.2-.6	Moderate
		25-35	.06-.2	Moderate
		35-47	0-.06	Low
		47-79	0-.06	Low
7228	Burchard - clay loam, 6 to 11 percent slopes, eroded	0-6	.2-.6	Moderate
		6-9	.2-.6	Moderate
		9-25	.2-.6	Moderate
		25-35	.06-.2	Moderate
		35-47	0-.06	Low
7231	Judson - silt loam, 2 to 6 percent slopes	0-6	.6-2	Low
		6-31	.2-.6	Moderate
		31-80	.2-.6	Moderate
7257	Deroin - silty clay loam, 2 to 6 percent slopes, eroded	0-7	.2-.6	Moderate
		7-40	.2-.6	Moderate
		40-80	.2-.6	Moderate
7258	Deroin - silty clay loam, 6 to 11 percent slopes, eroded	0-7	.2-.6	Moderate
		7-40	.2-.6	Moderate
		40-80	.2-.6	Moderate
7266	Burchard-Steinauer - clay loams, 11 to 17 percent slopes, eroded	0-6	.2-.6	Moderate
		6-9	.2-.6	Moderate
		9-25	.2-.6	Moderate
		25-35	.06-.2	Moderate
		35-47	0-.06	Low
		47-79	0-.06	Low
		0-6	.2-.6	Moderate
		6-15	.2-.6	Moderate
		15-57	.2-.6	Low
7267	Burchard-Steinauer - clay loams, 11 to 30 percent slopes	0-6	.2-.6	Moderate
		6-9	.2-.6	Moderate
		9-25	.2-.6	Moderate
		25-35	.06-.2	Moderate
		35-47	0-.06	Low
		47-79	0-.06	Low
		0-6	.2-.6	Moderate
		6-15	.2-.6	Moderate
		15-57	.2-.6	Low

Source: USDA Natural Resources Conservation Service.

TABLE B3C: SOIL PERMEABILITY BY SOIL TYPE

Soil Symbol/Soil Name		Depth (inches)	Permeability (inches/ hour)	Shrink-Swell potential
7268	Burchard-Steinauer - clay loams, 6 to 11 percent slopes, eroded	0-6	.2-.6	Moderate
		6-9	.2-.6	Moderate
		9-25	.2-.6	Moderate
		25-35	.06-.2	Moderate
		35-47	0-.06	Low
		47-79	0-.06	Low
7297	Malcolm - silt loam, 6 to 11 percent slopes, eroded	0-6	.2-.6	Moderate
		6-15	.2-.6	Moderate
		15-57	.2-.6	Low
		57-79	.2-.6	Low
7344	Malmo-Pawnee - complex, 6 to 11 percent slpes	0-7	.6-2	Low
		7-32	.2-.6	Moderate
		32-60	2-6	Low
		0-6	.06-.2	Moderate
		6-22	0-.06	Moderate
		22-43	0-.06	Moderate
		43-54	.06-.2	Moderate
		54-79	.06-.2	Moderate
		0-6	.2-.6	Moderate
		6-9	.2-.6	Moderate
		9-11	0-.06	Moderate
		11-33	0-.06	Moderate
		33-43	.06-.2	Moderate
		43-79	.06-.2	Moderate
7347	Malmo - silty clay loam, 6 to 11 percent slopes, eroded	0-6	.06-.2	High
		6-43	0-.06	High
		43-54	.06-.2	Moderate
		54-80	.06-.2	Moderate
7348	Malmo - silty clay loam, 3 to 6 percent slopes, eroded	0-6	.06-.2	High
		6-43	0-.06	High
		43-54	.06-.2	Moderate
		54-80	.06-.2	Moderate
7349	Malmo - clay loam, 2 to 6 percent slopes, eroded	0-6	.06-.2	High
		6-43	0-.06	High
		43-54	.06-.2	Moderate
		54-80	.06-.2	Moderate
7350	Malmo - clay, 3 to 11 percent slopes, eroded	0-6	.06-.2	High
		6-43	0-.06	High
		43-54	.06-.2	Moderate
		54-80	.06-.2	Moderate
7411	Cortland-Malmo - complex, 6 to 11 percent slopes, eroded	0-6	.6-2	Low
		6-28	.2-.6	Moderate
		28-36	.2-.6	Low
		36-80	.2-.6	Low
		0-6	.06-.2	High
		6-43	0-.06	High
		43-54	.06-.2	Moderate
		54-80	.06-.2	Moderate
7417	Morrill - clay loam, 11 to 30 percent slopes	0-6	.2-.6	Moderate
		6-10	.2-.6	Low
		10-28	.2-.6	Low
		28-63	.2-.6	Low
		63-73	.6-2	Low
		73-79	2-6	Low
7418	Morrill - clay loam, 6 to 11 percent slopes	0-6	.2-.6	Moderate
		6-12	.2-.6	Low
		12-28	.2-.6	Low
		28-63	.2-.6	Low
		63-73	.6-2	Low
		73-79	2-6	Low
7422	Morrill - clay loam, 6 to 11 percent slopes, eroded	0-6	.2-.6	Moderate
		6-10	.2-.6	Low
		10-28	.2-.6	Low
		28-63	.2-.6	Low
		63-73	.6-2	Low
		73-79	2-6	Low
7423	Morrill - clay loam, 3 to 7 percent slopes	0-6	.2-.6	Moderate
		6-13	.2-.6	Low
		13-28	.2-.6	Low
		28-63	.2-.6	Low
		63-73	.6-2	Low
		73-79	2-6	Low
7425	Morrill - clay loam, 3 to 6 percent slopes, eroded	0-6	.2-.6	Moderate
		6-11	.2-.6	Low
		11-28	.2-.6	Low
		28-63	.2-.6	Low
		63-73	.6-2	Low
		73-79	2-6	Low

Soil Symbol/Soil Name		Depth (inches)	Permeability (inches/ hour)	Shrink-Swell potential
7432	Morrill - soils 6 to 11 percent slopes, severely eroded	0-6	.2-.6	Moderate
		6-9	.2-.6	Low
		9-16	.2-.6	Low
		16-48	.2-.6	Low
		48-59	.6-2	Low
		59-79	2-6	Low
7464	Otoe - silty clay loam, 6 to 11 percent slopes, eroded	0-6	.06-.2	High
		6-18	.06-.2	High
		18-32	.06-.2	High
		32-40	.06-.2	Moderate
		40-57	.06-.2	Moderate
		57-79	.06-.2	Moderate
7550	Benfield - silty clay loam, 11 to 30 percent slopes	0-8	.2-.6	Moderate
		8-16	.06-.2	Moderate
		16-26	.06-.2	Moderate
		26-33	.06-.2	Moderate
		33-39	.06-.2	Low
		39-49	-	-
7551	Benfield - silty clay loam, 3 to 11 percent slopes, eroded	0-6	.2-.6	Moderate
		6-14	.06-.2	Moderate
		14-24	.06-.2	Moderate
		24-31	.06-.2	Moderate
		31-37	.06-.2	Low
		37-47	-	-
7552	Benfield - silty clay loam, 6 to 11 percent slopes, eroded	0-6	.2-.6	Moderate
		6-14	.06-.2	Moderate
		14-24	.06-.2	Moderate
		24-31	.06-.2	Moderate
		31-37	.06-.2	Low
		37-47	-	-
7611	Steinauer - clay loam, 11 to 30 percent slopes	0-6	.2-.6	Moderate
		6-15	.2-.6	Moderate
		15-57	.2-.6	Low
		57-79	.2-.6	Low
7666	Mayberry - silty clay loam, 3 to 6 percent slopes, eroded	0-10	.2-.6	Moderate
		10-42	.2-.6	Very High
		42-60	.06-.2	Moderate
7667	Mayberry - silty clay loam, 6 to 11 percent slopes	0-10	.2-.6	Moderate
		10-42	.2-.6	Very High
		42-60	.06-.2	Moderate
7689	Wymore - silty clay loam, 0 to 2 percent slopes	0-6	.2-.6	Moderate
		6-11	.2-.6	Moderate
		11-18	0-.06	High
		18-45	.06-.2	Moderate
		45-53	.2-.6	Moderate
		53-79	.2-.6	Moderate
7693	Wymore - silty clay loam, 2 to 6 percent slopes	0-6	.2-.6	Moderate
		6-10	.2-.6	Moderate
		10-14	0-.06	High
		14-41	.06-.2	Moderate
		41-53	.2-.6	Moderate
		53-79	.2-.6	Moderate
7750	Nodaway - silt loam, occasionally flooded	0-7	.2-.6	Low
		7-12	.2-.6	Low
		12-26	.2-.6	Low
		26-79	.2-.6	Low
7868	Nodaway - silt loam, channeled, occasionally flooded	0-7	.6-2	Low
		7-80	.6-2	Low
8435	Cass - loam, rarely flooded	0-16	2-6	Low
		16-33	2-6	Low
		33-60	6-20	Low
8636	Cass - loam, occasionally flooded	0-16	2-6	Low
		16-33	2-6	Low
		33-60	6-20	Low
8870	Hord - silt loam, 1 to 3 percent slopes	0-38	.6-2	Low
		38-60	.6-2	Moderate

Source: USDA Natural Resources Conservation Service.

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Jefferson County, Nebraska
COMPREHENSIVE PLAN

Fig B1 DWELLINGS WITHOUT BASEMENTS
Source: USDA Natural Resources Conservation Service

Fillmore County
Saline County
Thayer County
Gage County
Kansas
Daykin
Plymouth
Powell
Jansen
Harbine
Gladstone
Fairbury
Diller
Endicott
Reynolds
Thompson
Steele City

Legend

- Railroads
- Highways
- Paved Roads
- County_Boundaries
- Rivers
- Jefferson County Municipalities
- Jefferson County Towns

Parcels

- Parcels

Dwellings without Basements

- Not rated
- Not limited
- Somewhat limited
- Very limited

N

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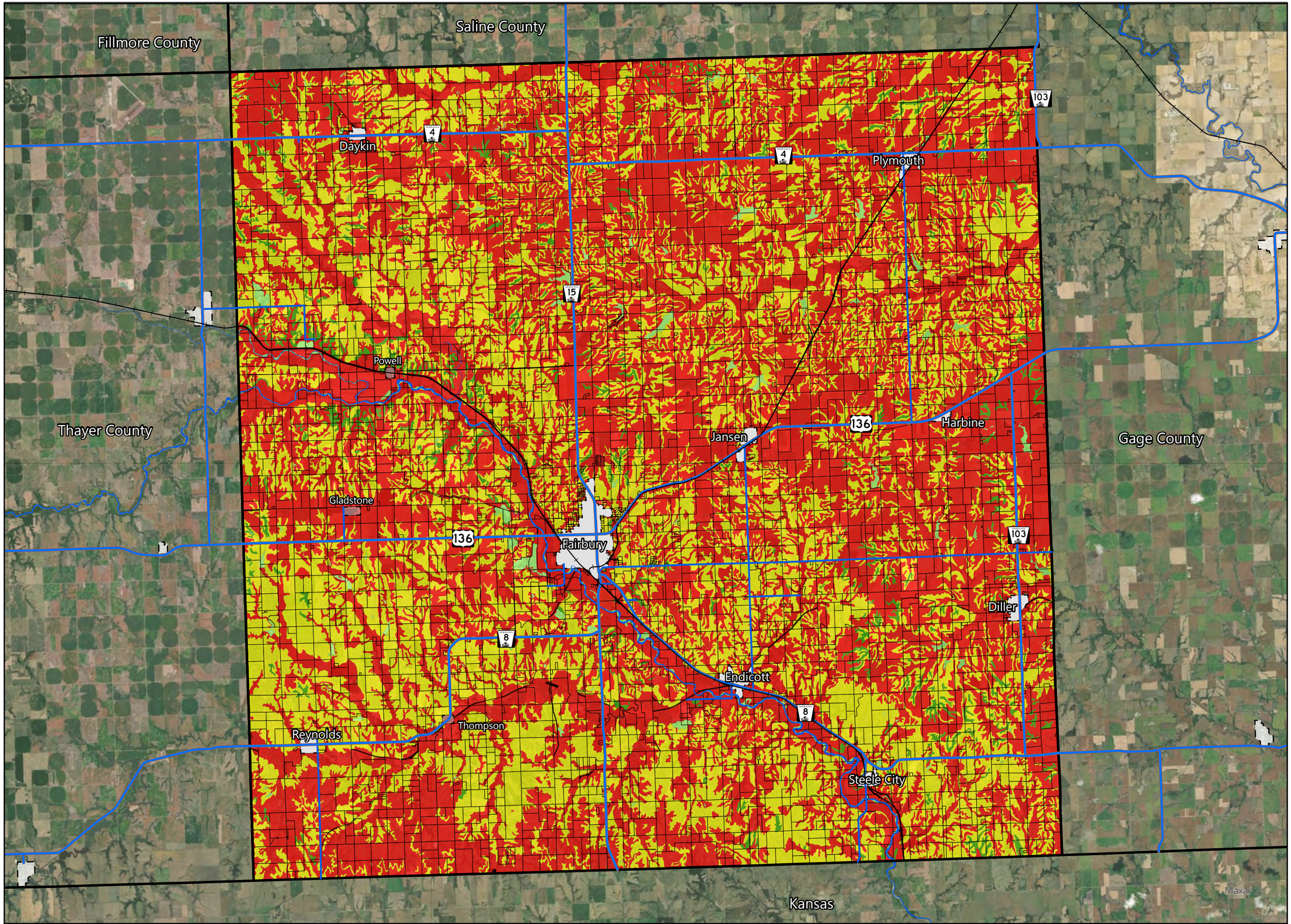
Maxar

PROJECTION: NAD83 State Plane NE
DATUM: NAD 83
DATE: 3.24.26

0 0.75 1.5 3 Miles



Jefferson County, Nebraska

COMPREHENSIVE PLAN

Fig B2 DWELLINGS WITH BASEMENTS

Source: USDA Natural Resources Conservation Service

Legend

- Railroads
- Highways
- Paved Roads
- County_Boundaries
- Rivers
- Jefferson County Municipalities
- Jefferson County Towns

Parcels

- Parcels

Dwellings with Basements

- Not rated
- Not limited
- Somewhat limited
- Very limited

N

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Specializing in Municipal, County and Neighborhood Planning

PROJECTION: NAD83 State Plane NE

DATUM: NAD 83

DATE: 3.24.26

0 0.75 1.5 3 Miles

Jefferson County, Nebraska
COMPREHENSIVE PLAN
Fig B3 SEPTIC TANK ABSORPTION
Source: USDA Natural Resources Conservation Service

Fillmore County
Saline County
Thayer County
Gage County
Kansas
Daykin
Plymouth
Powell
Jansen
Harbine
Gladstone
Fairbury
Diller
Endicott
Thompson
Reynolds
Steele City
4
15
103
136
8
Earthstar Geographics

Legend

- Railroads
- Highways
- Paved Roads
- County_Boundaries
- Rivers
- Jefferson County Municipalities
- Jefferson County Towns

Parcels

- Parcels

Septic Tank Absorption

- Not rated
- Somewhat limited
- Very limited

N

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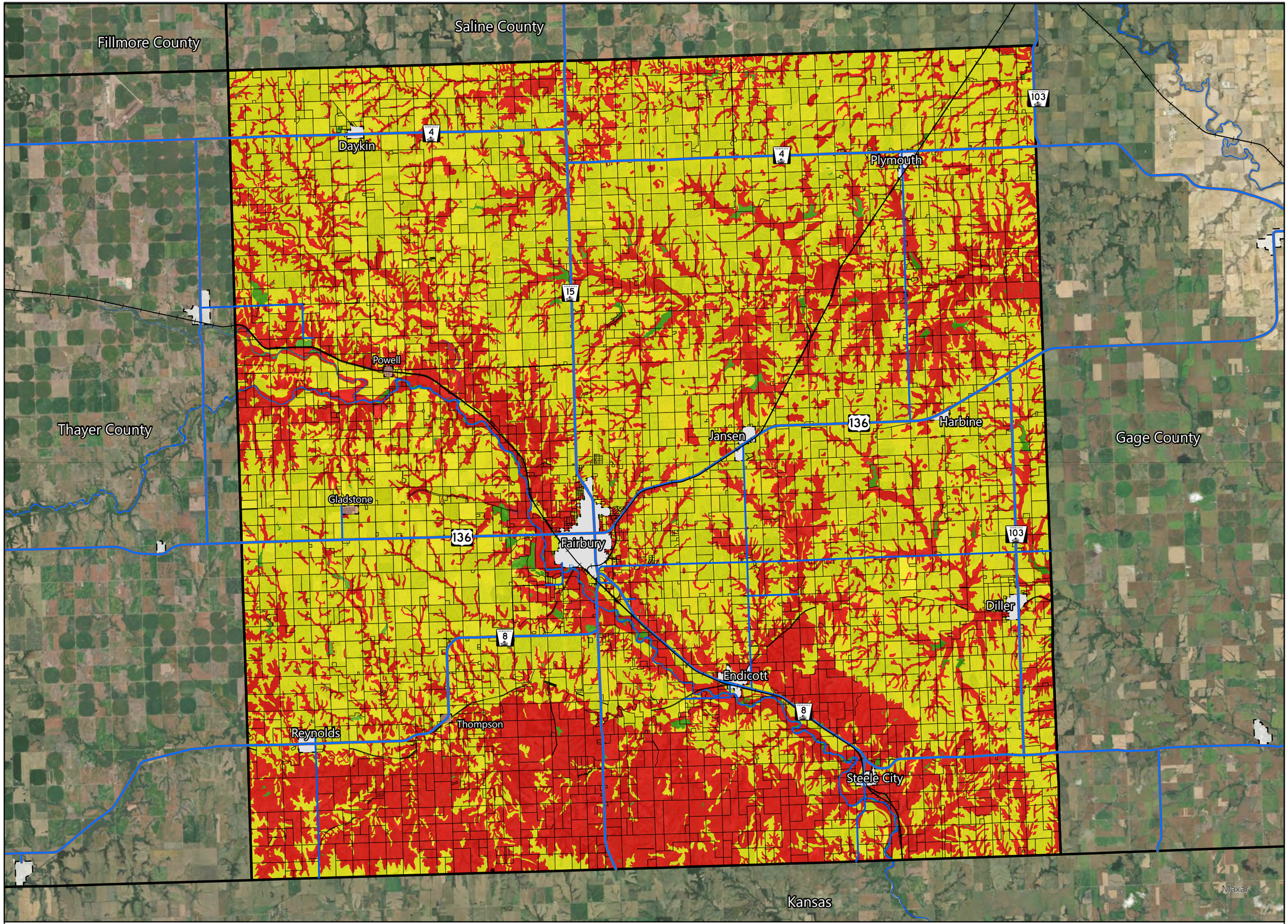
PROJECTION: NAD83 State Plane NE
DATUM: NAD 83
DATE: 3.24.26

0 0.75 1.5 3 Miles



Jefferson County, Nebraska
COMPREHENSIVE PLAN
Fig B4 SEWAGE LAGOONS
Source: USDA Natural Resources Conservation Service

Legend

- Railroads
- Highways
- Paved Roads
- County_Boundaries
- Rivers
- Jefferson County Municipalities
- Jefferson County Towns

Parcels

- Parcels

Sewage Lagoons

- Not rated
- Somewhat limited
- Very limited

N

MARVIN PLANNING CONSULTANTS
Specializing in Municipal, County and Neighborhood Planning

PROJECTION: NAD83 State Plane NE
DATUM: NAD 83
DATE: 3.24.26

0 0.75 1.5 3 Miles

Jefferson County, Nebraska
COMPREHENSIVE PLAN
Fig B5 SANITARY LANDFILLS
Source: USDA Natural Resources Conservation Service

Fillmore County
Saline County
Thayer County
Gage County
Kansas
Daykin
Plymouth
Powell
Jansen
Harbine
Gladstone
Fairbury
Diller
Endicott
Reynolds
Thompson
Steele City
4
15
103
136
8

Legend

- Railroads
- Highways
- Paved Roads
- County_Boundaries
- Rivers
- Jefferson County Municipalities
- Jefferson County Towns

Parcels

- Parcels

Sanitary Landfill

- Not rated
- Somewhat limited
- Very limited

N

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Specializing in Municipal, County and Neighborhood Planning

Earthstar Geographics

PROJECTION: NAD83 State Plane NE
DATUM: NAD 83
DATE: 3.24.26

0 0.75 1.5 3 Miles

Jefferson County, Nebraska
COMPREHENSIVE PLAN
Fig B6 SMALL COMMERCIAL. BUILDINGS
Source: USDA Natural Resources Conservation Service

Fillmore County
Saline County
Thayer County
Gage County
Kansas
Daykin
Plymouth
Powell
Jansen
Harbine
Gladstone
Fairbury
Diller
Endicott
Reynolds
Thompson
Steele City
Maxar

Legend

- Railroads
- Highways
- Paved Roads
- County_Boundaries
- Rivers
- Jefferson County Municipalities
- Jefferson County Towns

Parcels

- Parcels

Small Comm. Buildings

- Not rated
- Not limited
- Somewhat limited
- Very limited

N

MARVIN PLANNING CONSULTANTS
Specializing in Municipal, County and Neighborhood Planning

PROJECTION: NAD83 State Plane NE
DATUM: NAD 83
DATE: 3.24.26

0 0.75 1.5 3 Miles