TAYLOR/LOUP COUNTY, NEBRASKA

COMPREHENSIVE PLAN

2021-2031

SEPTEMBER, 2021

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

TAYLOR/LOUP COUNTY, NEBRASKA
COMPREHENSIVE PLAN
2021-2031.

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SECTION 1:

THE TAYLOR/LOUP COUNTY PLANNING PROCESS.

SEPTEMBER, 2021

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

SECTION 1

THE TAYLOR/LOUP COUNTY PLANNING PROCESS.

THE COMPREHENSIVE PLAN

This **Comprehensive Plan** was prepared as an update to the existing **Taylor/Loup County Plan**, completed in 2001. This updated **Plan** will serve as a guide to direct future growth and development opportunities in **Loup County, Nebraska,** including the **Village of Taylor** during the 10-year planning period, 2021 to 2031.

A focus of this **Comprehensive Plan** is to assess the effectiveness of balancing the preservation and protection of agricultural production lands for agricultural uses, with the appropriate locating of development for non-farm dwellings and rural subdivisions.

The implementation of this **Comprehensive Plan** should be guided by ***"Goals & Policies,"*** as determined by the evaluation and analysis of ***"Population, Income, & Economic Profile," "Land Use Profile & Plan," "Public Facilities & Transportation"*** and an ***"Energy Element."*** The intent of this **Comprehensive Plan** is also to serve as a foundation and guide for the implementation of **Zoning and Subdivision Regulations,** as needed, to achieve the specific **Goals** and **Policies** identified in the **Plan**.

This **Comprehensive Plan** is intended to provide policy guidance to enable the residents and elected officials of the County to make decisions based upon the consensus of opinion by the **Loup County Planning Commission.** Plan implementation methods should include incentives to stimulate private action consistent with the **Plan** and the use of Local, State and Federal programs for County-wide economic development activities.

The **Comprehensive Plan** was prepared under the direction of the **Loup County Planning Commission** and Planning Consultants, **Hanna:Keelan Associates, P.C.,** of Lincoln, Nebraska.

PLANNING PERIOD

The planning time period for achieving the goals, programs and economic development activities identified in this **Comprehensive Plan** for Loup County, Nebraska, is 10 years (2021-2031).

AUTHORITY TO PLAN

This **Comprehensive Plan** for Loup County is prepared under the Authority of Sections 23-114 to 23-174.10, Nebraska State Statutes 1943, as Amended.

AMENDMENT

The **Comprehensive Plan** may be amended or updated as the need arises as provided in the Nebraska State Statutes.

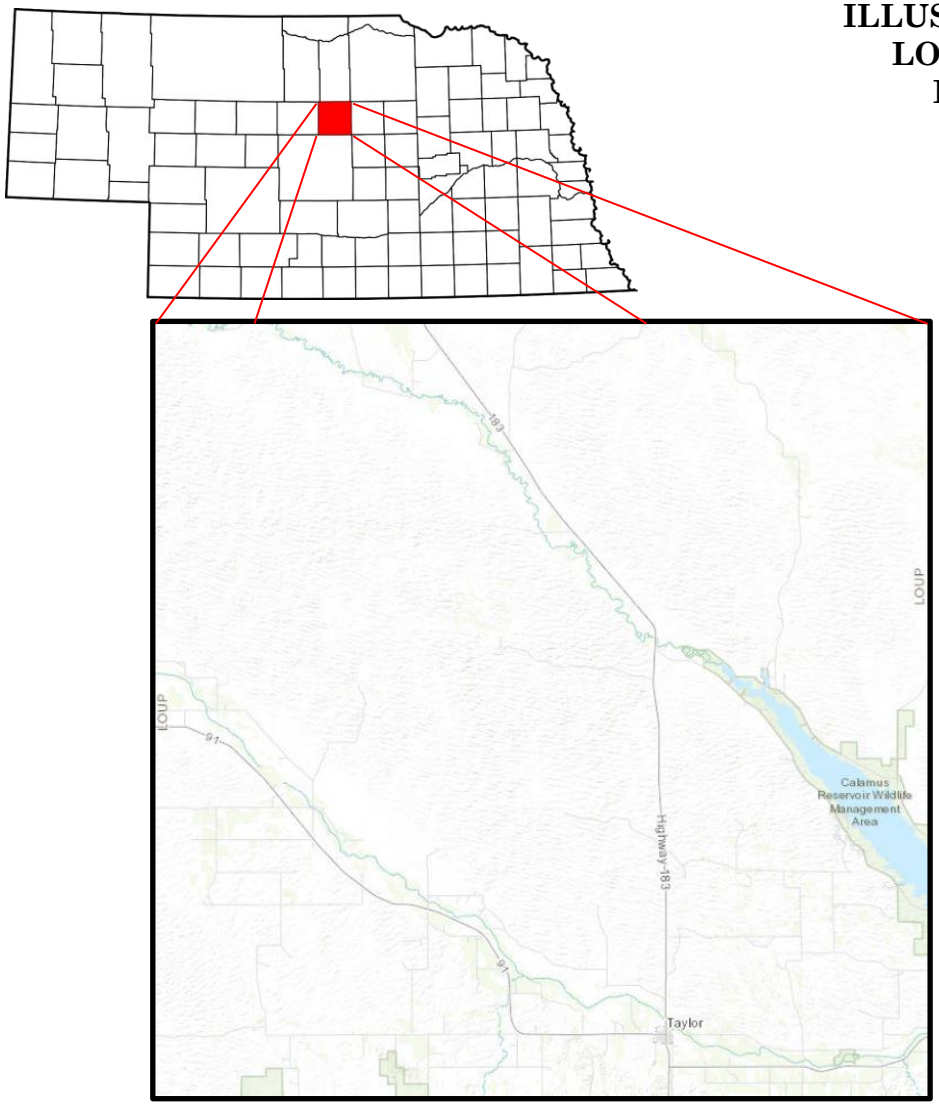


ILLUSTRATION 1.1
LOCATION MAP
LOUP COUNT

SECTION 2:

GOALS & POLICIES.

SEPTEMBER, 2021

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

SECTION 2

GOALS & POLICIES.

INTRODUCTION

The **Comprehensive Plan** plays a major role in the future growth and sustainability of **Taylor/Loup County**. Important components of this **Plan** are specific planning **Goals** and **Policies** that provide local leadership with the direction for the administration and overall implementation of the **Plan.** In essence, **Goals** and **Policies** are the most fundamental elements of the **Plan;** the premises upon which all other elements of the **Plan** must relate. The following **Goals** and **Policies** will be in effect for the period of the **Taylor/Loup County Comprehensive Plan, 2021 to 2031,** pending annual review.

Goals are broad statements, identifying the present state or condition of the planning area and what the area could or should evolve into during the planning period. Goals are established for the primary components of the **Comprehensive Plan,** including **land use, housing, economic development, public facilities and transportation and plan maintenance and implementation.** Goals are long term in nature and, in the case of those identified for this **Comprehensive Plan,** will be active throughout the **10-year planning period.**

Policies help to further define the specific actions to accomplish specific goals. Policies, or often referred to as objectives, are sub-parts of a Goal and are accomplished in a much shorter time space.

The following **Goals** and **Policies** are the result of both qualitative and quantitative research conducted in association with the **Comprehensive Plan.** The **qualitative research** has included input received from the **Loup County Planning Commission.**

GENERAL GOALS

The first step in developing **Goals** and **Policies** for this **Plan** is the creation of **general goals.** These **"General Goals"** were developed to "highlight" **important** elements of this comprehensive planning process, as determined via field analysis and the formation of "key" issues with the public.

1. Protect and preserve the agricultural industry, including the diversity of crops and livestock production. Historically, agriculture and ranching activities have been the primary income producing activity for Taylor/Loup County, and is anticipated to remain as such through the 10-year planning period.

2. Encourage proper rural housing development activities and job creation opportunities to stabilize the Taylor/Loup County population.

3. Promote the lifestyle and amenities of Taylor/Loup County to broaden the economic base and expand economic development and employment opportunities. This could include local efforts to promote tourism to the Village of Taylor and the Calamus Reservoir environs.

4. Promote citizen participation by persons of all ages and incomes to ensure the preservation improvement of the economic and social quality of life in Taylor/Loup county.

5. Collaborate and promote programs in conjunction with Nebraska Games and Parks and the Lower Loup NRD to promote the use of the Calamus River and Calamus Reservoir.

6. Enforce the **Comprehensive Plan** and appropriate planning and zoning administration procedures to ensure the proper implementation of the Taylor/Loup County Future Land Use Map and Zoning Regulations.

7. Maintain and strengthen relationships between the County and the Village of Taylor to produce planning and development practices supportive of proper land usage, economic growth, housing, public facilities and services, transportation and recreation.

8. Maintain a floodplain evaluation and administration process in Taylor/Loup County that fits with both proper development activities and flood mitigation efforts. This includes finalizing and implementing **minimum requirements of Nebraska Standards for floodplain management programs** in Taylor/Loup County.

LAND USE

Goal 1 – Provide opportunities for land development in an orderly, efficient and environmentally sound manner.

Policies:

1.1 Ensure that future non-agricultural development in rural Loup County is equipped with modern public utility services. These facilities are recommended to be located in close proximity to the Village of Taylor and along the Calamus Reservoir.

1.2 Direct future developments to locations which are relatively free of environmental constraints relating to: sensitive soils, slope, floodplains, drainage, ground water, endangered species or other natural resources.

1.3 Avoid development in regions of Loup County that could result in the contamination of soils and ground water resources.

1.4 Implement Zoning Regulations that allow for livestock/confinement facilities in appropriate areas of rural Loup County, when in conformance with the Loup County Zoning Regulations. Utilize the Zoning Regulations as a means to promote "backgrounding" as a viable a productive livestock management procedure in the County.

1.5 Utilize alternative energy systems to supplement individual residential and business electric consumption in accordance with Nebraska State Statute 70-12, as amended August, 2009, and identified in the **Energy Element, Section 6** of this **Comprehensive Plan.**

Goal 2 - Maintain land use development patterns and densities in Loup County that conform to uniform planning standards.

Polices:

2.1 Utilize the Future Land Use Map to make appropriate land use decisions in the County, which is based upon present needs and sound forecasts of future growth and development of the agricultural industry.

2.2 Preserve and protect existing and future State Special Use Areas, program hunting and trapping lands and, potentially, the Calamus River and Reservoir environs for the use of residents and visitors to the County.

2.3 Direct both irrigated and dryland crop production to areas that minimize the effect on the local groundwater system.

2.4 Enforce Zoning Regulations to provide incentives for maintenance and preservation of agricultural lands for agricultural uses throughout the rural County jurisdiction, while encouraging appropriate non-agricultural development activities, non-detrimental to the natural environment.

2.5 Promote biodiversity in Loup County with various plant, vegetation and land preservation measures that enhance the natural beauty of the Loup County environs.

2.6 Limit the development of new livestock confinement facilities and operations from areas with sensitive soils and other natural environmental conditions. Land along the Calamus and North Loup Rivers contain the highest concentration of sensitive soils conditions and designated flood plains, in addition to unique environmental settings.

<u>Goal 3</u> - Encourage compatible adjacent land uses through regulations suited to the unique characteristics and location of each use.

Policies:

3.1 Establish an annual review and modification process of established Zoning Districts and regulations to encourage both development and redevelopment activities.

3.2 Ensure the orderly development of residential uses that are environmentally sound, regarding topography and soils capacity

3.3 Encourage planned development of residential dwellings within and adjacent the Village of Taylor, the Calamus Reservoir Environs (where appropriately zoned) and in areas not suitable for agricultural production. Encourage planned rural subdivisions with modern infrastructure, within appropriately Zoned districts.

3.4 Ensure the appropriate location of industrial and commercial developments within and/or adjacent the Village of Taylor, or in areas allowing for compatible land uses and adequate access to transportation systems and utilities.

<u>Goal 4</u> - Work cooperatively with Federal, State and County Governments to develop compatible flood control measures.

Policies:

4.1 Continue to work cooperatively with State and Federal agencies to protect the natural environment Loup County from developments that result in contaminants or pollutants.

4.2 Require all developments in the County to be consistent with floodplain requirements.

4.3 Review and identify measures which limit or reduce flood hazards, control water runoff and enhance the quality of surface and ground water.

<u>Goal 5</u> - Achieve residential, commercial, and industrial land use developments that are suitable for existing soils capacity and topography.

Policies:

5.1 Support sound, planned rural subdivision development in Loup County, through appropriate, but cost efficient standards for subdivision design and construction.

5.2 Support efforts in the Village of Taylor to establish one or multiple "Redevelopment Areas" for the use of Tax Increment Financing (TIF) as a means of encouraging local development and reinvestment.

5.3 Identify land uses to promote and complement the existing State Recreation and Wildlife Management Areas.

HOUSING

<u>Goal 1</u> - Provide access to a variety of safe, decent and affordable housing types in Loup County.

Polices:

1.1 Improve on existing and develop new organizational relationships to create affordable housing in Loup County, including County government partnering with Central Nebraska Economic Development District and the Central Nebraska Community Action Partnership.

1.2 Promote affordable housing programs, including the home ownership and improvement loans from the Center for Rural Affairs (CRFA), in Taylor and rural Loup County, both for the rehabilitation and/or removal of unsafe housing, as well as new housing construction.

1.3 Promote and encourage the development of varied housing styles, prices, densities, quantities and locations, as to attract individuals and families to Loup County.

1.4 Advocate the development of residential retirement housing, as needed, within or adjacent the Village of Taylor. This housing should be designed and built for elderly of all income levels as independent, congregate and residential care living units.

1.5 Promote additional housing to retain young families, especially the local workforce.

<u>Goal 2</u> - Protect and preserve existing rental and owner occupied residential housing units in Loup County.

Policies:

2.1 Promote housing rehabilitation programs throughout Loup County to preserve and ensure that the existing housing stock meets current health and safety codes.

2.2 Identify and encourage the rehabilitation/preservation of the historically significant residences and structures in Loup County.

<u>Goal 3</u> - Encourage future residential developments in Loup County that are compatible and complements existing environmental features. Non-farm/ranch dwellings should be located adjacent or near hard surfaced highways.

Policies:

3.1 Identify and promote additional areas for residential development in appropriately zoned areas of Loup County. Areas adjacent or near the Village of Taylor where municipal services are available would be best, preventing conflicts with agricultural production areas of the County.

3.2 Discourage development of residential units in environmentally sensitive areas, including, but not limited to, Rural Conservation Districts along the Calamus and North Loup Rivers.

PUBLIC FACILITIES & TRANSPORTATION

Goal 1 – Plan and implement the most effective, safe and cost efficient public facilities and transportation systems throughout Loup County.

Policies:

1.1 Support local, public organizations in preparation of **Capital Improvement Programs** or **Plans,** consistent with the **Goals and Policies** of this **Comprehensive Plan.**

1.2 Recognize the need for and improve on intergovernmental and regional cooperation to reduce duplication of public health and safety efforts.

1.3 Maintain a **One-** and **Six-Year Road Plan** to assure a safe and efficient road system in Loup County.

Goal 2 - Provide a transportation system throughout Loup County for the safe and efficient movement of people, goods and services.

Policies:

2.1 Coordinate transportation planning and improvements with the planning and development of other elements of the County, including public utilities and facilities supportive of commercial and industrial development.

2.2 Maintain a road and associated bridge system in Loup County that is in accordance with the standard functional street classification system of the State of Nebraska.

<u>Goal 3</u> - Provide adequate, efficient and appropriate public utilities and services to both existing and future residential, commercial and industrial areas in Loup County.

Policies:

3.1 Provide facilities and services in Loup County necessary to prevent degradation of the environment, including sewage treatment, refuse collection and disposal, road maintenance and similar environmental control processes as necessary.

3.2 Support efforts in Loup County and the Village of Taylor to supply appropriate drinking water and sewage treatment systems to all residents. Ensure the rules and regulations governing safe drinking water and sewage treatment are met in Loup County. The Nebraska Departments of Environment & Energy and Health & Human Services assist in the regulation of these systems.

3.3 Maintain and improve existing public utilities and health & safety services in Loup County, based upon future needs.

<u>Goal 4</u> - Provide for the equitable distribution of public facilities to meet the cultural, educational, social, recreational and safety and health needs of Loup County.

Policies:

4.1 Provide sufficient resources to examine, maintain and develop appropriate recreational, cultural and leisure activities in Loup County, specifically in relation to the natural environs at the Calamus Reservoir/River and North Loup River.

4.2 Provide adequate public health, safety and crime prevention systems throughout Loup County.

4.3 Promote a social and cultural environment in the County that provides an opportunity for all residents to experience, develop and share their values, abilities, ambitions and heritage.

4.4 Support local educational delivery through Loup County Public Schools to promote and maintain the overall educational level in Loup County.

4.5 Develop and promote programs to educate the residents of Loup County and visitors regarding the rich heritage and history of the region. Utilize current and future public and cultural facilities such as the Taylor Library, Harrop Sandhills Park, Pavilion Hotel and areas associated with the North Loup and Calamus Rivers, as well as the Calamus Reservoir.

4.6 Ensure the rules and regulations of the Americans with Disabilities Act are met in all public facilities.

4.7 Encourage the availability of all necessary services to youth and older adults in Loup County.

PLAN MAINTENANCE & IMPLEMENTATION

Goal 1 - Maintain and utilize the Comprehensive Plan as the primary tool for Loup County decisions regarding the physical development of the Region.

Policies:

1.1 Establish an annual review process for the **Comprehensive Plan** and **Zoning Regulations**.

1.2 Coordinate development and land use changes with local, County and State officials.

1.3 Coordinate local groups and organizations to carry out the Goals and Policies of this **Comprehensive Plan.**

SECTION 3:

POPULATION, INCOME & ECONOMIC PROFILE.

SEPTEMBER, 2021

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

SECTION 3

POPULATION, INCOME & ECONOMIC PROFILE.

INTRODUCTION

Population, income and economic trends in Loup County serve as valuable indicators of future development needs and patterns for the County and provide a basis for the realistic projection of the future population. The quantity and location of social and economic features play an important role in shaping the details of various development plans to meet the County's needs.

The population trends and projections for the years 2000 through 2031 were studied and forecasted, utilizing a process of both trend analysis and U.S. Census population estimates. **Loup County is projected to remain stable in population over the next 10 years, increasing by an estimated 11 people.** The County should continue to promote the development of a variety of businesses and housing types as to attract individuals and families to the County during the 10-year planning period in Loup County.

GENERAL POPULATION TRENDS & PROJECTIONS

The analysis and projection of population are at the center of all planning decisions. This process assists in understanding important changes which have and will occur throughout the planning period.

Estimating population size is critical to a planning process. Further, projecting a County population is extremely complex. Because projections are based on various assumptions about the future, projections must be carefully analyzed and continually re-evaluated due to an area's economic and social structure.

❖ **Table 3.1** identifies **population trends and projections** for Loup County, the Village of Taylor and Balance of County, from 2000 through 2031. A decrease in population occurred for Loup County between the 2000 and 2020, declining 14.5 percent, or by 103 people.

The total populations of Loup County, Taylor and the Balance of County are an estimated 609, 141 and 468, respectively. The Village of Taylor is projected to decrease in population during the next 10 years, though the Balance of County population is estimated to increase by 20, likely due to new housing developments that are occurring in close proximity to the Calamus Reservoir environs.

Overall, the Loup County population is estimated to remain relatively stable. The 2031 population for Loup County is projected at an estimated 620, an increase of 11 persons from 2021.

Table 3.1
Population Trends & Projections
Taylor & Loup County, Nebraska
2000-2031

	2000	2010	2020	2021	2031	% Change 2021-2031
Loup County:	712	632	607	609	620	+1.8%
Taylor:	226	190	141	141	132	-6.4%
Balance of County:	486	442	466	468	488	+4.3%

Source: 2000, 2010 & 2020 Census.
Hanna:Keelan Associates, P.C., 2021.

AGE DISTRIBUTION

- For planning purposes, the various cohorts of population are important indicators of the special needs of a County. The cohorts of age, sex and family structure can assist in determining potential labor force and the need for housing, public facilities and other important local services. An analysis of age characteristics can be used to identify the potential needs for public school, recreational areas and short- and long-term health care facilities.

- **Table 3.2** identifies **age distribution trends and projections** for Loup County, from 2000 to 2031. Overall, the County is projected to experience a net increase in population during the next 10 years of approximately 11 persons. The "19 and Under" age group is projected to decrease by 18, whereas the "35-54" age group is projected to increase by 12 people. The slight increases in the 65+ age cohorts can be attributed to a retiring Baby Boomer population, as well as many of the County's aging seniors choosing to remain close to home for any services and amenities, rather than relocating to a larger community.

- Overall, the Balance of County population is projected increase by an estimated 29 persons from 2021 through 2031. **Ongoing residential development near the Calamus Reservoir is a contributing factor to the population increase in the Balance of County.**

- The population of Taylor is estimated to decrease by 18 persons by 2031, with the largest decreases occurring in the "18 and Under" and "65-74" age cohorts.

- The current median age in Loup County is an estimated 48.1 years, whereas the median age in Taylor and the Balance of County are approximately 49.4 and 48.3 years, respectively. The median age for Loup County is projected to increase to 49.2 years. The Balance of County median age is anticipated to increase to 49.2 years and the median age of Taylor is estimated to increase to 49.8 years.

Table 3.2
Population Age Distribution Trends & Projections
Taylor & Loup County, Nebraska
2000-2031

Loup County							**2021-2031**
age group	**2000**	**2010**	**Change**	**2020**	**2021**	**2031**	**Change**
19 and Under	206	148	**-58**	**105**	**102**	**84**	**-18**
20-34	76	71	**-5**	**87**	**90**	**95**	**+5**
35-54	204	174	**-30**	**159**	**160**	**172**	**+12**
55-64	88	102	**+14**	**104**	**105**	**110**	**+5**
65-74	75	81	**+6**	**93**	**91**	**94**	**+3**
75-84	54	40	**-14**	**47**	**49**	**51**	**+2**
85+	9	16	**+7**	**12**	**12**	**14**	**+2**
TOTALS	**712**	**632**	**-80**	**607**	**609**	**620**	**+11**
Median Age	42.8	48.5	**+5.7**	**48.0**	**48.1**	**49.2**	**+1.1**

Taylor							**2021-2031**
age group	**2000**	**2010**	**Change**	**2020**	**2021***	**2031***	**Change**
19 and Under	52	57	**+5**	**37**	**36**	**30**	**-6**
20-34	18	17	**-1**	**16**	**14**	**12**	**-2**
35-54	59	47	**-12**	**31**	**28**	**24**	**-4**
55-64	26	29	**+3**	**22**	**24**	**23**	**-1**
65-74	29	27	**-2**	**23**	**26**	**21**	**-5**
75-84	18	10	**-8**	**8**	**7**	**6**	**-1**
85+	5	3	**-2**	**4**	**4**	**5**	**+1**
TOTALS	**207**	**190**	**-17**	**141**	**139**	**121**	**-18**
Median Age	45.9	45.7	**-0.2**	**49.3**	**49.4**	**49.8**	**+0.4**

Balance of County							**2021-2031**
age group	**2000**	**2010**	**Change**	**2020**	**2021***	**2031***	**Change**
19 and Under	154	91	**-63**	**68**	**66**	**54**	**-12**
20-34	58	54	**-4**	**71**	**76**	**83**	**+7**
35-54	145	127	**-18**	**128**	**132**	**148**	**+16**
55-64	62	73	**+11**	**82**	**81**	**87**	**+6**
65-74	46	54	**+8**	**70**	**66**	**73**	**+7**
75-84	36	30	**-6**	**39**	**41**	**45**	**+4**
85+	4	13	**+9**	**8**	**8**	**9**	**+1**
TOTALS	**505**	**442**	**-63**	**466**	**470**	**499**	**+29**
Median Age	41.5	49.7	**8.2**	**48.6**	**48.3**	**49.2**	**+0.9**

Source: 2000, 2010 & 2020 Census.

Hanna:Keelan Associates, P.C., 2021.

HOUSEHOLD CHARACTERISTICS

- **Table 3.3** identifies **specific household characteristics** of Loup County, from 2000 to 2031. The total number of households is projected to increase by 12 throughout the County, decrease by six in Taylor and increase by 18 in the Balance of County.

- During the next 10 years, "persons per household" in Loup County is projected to decline slightly, from an estimated 2.17 to 2.12.

- **Currently, no Group Quarters are operating in Loup County.** Group Quarters consist of living quarters that are not considered a household, such as dormitories, nursing care centers and correctional facilities.

Table 3.3
Specific Household Characteristics Trends & Projections
Taylor & Loup County, Nebraska
2000-2031

	Year	Population	Group Quarters	Persons in Households	Households	Persons Per Household
	2000	712	0	712	289	2.46
Loup	2010	632	0	632	275	2.30
County:	**2020**	**607**	**0**	**607**	**278***	**2.18***
	2021	**609**	**0**	**609**	**280**	**2.17**
	2031	**620**	**0**	**620**	**292**	**2.12**
	2000	207	0	207	97	2.13
Taylor:	2010	190	0	190	82	2.35
	2020	**141**	**0**	**141**	**65***	**2.18***
	2021	**139**	**0**	**139**	**63**	**2.18**
	2031	**121**	**0**	**121**	**57**	**2.10**
	2000	505	0	505	192	2.63
Balance of	2010	442	0	**442**	**193**	2.29
County:	**2020**	**466**	**0**	**466**	**213***	**2.17***
	2021	**470**	**0**	**470**	**217**	**2.16**
	2031	**499**	**0**	**499**	**235**	**2.12**

*Estimate.

Source: 2000, 2010 & 2020 Census.
Hanna:Keelan Associates, P.C., 2021.

HOUSEHOLD TENURE

- **Table 3.4** identifies **tenure by household** for Loup County, from 2000 to 2031. The County is currently comprised of an estimated 280 households, consisting of 207 owner and 73 renter households. By 2031, owner households will account for an estimated 74.3 percent of the total households in Loup County, resulting in 217 owner households and 75 renter households.

  Between 2021 and 2031, the number of renter households in Loup County is projected to remain relatively stable, increasing by two households. The Balance of County, is projected to increase by 14 owner households and four renter households by 2031.

Table 3.4
Tenure By Household Trends & Projections
Taylor & Loup County, Nebraska
2000-2031

		Total	Owner		Renter	
	Year	Households	Number	Percent	Number	Percent
	2000	289	226	78.2%	63	21.8%
Loup	2010	275	202	73.5%	73	26.5%
County:	**2020***	**278**	**205**	**73.7%**	**73**	**26.3%**
	2021	**280**	**207**	**73.9%**	**73**	**26.5%**
	2031	**292**	**217**	**74.3%**	**75**	**25.7%**
	2000	101	88	87.1%	13	12.9%
Taylor:	2010	82	59	72.0%	23	28.0%
	2020*	**65**	**44**	**67.7%**	**21**	**32.3%**
	2021	**63**	**42**	**66.7%**	**21**	**31.5%**
	2031	**57**	**38**	**66.6%**	**19**	**33.4%**
	2000	192	143	74.5%	49	25.5%
Balance of	2010	193	143	74.1%	50	25.9%
County:	**2020***	**213**	**161**	**75.5%**	**52**	**24.5%**
	2021	**217**	**165**	**76.0%**	**52**	**24.0%**
	2031	**235**	**179**	**76.2%**	**56**	**23.8%**

*Estimate.

Source: 2000, 2010 & 2020 Census.
Hanna:Keelan Associates, P.C., 2021.

INCOME TRENDS & PROJECTIONS

AREA MEDIAN HOUSEHOLD INCOME

- **Table 3.5** identifies **median household income** for Loup County, Nebraska, from 2000 to 2031. The current median income in Loup County is an estimated $52,200. Median income in the County is projected to increase by an estimated 25.2 percent to $65,329, by 2031. By comparison, the Village of Taylor is projected to experience an income increase of 15.7 percent to $35,864.

  The Balance of County currently has the highest median income in the County. This trend is projected to continue through 2031 with the area median income increasing by an estimated 23.2 percent, from $62,100 to $76,515.

Table 3.5
Area Median (Household) Income Trends & Projections
Taylor & Loup County, Nebraska
2000-2031

	2000	2010	2019 Est.	2021	2031
Loup County:	**$26,250**	**$34,219**	**$51,000**	**$52,200**	**$65,329**
Taylor:	**$21,875**	**$31,429**	**$30,735**	**$31,000**	**$35,864**
Balance of County:	**$28,505**	**$35,597**	**$60,525**	**$62,100**	**$76,515**

Source: 2000 Census.
2010 & 2019 American Community Survey.
Hanna:Keelan Associates, P.C., 2021.

PER CAPITA INCOME

- **Table 3.6,** identifies **per capita income** for Loup County and the State of Nebraska, from 2014 to 2031. Per capita income is equal to the gross income of an area (State, County, City, Village) divided equally between the residents of the area.

- In **2021,** per capita income in Loup County is an estimated $53,940. By 2031, per capita income will increase in the County by an estimated 20.6 percent, to **$65,050.**

Table 3.6
Per Capita Income
Loup County, Nebraska / State of Nebraska
2014-2031

	Loup County		State of Nebraska	
Year	Per Capita Income	Percent Change	Per Capita Income	Percent Change
2014	$67,143	--	$48,937	--
2015	$74,307	+10.7%	$50,704	+3.6%
2016	$66,745	-10.2%	$49,593	-2.2%
2017	$52,917	-20.7%	$50,617	+2.1%
2018	$53,545	+1.2%	$52,893	+4.5%
2019	$52,977	-1.1%	$54,567	+3.2%
2021	$53,940	+1.8%	$56,342	+3.3%
2014-2021	**$67,143-$53,940**	**-19.7%**	**$48,937-$56,342**	**+15.1%**
2021-2031	**$53,940-$65,050**	**+20.6%**	**$56,342-$70,428**	**+25.0%**

Source: Bureau of Economic Analysis, 2021.
Hanna:Keelan Associates, P.C., 2021.

SOCIAL SECURITY INCOME

- **Table 3.7** identifies the number of **persons receiving Social Security Income and/or Supplemental Security Income** in Loup County. A total of 160 persons received Social Security Income in Loup County in 2019. Of this total, 81.3 percent, or 130 persons were aged 65 years or older.

Table 3.7
Persons Receiving Social Security Income
Loup County, Nebraska
2019

Social Security Income	**Number of Beneficiaries**
Retirement Benefits	
Retired Workers	125
Spouses	10
Children	5
Survivor Benefits	
Widow(er)s and Parents	5
Children	5
Disability Benefits	
Disabled Persons	10
Wives & Husbands	0
Children	0
TOTAL	**160**
Aged 65 & Older	
Men	65
Women	65
TOTAL	**130**
Supplemental Security Income - 2019	**Number of Beneficiaries**
Aged 65 or Older	N/A
Blind and Disabled	N/A
TOTAL	**N/A**

N/A = Not Available.
Source: Department of Health and Human Services, Social Security Administration, 2021.

EMPLOYMENT & ECONOMIC TRENDS

The most recent and comprehensive employment data available for Loup County was obtained from the Nebraska Department of Labor. A review and analysis of Loup County labor force statistics provides a general understanding of the economic activity occurring in and around the County.

EMPLOYMENT DATA

- **Table 3.8** identifies **employment data trends and projections** for Loup County, Nebraska, from 2010 through 2031. Current data estimates 120 employed persons in Loup County with an estimated unemployment rate of six percent. By 2031, employed persons in the County are projected to remain stable and increase, slightly, by five persons, to 125. The 2031 unemployment rate is projected to be approximately 5.5 percent, a 0.5 percent reduction from 2021.

Table 3.8
Employment Data Trends & Projections
Loup County, Nebraska
2010-2031

Year	Number of Employed Persons	Change	Percent Unemployed
2010	90	-	9.0%
2011	93	+3	8.7%
2012	112	+19	8.1%
2013	108	-4	7.4%
2014	112	+4	6.2%
2015	107	-5	5.3%
2016	120	+13	4.9%
2017	122	+2	4.4%
2018	121	-1	3.9%
2019	122	+1	3.7%
2020	**115**	**-7**	**8.1%**
2021	**120**	**+5**	**6.0%**
2031	**125**	**+10**	**5.5%**
2010-2031	**90-125**	**+35**	**9.0%-5.5%**

Source: Nebraska Department of Labor, 2021.
Hanna:Keelan Associates, P.C., 2021.

TRAVEL TIME TO WORK

- **Table 3.9** illustrates the **travel time to work** for residents of Loup County, in 2019. Approximately 40.7 percent of the employed residents of Loup County traveled less than 20 minutes to work or worked at home, whereas 12.7 percent travel 45 minutes or more.

Table 3.9
Travel Time to Work
Taylor & Loup County, Nebraska
2019 Estimate

	9 Minutes or Less	10-19 Minutes	20-29 Minutes	30-44 Minutes	45 Minutes or More
Loup County:	**26.0%**	**14.7%**	**28.0%**	**18.6%**	**12.7%**
Taylor:	14.3%	26.0%	33.8%	14.3%	11.7%
Balance of County:	31.6%	9.1%	25.8%	20.6%	12.9%

Source: 2019 American Community Survey.

❖ **Table 3.10** identifies **workforce employment by type,** in Loup County, Nebraska, for 2021. The State and Local Government sector is the largest non-farm employment sector, with 70 employed persons in this category. "Educational Services" was the second largest employment sector with 18 employed persons in June of 2021.

Table 3.10
Workforce Employment by Type
Loup County, Nebraska
2021

Workforce	
Non-Farm Employment	**144**
Forestry, Fishing & Hunting.	*
Mining, Quarrying and Oil/Gas Extraction.	0
Utilities.	0
Construction.	*
Manufacturing.	0
Wholesale Trade.	0
Retail Trade.	*
Transportation & Warehousing.	*
Information.	0
Finance & Insurance.	*
Real Estate & Rental/Leasing.	0
Professional, Scientific & Technical Services.	0
Management of Companies & Enterprises.	0
Administrative/Support/Waste.	0
Educational Services.	18
Health Care & Social Assistance.	*
Arts, Entertainment & Recreation.	0
Accommodation & Food Service.	*
Other Services (except Public Administration).	*
Federal Government and Military.	1
State and Local Government.	70

*Data not available because of disclosure suppression.
Source: Nebraska Department of Labor, Labor Market Information, 2021.

HOUSING STOCK CONDITIONS, VALUE & GROSS RENT

HOUSING STOCK CONDITIONS

- **Tables 3.11** and **3.12** identify a **Housing Stock Profile** for Loup County, including "units in structure" and "substandard housing" as defined by the U.S. Department of Housing and Urban Development. A substandard unit is one that is lacking complete plumbing, plus the number of households with more than 1.01 persons per room, including bedrooms, within a housing unit.

- Between 2000 and 2019, both Loup County (overall) and the Balance of County increased in the total number of housing units. The Village of Taylor increased an estimated three housing units, while the Balance of County increased an estimated 67 housing units. The majority of housing units in the County are comprised of a single unit.

- Of the 294 occupied housing units in Loup County, none were identified as lacking complete plumbing and no units were considered to be overcrowded.

Table 3.11
Housing Stock Profile/Units in Structure
Taylor & Loup County, Nebraska
2000, 2010 & 2019 Estimate

		Number of Units				
		1 unit	2-9 units	10+ units	Other**	Total
Loup County:	2000	317	2	0	58	377
	2010	345	0	0	46	391
	2019	362	0	0	85	447
Taylor:	2000	99	2	0	12	113
	2010	89	0	0	15	107
	2019	94	0	0	22	116
Balance of County:	2000	218	0	0	46	264
	2010	256	0	0	31	287
	2019	268	0	0	63	331

**Other includes mobile homes, vans, RVs, boats, etc.
Source: 2000 Census.
2010 & 2019 American Community Survey.

Table 3.12
Housing Stock Profile - Substandard Housing – HUD
Taylor & Loup County, Nebraska
2019 Estimate

		Complete Plumbing		Lack of Complete Plumbing		Units with 1.01+ Persons per Room	
	Total	Number	% of Total	Number	% of Total	Number	% of Total
Loup County:	**294**	294	100%	0	0%	0	0%
Taylor:	**94**	94	100%	0	0%	0	0%
Balance of County:	**200**	200	100%	0	0%	0	0%

Source: 2019 American Community Survey.

HOUSING VALUE & GROSS RENT

- The cost of housing in any Community is influenced by many factors, primarily the cost of construction, availability of land and infrastructure and, lastly, the organizational capacity of the Community or County to combine these issues into an applicable format and secure the appropriate housing resources, including land and money. Loup County is challenged to organize necessary resources to meet the needs of their residents, including both financial and organizational resources.

- **Table 3.13** identifies **owner occupied housing values** in Loup County, from 2000 through 2031. Currently, the estimated the Loup County median owner housing value at $119,200. By 2031, the estimated median housing value is projected to increase an estimated 35.2 percent to $161,214**.** The Balance of County is also projected to experience a substantial increase in housing values, increasing an estimated 39.5 percent through 2031, or from $149,750 to $208,943. The significant increase in both total and Balance of County are attributed to new housing developments in close proximity to the Calamus Reservoir. Housing units in this location have an estimated valuation in the $150,000 to $350,000 range.

- **Table 3.14** identifies **gross rent** in Loup County, from 2000 through 2031. The 2021 estimated median gross rent for Loup County is $570. The median gross rent is projected to increase an estimated 28.5 percent to $685 by 2031. Gross rents in the Village of Taylor and the Balance of County are projected to increase through 2031 to $608 and $703, respectively**.**

Table 3.13
Owner Occupied Housing Value Trends & Projections
Taylor & Loup County, Nebraska
2000-2031

		Less than $50,000	$50,000 to $99,999	$100,000 to $149,999	$150,000 to $199,999	$200,000 or More	Total
	2000	117	45	13	11	38	**224**
	2000 Med. Val.	**$27,500**					
	2010	79	59	18	21	29	**206**
	2010 Med. Val.	**$58,900**					
Loup County:	2019 Est.*	58	43	23	15	86	**225**
	2019 Med. Val.	**$112,500**					
	2021	31	37	23	20	96	**207**
	2021 Med. Val.	**$119,200**					
	2031	18	30	30	29	110	**217**
	2031 Med. Val.	**$161,214**					
	2000	84	4	0	0	0	**88**
	2000 Med. Val.	**$18,500**					
	2010	48	17	0	8	0	**73**
Taylor:	**2010 Med. Val.**	**$31,900**					
	2019 Est.*	49	11	6	2	4	**72**
	2019 Med. Val.	**$44,800**					
	2021	22	8	6	2	4	**42**
	2021 Med. Val.	**$48,700**					
	2031	15	7	6	5	5	**38**
	2031 Med. Val.	**$61,245**					
	2000	33	41	13	11	38	**136**
	2000 Med. Val.	**$32,984**					
	2010	31	42	18	13	29	**133**
Balance of	**2010 Med. Val.**	**$73,720**					
County:	2019 Est.*	9	32	17	13	82	**153**
	2019 Med. Val.	**$144,359**					
	2021	9	29	17	18	92	**165**
	2021 Med. Val.	**$149,750**					
	2031	3	23	24	24	105	**179**
	2031 Med. Val.	**$208,943**					

*Specified Data.
Source: 2000 Census.
2010 & 2019 American Community Survey.
Hanna:Keelan Associates, P.C., 2021.

Table 3.14
Gross Rent Trends & Projections
Taylor & Loup County, Nebraska
2000-2031

		No Rent Paid	Less than $500	$500 to $999	$1000 or More	Total
	2000	18	23	0	0	**41**
	2000 Median Rent	**$278**				
Loup	2010	19	7	10	0	**36**
County:	**2010 Median Rent**	**$525**				
	2019 Est.*	57	4	8	0	**69**
	2019 Median Rent	**$537**				
	2021	40	4	26	3	**73**
	2021 Median Rent	**$570**				
	2031	33	0	36	6	**75**
	2031 Median Rent	**$685**				
	2000	2	11	0	0	**13**
	2000 Median Rent	**$271**				
	2010	1	3	3	0	**7**
Taylor:	**2010 Median Rent**	**$475**				
	2019 Est.*	19	0	2	0	**21**
	2019 Median Rent	**$510**				
	2021	17	0	4	0	**21**
	2021 Median Rent	**$518**				
	2031	10	0	9	0	**19**
	2031 Median Rent	**$608**				
	2000	16	12	0	0	**28**
	2000 Median Rent	**$281**				
	2010	18	4	7	0	**29**
	2010 Median Rent	**$537**				
Balance of	2019 Est.*	38	4	6	0	**48**
County:	**2019 Median Rent**	**X**				
	2021	23	4	22	3	**52**
	2021 Median Rent	**$598**				
	2031	23	0	27	6	**56**
	2031 Median Rent	**$703**				

*Specified Data.

X - Data not available because of disclosure suppression.

Source: 2000 Census.
2010 & 2019 American Community Survey.
Hanna:Keelan Associates, P.C., 2021.

SECTION 4:
LAND USE PROFILE & PLAN.

SEPTEMBER, 2021

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

SECTION 4

LAND USE PROFILE & PLAN.

INTRODUCTION

The following **Land Use Profile & Plan** for the **Taylor/Loup County Comprehensive Plan** focuses on the analysis of existing and future land uses throughout Loup County, including the Village of Taylor and Calamus Reservoir Environs. Detailed components include the natural environment, highlighting soils, watersheds, wetlands and ground water.

THE NATURAL ENVIRONMENT

Proper land use practices can protect Loup County's natural resources and complement the built environment. The natural environment provides opportunities and constraints for existing and future developments. As humans strive to create a sustainable living environment, they must work and live in harmony with their natural surroundings. This can occur by designing with nature, conserving unique features, protecting watersheds and using sensitive development practices. An objective of the **Comprehensive Plan** is to protect agricultural lands and, where appropriate, provide for the potential development of commercial/industrial buildings, and for new dwellings and subdivisions. The challenge is to balance agricultural preservation with rural residential development in appropriate areas of the County.

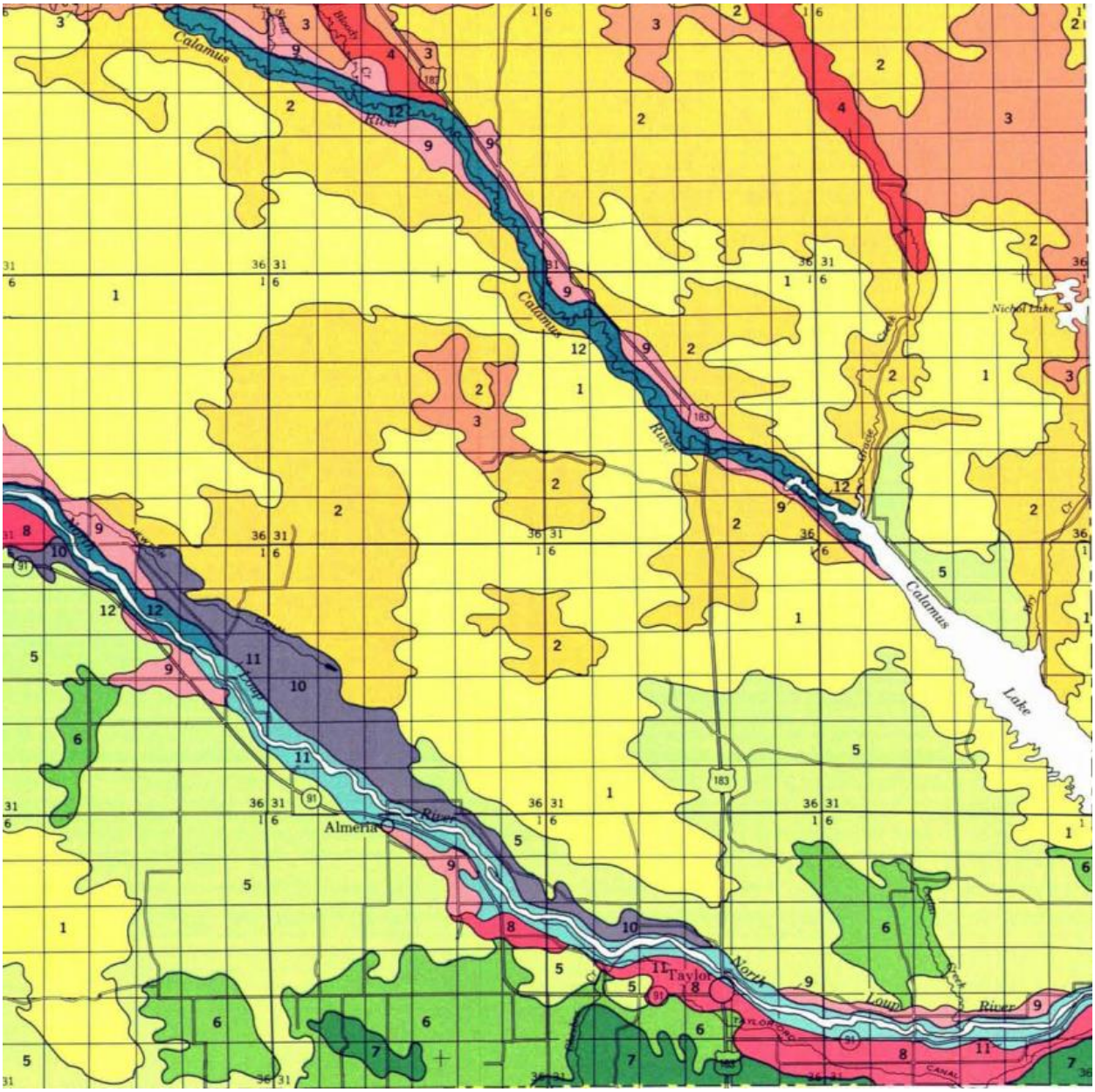
Loup County contains an estimated total land area of 365,440 acres, or 571 square miles. Major waterways include the Calamus and North Loup Rivers, which generally flow from northwest to southeast. These rivers and associated tributaries are responsible for sculpting the terrain Loup County, creating valleys within the extensive rolling Sandhills that encompass most of Loup County. The entirety of Loup County is located within the Sandhills topographic region. Soils are primarily used for pasture and range land. Crop production is very limited within the Sandhills topographic region.

SOILS

The Soil Conservation Services has identified 12 "Soil Associations" in Loup County. These include the Valentine, Valentine-Ipage, Valentine-Tryon-Ipage, Els-Tryon-Ipage, Valentine-Hersh-Gates, Hersh-Gates-Valentine, Coly-Uly Hobbs, Cozad-Ord, Ipage-Valentine-Elsmere, Valentine-Simeon-Boelus, Ord-Bolent-Almeria and the Almeria-Calamus-Bolent Associations. **Illustration 4.1** identifies the location of the 12 Soil Associations that are found in Loup County. The following narrative describe the general characteristics of the 12 Associations.

GENERAL SOILS MAP

LOUP COUNTY, NEBRASKA



1 VALENTINE ASSOCIATION	7 COLY-ULY-HOBBS ASSOCIATION
2 VALENTINE-IPAGE ASSOCIATION	8 COZAD-HORD ASSOCIATION
3 VALENTINE-TRYON-IPAGE ASSOCIATION	9 IPAGE-VALENTINE-ELSMERE ASSOCIATION
4 ELS-TRYON-IPAGE ASSOCIATION	10 VALENTINE-SIMEON-BOELUS ASSOCIATION
5 VALENTINE-HERSH-GATES ASSOCIATION	11 ORD-BOLENT-ALMERIA ASSOCIATION
6 HERSH-GATES-VALENTINE ASSOCIATION	12 ALMERIA-CALAMUS-BOLENT ASSOCIATION

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

ILLUSTRATION 4.1

- **VALENTINE ASSOCIATION.**

  Deep, rolling and hilly, excessively drained, sandy soils; on uplands.

  The Valentine Association is located in the northwest and central portions of Loup County. This Association is comprised of soils on dunes in the sandhills, which rise 100 feet or more above the valleys. The dunes are formed in sandy eolian material, with slopes ranging from nine to 60 percent. The Association makes up about 33 percent of Loup County. The Association supports tall and medium length native prairie grasses for grazing, with less sloped areas used for hay production. The soils in this Association are not suited for crop cultivation, as they are too sandy and steep. Soil blowing is a major problem for Valentine soils, as blowouts can form if the protective grass cover is destroyed. Range management practices including deferring grazing and rotating is necessary to preserve Valentine Association soils and reduce the blowouts and erosion.

- **VALENTINE-IPAGE ASSOCIATION.**

  Deep, nearly level to hilly, excessively drained and moderately well drained, sandy soils; on uplands and in sandhill valleys.

  The northern and central portions of Loup County are comprised of the Valentine-Ipage Association. The Association consists of rolling and hilly soils on the sandhills and less sloping soils in the swales and valleys. The Association makes up about 23 percent of the county, and is about 87 percent Valentine soils, eight percent Ipage soils, and five percent minor soils. Ipage soils are formed of sandy eolian material or sandy alluvium which has been altered by the wind, with slopes ranging from 0 to 60 percent, and are moderately well drained. Nearly all of the Association supports tall and medium length native prairie grasses used for grazing, but it is generally unsuited for cultivated crops due to the sandy texture of soil types. Some of the Valentine-Ipage Association is suitable for hay production. As with the Valentine Association, soil blowouts are also a major risk for this Association, and carefully planned range management and grazing systems will help reduce the risk of blowouts.

- **VALENTINE-TRYON-IPAGE ASSOCIATION.**

  Deep, nearly level to hilly, excessively drained, poorly drained, very poorly drained, and moderately well drained, sandy soils; on uplands and sandhill valleys.

  Most of the Association is located in the northeast section of Loup County. The Association is comprised of rolling and hilly soils on sandhills and flatter soils in wet valleys. The soils are formed in sandy eolian material or sandy alluvium, with slopes ranging from 0 to 60 percent. The Association makes up 5.5 percent of Loup County, and is 53 percent Valentine soils, 19 percent Tryon soils, 14 percent Ipage soils, and 14 minor soils. Tryon soils are nearly level, sandy, located in sandhill valleys, and are poorly drained. The water table ranges from six inches above to one and a half feet below the surface of Tryon soil areas. Nearly all of the Association supports native prairie grasses, and can be used as range or hayland. With the steep slopes the Valentine soils and the poor drainage of the Tryon soils, the Association is generally not suited for crop cultivation. Tryon soils can be useful for water sources but are susceptible for flooding issues during wet seasons. Soil blowing is also an issue for this Association, especially for sloping areas. Carefully planned range management and grazing systems will help reduce the risk of blowouts.

- **ELS-TRYON-IPAGE ASSOCIATION.**

  Deep, nearly level and very gently sloping, moderately well drained to very poorly drained, sandy soils; in sandhill valleys.

  The Association is primarily located in the furthest north sections of Loup County, along Bloody Creek and Gracie Creek. The Association includes soils in broad, wet valleys which surround small streams in the sandhills. The soils are formed in sandy eolian material or in sandy alluvium that has been altered by the wind, with slopes ranging from 0 to three percent. The Association makes up 1.5 percent of Loup County, and is approximately 41 percent Els soils, 39 percent Tryon soils, 13 percent Ipage soils, and seven percent minor soils. Els soils are nearly level, somewhat poorly drained, and lie above Tryon soils and below Ipage soils. The water table ranges from eighteen inches below to 3 feet below the surface of Els soil areas. Nearly all of the Association supports native prairie grasses, and can be used as range or hayland. Irrigated lands are also used for alfalfa or pasture areas. Soil blowing is also an issue for this Association, especially for sloping Ipage areas. In the limited areas where cultivation is practical, maintaining crop residue and applying a system of conservation tillage can help control soil blowing and conserve moisture. Carefully planned range management and grazing systems will help reduce the risk of blowouts.

- **VALENTINE-HERSH-GATES ASSOCIATION.**

  Deep, nearly level to rolling, excessively drained and well drained, sandy, loamy, and silty soils; on uplands.

  The Association is primarily located in the southern half of Loup County. The Association consists of gently sloping to rolling, sandy soils on dunes in the sandhills, to level silty and loamy soils in upland swales. Slopes range from 0 to 24 percent. The Association makes up about 19 percent of Loup County, and is about 87 percent Valentine soils, seven percent Hersh soils, five percent Gates soils, and one percent minor soils. Hersh and Gates soils are both level or gently sloping and are in swales and are well drained. Hersh soils consist of loamy or sandy eolian soils and Gates soils are loess and reworked loam. Nearly all of the Association supports tall and medium length native prairie grasses used for grazing, but also can support cultivation. Alfalfa and corn are the main cultivated crops in the Association. Though this Association supports cultivation, blowouts are still a major risk for farms in the Association. Maintaining crop residue and applying a system of conservation tillage can help control soil blowing and conserve moisture. Carefully planned range management and grazing systems also help reduce the risk of blowouts.

- **HERSH-GATES-VALENTINE ASSOCIATION.**

  Deep, nearly level to very steep, excessively drained to well drained, loamy, silty, and sandy soils; on uplands.

  The Association is primarily located in the southern portions of Loup County. The Association consists primarily of soils on uplands, side slopes, and along drainageways, with some hummocky hills and slopes ranging from 0 to 60 percent. The Association comprises about six percent of Loup County, and is about 30 percent Gates soils, 24 percent Valentine soils and eight percent minor soils. Compared to the Valentine-Hersh Gates Association, there is a greater proportion of Hersh and Gates soils. Soils in this Association are well drained to excessively well drained, and approximately half of this Association is farmed and the other half is primarily used for grazing or hayland. Corn, alfalfa, and sorghum, and alfalfa are grown in the Association, both for feeding livestock and for sale. Though this Association supports cultivation, blowouts are still a major risk for farms in the Association. Maintaining crop residue and applying a system of conservation tillage can help control soil blowing and conserve moisture. Carefully planned range management and grazing systems also help reduce the risk of blowouts.

- **COLY-ULY-HOBBS ASSOCIATION.**

  Deep, very gently sloping to very steep, excessively drained and well drained, silty soils; on uplands and bottom land.

  This Association is located along the southernmost boundary of Loup County and consists of soils on deeply dissected uplands and narrow bottom land, including narrow ridgetops, irregular side slopes, and drainageways. Slopes in this Association range from two to 60 percent. The Association comprises 1.5 percent of Loup County and is 53 percent Coly soils, 19 percent Uly soils, 17 percent Hobbs soils, and 11 percent minor soils. Coly and Uly soils are steep, on side slopes, canyon sides and ridgetops. Coly and Uly soils are well drained to excessively well drained and are formed in loess, but Uly soils have a much deeper surface layer. Hobbs soils are very gently sloping and are on bottom land along narrow drainageways and are well drained. They consist of alluvium and are occasionally flooded. The Association supports tall and medium length native prairie grasses used for grazing, as well as some trees, shrubs, and forbs. Most of the Association is not suited to cultivation because of steep slopes, but gentler slopes and some bottom lands are used for crops. Alfalfa is the primary cultivated crop. Water erosion along slopes and flooding is a hazard on bottom land. Carefully planned range management and grazing systems can improve the distribution of livestock and achieve a more uniform grazing pattern.

- **COZAD-HORD ASSOCIATION.**

  Deep, nearly level and very gently sloping, well drained, silty soils; on stream terraces.

  The Association is located primarily in the southeast corner of Loup County, on the south side of the North Loup River. The Association consists of soils on flat terraces adjacent to streams and are formed of loess and alluvium, with slopes up to three percent. The Association comprises approximately two percent of Loup County and includes 38 percent Cozad soils, 37 percent Hord soils, and 25 percent minor soils. Both Cozad and Hord soils are essentially level and are well drained, but Cozad soils consist of alluvium whereas Hord soils include a mixture of loess and alluvium and have a deeper surface layer. The majority of the Association is used for irrigated crops, dryland farming, and grazing or hay production. Corn, alfalfa, and sorghum are the primary crops. The efficient use of irrigation water and conserving soil moisture is a challenge for land management, as limited rainfall is an issue throughout Loup County. Conservation tillage and carefully planned range management are essential to retaining good soil health throughout the Association.

- **IPAGE-VALENTINE-ELSMERE ASSOCIATION.**

Deep, nearly level to strongly sloping, excessively drained, moderately well drained and somewhat poorly drained, sandy soils; on stream terraces and uplands.

The Association consists of soils formed in alluvium and sandy eolian material on stream terraces and uplands along the North Loup and Calamus Rivers, with slopes ranging up to nine percent. The Association includes 3.3 percent of Loup County and is 61 percent Ipage soils, 12 percent Valentine soils, 10 percent Elsmere soils and 17 percent minor soils. Elsmere soils are nearly level and somewhat poorly drained, located lower than Ipage soils and formed of sandy alluvial material on stream terraces. The water table ranges between 1.5 to 3 feet beneath the surface. Nearly all of the Association supports tall and medium length native prairie grasses used for grazing, but also can support cultivation. Alfalfa and corn are the main cultivated crops in the Association. Though this Association supports cultivation, soil blowouts are still a major risk for farms in the Association. Careful conservation of irrigation water and conservation tillage systems are essential for maintaining soil moisture and improving soil fertility. Range management including planned grazing system is also essential for maintaining range condition.

- **VALENTINE-SIMEON-BOELUS ASSOCIATION.**

Deep, nearly level to strongly sloping, excessively drained and well drained, sandy soils; on uplands and stream terraces.

The Association is located primarily on the north side of the North Loup River and includes soils on uplands and broad stream terraces comprised of sandy eolian material and alluvium. Slopes in the Association range up to nine percent. The Association makes up approximately 2.5 percent of Loup County, and is about 40 percent Valentine soils, 32 percent Simeon Soils, 15 Boelus soils, and 13 percent minor soils. Simeon soils are excessively well drained and are formed of sandy alluvium. Boelus soils are located between Valentine and Simeon soils and are formed in sandy eolian material over loamy alluvium. Most of the Association supports native prairie grasses and can be used as range or hayland. Though this Association supports cultivation, soil blowouts are still a major risk for farms in the Association. Some irrigated crops are grown in the Association, including alfalfa and corn. Soil blowing Careful conservation of irrigation water and conservation tillage systems are essential for maintaining soil moisture and improving soil fertility. Range management including planned grazing system is also essential for maintaining range condition.

- **ORD-BOLENT-ALMERIA ASSOCIATION.**

Deep, nearly level, somewhat poorly drained to very poorly drained, loamy and sandy soils; on bottom land.

The Association consists of soils formed in alluvium on bottom land along the North Loup River, with slopes ranging up to two percent. The Association makes up approximately 1.6 percent of Loup County and is 32 percent Ord soils, 17 percent Bolent soils, 15 percent Almeria soils and 36 percent minor soils. Ord and Bolent soils are somewhat poorly drained and Almeria soils are very poorly drained. Almeria soils are frequently flooded, Bolent soils are occasionally flooded and Ord soils are subject to rare flooding. Almeria and Bolent soils include loamy fine sand, while Ord soils have a surface layer of fine sandy loam. Most of the Association supports native prairie grasses and can be used as range or hayland, while some areas with dense stands of trees and shrubs are suited for wildlife habitat. Higher areas on bottom land are used for crops, including corn and alfalfa. The high water table and flooding are the main concerns in the Association, and wetness of soils in the Area can delay planting and harvesting. Range management including planned grazing system is also essential for maintaining soil condition.

- **ALMERIA-CALAMUS-BOLENT ASSOCIATION.**

Deep, nearly level, moderately well drained to very poorly drained, sandy soils; on bottom land.

The Association consists of soils on bottom land along the North Loup and Calamus Rivers, which are formed in sandy alluvium and have slopes up to two percent. The Association makes up approximately 1.1. percent of Loup County, and is 37 percent Almeria soils, 31 percent Calamus soils, 13 percent Bolent Soils and 19 percent minor soils. Calamus soils are moderately well drained and are subject to rare flooding, with a water table ranging from three feet to six feet. Most of the Association supports native prairie grasses and can be used as range or hayland, while some areas with dense stands of trees and shrubs are suited for wildlife habitat. Higher areas on bottom land are used for crops, including corn and alfalfa. The high water table and flooding are the main concerns in the Association, and wetness of soils in the Area can delay planting and harvesting. The surface of Calamus soils need to be protected to prevent soil blowing. Range management including planned grazing system is also essential for maintaining soil condition.

CLIMATE

The climate of Loup County is continental and characterized by widely ranging seasonal temperatures and rapidly changing weather patterns. The temperature ranges from an average daily minimum of 12 degrees in December and January to an average daily maximum in July of 85 degrees. The annual total precipitation is 21.62 inches and approximately 80 percent of rainfall occurs between the months of April and September. Thunderstorms are common and tornados occur occasionally. The average relative midafternoon humidity is about 55 percent and is 80 percent in the evening.

WATERSHEDS AND TOPOGRAPHY

Loup County is located within the Loup watershed and drainage follows the North Loup and Calamus Rivers, running southeast. Minor tributaries of the Calamus include Skull Creek, Bloody Creek, Gracie Creek, and Dry Creek. The Chesbra Creek and Cedar Creek flow into the North Loup River. A majority of the county is within the Nebraska Sandhills whereas the southern edge of the county is located within the Central Nebraska Loess Hills. The Sandhills topography includes rolling dunes, with crests reaching from 10 to 100 feet tall among broad, flat or gently sloping valleys. The Central Nebraska Loess Hills are dissected by creeks flowing into the North Loup River, and hilltops reach from 50 to 125 feet above the valley floor. Wetlands and shallow lakes are located in some of the valleys, especially in areas with a high water table. Moving north from the loess hills, a transition area exists moving into the Sandhills, which includes features of both landscapes with some mixed silty/sandy hills and ridges.

GROUNDWATER

The bedrock in Loup County is part of the Ogallala Formation of the Miocene Era. Quaternary-age deposits mantle the bedrock throughout the county. Wells in the Quaternary deposits and the Ogallala Formation provide water for homes, lifestock, and irrigation. The ground water is of good quality and is in adequate supply. Drainage from feedlots, septic tanks, and lagoons can contaminate ground water, especially with shallow wells. Surface drainage and streams account for a small percentage of the Loup County water resources. The majority of the water is in the Ogallala Aquifer. The surface water in drainage ways and depressions seeps into the aquifer to recharge it, thus the surface and ground water are part of one interactive system which cannot be separated.

EXISTING LAND USE ANALYSIS

The **Existing Land Use Maps**, **Illustrations 4.2** through **4.4, Page 4.11** through **4.13,** serve as the basis for establishing the **Land Use Plan**. The **Existing Land Use Map** highlights the impact of concentrations of rural dwellings, commercial businesses and agricultural areas throughout the County, as well as the Village of Taylor and the Calamus Reservoir environs. The impact of residential development on the production of crops and the raising of livestock can be evaluated for Loup County by the Nebraska Agricultural Census.

EXISTING LAND USES

Harvested crop and livestock production are the most prolific rural land use in Loup County, which is generally practiced throughout all areas of the County. The majority of agricultural land is used for grazing. The Calamus Reservoir, located in along the eastern edge of Loup County, includes a 5,123-acre lake and the surrounding 4,958 acres of land. The reservoir was constructed for irrigation and flood prevention purposes. Approximately 1.2 miles of the Calamus River and 3.5 miles of other streams are also located within the County.

- **RURAL RESIDENTIAL DEVELOPMENT.**

  The **Existing Land Use Map, Illustration 4.2, Page 4.11,** indicates rural dwellings exist throughout Loup County in areas where soil conditions are permissible for development. Most rural residential dwellings, including ranch homes/properties are located along the Highway 91 and 183 Corridors. Residential dwellings not located along major highways are serviced by access roads connecting one home or ranch to another, due to the lack of a complete rural road system.

- **PUBLIC/QUASI-PUBLIC AND RECREATIONAL USES.**

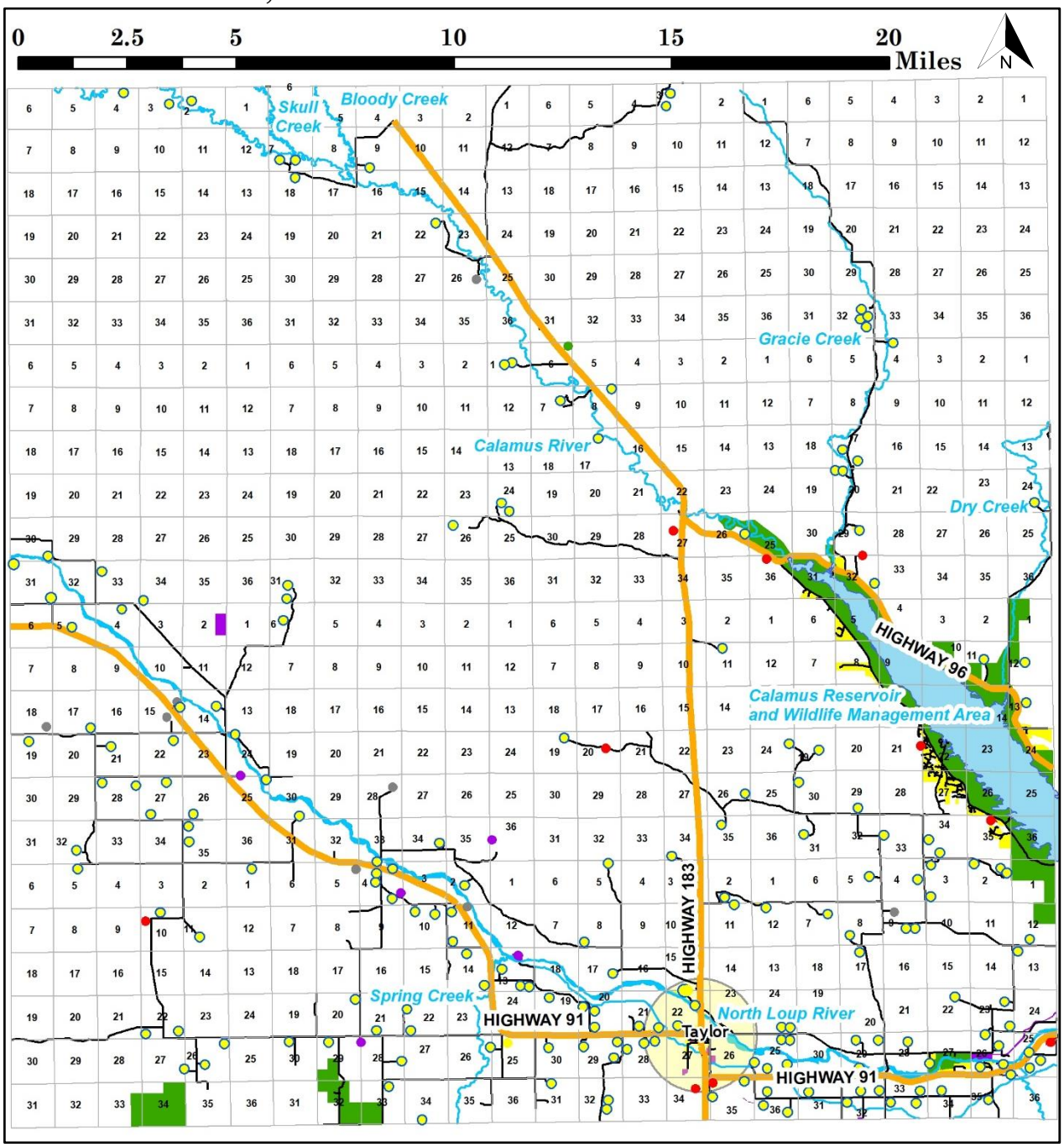
  Public/quasi-public land uses, such as churches, cemeteries and rural utility substations are scattered throughout Loup County. **Rural wildlife and recreation land uses** includes the Calamus Reservoir, as well as State Wildlife Management Areas and State Recreation Areas throughout the County.

- **COMMERCIAL USES.**

  Commercial uses are generally located within the Village of Taylor and corridors along Highways 91, 183 and 96, as well as S. Lake Road. Commercial uses in Taylor include services such as Union Bank, the Lazy D Lounge and the Marah's Treasures Gift Shop. Commercial uses around the Calamus Reservoir are generally oriented to visitors, such as Calamus Outfitters, Creekside at Calamus West and convenience stores.

EXISTING LAND USE MAP

LOUP COUNTY, NEBRASKA



LEGEND

- AGRICULTURE
- PUBLIC/QUASI-PUBLIC
- PARKS/RECREATION
- RESIDENTIAL
- HIGHWAY CORRIDOR
- COMMERCIAL
- STREETS/ROADS
- RIVERS & LAKE
- VACANT OR ABANDONED STRUCTURE

ILLUSTRATION 4.2

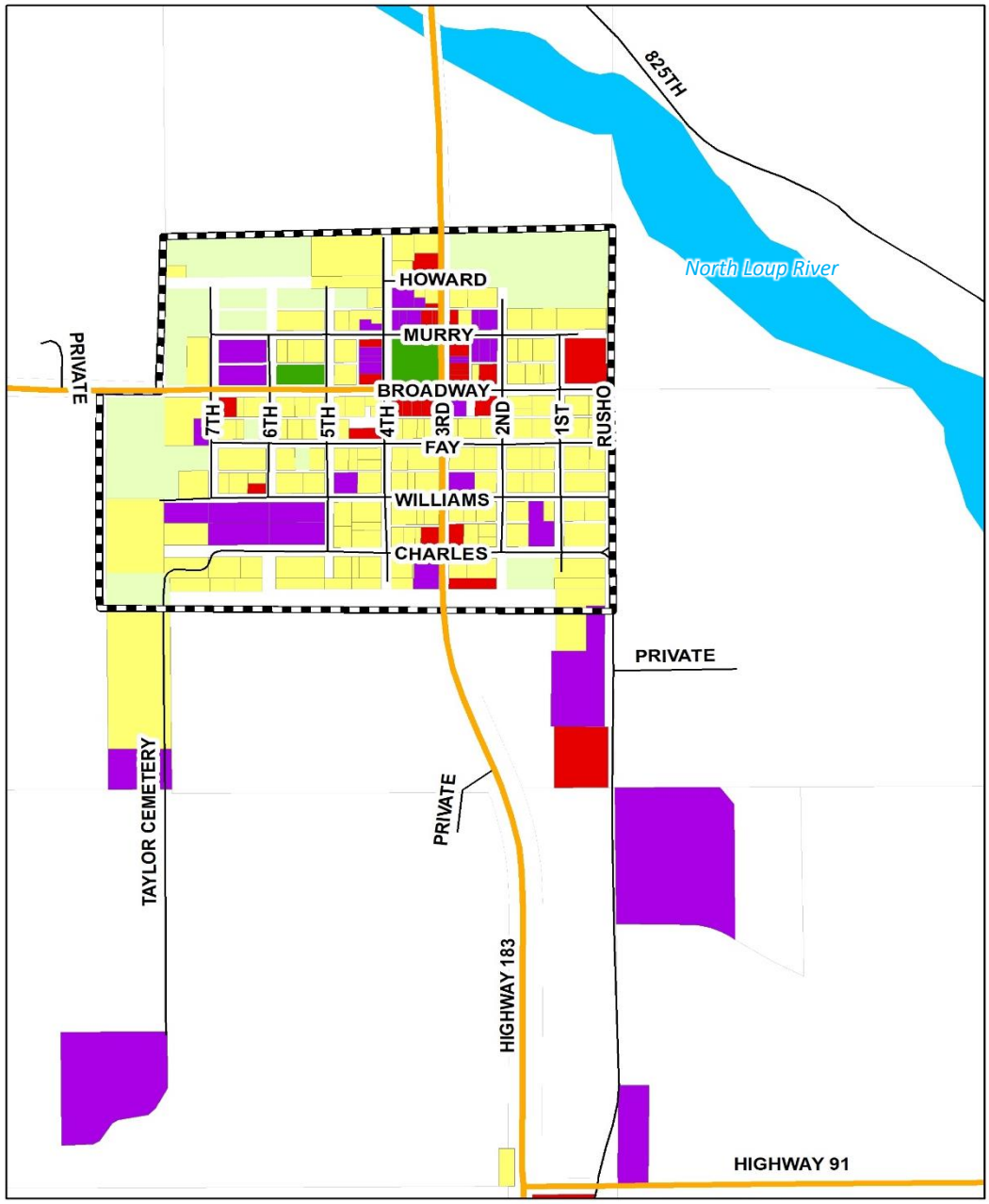
HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

EXISTING LAND USE MAP

VILLAGE OF TAYLOR, NEBRASKA

0 0.1 0.2 0.4 0.6 0.8 Miles

N



LEGEND

- AGRICULTURE
- PUBLIC/QUASI-PUBLIC
- PARKS/RECREATION
- COMMERCIAL
- RESIDENTIAL
- HIGHWAY CORRIDOR
- STREETS/ROADS
- VACANT
- RIVER CORRIDOR
- CITY LIMITS

ILLUSTRATION 4.3

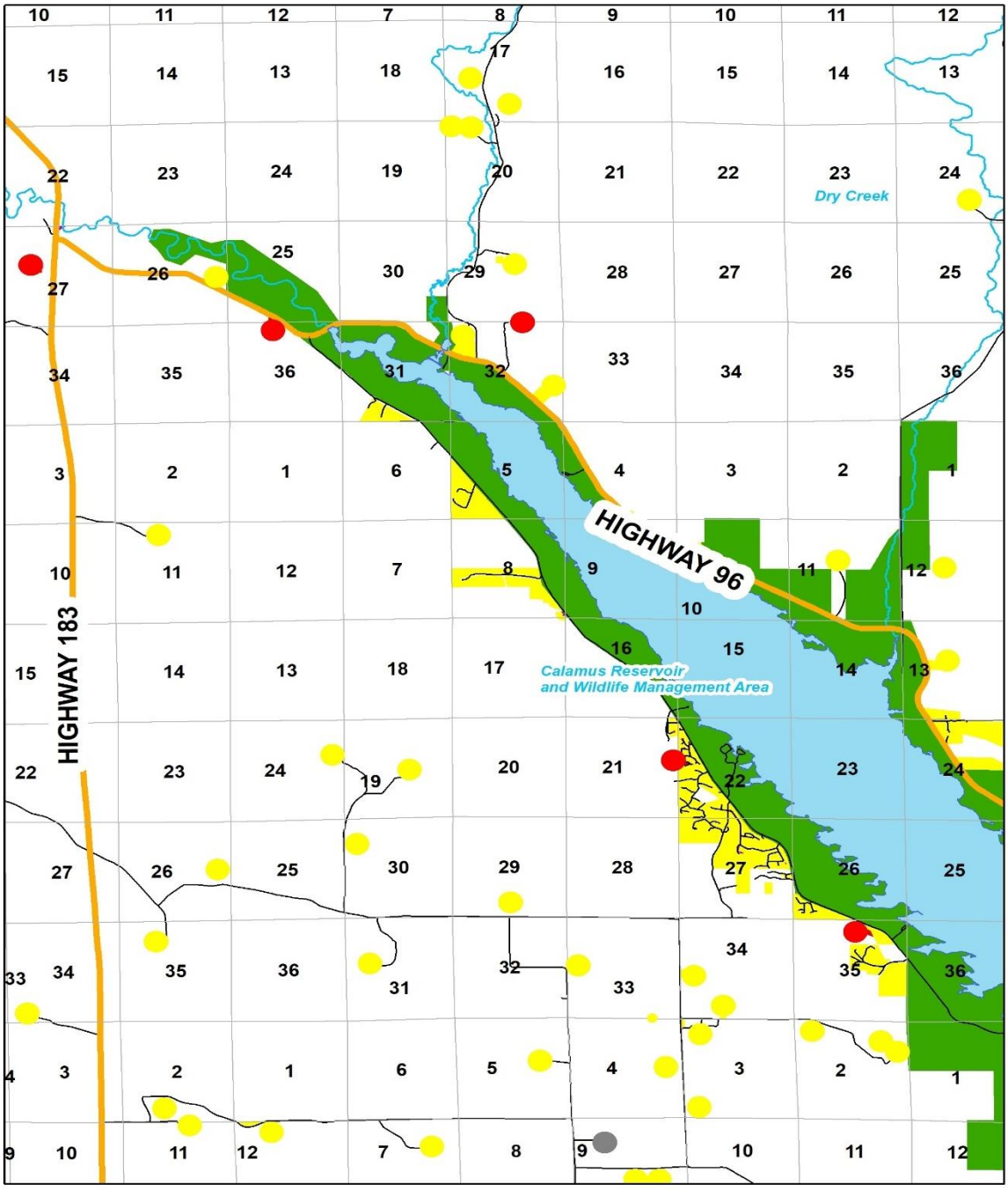
HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

EXISTING LAND USE MAP

CALAMUS RESERVOIR ENVIRONS, NEBRASKA

0 1 2 4 6 Miles

N



LEGEND

- AGRICULTURE
- PARKS/RECREATION
- COMMERCIAL
- RESIDENTIAL
- HIGHWAY CORRIDOR
- STREETS/ROADS
- RIVERS & LAKE
- VACANT OR ABANDONED STRUCTURE

ILLUSTRATION 4.4

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

AGRICULTURAL PRODUCTION STATISTICS

NUMBER AND SIZE OF FARMS/RANCHES

The development of new, small scale farms/ranches has been the trend in Loup County between 2007 and 2017. ***Statistics included in the Nebraska Census of Agriculture are released every five years; the latest being 2017.***

The number and size of farms/ranches, identified in **Table 3.1,** indicates that the number of farms/ranches in the "1 to 9" and "500 to 999" acre categories experienced the largest increases. The "1 to 9" category increased a total of five farms/ranches, or 125 percent, between 2007 and 2017. The "500 to 999" acre category increased by 12 farms/ranches, or 85.7 percent. Large scale, 1,000+ acre farms/ranches declined by 20 (30 percent), and "180 to 499" acre farms declined by four (23.5 percent). "50 to 179" acre farms increased from 18 to 38 in 2012 and then decreased back to 17 in 2017. The remaining farm/ranch category of "10 to 49" acres remained relatively stable, experiencing a slight increase during the ten-year period.

The average farm/ranch size has decreased by 16.9 percent, from 2,589 in 2007 to 2,152 acres in 2017. The decrease in the number of large farms and a decrease in average farm/ranch size suggests the disaggregation of some large farms and the repurposing of farmland for other uses, such as pasture or grazing lands. This may have a significant impact on the County economy as agriculture is the main source of income.

Table 4.1
Farms/Ranches by Size
Loup County, Nebraska
2007 – 2017

Size	2007	2012	2017	% Change 2007 - 2012	% Change 2007 - 2017
1 to 9 Acres	4	7	9	75.0%	125.0%
10 to 49 Acres	15	10	16	-33.3%	6.7%
50 to 179 Acres	18	38	17	111.1%	-5.6%
180 to 499 Acres	17	15	13	-11.8%	-23.5%
500 to 999 Acres	14	16	26	14.3%	85.7%
1,000 to Acres or More	69	52	49	-24.60%	-30.0%
Total Farms/Ranches	**137**	**138**	**130**	**0.7%**	**-5.1%**
Total Crop Land	**35,265**	**29,347**	**24,049**	**-16.8%**	**-31.8%**
Land in Farms	**354,688**	**282,989**	**279,800**	**-20.2%**	**-21.1%**
Average Farm Size	**2,589**	**2,051**	**2,152**	**-20.8%**	**-16.9%**

Source: Nebraska Census of Agriculture, 2007, 2012 & 2017.

CROP PRODUCTION TRENDS

Table 4.2 identifies the **status of crop production** in Loup County from 2007 to 2017. The acreage of harvested cropland decreased by 26.2 percent from 2007 to 2017, and the acreage of farms/ranches with irrigated cropland decreased by 9.3 percent. Overall, total crop land decreased by 31.8 percent. This trend suggests that total farmland in the county is being repurposed for other non-agricultural uses.

Table 4.2
Status of Crop Production
Loup County, Nebraska
2007 – 2017

	2007	2012	2017	% Change 2007 - 2012	% Change 2007 - 2017
IRRIGATED LAND					
Farms/Ranches	48	41	46	-14.6%	-4.2%
Acres	10,375	8,222	9,408	-20.8%	-9.3%
HARVESTED CROP LAND					
Farms/Ranches	94	79	85	-16.0%	-9.6%
Acres	30,066	25,633	22,195	-14.7%	-26.2%
TOTAL CROP LAND					
Farms/Ranches	137	138	130	0.7%	-5.4%
Acres	35,265	29,347	24,049	-16.8%	-31.8%

Source: Nebraska Census of Agriculture, 2007, 2012 & 2017.

Table 4.3 identifies **harvested crops by type** in Loup County, from 2007 to 2017. The total acreage committed to corn, forage, and soybean production has substantially decreased (by over 8,000 acres). There has been a small increase in the production of sorghum by 136 acres.

Table 4.3
Harvested Crops by Type
Loup County, Nebraska
2007-2017

	Production in Acres			% Change	% Change
CROP BY TYPE	2007	2012	2017	2007-2012	2007-2017
Corn for Grain or Seed	5,113	4,327	4,326	-15.4%	-15.4%
Corn for Silage or Green Chop	630	1,070	372	69.8%	-41.0%
Sorghum for Grain or Seed	260	-	396	--	52.3%
Oats for Grain	*(D)	*(D)	*(D)	--	--
Soybeans for Beans	**(NR)	2,268	802	--	--
Forage - Hay-alfalfa, Silage	23,067	17,677	15,403	-23.4%	-33.2%

*(D) Withheld to avoid disclosing data for individual operations. **(NR) Not reported in this year.
Source: Nebraska Census of Agriculture, 2007, 2012 & 2017.

LIVESTOCK PRODUCTION TRENDS

Table 4.4 identifies **livestock production trends** from 2007 through 2017. During this period, the total number of livestock producing farms/ranches for "Cattle/Calves" decreased by 23 farms/ranches, and the total number of cattle/calves decreased, slightly, by 909 or three percent during the same period. The number ranches raising "Beef Cows" declined from 102 to 76 (25.5 percent) during the same period. The number of farms/ranches raising "Hogs and Pigs" has declined from four to two, and the number of farms/ranches raising "Goats" has declined from three to one between 2007 and 2017. The number of farms raising "Sheep and Lambs" increased from four to nine, with 247 additional livestock.

Table 4.4
Livestock Production Trends
Loup County, Nebraska
2007 – 2017

	Total Farms and Ranches / Total Animals				
Type	**2007**	**2012**	**2017**	**% Change 2007 – 2012**	**% Change 2007 – 2017**
Cattle/Calves	110 / 29,833	104 / 29,362	87 / 28,924	-5.5% / -1.6%	-20.9% / -3.0%
Beef Cows	102 / *(D)	101 / *(D)	76 / *(D)	-1.0% / --	-25.5% / --
Milk Cows	1 / *(D)	2 / *(D)	2 / *(D)	100.0% / --	100.0% / --
Hogs and Pigs	4 / 397	3 / 1,808	2 / *(D)	-25.0% / 355.4%	-50.0% / --
Sheep and Lambs	4 / 158	4 / 204	9 / 405	0.0% / 29.1%	125.0% / 156.3%
Goats	3 / *(D)	1 / *(D)	1 / *(D)	-66.6% / --	-66.6% / --

*(D) Withheld to avoid disclosing data for individual operations.
Source: Nebraska Census of Agriculture, 2007, 2012 & 2017.

SUMMARY OF AGRICULTURAL STATISTICS

Agricultural statistics between 2007 and 2017 indicate that total cropland has declined substantially, by 11,216 acres or 31.8 percent. As the total number of farms/ranches has only decreased from 138 to 130, and with a 30 percent reduction in the number of farms/ranches larger than 1,000 acres, consolidation is not a likely cause for the reduction in total cropland. The proportion of pastureland in farms has remained stable at approximately 90 percent, and therefore the reduction in cropland is not likely due to increased ranching. The reduction in total cropland is likely due to farms ceasing operation or changing to other land uses. Reductions in agricultural production may also be related to changes in crop prices as certain crops become less profitable. Extreme weather events and climatic changes in precipitation, including heavy flooding and extended periods of drought, may have decreased the viability of some farms, especially the farms located near the floodplain or lacking irrigation systems. The construction of acreages near the Calamus River and Calamus Reservoir on land formerly used for agriculture may be responsible for some of the reduction in cropland as well.

FUTURE LAND USE ANALYSIS

Illustration 4.5, Page 4.19, identifies the **Future Land Use** for Loup County. **Illustration 4.6** and **4.7**, on **Pages 4.20** and **4.21**, highlight the **Future Land Use** for the Village of Taylor and Calamus Reservoir Environs. The primary hard-surfaced County roads and State highways were reviewed to determine the potential impact of rural development adjacent these corridors. Rural residential land uses not associated with farming or ranching are most suitable adjacent Highways 91, 183, 96 and S. Lake Road.

GENERAL AGRICULTURAL AREAS

Significant agricultural and ranch lands cover the large majority of Loup County, as identified in the **Future Land Use Map, Illustration 4.5, Page 4.19.** These areas are recommended to be preserved and protected from unnecessary encroachment of residential, commercial or industrial development. Non-farm/ranch rural residential dwellings are widely scattered along major highways in Loup County, though some are accessed by single roads and trails.

RESIDENTIAL AREAS

Residential areas are primarily located within the Village of Taylor and around the Calamus Reservoir environs. Existing rural farmstead dwellings are widely spread throughout the County, but concentrations exist along major Highway Corridors. The **Future Land Use Map, Illustration 4.5**, promotes the continued development of non-farm/ranch dwellings in R "Residential" areas within the Village of Taylor and AGR "Agricultural Residential District" areas along the Highway Corridors. By promoting non-farm/ranch residential development in the Agricultural Residential areas, the County also seeks to preserve and protect agricultural production areas from further encroachment of conflicting uses. This practice also would locate these future dwellings nearest local goods and services.

PARKS/RECREATION AREAS

The Calamus Reservoir is the largest park/recreation area in Loup County, encompassing an estimated 5,123 acre lake with 4,958 acres of gently rolling land, covered with native grasses and forbs. The reservoir was constructed for irrigation and flood prevention purposes, but also supports recreational uses. Several recreational opportunities are also located within the Village of Taylor. Preservation of these and other natural open space areas, such as river corridors and wetland areas, should be a priority during the 10-year planning period.

COMMERCIAL AREAS

Future commercial uses in Loup County should consist of "General Commercial" developments, including all permissible uses, as allowed via the **Loup County Zoning Regulations.** Land zoned as "C – Commercial" should be located in close proximity to the Village of Taylor, the Calamus Reservoir and could be considered at the junction of major highway corridors.

Industrial areas are encouraged to locate in close proximity to major transportation routes within each Community or specified rural areas, adjacent railroad or highway corridors. The types of encouraged industries should include "light manufacturing" and agriculture-related industries. These types of industries are often clean and efficient in operation and provide various employment opportunities.

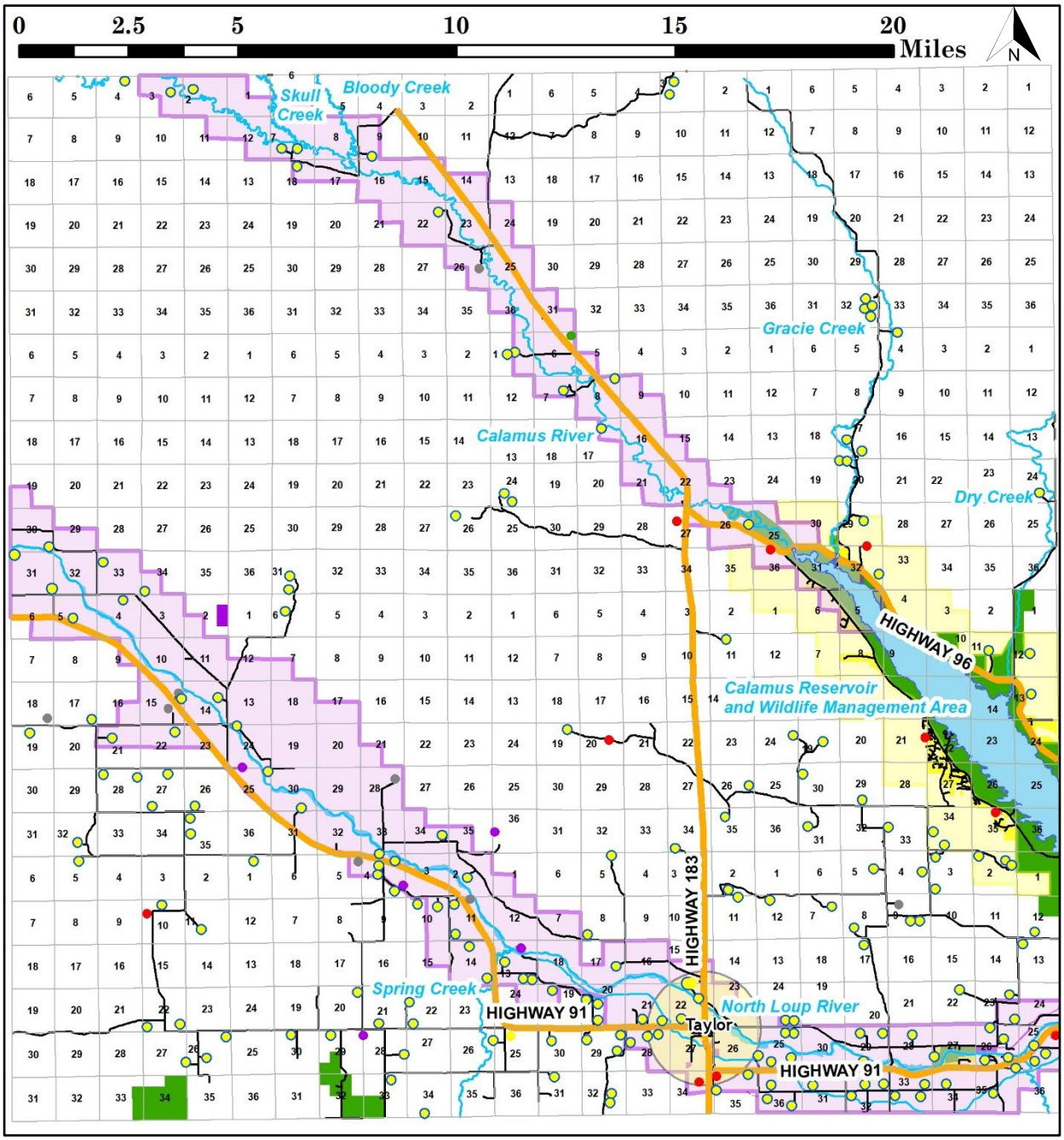
RURAL CONSERVATION AREAS

Rural Conservation Areas are located along the major riparian corridors in Loup County, including the North Loup and Calamus Rivers. Environmentally sensitive areas, including drainage ways, floodplains and flood prone areas are located within the identified Rural Conservation Areas. Future development in these areas is discouraged.

The development of any animal and livestock confinement facilities should be carefully reviewed to ensure conformance with the land use goals and expectations of the County. Animal confinement facilities should not be located within the floodplain or flood prone areas along rivers, creeks, streams and drainage ways, nor areas which have topographical or soil constraints. These facilities should not be located in close proximity to existing residential uses.

FUTURE LAND USE MAP

LOUP COUNTY, NEBRASKA



LEGEND

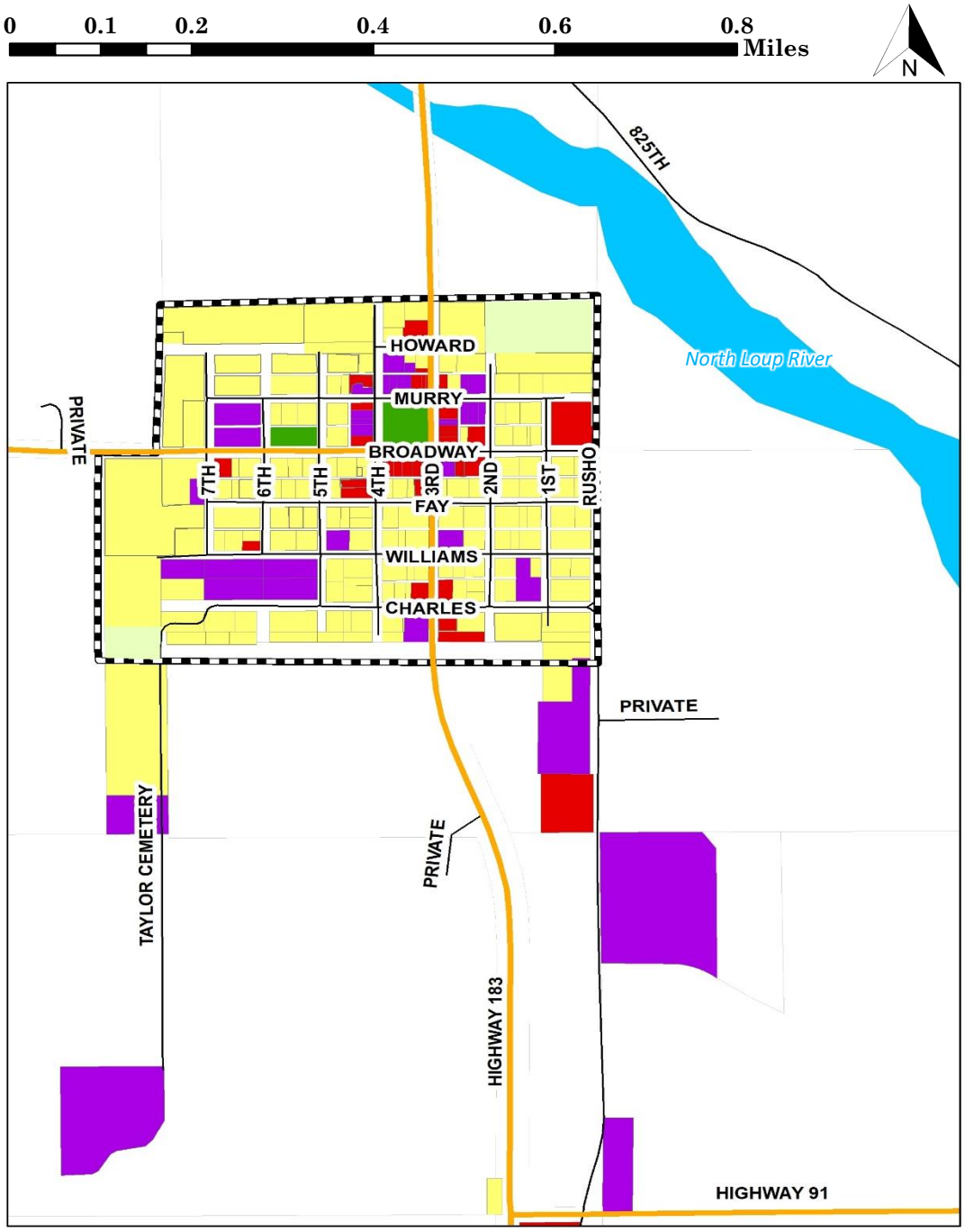
- AGRICULTURE
- PUBLIC/QUASI-PUBLIC
- PARKS/RECREATION
- COMMERCIAL
- AGRICULTURAL RESIDENTIAL
- RURAL CONSERVATION
- VACANT OR ABANDONED STRUCTURE
- STREETS/ROADS
- RIVERS & LAKE
- HIGHWAY CORRIDOR

ILLUSTRATION 4.5

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

FUTURE LAND USE MAP

VILLAGE OF TAYLOR, NEBRASKA



LEGEND

- AGRICULTURE
- PUBLIC/QUASI-PUBLIC
- PARKS/RECREATION
- HIGHWAY CORRIDOR
- COMMERCIAL
- RESIDENTIAL
- VACANT
- RIVER CORRIDOR
- STREETS/ROADS
- CITY LIMITS

ILLUSTRATION 4.6

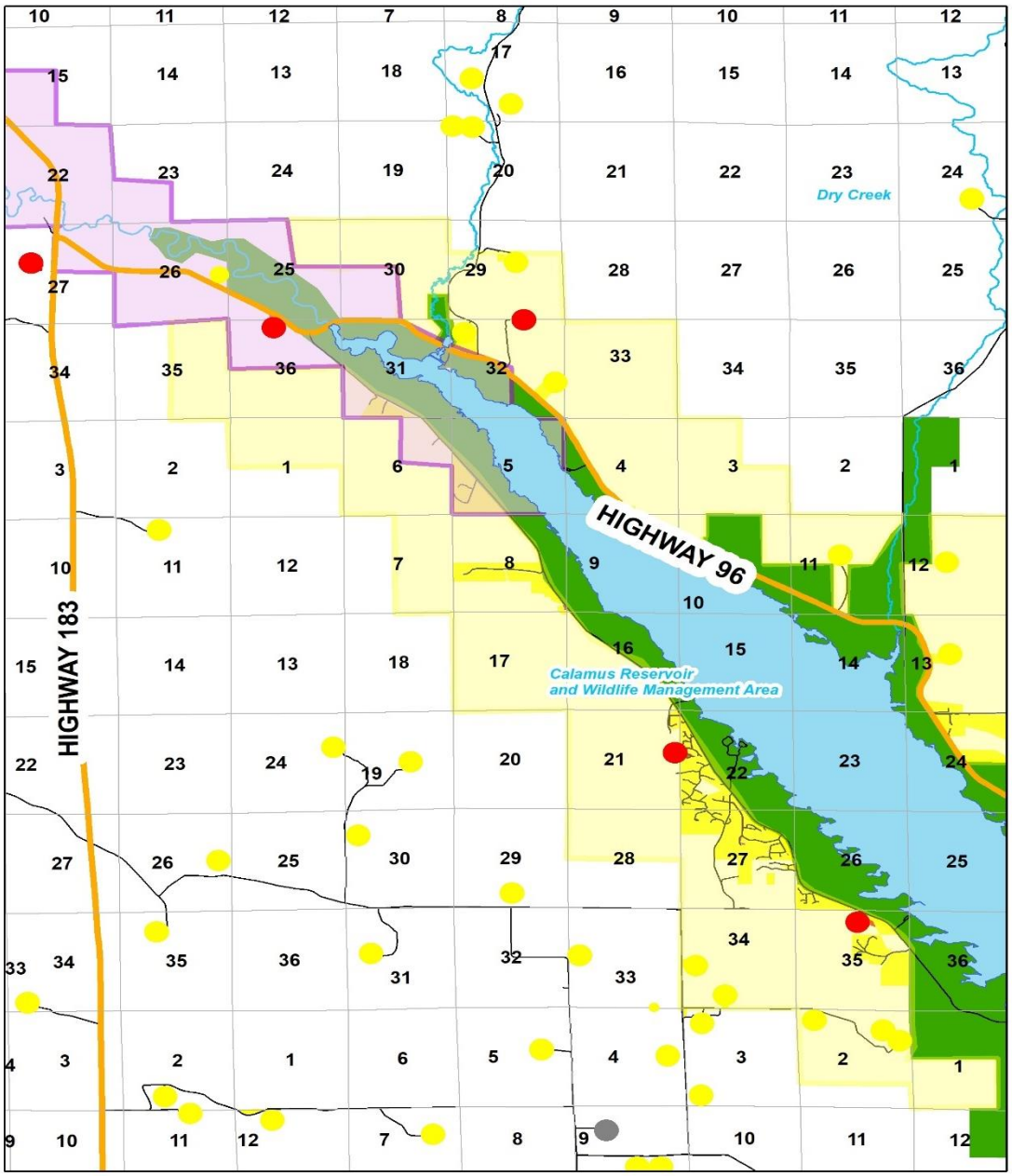
HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

FUTURE LAND USE MAP

CALAMUS RESERVOIR ENVIRONS, NEBRASKA

0 1 2 4 6 Miles

N



LEGEND

- AGRICULTURE
- PARKS/RECREATION
- COMMERCIAL
- VACANT OR ABANDONED STRUCTURE
- AGRICULTURAL RESIDENTIAL
- RURAL CONSERVATION
- RIVERS & LAKE
- STREETS/ROADS
- HIGHWAY CORRIDOR

ILLUSTRATION 4.7

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

EXISTING ZONING ANALYSIS

Illustrations 4.8 and 4.9, Pages 4.24 and **4.25,** identify the **Zoning** for Loup County and the Village of Taylor. **Future Land Use,** as identified in **Illustrations 4.5, 4.6 and 4.7,** conforms with existing zoning districts as defined in the **Taylor/Loup County Zoning Regulations**. Existing **Zoning Districts** in Loup County include:

AG – AGRICULTURE DISTRICT

The **Agriculture District** is designated for general agriculture use and is intended to preserve and protect agriculture production from encroachment by incompatible uses. The **District** supports farming and ranching activities, ranch and farm dwellings, grain/produce storage, irrigation, flood, erosion and sediment control projects, as well as greenhouses and garden centers. Additionally, bed and breakfast homes, temporary roadside produce stands and pertinent accessory buildings are permitted in the **District.** Confined livestock feeding operations are a special permitted use in the **District** and thus require a special permit.

RC – RURAL CONSERVATION DISTRICT

The **Rural Conservation District** is intended for those areas which, because of limiting environmental characteristics such as scenic status, excessive slope, soils conditions, high water table, or other factors, in areas associated with the North Loup and Calamus Rivers, require the regulation of development in keeping with the conditions imposed by the natural environment. Farming and ranching activities and associated home occupations, in accordance with Article 8 of the **Taylor/Loup County Zoning Regulations** are permitted in the **District.**

AGR – AGRICUTURAL RESIDENTIAL DISTRICT

The **Agricultural Residential District** is intended to provide for low-density, acreage residential development in selected areas in close proximity to the Village of Taylor and the Calamus Reservoir, or in rural areas with reasonable access to major rural roads. Generally, these districts are located near urban and built-up areas within reasonable reach of fire protection and hard surfaced roads.

R-1 – SINGLE FAMILY RESIDENTIAL DISTRICT

The **Single Family Residential District** is intended to provide for low density residential uses consisting of single family and two-family detached dwelling units and accessory structures. The **District** is located within the Village of Taylor.

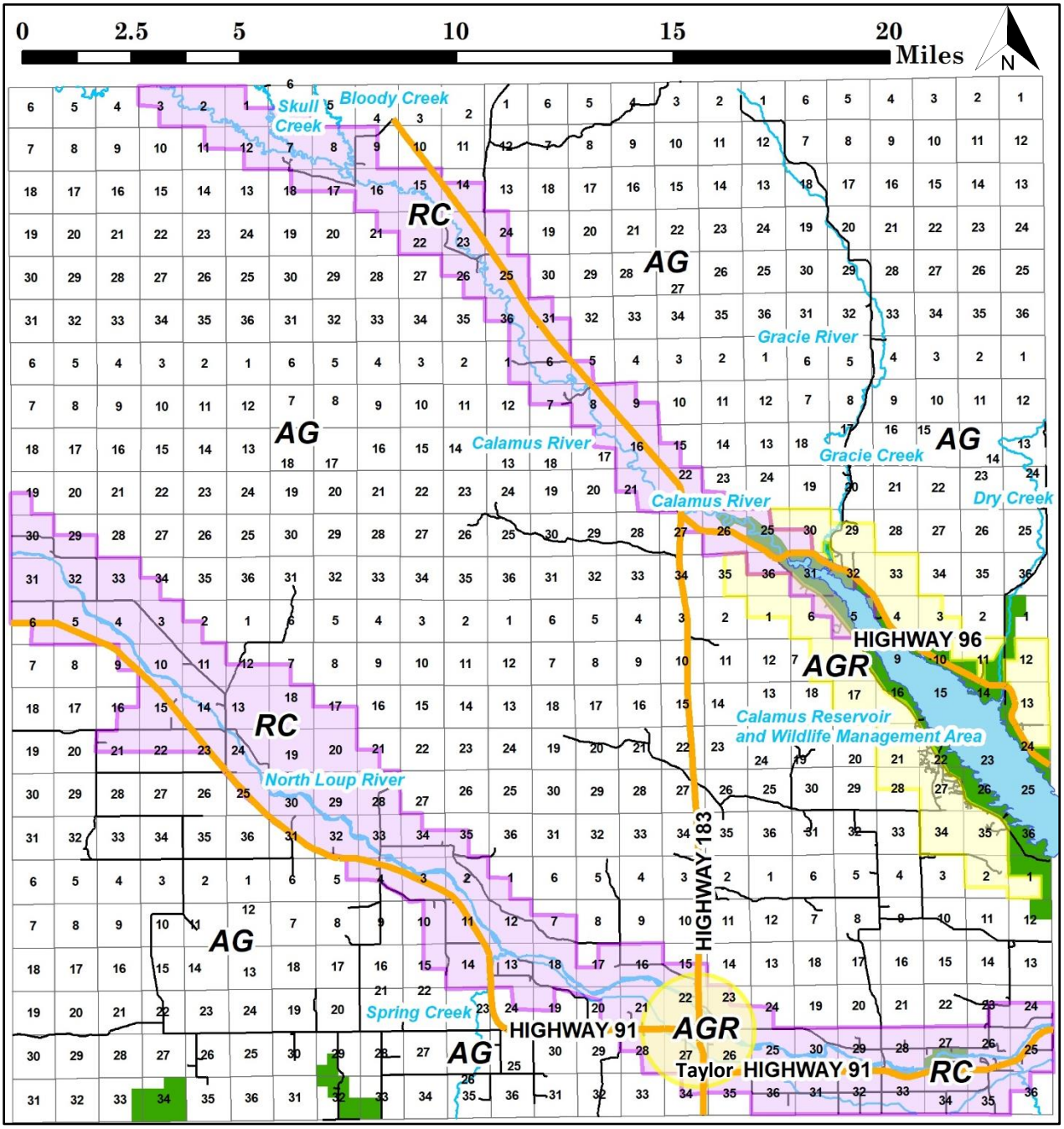
C-1 – GENERAL COMMERCIAL DISTRICT

The **General Commercial District** is designed to provide for a wide range of retail, office, amusement and service uses normally found in a Central Business District. The highest density and intensity of use is permitted in this **District.** The **District** is located within the Village of Taylor.

The **Zoning Maps** identified in this **Comprehensive Plan** set a 10-year vision for the location of **Zoning Districts**, which should be applied consistently to developments throughout Loup County. **Taylor/Loup County** should avoid "spot zoning" in which parcels of land are re-zoned to the specific benefit of a particular property owner to the detriment of the **Future Land Use Plan** or the identified goals of this **Comprehensive Plan.**

ZONING MAP

LOUP COUNTY, NEBRASKA



LEGEND

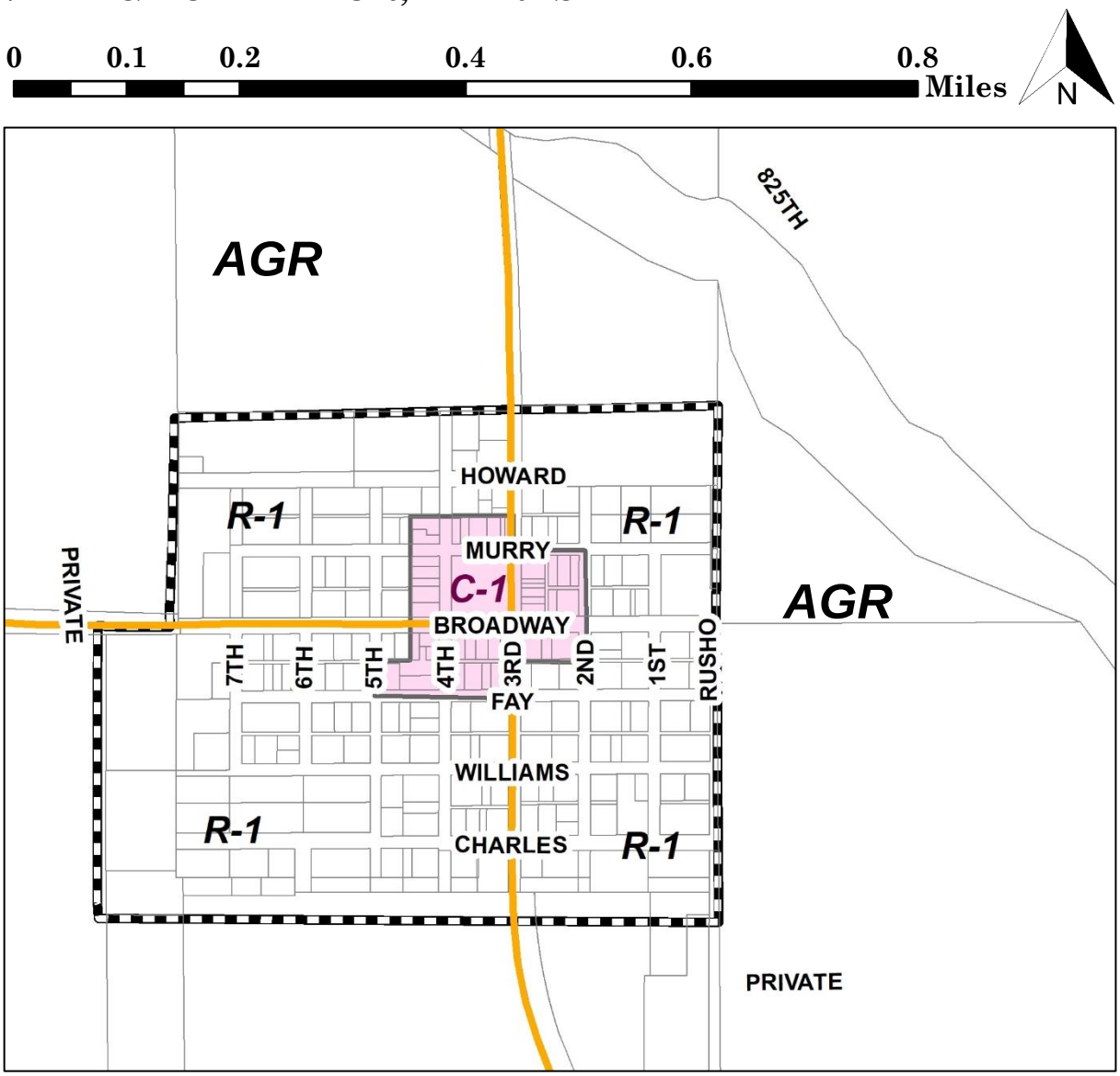
- AG – GENERAL AGRICULTURAL DISTRICT
- AGR – AGRICULTURAL RESIDENTIAL
- RC – RURAL CONSERVATION DISTRICT
- PARKS/RECREATION
- RIVERS & LAKE
- HIGHWAY CORRIDOR
- STREETS/ROADS

ILLUSTRATION 4.8

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

ZONING MAP

VILLAGE OF TAYLOR, NEBRASKA



LEGEND

C-1 – GENERAL COMMERCIAL DISTRICT
R-1 – SINGLE FAMILY RESIDENTIAL DISTRICT
AGR – AGRICULTURAL RESIDENTIAL DISTRICT
HIGHWAY CORRIDOR
TAYLOR CITY LIMITS

ILLUSTRATION 4.9

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

SECTION 5:
PUBLIC FACILITIES & TRANSPORTATION.

SEPTEMBER, 2021

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

SECTION 5

PUBLIC FACILITIES & TRANSPORTATION.

INTRODUCTION

Section 5 of this **Comprehensive Plan** discusses current conditions and planned improvements to existing **public facilities and transportation systems** in Loup County. All improvements to these components are aimed at maintaining or improving the quality of life in the County. The intent of this **Section** is to determine the adequacy of these public facilities to meet the future estimated demand during the current planning period.

PUBLIC FACILITIES

Public Facilities identify existing public places in the County and determine future needs of and desires for pertinent public facilities during the planning period 2021 to 2031. Public facilities provide citizens with social, cultural and educational opportunities in Loup County. Facilities can include, but are not limited to schools, fire protection, medical/elderly services and recreational facilities such as parks and sports fields.

EDUCATION

A broader-based education, with emphasis on technical and human relation skills has become necessary and desired in today's society. Standards developed by educators and planners can provide guidance in the creation of, and addition to, the educational facilities within the **Loup County School District**. It will be important, during the 10-year planning period, that the facilities are able to support the existing school-age or youth populations, as well as be prepared to support a potential increasing youth population.

Public schools in Loup County should strive to meet the following general standards and guidelines:

- Schools should be centrally located.
- Schools should not be located near high traffic or heavily concentrated areas with high noise levels.
- Land acquisition should be made with future expansion in mind.
- Adequate open space should be available to students.
- Provide safe routes to schools from all neighborhoods of Loup County Communities, including sidewalks, pedestrian crossings and school bus access.

Loup County Public Schools is the only public school district within the County. The district maintains the Loup County Elementary School and the Loup County High School, which serves as both a junior and senior high school for Loup County. The two schools are adjacent and connected, functioning as one campus, located at 608 Williams Street in Taylor. The school district employs approximately 31 total staff members, including 19 certified teachers. The Loup County High School building was constructed in 1923, whereas the Elementary School building was constructed in 1982. Given the age of these structures, ongoing maintenance and continual upgrades to facility technology are essential for maintaining educational quality.

The school system has small class sizes, with approximately 5-8 students per teacher. Extra-curricular activities offered in the Loup County Public School District include the standard clubs and organizations, as well as a variety of athletic teams. To enhance the student learning experience with a variety of educational applications, there is an independent laptop available for every student, with newer laptops prioritized for high school students.

PUBLIC LIBRARIES

The **Taylor City Library** is located at 106 Williams Street in Taylor, Nebraska. The Library is open weekly during the following days:

Monday: Closed
Tuesday: 11:00 AM to 3:00 PM
Wednesday: Closed
Thursday: 1:00 PM to 5:00 PM
Friday: Closed

The Library was built in 1964 and currently employs one part-time employee and has two active volunteers. The Library currently maintains 519 registered users and approximately 8,181 volumes with an average annual circulation of 818. The library has one computer with public internet available for use.

PARKS/RECREATION

An integral part to the quality of life in any County or Community is a well-maintained park system and recreational opportunities provided to its residents and visitors. Additionally, parks and recreational facilities ensure the health of families and individuals, and contribute to the economic and environmental well-being of the entire County. The following highlights Loup County's public parks and other recreational facilities.

- **Calamus State Recreation Area and Wildlife Management Area** – The Area surrounds the 5,123-acre Calamus Reservoir, featuring sites for boating, swimming, fishing and camping. Campsites include the Hannamon Bayou Campground, Valley View Flat Campground, Nunda Shoals Campground and the Homestead Knolls Campground. Boats, fishing equipment and camping gear is available to rent at a variety of nearby shops. This **Area** attracts many visitors to the County and promotes the development of nearby homes.

- **Taylor Tourist Park Campground** – Located at 5th and Broadway Streets in Taylor, the park includes a full-sized basketball court, swing set, play equipment and horseshoe pits. Additionally, there is a gravel parking lot intended for visiting camping trailers, featuring electrical connections for each of the six stalls.

- **Taylor Park and Arboretum** – The Taylor Park and Arboretum occupies the square block between Murray Street, 4th Street, 3rd Street and Broadway Street in Taylor. The park features a swing set, two sets of playground equipment, a gazebo, a large and a covered shelter with picnic benches. The densely planted trees offer shade to picnic benches and other park benches which are located throughout the park.

- **Taylor Junior Rodeo** – The Taylor Junior Rodeo offers a variety of events, to help youth develop skills for rodeo competitions. Events include steer riding, breakway roping, goat tying, team roping, barrel racing and other events.

- **Loup County Community Center** – Located at 406 4th Street in Taylor, the community center serves as a shared meeting/dining hall available by reservation and for community events.

- **Loup County Fair** – The Loup County Fair is a four-day fair held annually in Taylor in August. The fair is held along the town square, which surrounds Taylor Park and Arboretum, in the fair hall to the north of Murray Street and includes events at the Jr. Rodeo grounds north of town. The fair includes a variety of events, including rodeo events, 4-H and FFA animal shows, a parade, a dance, a cook-out, a livestock auction and other games/activities for kids.

MEDICAL FACILITIES

Loup County does not have a medical facility. Persons in need of immediate medical attention are transported to the facilities in Ord, Broken Bow or Bassett. Clinics are also available in the communities of Burwell or Sargent, which are located in Garfield and Custer Counties.

PUBLIC SAFETY

Public administration facilities serve the citizens of the County and conduct business of government and carry out its operations. Therefore, it is essential these services are centrally located and convenient to the majority of the citizens in Loup County.

- **Law Enforcement** – The **Loup County Sheriff's Department** is located at 404 4th Street in Taylor, Nebraska. The Sheriff Department employs one full-time Sheriff. The Department does not have holding cells, criminals are taken to either the Broken Bow or other communities with holding cells. If additional help is needed, the adjacent counties sheriff's departments and the Highway State Patrol are available.

- **Fire Protection** – The **Loup County Rural Fire Department** has a fire station located at 407 3rd Street in Taylor. The department has other vehicles and mobile stations located throughout the county, to improve coverage and response times. The department has approximately 30 volunteer fire fighters. The Department has an Insurance Classification Rating (ISO) of "10" and reports an average response time of approximately 10-25 minutes, depending on proximity to stations. The department usually responds to less than 20 incidents a year. The department covers most of Loup County except for the region around Calamus, which is protected by the **Burwell Rural Fire District.**

- The **Loup County Ambulance** also operates out of Taylor, and has vehicles stored at the fire station. The ambulance is operated by volunteers. Patients are brought to facilities in Ord, Broken Bow, or Basset for emergency medical care.

- **Airport** – No public airports are located within the county. The nearest municipal airports are located in Burwell and Sargent. The private airstrip within the West Meeks Ranch, near the Calamus River, is no longer in operation.

- **Civil Defense** – The present **Civil Defense** services in Loup County are managed by **Region 26,** along with local volunteer fire departments, the County Sheriff's Department and other County officials. Region 26 was established in 1971 for the purpose of 911 communications for an eight county area, and developed into an emergency management region as well.

  The Region 26 coverage area includes the counties of Thomas, Blaine, Loup, Garfield, Wheeler, Greeley, Valley and Sherman in central Nebraska. Civil defense is responsible for notifying citizens in the case of an emergency. In the case of an emergency, a list of trained volunteers is maintained on an as-needed basis. The planning and preparation for natural disaster and man-made emergencies consist of the following: Mitigation, Preparation, Response, and Recovery. Examples of natural and man-made disasters include floods, tornadoes, winter storms, chemical spills, explosions, plane crashes, etc. Other services include weather alert of severe weather, tornado awareness week education, winter time road services, etc.

GOVERNMENT & PUBLIC ADMINISTRATION

- **County Courthouse** – The **Loup County Courthouse** is located at 408 4th Street in Taylor, Nebraska. The courthouse meets ADA standards and hold Loup County Commissioner meetings on the second Tuesday of each month. Offices included include:

  - County Assessor.
  - County Election Commissioner.
  - County Clerk.
  - County Treasurer.
  - County Zoning Administrator.
  - County Sheriff.
  - County Clerk of District Court.
  - County Weed Superintendent.
  - County Register of Deeds.
  - County Board of Commissioners.

  Many of these roles (Clerk, Election Commissioner, Assessor, Register of Deeds) are managed by the County Clerk Office. Multiple offices simply have a PO Box available in Taylor rather than a physical office. The Loup County Attorney operates out of Broken Bow.

- **Lower Loup Natural Resources District** – The Lower Loup Natural Resources District (LLNRD), which serves Loup County, has an office located in Ord, which is in Valley County. A large area of central Nebraska is within the LLNRD, including the communities of Taylor, Sargent, Broken Bow, Ord, Loup City, Ravenna, St. Paul, Bartlett, and Albion.

- **Postal Services** – The **Taylor Post Office** is located at 301 Murray Street in Taylor, Nebraska. The building is ADA accessible and houses approximately 100 postal boxes. The Post Office maintains two rural delivery routes, and the Service Center is open from 9:00 AM to 1:00 PM Monday through Friday, as well as 9:00 AM to 10:00 AM on Saturdays.

- **United States Department of Agriculture (USDA)** – The closest USDA Services Center is located in Burwell in Garfield County. The USDA utilizes various local, state and national land and natural resource conservation programs include the following:

  - Environmental Quality Incentives Program.
  - Well Head Identification and Protection.
  - Wetlands Reserve Program.
  - Conservation Reserve Program.
  - Nebraska Soil & Water Conservation Program.

  The USDA utilizes these programs to address concerns and formulate solutions for the Lower Loup Natural Resource District.

TRANSPORTATION

The availability of a convenient and efficient transportation system is essential to the continued economic and physical development of Loup County. An adequate transportation system is required to transport goods and services to and from major travel routes and market centers within and outside the County. The overall purpose of this transportation analysis is to provide the necessary guidelines for the safe movement of people and vehicles throughout the County.

The primary sources of information utilized to develop the transportation analysis were the (1) Loup County "One and Six Year Road Improvement Program" and (2) State of Nebraska Department of Transportation "Nebraska Statewide Transportation Improvement Program (STIP)" (Fiscal Years 2021-2026).

EXISTING TRANSPORTATION SYSTEM

Illustration 5.1, State Functional Classification Map, as identified by the Nebraska Department of Transportation, depicts the transportation system in Loup County. The transportation network in Loup County comprises one U.S. Highway (183), two Nebraska State Highways (91, 96) and local access County roads. U.S. Highway 183 serves as the main north-south highway through Loup County, while Highway 91 serves as the east-west highway through the county, and Highway 96 connects U.S. Highway 183 to Highway 91 along the north side of the Calamus Reservoir.

ROAD CLASSIFICATIONS

Nebraska Highway Law identifies the nine functional classifications of rural highways as follows:

(1) **Interstate:** Which shall consist of the federally designated National System of Interstate and Defense Highways;

(2) **Expressway (Other Freeways & Expressways):** Second in importance to Interstate. Shall consist of a group of highways following major traffic desires in Nebraska and ultimately should be developed to multilane divided highway standards;

(3) **Major Arterial (Other Principal Arterials):** Consists of the balance of routes which serve major statewide interests for highway transportation in Nebraska. Characterized by high speed, relatively long distances, and travel patterns;

(4) **Scenic-Recreation:** Consists of highways or roads located within or which provide access to or through state parks, recreation or wilderness areas, other areas of geological, historical, recreational, biological, or archaeological significance, or areas of scenic beauty;

(5) **Other Arterial (Minor Arterials):** Which shall consist of a group of highways of less importance as through-travel routes which would serve places of smaller population and smaller recreation areas not served by the higher systems;

(6) **Collector (Major and Minor Collectors):** Which shall consist of a group of highways which pick up traffic from many local or land-service roads and carry it to community centers or to the arterial systems. They are the main school bus routes, mail routes, and farm-to-market routes;

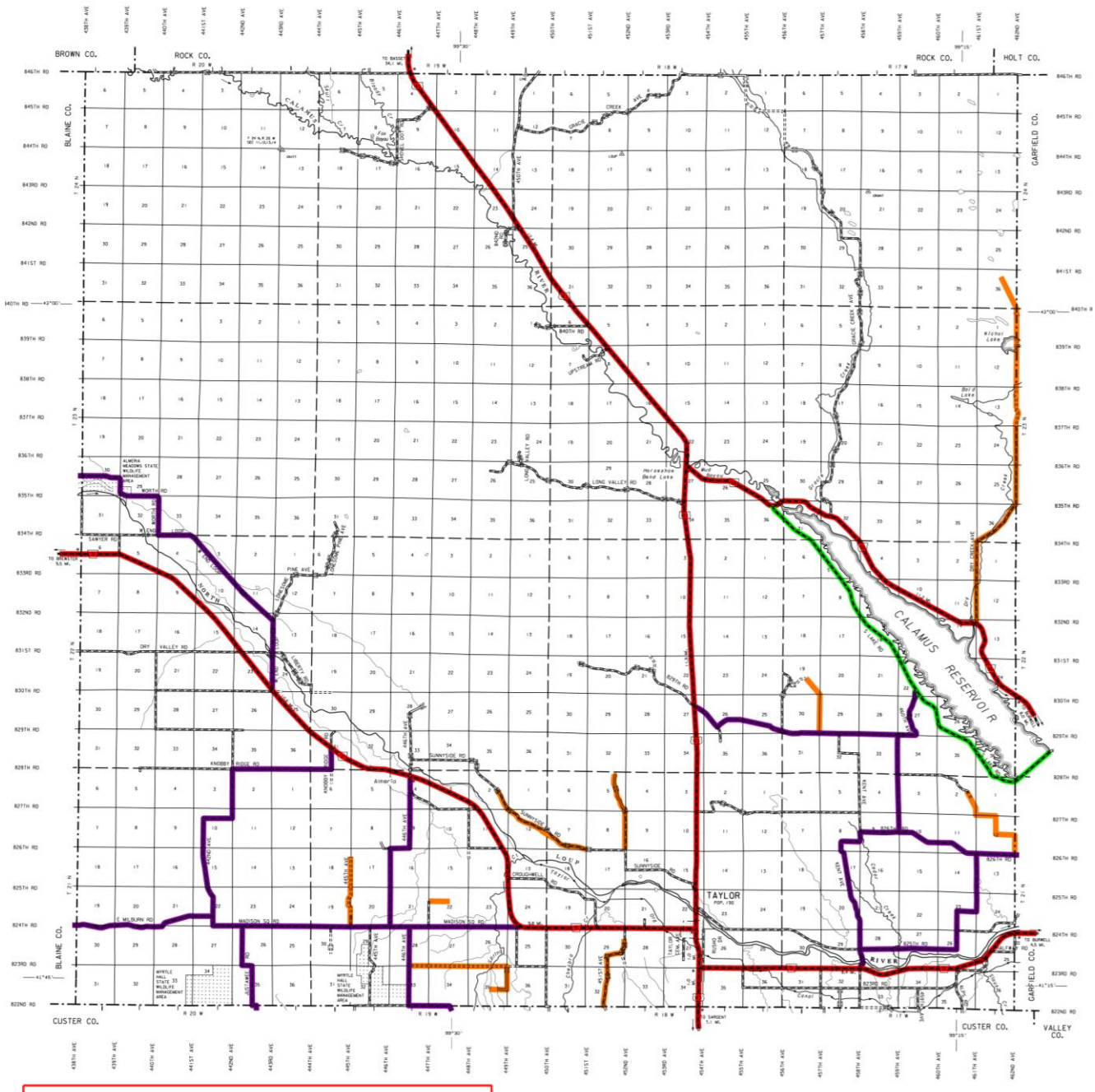
(7) **Local:** Which shall consist of all remaining rural roads, except minimum maintenance roads; and

(8) **Minimum Maintenance:** Which shall consist of (a) roads used occasionally by a limited number of people as alternative access roads for area served primarily by local, collector, or arterial roads, or (b) roads which are the principal access roads to agricultural lands for farm machinery and which are not primarily used by passenger or commercial vehicles.

(9) **Remote Residential:** Consists of roads or segments of roads in remote areas of counties with (a) a population density of no more than five people per square mile or (b) an area of at least one thousand square miles, and which roads or segments of roads serve as primary access to no more than seven residences.

The rural highways classified under subdivisions (1) through (3) of this Section should, combined, serve every incorporated municipality having a minimum population of 100 inhabitants or sufficient commerce, a part of which will be served by stubs or spurs, and along with rural highways classified under subsection (4) of this section, should serve the major recreational areas of the State. Sufficient commerce shall mean a minimum of $200,000 of gross receipts under the Nebraska Revenue Act of 1967.

STATE FUNCTIONAL CLASSIFICATION MAP
LOUP COUNTY, NEBRASKA



Source: Nebraska Department of Transportation.

ILLUSTRATION 5.1

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

TRAFFIC VOLUME

The Nebraska Department of Transportation monitors traffic volume in the Loup County area, for local roads and State and Federal highways. This tabulation process is done to identify appropriate existing road classification and engineering standards.

Illustration 5.2, **Page 5.10,** identifies the average daily traffic counts for State and Federal transportation routes throughout Loup County. Each of the road segments are identified as *"Major Arterial"* roads. All other roads within the County jurisdiction are classified as *"Other Arterial," "Collector"* or minimum maintenance roads.

The analysis of average 24-hour traffic volumes at the above identified locations indicates that in the four-year period between 2016 and 2020, traffic volumes increased throughout the County, including both total vehicles and heavy commercial vehicles. As depicted in **Illustration 5.2,** counts on Segments A and D decreased slightly between 2016 and 2018. Counts also decreased slightly on Segments E, F, G, H and I. All other segments increased in traffic

Overall traffic volumes increased over the four-year period, especially for Segments A-E. The remaining Segments were generally stable to decreasing in volumes of total vehicles and during the four-year period 2016-2020. It should also be noted that heavy commercial traffic increased substantially along Highway 183, for Segments I and D.

AVERAGE ANNUAL DAILY TRAFFIC

LOUP COUNTY, NEBRASKA

ILLUSTRATION 5.1
AVERAGE ANNUAL DAILY TRAFFIC
LOUP COUNTY, NEBRASKA

	2016	2018	2020
Segment A	350/65	285/55	410/75
Segment B	380/75	390/75	470/70
Segment C	555/85	600/90	745/95
Segment D	585/95	540/90	735/145
Segment E	1,025/247	1,215/199	1,210/205
Segment F	205/20	245/25	210/20
Segment G	495/85	515/90	460/120
Segment H	170/20	170/20	165/20
Segment I	425/75	475/85	455/130
Totals	**4,190/767**	**4,435/729**	**4,860/880**

Total Vehicles / Heavy Commercial Vehicles.
Source: Nebraska Department of Transportation, 2021.

Source: Nebraska Department of Transportation.

ILLUSTRATION 5.2

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

FUTURE LOUP COUNTY TRANSPORTATION SYSTEM

COUNTY ONE- AND SIX-YEAR ROAD IMPROVEMENT PLAN

The future transportation system is outlined in the Loup County **One- and Six- Year Road Improvement Plan.** The County's One-Year Plan identifies projects to be undertaken in Fiscal Year 2021, while the Six-Year Plan includes projects to be undertaken through 2026, or earlier if funding becomes available. Road Improvement Plans are available in the office of the County Clerk.

The Loup County Highway Superintendent annually prepares the One and Six-Year Road Plan and reports directly to the County Commissioners. The County Board of Commissioners approves the Plan and files it with the Nebraska Department of Transportation.

- **C-58(42):** On County Road 842, approximately 0.3 miles west of US Highway 183; New or Reconstructed Bridge; Grading, Removal of Roadside Obstacles, 404 Permit, Guardrail, Acquire Right of Way, Bridge Rail, Erosion Control; 0.1 Miles; Estimated Cost: $600,000.

- **C-56(43):** On County Road 840, approximately 0.95 miles west of US Highway 183; New or Reconstructed Bridge; Removal of Roadside Obstacles, Grading, 404 Permit, Erosion Control; 0.1 Miles; Estimated Cost: $418,000.

- **C-58(44):** On 446th Avenue, approximately 0.2 miles north of Nebraska Highway 91; New or Reconstructed Bridge; Removal of Roadside Obstacles, Grading, Erosion Control; 0.1 Miles; Estimated Cost: $1,300,000.

- **C-59(40A):** Beginning at approximately the Northeast Corner of Section 21 Township 22 North, Range 17 West; then running southeasterly along South Lake Road to the Garfield County Line, South Lake Road from Dry Valley to the Garfield County Line; Asphalt Surfacing; Mill and fill county road to be done with NDOT and Nebraska Game and Parks, 5.0 Miles; Estimated Cost: $480,000.

- **C-59(40B):** Beginning at approximately the Northeast Corner of Section 21 Township 22 North, Range 17 West, running northwesterly along South Lake Road approximately 5 miles to the Nebraska State Highway 96. South Lake Road from Dry Valley Road to Highway 96; Asphalt Surfacing; 5.0 Miles; Estimated Cost: $500,000.

STATE ONE AND SIX-YEAR TRANSPORTATION PLAN

The Nebraska "Surface Transportation Program 2021-2026" is an annual publication that includes a list of one-year short-term and six-year long-range improvement projects for State and Federal Highways. Improvement projects located in Loup County include the following projects:

One-Year Projects (Fiscal Year 2021 to Fiscal Year 2022):

- None.

Six-Year Planning Program Projects (Fiscal Years 2022-2026):

- **STP-91-3(114):** Almeria East & West; Microsurface; 20.4 Miles; Estimated Cost: $1,620,000.
- **STP-91-3(112):** Blaine/Loup Co. Line Southeast; Milling, Resurfacing; 6.3 Miles; Estimated Cost: $2,459,000.
- **STP-183-3(119):** Loup/Rock Co. Line Southeast; Milling, Resurfacing; 4.8 Miles; Estimated Cost: $2,488,000.
- **STP-183-3(123):** Calamus River Tributary - Rock Co. Line; Drainage; 2.3 Miles; Estimated Cost: $525,000

SECTION 6:
ENERGY ELEMENT.

SEPTEMBER, 2021

HANNA:KEELAN ASSOCIATES, P.C.
COMMUNITY PLANNING & RESEARCH

SECTION 6

ENERGY ELEMENT.

INTRODUCTION

This **Section** of the **Loup County, Nebraska, Comprehensive Plan** complies with a **July, 2010, amendment to Nebraska State Statues 23-114.02,** requiring updates to a County Comprehensive Plan to include an **"Energy Element."** This component of the **Plan** profiles the energy infrastructure and energy use by sector, in the County, including residential, commercial and industrial. This Section also discusses the utilization of renewable energy sources and the promotion of energy conservation measures.

PUBLIC POWER DISTRIBUTION

Energy usage and consumption throughout Loup County has followed the trends prevalent in the State of Nebraska. Electrical power is distributed across Loup County by the **Custer Public Power District (CPPD),** which purchases electricity from the **Nebraska Public Power District (NPPD).** CPPD is geographically the largest rural public power district in Nebraska, serving over 8,000 square miles of territory. This service area includes Thomas, Custer, Blaine, Logan, McPherson, Loup and Hooker Counties, as well as portions of Sherman, Dawson, Cherry, Lincoln, Brown and Garfield Counties.

NEBRASKA PUBLIC POWER DISTRICT (NPPD)

As the largest electric generating utility in the State of Nebraska, NPPD provides electricity to all or parts of 86 of the State's 93 Counties, including 46 individual municipalities and 25 public power districts, cooperatives and their member communities. The fuel sources of NPPD's generating facilities includes coal, oil, natural gas and nuclear energy. Additionally, NPPD also purchases electricity from the **Western Area Power Administration (WAPA)**, which markets and transmits electricity for federally owned hydropower facilities.

- NPPD was formed in 1970 through the merger of two public power districts and the assets of the former Nebraska Public Power System.
- More than 5,200 miles of overhead and underground power lines make up NPPD's electric system.
- NPPD revenue is derived from wholesale power supply agreements with 46 municipalities and 25 public power districts and cooperatives. NPPD also serves 80 Nebraska communities at retail, consisting of more than 89,000 customers.

GENERATING RESOURCES

The source of NPPD's generating facilities includes Fossil fuels – coal, oil or natural gas, Nuclear, Hydroelectric, Wind and Methane. Additionally, NPPD purchases electricity from the **Western Area Power Administration (WAPA)**, which markets and transmits electricity for federally owned hydropower facilities.

2020 data regarding NPPD's energy generation for Nebraska customers was comprised of:

- 19.9 percent of NPPD's energy generation was from coal.
- 48.6 percent was from nuclear.
- 5.2 percent generation from oil & natural gas.
- 8.3 percent from renewable wind generation.
- 8.0 percent from renewable hydroelectric generation.
- 0.1 percent from renewable solar generation.
- The remaining 9.9 percent of NPPD's energy was supplied through wholesale purchases.

MORE THAN 65% OF NPPD'S GENERATION SOURCES ARE CARBON-FREE.

NPPD RENEWABLE ENERGY CAPABILITIES

1.) Hydroelectric Facilities

NPPD operates two hydroelectric generating facilities, at North Platte and Kearney on the Platte River and purchases 100 percent of the energy output from two facilities owned by Loup Public Power District and one facility owned by Central Nebraska Public Power and Irrigation District. Combined, these facilities produce 107 megawatts of power.

2.) Wind Turbine Generators

NPPD owns 32 MW of the Ainsworth Wind Energy Facility, while Omaha Public Power District (OPPD) owns 10 MWs of the facility, the Municipal Energy Agency of Nebraska purchases seven MWs, and the City of Grand Island purchases one MW.

NPPD has power purchase agreements with seven additional wind generating facilities in Nebraska. NPPD purchases a total of 435 MWs, of which NPPD utilizes 281 MWs and has purchase agreements for the remaining 154 MWs to other utility districts.

3.) Solar Energy

Under NPPD's wholesale power contract, customers have the ability to invest in their own, local renewable energy sources by installing qualifying local generation, including solar, and offset its purchases of demand and energy from NPPD by up to two megawatts or 10 percent of their demand, whichever is greater.

Central City installed a 200-kilowatt (KW) facility and became Nebraska's first "Community Solar Garden." This 100-panel system was installed in an industrial park and is owned by the City. Additionally, 600 KW and 25 KW solar projects were developed in 2016 near Callaway, Nebraska, in Custer County. Custer Public Power District purchases power generated from the system. The Nebraska Department of Environment and Energy reports 2,325 KW (or 2.325 megawatts) of solar generation within Custer County.

NPPD also developed a "Community Solar Program" that is now in effect in pilot programs in Kearney, Scottsbluff and Venango. The Program allows community members to purchase solar energy without having to install solar panels on individual rooftops. Solar subscribers can purchase different amounts of solar energy based on their annual electricity usage.

NPPD TRADITIONAL PRODUCTION FACILITIES

Coal-Fired Generators

NPPD owns the Gerald Gentleman and Sheldon Stations, which are both coal-fired generating stations. Together, these facilities produce 1,590 MWs. The Gerald Gentleman Station produces enough power to supply electricity to 600,000 Nebraskans. Additionally, NPPD has a coal power purchase agreement with the Nebraska City #2 facility, owned by Omaha Public Power District, for 162 MWs.

Natural Gas & Oil-Fired Generators

Gas and oil-fired generators are utilized primarily during peak loads or as replacement power if another facility is down. NPPD owns two natural gas-fired generation facilities, the Beatrice Power Station and the Canaday Station that produce a combined total of 350 MW.

Three oil-fired generation facilities located in Hallam, McCook and Hebron, Nebraska produce 162 MW. NPPD also have capacity purchases agreements with 12 municipal systems in Nebraska for an additional 93 MWs.

NPPD EMISSION FREE ELECTRICITY

Nuclear Facilities

Cooper Nuclear Station operates as the largest single unit electrical generator in Nebraska, by generating 810 MW of electricity. This facility is capable of supplying power to more than 310,000 customers during peak summer usage. In November of 2010, NPPD received an additional 20 years beyond its initial 40-year license to provide power through at least January, 2034.

"NET METERING"

In 2009, the State of Nebraska Legislature approved and signed into law, LB 439 (**Nebraska State Statute §70-2001 to 2005**), which is also referred to as "**Net Metering**." This law allows individual residences and businesses to supplement their standard electric service with one, or combinations of, five alternate energy systems, including Solar, Methane, Wind, Biomass, Hydropower and Geothermal.

By implementing these types of alternative energy systems, individuals will reduce their reliance on public utility systems, potentially generating more electricity than they use and profit by the public utility districts purchasing their excess energy. The Loup County Planning Commission can choose to allow usage control of Net Metering by allowing residential and businesses property owners to seek a **Special Use Permit,** if the applicant can document a project in conformance with allowable provisions included in the **Loup County Zoning Regulations.**

LOUP COUNTY ENERGY CONSUMPTION

Custer Public Power District provided annual Loup County consumption and revenue data between 2016 and 2020 (see **Table 6.1, Page 6.6**). Commercial, Irrigation and Residential users were analyzed. Commercial energy consumption also includes consumption from agricultural and industrial sectors.

The five-year period between 2016 and 2020 revealed a generally gradual increase in overall energy consumption, but with a spike in consumption in 2018. Consumption has increase from an estimated 7.26 million kilowatt-hours (KWh) in 2016, to approximately 8.42 million KWh in 2020, with a peak output in 2018 of approximately 8.63 million KWh. Residential properties have consistently consumed the most KWh of energy within the reviewed five-year period.

Total revenues from Custer Public Power have gradually increased, from 2016 to 2019. Revenues from Loup County increased 16.7 percent, or from $945,731 to $1,103,225 in 2019. 2020 revenues declined less than 1% to $1,100,103. Residential energy consumption in Loup County has consistently generated the most revenue for Custer Public Power.

Table 6.1
Loup County Electrical Consumption and Revenue Data
2016-2020

Consumption of Electricity (KWh)	2016	2017	2018	2019	2020
Commercial	1,314,452	1,487,439	1,780,688	1,614,752	1,604,818
Irrigation	374,589	466,267	168,351	62,501	488,450
Residential	5,572,228	5,847,564	6,678,720	6,275,983	6,324,123
TOTAL	**7,261,269**	**7,801,270**	**8,627,759**	**7,953,236**	**8,417,391**
Revenues					
Commercial	$172,485	$198,036	$222,406	$221,434	$223,458
Irrigation	$88,326	$103,883	$88,856	$69,840	$103,620
Residential	$684,920	$718,776	$789,362	$811,951	$773,025
TOTAL	**$945,731**	**$1,020,695**	**$1,100,624**	**$1,103,225**	**$1,100,103**

*Note: Commercial also includes agricultural and industrial sectors.
Source: Custer Public Power District.

STATE-WIDE TRENDS IN ENERGY CONSUMPTION

During the last 40+ years, the State of Nebraska, as a whole, has vastly increased energy consumption. However, percentage share of personal income has remained constant, although it has declined in recent years. In 1970, 11.5 percent of the percentage share of personal income was spent on energy. As of 2015, 8.9 percent was spent on energy usage. The peak percentage occurred in 1980 at 16.6 percent.

Trends in the Total Energy Consumption for the State of Nebraska, published in the ***"2020 Annual State Energy Report"*** of the Nebraska Department of Environment and Energy, is mirrored in each of the individual energy categories, coal, natural gas, gasoline and distillate fuel oil (primarily diesel fuel), nuclear power, and hydroelectric production. Each energy type is detailed between 1960 and 2018, as follows:

- **Coal** consumption has increased from 20 trillion British Thermal Units (BTUs) in 1960 to 264.1 trillion BTUs in 2018. Peak use of coal was reached in 2013, surpassing the previous high set in 2011. The increase through 2013 was attributable to coal energy used to generate electricity.

- **Natural Gas** consumption has risen and fallen during the 58-year period between 1960 and 2018, beginning at 140.4 trillion BTUs, peaking in 1973 at 230.8 trillion BTUs and, by 2016, declining to 172.9 trillion BTUs.

- **Gasoline** and **Diesel Fuel** consumption nearly doubled in Nebraska between 1960 and 2018. Gasoline consumption increased by nearly 29 percent, from 78.8 to 102.4 trillion BTUs, as of 2018, and peaked in 1978 at 116 trillion BTUs. Diesel fuel consumption more than quadrupled from 24.2 trillion BTUs to 111.4 trillion BTUs, primarily due to an increase in trucking and agricultural use. Petroleum consumption, overall, peaked in 1978 at 246.7 trillion BTUs.

- **Nuclear** power generation began in Nebraska in 1973 at 6.5 trillion BTUs. Usage has since increased to 97.8 trillion BTUs as of 2018. The peak use of nuclear power was in 2007 at 115.8 trillion BTUs.

- **Renewable energy** consumption has grown, beginning in 1960 at 13.4, and peaking in 2018 at 193.6 trillion BTUs. Hydropower was the primary renewable energy source from 1960 to 1994. Biofuels, or ethanol production, began equaling hydropower in 1995. As of 2018, 63.3 percent of all renewable energy produced came from biofuels, 6.6 percent from hydroelectric, 26.5 percent from wind, and 2.1 percent from wood products. Minor amounts came from geothermal and solar energy.

NEBRASKA ENERGY CONSUMPTION BY SECTOR

- **Commercial Sector:** The commercial sector includes non-manufacturing business establishments, including energy use by local, state and federal governments. Energy use in the commercial sector closely parallels consumer energy use and economic activity in the State of Nebraska. More than 90 percent of all fuel used in the commercial sector was supplied by natural gas and electricity. Although natural gas has historically been the dominant fuel type, recent trends suggest a period of near parity between the two fuel types is likely into the near future. In 2018, a total of 147.5 trillion BTUs were consumed in the commercial sector.

- **Residential Sector:** The residential sector consumed 167.8 trillion BTUs in 2018. Natural gas and electricity accounted for 90.7 percent of the total energy use in the residential sector.

- **Industrial Sector:** The industrial sector includes manufacturing, construction, mining, forestry and agricultural operations. Energy use in the industrial is more diverse, with natural gas, renewable energy, electricity, coal and a variety of petroleum products all being utilized. The industrial sector consumes more energy than any other sector in the State. In 2018, it accounted for 386.9 trillion BTUs of the State's total energy consumption.

- **Transportation Sector:** Public and private vehicles, railroads, aircraft and boats are all included in the transportation sector. Motor gasoline and diesel fuel products accounted for 86 percent of the energy use in the transportation sector in 2018. Approximately 195 trillion BTUs were used in the transportation sector in 2018.

- **Agricultural Sector:** As per the U.S. Department of Agriculture National Agricultural Statistics Service, there were 47,400 farms and ranches on 45.2 million acres in Nebraska in 2017, encompassing 91 percent of the State's total land area. Energy demand information in this sector is not available on a consistent or annual basis.

AGRICULTURAL ENERGY DEMAND & CONSERVATION

A comparison of "**Total Energy Expenditures Per Capita**" between the United States and the State of Nebraska indicated that between 1970 and 1994, Nebraska and the Nation's per capita energy consumption were very close to one another. But, after 1994, Nebraska's consumption began to be drastically higher than that of the Nation. The agricultural sector was surging in energy consumption in Nebraska.

In 2018, 7.7 million acres in Nebraska were irrigated. As 3.1 million acres were irrigated in 1966, irrigated lands have increased by at least 4.6 million acres over the last five decades. In addition to transportation of agricultural products and inputs, irrigation makes up a growing share of the energy demand for Nebraska's agricultural sector. According to the USDA Irrigation and Water Management Survey, irrigation pumps were powered by electricity (58.7%), diesel (24.3%), natural gas (11.4%), propane (5.4%) and gasoline/ethanol (0.2%). The increasing use of irrigation helps to boost yields and helps minimize losses during drought, but it creates an increased dependence on energy use in Nebraska's agricultural sector. The increase in irrigated acres results in a significantly higher electrical demand during periods of drought. For example, in 2012, record droughts put strain on the Nebraska Public Power District (NPPD) transmission system due to increased irrigation use. Mobile diesel generators were used to meet this additional demand, though NPPD has since made transmission system additions and upgrades to meet additional demand.

As Nebraska's agricultural energy demand and costs have increased, conservation practices are also gaining popularity in the agricultural sector. The U.S. Department of Agriculture issued a report in 2008 which concluded that farmers have increased conservation practices. Technological innovations have increased the ability for farmers to monitor for soil moisture, leading to more efficient irrigation practices. Additionally, switching from fossil fuels to electrically powered irrigation systems has improved energy efficiency. Conservation tillage (and no-till agriculture) has reduced the use of heavy equipment.

The agricultural sector is also an energy producer. Nebraska biofuels, especially ethanol, helps decrease the transportation's sector consumption of gasoline. Ethanol production in Nebraska in 1994 was 78.9 million gallons, by 2020 production had increased to an estimated 2.3 billion gallons. Considering ethanol production uses high volumes of both electricity and natural gas, the State's energy expenditures per capita increased as well. In 2020, approximately 44 percent of the State's total corn harvested, or 790 million of the total 1.81 billion bushels of corn, was consumed by ethanol production.

Untapped renewable energy sources present additional opportunities for energy production in the agricultural sector. Waste from livestock generates methane, which is usually not captured, acts as a harmful greenhouse gas. The University of Nebraska, NPPD, the former Nebraska Department of Environmental Quality, Nebraska Organic Waste Energy, Nebraska Cattlemen and the Nebraska Department of Agriculture estimated that livestock operations could capture enough methane to generate 95.4 MW of electricity.

ENERGY CONSERVATION POLICIES

The most effective means for Loup County to reduce its total energy consumption in each of the Energy Sectors (and by selected energy type) is through conservation practices and by continuing to promote the conversion to alternative energy systems when appropriate.

The following is a list of policies to guide energy practices throughout the County:

- **Promote the use of "Net Metering" or the use of one or more combinations of selected alternative energy sources to reduce public/quasi-public, residential, commercial and industrial facilities consumption of energy.**
    - Utilize the Loup County Zoning Regulations to control the placement and operation of alternative energy systems.
    - Require compliance with a Conditional Use Permit process so that established conditions are met by the applicant.
    - Utilize the net metering services of Custer Public Power District to assist Loup County in complying with Nebraska's Net Metering Law.
    - Promote the development of vocational education opportunities in the Public School Districts of Loup County, as well as regional State and Community Colleges, to educate the current and future workforce in alternative energy design, fabrication of equipment and maintenance.
- **As other sources of Alternative Energy Systems are developed, or become cost-effective for use in Nebraska, the planning documents of the County are recommended to be revised to guide their locations and monitor their operation.**
- **Increase Building Efficiency.**
    - Lighting – consider converting street lighting to a Light Emanating Diode (LED) system.
    - Retrofit Residential Buildings – provide incentives and construction advice to the public to expand the restoration of homes including windows, doors, attic ventilation, insulation, and alternative energy systems such as solar panels.
    - Retrofit Old Public and Commercial Buildings – provide incentives and construction advice to the public for Restoration Best Management Practices for windows, doors, attic ventilation, insulation, solar panels and lighting.
    - New Construction Codes Implement Best Management Practices (BMPs) to city codes and educate homeowners and realtors.

- Encourage Taylor residents to plant new trees and replace damaged trees to maintain and expand the urban tree canopy. Shade from trees reduces peak electric demands during the summer and provides wind breaks during the winter.

♦ **Promote the use of conservation methods to reduce the consumption of energy usage in each of the individual sectors including commercial and industrial (which includes agricultural and public uses).**

- Promote the expanded use of solar, methane, biomass, hydropower and geothermal exchange energy systems, or other sources of alternative energy systems, for applications throughout Loup County. The use of an alternate energy source or combinations of these energy sources should be considered by farming and ranching operations to lower energy consumption and to make energy more affordable.

- Promote the use of conservation programs supported by Custer Public Power District, and in its association with Nebraska Public Power District, for its member Communities and public power districts. For example, the Prescriptive Lighting or Custom Lighting Programs provide cash incentives to businesses that replace old lighting fixtures with high-efficient light fixtures such as LED to reduce energy costs.

- The Loup County residents and farming/ranching operations could also access grant and loan programs to replace light fixtures with LED fixtures that reduce consumption and are more energy efficient.

- Support and provide incentives for the expanded use of agricultural practices to reduce energy consumption. Techniques such as conservation tillage, high efficiency irrigation equipment and cost-effective fuel sources to power irrigation systems.

- Support State and Federal incentive programs to continue to provide low-cost financing to purchase modern agricultural equipment such as low-pressure pivots and no-till equipment. Programs such as the U.S. Department of Agriculture's Rural Energy for America Program (REAP) that finances irrigation efficiency improvements switching diesel, propane and natural gas pumps to electric operated.

- Promote the availability of incentives provided by public power districts to develop alternative energy sources for, and from, agricultural practices. Modern methods such as producing methane gas from livestock confinement facilities to power agricultural equipment, is one example.

- Promote the use of solar and geothermal exchange energy systems for agricultural applications that power equipment and heat/cool farm and ranch buildings.

- **Support Low Impact Development (LID) and Green Infrastructure Programs.**
  - Specify LID design option in engineering services contracts for subdivision development, stormwater and parking lot improvements.
  - Provide continuous education to the Village Staff, Public Works Staff in the new LID designs and BMPs (Best Management Practices) for operation and maintenance of LID projects.
  - Calculate and track the public and private construction and life cycle cost savings for LID projects.
  - Promote Water Conservation through use of low impact lawn care, rain barrels, alternative to paved driveways, gray water & potable water systems and xeriscraping.
  - Require LID and Green Infrastructure Storm Water Detention and urban forestry practices in Subdivision Agreements.
  - Provide incentives to the public and developers to expand energy efficiency, LID and Green Infrastructure, within the annual City Budget.
- **Plant Urban Forests.**
  - Trees / Urban Forest – provide incentives for city rebate programs to replant new trees.
  - Compost brush and trimmings – utilize the Best Management Practices utilized by other communities to provide a public deposit site to compost brush and trimmings.
  - Create a waste wood recycling/composting/energy generation program.
- **Create a Zero Waste Community.**
  - Reduce waste disposal with a 10-year Zero Waste strategy in support of achieving 90% resource recovery (recycling, reuse, repair, composting, redesign).
  - Provide universal access to curbside recycling services for all residential dwellings and businesses.
  - Establish financial incentive to increase recycling by charging for trash service based on volume.
  - Gather annual data on waste disposal and resource recovery by volume.

- Provide access to recycling in public areas and major Community events, such as the Loup County Fair.
- Establish designated public drop-off sites and promote the benefits of recycling facilities and develop the most efficient collection and transport of recycled materials possible.
- Investigate "regional hub and spoke system" promoting efficient transportation of recycled materials.
- Support creation of publicly owned Zero Waste facilities, including contracting approaches for private operations, or explore public-private partnership opportunities for Zero Waste infrastructure and services.
- Upcycle goods for other uses.
- Provide Community Gardens & Composting – divert organic compost to a local compost operation.
- Establish education and awareness campaigns promoting the benefits of Zero Waste for the local economy, the environment, and public health.