O'Neill, Nebraska

Comprehensive Plan - 2025

Stahr & Associates, Inc.

Community and County Planning - Economic Development Consultants

1512 Road 13
York, Nebraska 68467

Telephone (402) 710-1819
Fax (402) 362-2526
E-Mail ojstahr@hotmail.com

INTRODUCTION

WHAT IS COMMUNITY PLANNING?

Community planning is a process through which a community addresses change. Planning is a future-oriented activity which involves a process in which the citizens of the community consider likely outcomes of change before choosing a course of action from various options or alternatives.

Planning for change is a process in which information on existing physical, social and economic conditions within a community is gathered, future trends are forecasted and alternative courses of action with regard to the various changes that are forecasted for or desired by the community and its citizens are considered. Planning, simply stated, is a process of thinking through a problem or issue in a systematic fashion, using statistical, analytical and other information or factual data to provide a sound basis for making well-informed and "good" decisions.

WHAT IS A COMMUNITY PLAN?

A community plan can be viewed as a formalized written statement regarding what the citizens of a community have collectively decided they want the future community to be like, as well as a statement regarding how the community intends to utilize its human, economic, financial and physical resources to achieve the desired future community.

In Nebraska and many other states, the community plan is often referred to as a "Comprehensive Plan." The word comprehensive is defined as "inclusive, thus a Comprehensive Plan should evaluate all aspects of a community's future with regard to future land use, public facilities and services, transportation facilities and services, utilities, housing and other special aspects or issues affecting the community. Nebraska law sets forth the minimum aspects of a community which should be addressed in any comprehensive plan as follows:

A comprehensive plan, which shall consist of both graphic and textual material, shall be designed to accommodate anticipated long-range future growth of a community which shall be based upon documented population and economic projections and shall include among other possible elements the following:

- A land use element which designates the proposed general distributions, general location and extent of the uses of land for agriculture, housing, commerce, industry, recreation, education, public buildings and lands, and other categories of public and private use of land;

- The general location, character and extent of existing and proposed major roads, streets and highways, and air and other transportation routes and facilities;

- The general location, type, capacity and area served of present and projected or needed community facilities including recreation facilities, schools, libraries, and other public buildings, and public utilities, and;

- An identification of sanitary and improvement districts, subdivisions, industrial tracts, commercial tracts and other discrete developed areas, which are or in the future may be appropriate subjects for annexation and a general review of the standards and qualifications that should be met to enable the municipality to undertake annexation in the future.

- An assessment of energy infrastructure and energy use by sector, including residential, commercial and industrial sectors, an evaluation of utilization of renewable energy sources and promotion of energy conservation measures that benefit the community.

This comprehensive plan shall also include two very important additional components. This first of these is a component which examines the natural and environmental factors which have and will continue to influence the development of the City. This component will also evaluate the man-made factors which will continue to influence the development of the community.

The second additional component is a critical component which allows the citizens of the City, through its Planning Commission to formulate community goals and policies which are focused on what the citizens of the community want the future community to be like. It is these goals and policies, once determined, that provide the basis for recommendations in all remaining components of the Comprehensive Plan.

A comprehensive plan is a long-range plan in which the citizens of the community focus primarily upon the factors and functions that have affected and will affect the physical growth and development of the community. A comprehensive plan thus outlines future improvements and development that will change the community from its present condition to a community with the characteristics desired by its citizens.

THE PLANNING PROCESS

The community planning process begins with the collection of data regarding the past and present economy and population of the community to provide a basis for forecasting future economic conditions and population. Additional data and information regarding the land uses, housing, community facilities and services, utilities and transportation facilities are also collected to provide a comprehensive picture of the present community which can then be used as a basis for identifying changes in the community most desired by its citizens.

The second phase of the planning process is the development of community goals and policies that establish specific guidelines for improving existing aspects of the community as desired by its citizens. This portion of the planning process is critical because it is the defined goals and policies regarding various aspects of the future community which will be the basis for the formulation of the recommended community improvements outlined in the various components of the comprehensive plan.

The third phase of the planning process involves translating the defined goals and policies to specific recommendations, projects and actions with regard to future land usage, housing, public facilities, transportation facilities, utilities and other special aspects of the community which are identified.

The fourth and final phase of the planning process is the implementation of the comprehensive plan. A broad range of community development policies and programs is needed to successfully implement the plan. The comprehensive plan should identify the project priorities and prerequisites, implementation tools and methods and financing alternatives appropriate to carrying out the recommendations of the plan so that enhancement of the local economy and realizing the desired future community can be achieved in the most efficient and cost effective manner possible.

WHO DOES THE PLANNING?

Ideally, all citizens in a community would be directly involved in the planning process. However, scheduling and conducting meetings when all citizens can attend is virtually impossible on an on-going basis. For this reason, Nebraska law provides for the creation of a citizen Planning Commission. This group of citizens, appointed by the governing body, is charged with taking the lead in the planning process. The members of the Planning Commission typically represent a broad cross-section of the community and thus often represent the diverse views of the citizens in a community.

Other people should also be actively involved in the planning process. These include the members of the governing body of the community, local officials and staff employed by the community and a consultant who specializes in assisting local communities in successfully formulating and implementing a Comprehensive Plan.

Whenever possible, the opinions and ideas of all local citizens should be solicited by the Planning Commission in the formulation of the Comprehensive Plan. The methods of obtaining local citizen opinions can range from community surveys, to inviting groups of citizens representing various aspects of the community to the Planning Commission meetings, to conducting public forums, focus groups and public hearings. In addition, it is recommended that the minutes of the Planning Commission be published in the local newspaper or at least posted in public places so that the average citizen has an on-going opportunity to understand the issues which the Planning Commission is considering as the planning process continues.

THE PLANNING AREA

The area for which the City of O'Neill should plan for is the entirety of the corporate limits of the community. Nebraska law provides that city may extend its planning and zoning jurisdiction up to one mile from it corporate limits. This law allows urban communities to plan for and have land use regulatory control over areas which the community may develop into over the planning period.

THE PLANNING PERIOD

The typical period of time for which a comprehensive plan is developed is ten years. For this O'Neill, Nebraska Comprehensive Plan, the particular planning period shall be from the present to the year 2025. Due to the likelihood of changes in factors within and outside of the City which can influence the development of the community, it is recommended that the community review its plan on an annual basis so that it can be determined when the plan becomes inconsistent with the goals of its citizens. When and if this occurs, the Comprehensive Plan should be updated.

ECONOMIC, POPULATION & HOUSING ANALYSIS & FORECAST

INTRODUCTION

In order to formulate effective plans for the economic and physical development of the City of O'Neill, Nebraska which are properly scaled to meets the needs of the present and future community, it is necessary to establish a forecast of the future population. Historic population data and trends assist in developing projections of population, which in turn assist in determining future housing, business, employment, educational and future land use needs within the community.

Population growth or decline in any geographic area is dependent on the levels of and trends in the regional and local economies. A strong, expanding economy generates employment opportunities within a given geographic area, which in turn attracts more people to the area to obtain employment. A declining economy, on the other hand, results in decreasing employment opportunities and the outflow of people from a given geographic area in search of employment opportunities elsewhere.

It is important to understand that the local economy of the City of O'Neill does not exist in a vacuum. Instead, the economy of the community is part of and is affected by the economy of the geographic area in which it is located. For smaller communities, the geographic area of which the community is a part and for which statistical data is available is the county in which the community is located. The characteristics and trends in the Holt County economy directly affect the economy of O'Neill and thus provide a reasonable basis on which to evaluate the economic trends and on which to base forecasts of future population levels.

The following analysis relates the historic economic trends of the City of O'Neill and Holt County with past population changes in the community and the county. Future economic activity assumptions can be derived from past economic patterns and trends to provide supporting data for forecasting future population levels.

HISTORIC ECONOMIC TRENDS AND ANALYSIS

One of the critical components in the analysis of economic trends in Holt County and the City of O'Neill is an analysis of employment levels, types of employment and changes employment over time. As indicated in Table 1, the local County economy exhibited several changes in employment characteristics over the last 9 years. Since 2000 the number of persons employed in agriculture, forestry, fisheries and mining, which in the case of Holt County is primarily agricultural employment, has declined by 236 persons or nearly 17%.

Since 2000, the County has also experienced notable declines in employment in construction, wholesale and retail trade, personal services, and public administration. The number of persons employed in these sectors of the County economy declined by a total of 310 jobs. This loss of jobs represents a nearly 16% decline in employment in these categories.

TABLE 1 EMPLOYMENT BY INDUSTRY
HOLT COUNTY, NEBRASKA

Industry Category	2000		2010		% Change 2000 - 2010
Agriculture, Forestry & Mining	1,416	24.8%	1,180	21.5%	- 16.7%
Construction	351	6.1%	335	6.1%	- 4.6%
Manufacturing	177	3.1%	268	4.9%	+ **51.4%**
Transportation, Warehousing & Utilities	349	6.1%	360	6.6%	+ **3.2%**
Wholesale Trade	330	5.8%	203	3.7%	- 38.5%
Retail Trade	740	13.0%	651	11.9%	- 12.0%
Finance, Insurance & Real Estate	220	3.9%	265	4.8%	+ **20.5%**
Personal, Entertainment, Accommodation, Food Services & Recreational Services	344	6.0%	342	6.2%	- 0.6%
Educational Services, Health & Social Services	1,102	19.3%	1,231	22.4%	+ **11.8%**
Other Professional & Related Services	487	8.5%	539	9.8%	+ **10.7%**
Public Administration	192	3.4%	116	2.1%	- 39.6%
TOTAL EMPLOYED PERSONS 16 YRS. & OVER	**5,708**	**100.0%**	**5,490**	**100.0%**	- 3.8%

Source: U. S. Bureau of Census, Census of Population, 2000 – 2010

On the plus side, the Holt County economy did make gains in other categories of employment since 2000. These include a very notable increase in employment in the manufacturing sector which expanded by 91 jobs or slightly over 50%. Other notable gains include employment in finance, insurance and real estate, educational, health and social services and other professional services, in which employment increased by 226 jobs representing a very healthy 12.5% increase. The County also experienced small employment gains in transportation, warehousing and utilities where employment increased by 3.2% or by some 11 jobs.

These increases in employment in the County have not offset the losses in the other sectors of the County economy. Since 2000, overall employment in the County declined by 218 jobs, most of which were in the agricultural and retail trade sectors of the economy. Overall, County employment decreased by almost 4% in the last decade. In summary, the County's economy has weakened slightly, primarily by losing 3.8% in the total number of jobs over the last decade. Although the County's economy is still dependent on agriculture, the County economy has been diversifying into more manufacturing, professional, educational and health care employment, which is not necessarily linked to local agricultural production activities.

Employment in the City of O'Neill is similar to employment of Holt County, except in the agricultural employment category. As indicated in Table 2, in 2010, the number of persons working in O'Neill who are employed in agricultural related businesses comprised 10.6% of total employment, which is one-half that level of employment in the County. This indicates that nearly 1 out of every 16 persons employed in agricultural related employment are not directly employed in farming or ranching, but instead in providing goods and services to the farm and ranch operations.

TABLE 2 EMPLOYMENT BY INDUSTRY
O'NEILL, NEBRASKA

Industry Category	2000	Percent of Total	2010	Percent of Total	Percent Change 2000 - 2010
Agriculture, Forestry, Fisheries & Mining	155	8.8%	193	10.6%	+ **24.5%**
Construction	164	9.3%	147	8.1%	- 10.4%
Manufacturing	23	1.3%	101	5.6%	+ **339.1%**
Transportation, Utilities & Communication	119	6.8%	198	10.9%	+ **66.4%**
Wholesale Trade	155	8.8%	84	4.6%	- 45.8%
Retail Trade	269	15.3%	172	9.5%	- 36.1%
Finance, Insurance & Real Estate	110	6.2%	110	6.0%	0.0%
Personal, Entertainment & Recreation Services	167	9.5%	180	9.9%	+ **7.8%**
Educational, Health & Social Services	337	19.1%	450	24.7%	+ **33.5%**
Other Professional & Related Services	166	9.4%	150	8.2%	- 9.6%
Public Administration	97	5.5%	34	1.9%	- 64.9%
TOTAL EMPLOYED PERSONS 16 YRS. & OVER	**1,762**	**100.0%**	**1,819**	**100.0%**	+ **3.2%**

Source: U. S. Bureau of Census, Census of Population, 2000 - 2010

Due to the community of O'Neill being the largest urban settlement in the County and the County Seat, employment in other components of the local economy are quite similar to those of the total County with manufacturing and education and health care employment being concentrated in the City.

BASIC / NON-BASIC ECONOMIC COMPONENT ANALYSIS

As stated previously, the economy of the City of O'Neill does not exist in a vacuum. Instead, the economy of the community is part of and is affected by the economy of the geographic area in which it is located. For smaller communities, the geographic area of which the community is a part and for which statistical data is available is the county in which the community is located. The characteristics and trends in the Holt County economy directly affect the economy of O'Neill and thus provide a reasonable basis on which to evaluate the economic trends and on which to base forecasts of future population levels.

The importance of agricultural production and other sectors of the economy in Holt County can be examined further through an analysis of basic and non-basic employment in the County.

Basic employment components of the local economy include business activities that provide services and products via sales primarily outside of the County where the money generated by such sales is directed to the local area (the County) in the form of wages and payments to local suppliers.

Non-basic employment components of the local economy include the sale of goods and services within the County and the majority of the money generated by such sales is not re-circulated locally in the form of wages and payments.

An analysis of basic and non-basic employment is used to better understand which employment categories are exporting goods and services outside of the County, thus importing dollars into the local economy.

The data in Table 3 indicates the employment category, the percentage of basic employment, the percentage of non-basic employment and the percent of the State of Nebraska workforce in each employment category. Subtraction of the State's workforce percentage in a particular employment category from the Holt County workforce percentage for the same category determines which categories are basic or non-basic. If a County economy indicates a lower proportion of people employed in an employment category than the State as a whole, that employment category is considered to be non-basic.

If the proportion for the County is higher than the State as a whole, that portion of the higher percentage which is above that as the State as a whole is considered to be basic employment, because it is these categories of employment which are exporting goods and services outside of the County resulting in generating an infusion of

money into the local economy. All other employment categories are "non-basic" and the levels of employment in these categories is dependent on expansion of the "basic" employment sectors.

TABLE 3 BASIC / NON-BASIC EMPLOYMENT - 2010

HOLT COUNTY, NEBRASKA

Employment Sector	Basic	Non-Basic	% of Holt County Workforce	% of State of Nebraska Workforce
Agriculture, Forestry and Mining	**16.6%**	4.9%	21.5%	4.9%
Construction	0.0%	6.1%	6.1%	6.7%
Manufacturing	0.0%	4.9%	4.9%	10.9%
Wholesale Trade	**0.4%**	3.3%	3.7%	3.3%
Retail Trade	**0.1%**	11.8%	11.9%	11.8%
Transportation, Warehousing & Utilities	**0.6%**	6.0%	6.6%	6.0%
Finance, Insurance, Real Estate	0.0%	4.8%	4.8%	7.7%
Educational, Health, Social Services	0.0%	22.4%	22.4%	22.6%
Personal, Entertainment, Recreation, Accommodation and Food Service	0.0%	6.2%	6.2%	7.8%
Other Services (except public administration)	0.0%	9.8%	9.8%	14.4%
Public Administration	0.0%	2.1%	2.1%	3.9%
TOTALS	**17.7%**	82.3%	100.0%	100.0%

Source: U. S. Census Bureau, Census of Population and Housing, 2010

The importance of agricultural production in Holt County and thus the City of O'Neill can be better understood if one realizes that agricultural production accounts for 94% of the basic employment in the County.

Transportation, warehousing and utilities employment accounts for another 3.3% of basic employment. This is largely due to the large trade area of the County and transportation of grain, feed for livestock and livestock produced in the County and the fact that utilities related employees reside in the County. Employment in the wholesale and retail trade segments of the local economy is another, but smaller, portion of the basic employment in the County. This category accounts for 3% of basic employment which can be credited to the

geographic location of the County and the relatively large trade area applicable to the communities in the County, particularly the City of O'Neill.

Combined, these three basic employment categories account for 17.7% of all employment in the County.

ECONOMIC BASE MULTIPLIER

The economic base multiplier is a ratio between the level of employment in "basic" employment categories and the level of employment in the "non-basic" categories. In the case of Holt County, the economic base multiplier is 2.3, meaning that for each new job added to one of the basic employment categories 2.3 new additional jobs in the non-basic employment categories will result. Similarly, the loss of a job in any of the basic employment categories would result in a loss of 2.3 jobs elsewhere in the non-basic local economy.

The future impact of continuing the historic trend of declining agricultural employment cannot be understated. Either employment in the agricultural sector of the County economy must be expanded or employment in the other basic employment categories must be expanded or expansion in other portions of the local economy, particularly manufacturing employment, must be accomplished if the County and thus the City of O'Neill are to have an expanding economy through the planning period.

If there is to be any growth in the agricultural production employment in the future in the County, such growth will probably have to occur in the area of expanded livestock and poultry production as there will only be a limited amount of additional land which can be converted to crop production. The importance of expanded livestock and poultry production and expansion in the manufacturing sector should not be understated. Expansion in the levels of employment in these two components of the local economy is the best way to expand the total overall economy in the County and the City of O'Neill.

The basic and non-basic employment sectors in the economy of the City of O'Neill, varies slightly from that of Holt County. As indicated in Table 4, there are 6 basic employment sectors in the economy of the O'Neill. In order of importance, these include agricultural related employment, transportation and utilities employment, educational and health care employment, personal service employment, construction employment and wholesale trade employment. The importance of agricultural employment in the County is apparent as even in the City of O'Neill 1/3 of all employment is in the agricultural related sector.

The economic base multiplier for the City of O'Neill is 1.5, meaning that for each new job added to one of the basic employment categories 1.5 new additional jobs in the non-basic employment categories will result.

TABLE 4 BASIC / NON-BASIC EMPLOYMENT - 2010
O'NEILL, NEBRASKA

Employment Sector	Basic	Non-Basic	% of Village of O'Neill Workforce	% of State of Nebraska Workforce
Agriculture, Forestry and Mining	**5.7%**	4.9%	10.6%	4.9%
Construction	**1.4%**	6.7%	8.1%	6.7%
Manufacturing	0.0%	5.6%	5.6%	10.9%
Wholesale Trade	**1.3%**	3.3%	4.6%	3.3%
Retail Trade	0.0%	9.5%	9.5%	11.8%
Transportation, Warehousing & Utilities	**4.9%**	6.0%	10.9%	6.0%
Finance, Insurance, Real Estate	0.0%	6.0%	6.0%	7.7%
Educational, Health, Social Services	**2.1%**	22.6%	24.7%	22.6%
Personal, Entertainment, Recreation, Accommodation and Food Service	**2.1%**	7.8%	9.9%	7.8%
Other Services (except public administration)	0.0%	8.2%	8.2%	14.4%
Public Administration	0.0%	1.9%	1.9%	3.9%
TOTALS	**17.5%**	82.5%	100.0%	100.0%

Source: U. S. Census Bureau, Census of Population and Housing, 2010

The level of employment needs to be translated to what such employment generates with regard to income. Household income data describes the earning power of the households in the City and further describes the local economy.

The data in Table 5 compares household incomes for the State of Nebraska, Holt County and the City of O'Neill in order to determine if the household incomes in the City have kept pace with those of the State and Holt County.

TABLE 5 HOUSEHOLD INCOME 2000 - 2010

STATE OF NEBRASKA, HOLT COUNTY & O'NEILL, NEBRASKA

Household Income	2000 (% of Total)			2010 (% of Total)		
	State of Nebraska	Holt County	O'Neill	State of Nebraska	Holt County	O'Neill
Less than $10,000	56,410 (8.4%)	565 (12.3%)	205 (13.4%)	43,938 (6.1%)	200 (4.7%)	85 (5.4%)
$10,000 - $24,999	142,578 (21.3%)	1,306 (28.4%)	435 (28.5%)	119,854 (16.8%)	968 (22.7%)	385 (24.2%)
$25,000 – $49,999	220,586 (33.1%)	1,662 (36.2%)	503 (33.0%)	188,929 (26.4%)	1,061 (24.9%)	357 (22.5%)
$50,000 - $74,999	136,141 (20.4%)	694 (15.1%)	256 (16.8%)	146,221 (20.4%)	1,031 (24.2%)	409 (25.8%)
$75,000 - $99,999	58,361 (8.7%)	201 (4.4%)	61 (4.0%)	94,334 (13.2%)	519 (12.2%)	211 (13.3%)
$100,000 and over	53,989 (8.1%)	170 (3.7%)	64 (4.2%)	122,427 (17.2%)	490 (11.5%)	141 (8.8%)
Total Households	**666,995**	**4,598**	**1,526**	**715,703**	**4,269**	**1,588**
Median Household Income	$39,250	$30,738	$30,815	$50,695	$46,292	$43,895

Source: U. S. Bureau of Census, Census of Population and Housing, 2000 – 2010

As is indicated, in the last 10 years household incomes in O'Neill have increased at a rate slightly faster than that of the State of Nebraska and Holt County.

In 2000, the number of households in O'Neill reporting incomes of less than $10,000 was 205 while in 2010 the number of households with incomes less than $10,000 was only 85. The proportion of households in O'Neill with incomes less than $10,000 was 3% less than the entire State and nearly 1% less than Holt County. Similarly, in 2000 the number of households in O'Neill reporting incomes of over $50,000 per year was 381

compared to the 761 households having a $50,000 or more annual income in 2010. This represents nearly a 100% increase in the number of families with higher incomes.

The median household income in O'Neill has, however, lagged behind that of the State as a whole and Holt County. The $43,895 median household income in 2010 in O'Neill was 5% less than the median household income in Holt County and 13% less than the median household income for the entire State. This is a reflection of a higher number of households in O'Neill who are retired and living on limited incomes.

Another important factor to consider when analyzing household income data is whether the household incomes are keeping pace with inflation. The Consumer Price Index, a measure of inflation, indicates that from 2000 to 2010 the CPI was 27%. In O'Neill, the median household income increased from $30,815 in 2000 to $43,895 in 2010, a 42.4% increase. This indicates that the household incomes in the City have been increasing at a rate substantially greater than the rate of inflation, which, in turn, indicates that the average household was earning more in real dollars in 2010 than in 2000.

The data in Table 6 provides an indication of how many persons work within the City of O'Neill and how many persons are traveling to work outside of O'Neill and how far they are traveling to work. The data indicate that 1371 of the persons working outside of their home, or 78% of those traveling to work in less than 20 minutes, were employed in or near the City while 252 persons, or 15% traveled more than 20 minutes, but less than 45 minutes to work, indicating that the majority are employed within the County. 108 persons traveled more than 45 minutes to work, indicating that they are employed outside of Holt County. Overall, some 21% of working age persons residing in the City are traveling outside of the community for employment. There are thus some 360 persons in the work force who, if competitive employment opportunities were available in or near the City, would probably stay within the City to work. This represents a sizeable work force which could be captured in the City if employment opportunities existed in the future.

TABLE 6 TRAVEL TIME TO WORK - 2010
O'NEILL, NEBRASKA

Travel Time to Work	Number of Persons
Did not work at home	1,731
Less than 10 minutes	1,051
10 - 14 minutes	190
15 - 19 minutes	130
20 - 29 minutes	128
30 - 44 minutes	124
45 - 59 minutes	9

60 minutes or more	99
Worked at home	85
Mean Travel Time to Work	16.0 minutes

Source: U. S. Census Bureau, Census of Population and Housing, 2010

This travel time to work data indicates that the primary geographic area from which the City of O'Neill attracts people to live in the City is that area within a 30 mile radius of O'Neill. In some instances, this radius can be expanded to 45 miles where major employment centers and good all weather roadways connect the community to these areas.

Given this economic data, it is possible to relate economic growth and change to the population of Holt County and the City of O'Neill.

HISTORIC POPULATION TRENDS AND ANALYSIS

In order to establish a population forecast, it is necessary to evaluate historic population levels and trends and to analyze and understand the various factors which have and will continue to influence population levels in the community. Historic population levels of Holt County and the City of O'Neill are presented on Table 7. As indicated, since 1980, the period of peak population for the City, the population of the community of O'Neill has declined by 344 persons or just under 9%. The rate of decline in the City's population is consistent with the consistent population decline for Holt County as a whole since 1980.

TABLE 7 1970 - 2010 POPULATION TRENDS
HOLT COUNTY & CITY OF O'NEILL, NEBRASKA

County / Community	1970	1980	1990	2000	2010	% Change 1980 - 2010
O'Neill	3,753	4,049	3,652	3,744	3,705	(-8.5%)
Holt County	12933	13,552	12,509	11,551	10,435	(-23.0%)

Source: U. S. Census Bureau, Census of Population and Housing, 1970 – 2010

Comparing the population trends of the City of O'Neill to Holt County indicates that the City experienced a lesser population decline over the last 30 years. The primary population losses in Holt County in the last 30 years have occurred in the rural areas of the County which has resulted from fewer and larger farms and ranches.

The loss in rural population and the corresponding decline in agricultural employment has been the primary reason for population declines in the City of O'Neill.

To examine this happening further, it is necessary to evaluate the migration trends of the County's population during the same time period.

POPULATION MIGRATION ANALYSIS

An analysis of the migration of the population over time allows an understanding of a specific demographic factor that influences the overall population of the County and its municipalities. Migration indicates the portion of the population that has either moved into the County or has moved out of the County. Population migration is the remaining portion of the population after natural change, births minus deaths, is subtracted from the total change in the population. In Table 8, the total change in population in Holt County together with the natural increase of decrease (births minus deaths) is indicated by decade since 2000. The migration of the population is also indicated. A negative number in the Total Migration column indicates the number of persons moving out of the County while a positive number indicates that people are moving into the County to live.

TABLE 8 POPULATION MIGRATION ANALYSIS
HOLT COUNTY, NEBRASKA

Decade	Holt County Population Change	Natural Change (Births minus Deaths)	Total Migration
2000 - 2010	- 1,116	- 198	-918

Source: U. S. Census Bureau, Census of Population and Housing, 2000 – 2010
Nebraska Department of Health and Human Services, Vital Statistics Reports, 2000-2010

As indicated in Table 8, the number of deaths in Holt County has exceeded births by a total of 198 since 2000, while the population of the County has decreased by 1,116 persons. This indicates that during the last 10 years a total of 918 persons have migrated out of the County. The majority of those persons migrating out of the County are those of college age and working age who are seeking a higher education or employment.

To verify this assumption and to determine if a "brain drain" trend is occurring an analysis of the age composition of the population is necessary. By analyzing the age structure of the population, it can be determined which age groups (cohorts) within the City of O'Neill are being affected.

POPULATION AGE ANALYSIS

The age composition of the population is an important component of this population analysis. By analyzing the age characteristics of the population, it can be determined which age groups (cohorts) within the City of O'Neill are being affected by the changes in the population. An increase or decrease in each age cohort affects the population in different ways. For example, an increase of the 20 - 44 cohorts would indicate that the present population will have a greater ability to sustain population growth due to a higher number of females of

childbearing age. An analysis of the changes in the population age cohorts also permits a detailed analysis of which age groups are moving into or out of the City of O'Neill.

Detailed data regarding the population cohorts for the City of O'Neill is presented in Table 9. The data indicate that since 1990, the City has experienced decreases in several age groups that are key components to future economic growth. Specifically, the losses in the 20-24 and 25-34 age cohorts indicates that the City has and is experiencing the "brain drain" that is typical of smaller urban communities in Nebraska as those persons who are old enough to have graduated from high school and have attended secondary education are migrating out of the Community to seek employment. The losses in these age cohorts is important because persons of these age groups represent a lower number of persons of child bearing age in the local population and because persons in these age groups help replace those persons in the workforce who have retired.

The City of O'Neill has experienced several additional changes in other age cohorts, including substantial decreases in the number of youth from ages under 5 to 19 and the 50-64 working age groups. The number of young people from under age 5 to 19 years declined by 125 persons or 11.2% since 1990. This decline is linked to a similar decline in the 20-34 age groups, the group that is of child-bearing age.

TABLE 9 ANALYSIS OF POPULATION AGE
O'NEILL, NEBRASKA

AGE GROUP (Cohort)	1990		2000		2010		1990 - 2010	
	Male & Female	% of Total	Male & Female	% of Total	Male & Female	% of Total	Net Change	% Change
Under 5	284	7.4%	250	6.7%	261	7.0%	- 23	- 8.1%
5 – 17	714	18.5%	693	18.5%	614	16.6%	- 100	- 14.0%
18 - 19	119	3.1%	145	3.9%	117	3.2%	- 2	- 1.7%
20 - 24	174	4.5%	124	3.3%	170	4.6%	- 4	- 2.3%
25 - 34	572	14.8%	361	9.7%	398	10.7%	- 174	- 30.4%
35 - 49	661	17.2%	795	21.3%	647	17.5%	- 14	- 2.1%
50 - 64	555	14.4%	532	14.3%	748	20.2%	+ 193	+ 34.8%
65 - 74	402	10.4%	370	9.9%	284	7.7%	- 118	- 29.4%
75+	371	9.6%	463	12.4%	466	12.6%	+ 95	+ 25.6%

Total	**3,852**	**100%**	**3,733**	**100%**	**3,705**	**100%**	**- 147**	**- 3.8%**
Median Age	**36.2**		**40.4**		**42.8**			

Source: U. S. Census Bureau, Census of Population and Housing, 2000 - 2010

Another important age cohort trend is that the number of persons in the pre-retirement and retirement age has been increasing. The typical "aging" of the population has occurred in O'Neill. However, given the overall losses in the age 35 - 49 and 50 – 64 cohorts, the City will experience an aging of the overall population as these age cohorts reach retirement age in the latter part of the planning period. As a result of these age group changes, the median age of the population of O'Neill has increased from 36.2 years in 1990 to almost 43 years in 2010. This aging will have implications for additional housing for the elderly in future years.

POPULATION FORECASTS

For smaller communities one of the more accurate ways of forecasting future population levels is known as a trend line projection. This type of projection utilizes historic trends in population change to predict the future. This method of projection is utilized over other forecasting methods because in smaller communities such as O'Neill, the potential for major changes in the local economy and thus major population changes are less likely than a larger urban area. The trend line forecast also incorporates the City's relationship to the overall Holt County population and the geographic location of the City within the County and the surrounding region, both of which are factors that will influence the future population of the City.

As indicated in Table 10, utilizing the mid-range projection, the Holt County population is forecasted to continue to decrease slightly over the next 18 years reaching a total of 2,765 persons by 2015. This would represent a population decline of 6.9% over the year 2010.

TABLE 10 POPULATION FORECASTS
HOLT COUNTY AND O'NEILL, NEBRASKA

Holt County & O'Neill	1980	1990	2000	2010		Projection Level	2015	2020	2025
Holt County	13,552	12,509	11,551	10,435		High Mid-Range Low	10,175 9,915 9,716	9,915 9,395 9,215	9,655 8,875 8,786
O'Neill	3,753	4,049	3,744	3,705		High Mid-Range Low	3,697 3,685 3,671	3,713 3,666 3,586	3,745 3,647 3,501

Source: Stahr & Associates, Inc., 2013

Decline in the Holt County population is also forecasted by the Nebraska Bureau of Business Research. The Bureau anticipates that the County population will decline to 9,716 by 2015 and 8,400 by 2025 when adjusted for the 2010 population levels. This decline is reflected in the "Low-Range" population projection for the County.

The mid-range forecast for the future population of the City of O'Neill suggests a limited decline of some 39 persons in the next 7 years and an additional 19 persons by the year 2025. This decline would represent a 1.6% decrease in population over the year 2010. A high range forecast, based upon employment growth in the County and regional economy and development of additional housing in O'Neill, would have the City maintaining a population of 3,713 by the year 2020 a slight increase of 8 persons over the 2010 population of the City and an increase of 40 more persons by the year 2025. This decrease would convert to a gain in population of approximately 16 households or families during the planning period.

SUMMARY AND PLANNING IMPLICATIONS FOR THE CITY OF O'NEILL

The primary summarization of this population analysis and forecast is that the population of the City will probably continue to decrease but a slower rate than in the past. The population of the City will most likely also continue to age slowly as the working age group today, those persons ages 35 to 64 which constitute the majority of the population of the City, will age an additional 12 years.

A key for the City to reverse the trend of population decline will be to provide affordable housing of the type in demand in the real estate market.

HOUSING ANALYSIS

This housing analysis component of the O'Neill Comprehensive Plan identifies and evaluates the existing housing characteristics of the community and provides a forecast of future housing needs in the community. A primary goal of the community should be to provide safe, sanitary and affordable housing for every family and individual now residing in the community or who may wish to in the future.

In order to project future housing needs with reasonable accuracy a number of factors must be considered. Among these are population change, household incomes, employment characteristics, age of people, land use, the age, condition, cost and availability of housing in the community and attitudes of persons residing in or may wish to reside in the community in the future.

EXISTING HOUSING ANALYSIS

An important characteristic with regard to housing in any community is its quality and desirability in the marketplace. One of the factors that determines the overall quality and desirability of the existing housing units is the age of the existing residential structures. A breakdown of the age of residential structures in the City of O'Neill is presented in Table 11. As indicated, 396 of the 1,778 residential structures in the community or 22%

were constructed prior to 1940. These structures are now in excess of 74 years old. Although many of these older structures have been remodeled and renovated during the last 74 years, the size, number of rooms, energy efficiency and type of design of these older homes often do not meet what persons in the housing market are looking for. The fact that nearly one-fourths of the residential structures in the City of O'Neill are over 74 years old also implies that a number of such homes are in need of rehabilitation.

997 residential structures in O'Neill were constructed from 1960 to 2010. These homes would be considered more modern and desirable in the marketplace due generally to their larger size, higher number of rooms and type of design. These structures represent over 56% of all residential structures in the Community.

There have been 16 new residential structures constructed in the City since 2005. This represents an average construction rate of 2.3 new homes per year, a relatively slow rate of development which reflects the declining population of the City.

TABLE 11 AGE OF EXISTING HOUSING STOCK - 2010
O'NEILL, NEBRASKA

YEAR OF CONSTRUCTION	NO. OF HOUSING UNITS	% OF TOTAL HOUSING UNITS
2000 - 2010	85	4.8%
1990 - 1999	103	5.8%
1980 - 1989	213	12.0%
1970 - 1979	233	13.1%
1960 - 1969	363	20.4%
1950 - 1959	220	12.4%
1940 - 1949	165	9.3%
1939 or earlier	396	22.2%
TOTAL	**1,778**	**100.0%**

Source: U. S. Census Bureau, Census of Housing, 2010

Housing type is another important factor in evaluating future housing needs. The 2010 U. S. Census, as presented in Table 12, indicates that nearly 84% of all residential structures, 1,501 units, in the City of O'Neill are detached single-family and there are an additional 14 units of single-family attached units comprising less than 1% of the total housing stock. There are also 218 units or 12.3% or all housing units are duplex or apartment units which are typically rental units. In addition there are 45 mobile home living units within the City which constitute 2.5% of the total housing stock.

TABLE 12 EXISTING HOUSING STOCK BY TYPE - 2010
O'NEILL, NEBRASKA

Housing Units in Residential Structures	Number of Structures
Single unit (detached)	1,501
Single unit (attached)	14
2 units	30
3-4 units	101
5-9 units	36
10-19 units	10
20 or more units	41
Mobile Home	45
TOTAL	**1,778**

Source: U. S. Census Bureau, Census of Housing, 2010

In addition to housing type, another factor to consider in determining future housing demand is what is and should be the mix between owner-occupied housing and rental housing. The data in Table 13 is provided to allow an analysis of what the housing mix in the community was in 2010. As indicated, in the year 2010 of the 1,593 occupied housing units in O'Neill, 1,045 or nearly 59% of all occupied housing units are owner-occupied. There are 548 housing units which are renter-occupied. These units comprise 30.8% of all housing units in the Community.

The data also indicate that 185 of the housing units or nearly 10% of all housing units in the City are vacant. The data further indicates that the homeowner vacancy rate was 2.1% and the rental vacancy rate was 6.7%, indicating that there were some 100 housing units that are vacant and not in the active use housing stock.

In 2010 the average household size in the 54 owner-occupied housing units was 2.43 persons. This indicates that in 2010 the majority of the owner-occupied housing in O'Neill was occupied by single persons and a limited number of families with children.

Similarly, the average household size in the 548 renter-occupied housing units was 1.99 persons. This indicates that the majority of the occupants in the rental housing units are persons or couples without children.

In summary, in 2010 the ratio of owner-occupied housing units to renter occupied housing units is nearly 2 to 1. This is to say that for every 100 households in the City, 67 households prefer to own their own home while 33 household prefers to rent their home.

TABLE 13 HOUSING OCCUPANCY &HOUSEHOLD SIZE - 2010
O'NEILL, NEBRASKA

Total Occupied Housing Units	2010
Total Occupied Units	1,593
Vacant Units	185
Owner Occupied:	1,045
Average Persons per Owner Occupied Unit	2.43
Renter Occupied Units:	548
Average Persons per Renter Occupied Unit	1.99

Source: U. S. Census Bureau, Census of Housing, 2010

Another factor to consider when evaluating the existing housing stock is the affordability of the owner-occupied housing and the reasonableness of rent rates. Owner occupied housing units range in price between less than $50,000 to over $1,000,000. The Census data for census year 2010 indicates the median for sale price for an owner-occupied housing unit in O'Neill in 2010 was $85,900. The data also indicates the median monthly rent for rent-occupied housing units in O'Neill was $448.

The values of the owner-occupied housing units in O'Neill are quite low. Over 96% of the owner-occupied housing units had values of less than $150,000. The lower values reflect the number of older, smaller housing units. The lower and more affordable value of the older housing in O'Neill is of critical importance as it is this more affordable housing stock that can attract younger working age persons to the community. It will thus be important for the City to encourage the continued maintenance and rehabilitation of the older housing units.

The data in Tables 14 and 15 provide the ability to further examine the affordability of housing in O'Neill. As indicated the median monthly cost to a homeowner for the mortgage, property taxes and insurance on their home is $871 per month. As indicated in Table 15, this cost represents a median percentage of household income of only 19.8%. This data further verifies that housing and selected owner costs are quite affordable.

TABLE 14 MORTGAGE & SELECTED OWNER COSTS - 2010
O'NEILL, NEBRASKA

Mortgage and Selected Owner Costs / Month*	Number
Housing Units with No Mortgage	522
Housing Units with Mortgage	523
Less than $500	13
$500 - $699	96
$700 - $999	238
$1,000 or more	177
Median Mortgage & Selected Owner Costs	**$871**
Median Selected Owner Cost with No Mortgage	**$395**

Source: U. S. Census Bureau, Census of Housing, 2010
*Selected costs include mortgage, taxes and insurance

TABLE 15 MORTGAGE & SELECTED MONTHLY OWNER COST AS PERCENTAGE OF HOUSEHOLD INCOME - 2010
O'NEILL, NEBRASKA

Mortgage & Selected Monthly Owner Costs as % of Household Income *	Number
Less than 20%	356
20% - 24.9%	77
25% - 29.9%	47
30% - 34.9%	9
35% or more	34
Median %	**19.8%**

Source: U. S. Census Bureau, Census of Housing, 2010
* Selected costs include mortgage, taxes and insurance

The cost of and affordability of rental housing is also an important factor in evaluating the existing housing situation in Aurora and in forecasting future rental housing needs. As indicated in Table 16, the contract rent rates for housing in the community range from no rent to over $500 per month. The median monthly contract rent in 2010 was $432 per month, which like owner-occupied housing values is reasonable given the cost of providing and maintaining rental housing.

TABLE 16 HOUSING CONTRACT RENT - 2010
O'NEILL NEBRASKA

Contract Rent for Housing / Month	Number
No cash rent	69
Less than $200	19
$200 - $299	89
$300 - $499	152
$500 - $749	144
$750 or more	75
Total Renter-Occupied Housing Units	**548**
Median Contract Rent	**$432**

Source: U. S. Census Bureau, Census of Housing, 2010

The data presented in Table 17 verifies that rent rates in O'Neill are reasonable. The calculated median percentage of household income for rental housing is only 27.5%. This level of commitment to housing costs is quite reasonable, however, it must be understood that providing of new rental housing at these lower rent rates will be very difficult in the future due to the cost of new housing construction. These low rental rates again point to the need to maintain and rehabilitate the existing housing stock.

TABLE 17 RENT AS PERCENTAGE OF HOUSEHOLD INCOME - 2010
O'NEILL, NEBRASKA

Gross Rent As % if Household Income	Number
Less than 15%	110
15% - 19%	75
20% - 24%	86
25% - 29%	32
30% - 34%	38
35% or more	138
Not Computed	69
Total Renter-Occupied Housing Units	**548**
Median Rent as % of Household Income	**27.5%**

Source: U. S. Census Bureau, Census of Housing, 2010

HOUSING NEEDS FORECAST

Based upon the previously prepared forecast of population for the City of O'Neill and upon the characteristics of the housing stock and vacancy rates in the community it is possible to generate a reasonable estimate of future housing needs during the planning period. Given the fact that the future population of the City of O'Neill

is expected to stabilize or increase slightly through the planning period, the demand for additional housing will be limited. However, as also indicated in Table 18, if the City would work to provide additional affordable housing through rehabilitation of existing housing structures, particularly those that are vacant but in good enough condition to warrant rehabilitation, and provide down-size housing for the increasing number of persons who will reach retirement age during the planning period, there could be a demand for a limited number of such housing units.

TABLE 18 HOUSING NEEDS FORECAST
O'NEILL, NEBRASKA

Historical Population Levels					Population Forecast				
Year	**1980**	**1990**	**2000**	**2010**	**Forecast Level**	**2015**	**2020**	**2025**	
	3,753	4,049	3,744	3,705	High Mid-Range Low	3,697 3,685 3,671	3,713 3,666 3,586	3,745 3,647 3,501	
Persons in Group Quarters	na	75	116	75		96	115	136	
Persons Per Household					**Persons Per Household Forecast**				
Owner Occupied	na	2.38	2.33	2.43	**Forecast Level**	2.45	2.46	2.48	
Renter Occupied	na	2.00	2.18	1.99		1.97	1.96	1.95	
Occupied Housing Units					**Occupied Housing Units Forecast**				
Owner Occupied	na	1,049	1,086	1,045	**Forecast Level**	1,050	1,059	1,071	
Renter Occupied	na	539	468	548		548	555	563	
Housing Units					**Forecast Level**	**2015**	**2020**	**2025**	
Single-Family						5	9	7	
Multi-Family						0	7	8	
6.7% Vacancy Rate						1	1	1	
Total Housing Units						6	17	16	

Source: Stahr & Associates, Inc., 2015

This potential demand for additional housing units can be satisfied through rehabilitation of existing housing units, development of an estimated 21 owner-occupied units and 15 additional rental units over the next 12 years. Development of this additional housing will result in a limited demand for additional land for new housing development.

PHYSICAL & ENVIRONMENTAL ANALYSIS

INTRODUCTION

To formulate a plan for the future physical development of the City of O'Neill it is necessary to evaluate the natural and man-made environment in which the City is now situated. A number of environmental factors, both natural and man-made, will serve to influence or limit further development in various parts of the community.

This component of the Comprehensive Plan of the City of O'Neill identifies and qualifies the impacts of various environmental and physical factors which have and will continue to impact the future physical development of the City.

The categories of the natural and man-made environmental factors which are herein evaluated include:

NATURAL ENVIRONMENT

- Geology
- Physiography, relief and drainage
- Soils
- Flood hazards
- Hydrology

MAN-MADE ENVIRONMENT

- Historical growth trends
- Transportation systems
- Land use patterns
- Public facility impacts

NATURAL ENVIRONMENTAL ANALYSIS

GEOLOGY

The bedrock underlying the land area occupied by the urban area of the City of O'Neill is known as Pierre Shale. The shale contains interbedded silt, sand, sandstone and siltstone of what is known as the Ogallala Formation. This relatively impervious material is overlain by unconsolidated sediments consisting of water-deposited sand, gravel, silt and clay and wind-deposited sand and silt. South of the Elkhorn River these unconsolidated deposits consist of water deposited and gravel with intermittent silt and clay. Wind-deposited sand overlays this material. North of the Elkhorn River, the location of the primary urban area of the City, the unconsolidated deposits are loamy materials mixed with coarse sand and gravel with some areas then covered by wind-deposited sand.

The primary characteristic of the Ogallala Formation is that the large deposits of sand and gravels provide an abundant source of groundwater for domestic, municipal and agricultural irrigation uses. The quality of the groundwater is very good with low dissolved solids content. This low solids content is the result of the sandy soils containing little organic matter to filter down into the groundwater and because the subsoils and saturated deposits contain very readily soluble materials. Due to the permeability of the sandy soils and the relatively shallow depth to

the water table in places, the groundwater has and is being slowly contaminated by leaching of agricultural chemicals, including those applied to urban lawns and by the improper disposal of human, livestock and household wastes.

The importance of the geology in and around the urban area of the City is that the availability of large quantities of quality groundwater at relatively shallow depths will assist in the further economic development of the City and County as those industries requiring large quantities of water will tend to gravitate to areas where such is available. Another important factor is that there will be a continued need to minimize the potential for contamination of this valuable resource.

PHYSIOGRAPHY, RELIEF AND DRAINAGE

The City of O'Neill is located immediately north of the North Branch of the Elkhorn River in a landform known as a sub-irrigated valley. This valley is broad with nearly level to very gently sloping bottom lands along the River and low rolling hills extending northward from the bottom lands. The elevation of the Elkhorn River bottom lands on the south edge of the City is 1,988 feet above sea level with the elevation of the urban areas of the City ranging from 1,990 to 2030 feet above sea level. All the land area occupied by the urban area drains southward to the River through swales and man-made drainage structures.

The physiography of the present urban area and the land around the City presents both positive and limiting influences which will impact the future physical development of the City. From a positive perspective, the relatively flat to gently sloping land in and around the City makes it relatively inexpensive for development of urban housing and other land uses. The limiting influence of the physiography is that the relatively extensive and flat bottom lands along the Elkhorn River results in expansive areas of land which are subject to flooding. This flooding potential has and will continue to discourage or prohibit urban development to the south of the present urban area. From a positive perspective, the areas subject to flooding a naturally wooded areas which can serve as attractive recreation areas for local citizens and can be used to attract additional tourists to the City.

SOILS

Soils in and around the City of O'Neill are divided into two distinct soils associations. A soils association is a landscape that has distinct patterns of soils and typically consists of one or more major soil types and at least one minor soil type. The associations are named for the dominant soils that occur. The two soils associations in and around the urban area are described and illustrated as follows:

O'Neill - Anselmo - Pivot Association

This soils association occurs along the gently sloping terraces of the Elkhorn River. As indicated on Figure 1, the soil type in this association that occurs in the southern half of the urban area of the City is Anselmo. This soil is

SOILS LEGEND: **Ax: Anselmo - O'Neill Sandy Loam (0-2% slope)**
Jn / Jnc: Jansen Loam (0-6% slope)

STAHR & ASSOCIATES, INC.
Community & County Planning - Economic Development Consultants

919 COUNTRY CLUB AVE. Suite 4 TELEPHONE (402) 710-1819
YORK, NEBRASKA 68467 E-MAIL ojstahr@hotmail.com

FIGURE 1

FUTURE LAND USE PLAN
O'NEILL, NEBRASKA

deep and well drained with sandy loam on the top fourteen inches or so. The subsoil is also sandy, typically fourteen inches deep. The underlying material is loamy sand to a depth of sixty inches. This soil type has only slight limitations for urban development, except that this soil has high seepage rates which present severe limitations for land uses such as landfills and sewage lagoons.

Jansen - O'Neill Association

The soils in this association occur on the tablelands on the divide between the Elkhorn and Niobrara River watersheds. As indicated on Figure 1, Jansen soils occur on the land throughout the northern half of the urban area of the City. Jansen soils are moderately deep loam soils with a surface and subsurface layer with an average depth of twelve inches. The subsoil, consisting of loam and sandy clay loam, averages eighteen inches in depth with the underlying material being gravelly coarse sand to a depth of more than sixty inches.

Jansen soils also present only slight limitations for urban development. The most important characteristic of this soil is low strength, thus urban development such as building floor slabs and streets have to be engineered to overcome this characteristic if foundation and street paving failures or cracking are to be avoided.

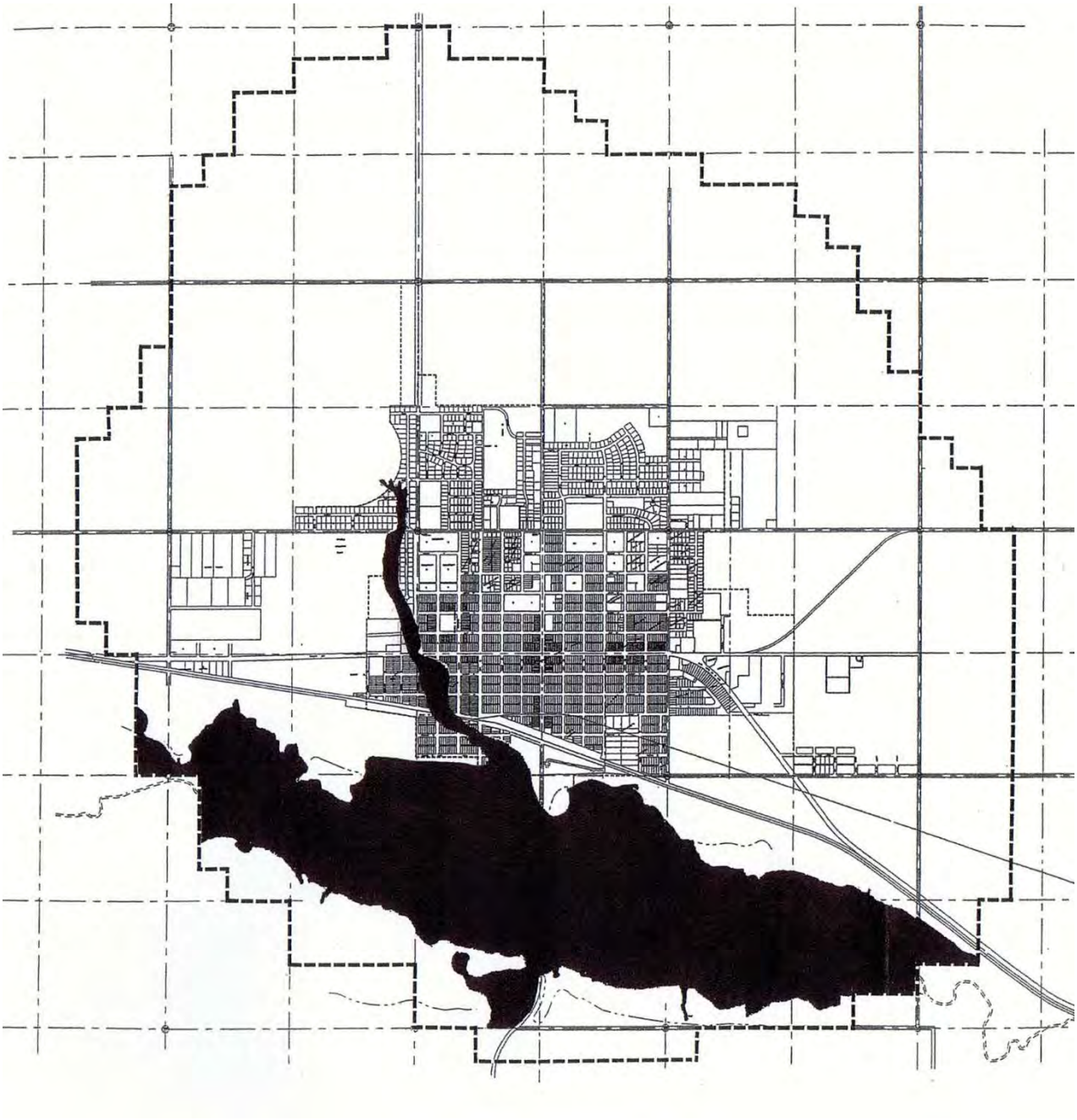
Jansen soils, like Anselmo soils, present limitations for landfills and sewage lagoons due to high seepage rates. The use of septic tank and tile field sewage disposal systems should also be minimized as Jansen soils are porous enough to be a very poor filter for such wastes and untreated waste could contaminate the groundwater.

Both of these major soils occurring in and around the City of O'Neill are classified by the U. S. Department of Agriculture Soil Conservation Service as prime agricultural soils, meaning that these soils well suited for producing crops, forage, fiber and oilseed crops with minimal inputs of energy and economic resources. The existence of these prime agricultural soils indicate that there is and will continue to be a conflict between the desire to preserve prime soils for agricultural production and the need for the City to continue to expand physically. In this situation the conflict cannot be avoided and thus this Comprehensive Plan shall formulate methods on minimizing the loss of prime agricultural land.

FLOOD HAZARDS

The City of O'Neill, as a result of being located near the North Branch of the Elkhorn River, is faced with some flood hazard limitations which will impact the future physical growth of the City. Although the majority of the existing urban area is not subject to flooding, flood hazards do exist to the south, and to a lesser extent, the southwestern portion of the City.

As indicated on Figure 2, the areas in and around the City which are subject to flooding on a 100 year basis occur along the Elkhorn River, extending northward to the southern edge of the developed urban area. Flood hazards also



100 Year Flood Hazard Areas

STAHR & ASSOCIATES, INC.

Community & County Planning - Economic Development Consultants

919 COUNTRY CLUB AVE. Suite 4 TELEPHONE (402) 710-1819
YORK, NEBRASKA 68467 E-MAIL ojstahr@hotmail.com

FIGURE 2

FLOOD HAZARD AREAS

O'NEILL, NEBRASKA

exist within the southwestern and western portions of the existing urban area as flooding along a natural drainageway extending northward from the Elkhorn River is possible.

The presence of the flood hazard areas has served to influence the direction of growth of the City and will continue to do so in the future. With the exception of utilizing the more scenic portions of these flood prone areas for recreational uses, the land areas which are subject to flooding, except for those areas where filling to above the 100 year flood elevations is feasible, should not be developed. The flood hazard limitations will limit urban growth to the south and thus limitation must therefore be reflected in the Future Land Use Plan component of this Comprehensive Plan.

HYDROLOGY

As noted previously, the City of O'Neill, like much of the central portion of the State of Nebraska, is situated over the expansive geological formation of sand and gravel known as the Ogallala Aquifer. This aquifer provides large quantities of good quality water for all types of uses.

In a considerable portion of Holt County and thus the City of O'Neill the soils and subsoils are very sandy and thus quite porous. This characteristic, combined with the relatively shallow water table depths especially in low lying areas along the Elkhorn River, increase the potential for contamination of the groundwater. If substantial contamination of the groundwater were to occur, it would greatly impact the existing as well as future development of the City. It is thus imperative that planning for the future physical development of the City include provisions to minimize or prohibit land uses in and around the City which have high potential for generating contaminants which could accidentally seep into or otherwise migrate into the groundwater.

CLIMATE

The climate of north-central Nebraska, in which the City of O'Neill is located, has and will have some limited impacts on development of the City. Most of these impacts relate to construction and design standards, such as insulation of buildings and temperature stress design on paved streets, which allow man-made developments to withstand the temperature extremes typical of the local climate.

In Holt County and the City of O'Neill the winter season is typically very cold because of incursions of dry continental air flowing down from Canada. The winter day average temperature is 24 degrees Fahrenheit while the average minimum temperature is 14 degrees. The lowest temperature on record in Holt County is minus 27 degrees. Snowfall is frequent and can at times be very heavy. Snow cover is usually not continuous as the average annual snowfall is 31 inches. When significant snowfall does occur, it is necessary to plow the snow to open roadways and streets to allow movement of people and goods. The need to have sufficient land area along the roadways and

streets on which to pile snow that is plowed from the roadways and streets is another design impact of the local climate.

Summers in O'Neill can be quite hot with twenty-four hour temperatures averaging 72 degrees Fahrenheit and day time temperatures averaging 85 degrees. Temperatures can, however, be much warmer with highs of 106 degrees having been recorded in the past. With the exception of the very hottest days, the summer climate of the City is quite enjoyable and enhances the life style and quality of life in the City.

MAN-MADE ENVIRONMENTAL ANALYSIS

HISTORIC GROWTH DIRECTIONS AND TRENDS

The present shape and configuration of the urban area of the City of O'Neill and the historic reasons for this shape and configuration will influence further physical and economic development of the City. From the platting of the original town near the Elkhorn River and the development of the major transportation corridors, Highways 20, 275 and 281, the urban area has expanded in a north-oriented fan shape around the downtown area. Concentric growth of any urban area typically occurs and is preferred as such urban form maximizes the efficiencies of the infrastructure of the City. In the case of O'Neill, the presence of the Elkhorn River floodplains to the immediate south of the City prohibits such concentric growth.

Historically, residential development has occurred to the east, west and north of the downtown area. More recent residential development has been to the north and northwest as these locations are those which have had limited non-residential development thus limiting land use conflicts with residential uses.

The importance of the two highways serving the City cannot be understated. Since the construction of these highways the majority of development in the City has occurred along these highways. With the exception of several blocks of older residential dwellings along this highway, the entirety of both frontages along these highways has been committed to commercial use. Commercial uses even extend west and east beyond the current corporate limits. This development occurred because of the importance that these commercial uses place on customer exposure and access and the limited amount of land available in the downtown area of the City.

More recently, with nearly all of the Highway 20 / 275 frontages in or near the City having been developed, newer commercial and industrial development has occurred along Highway 281 in the northwestern portion of the City and to a lesser extent in the area on the northeastern periphery of the City. This development has resulted simply because there are very limited options available to locating additional commercial and industrial uses in the current urban area. This limitation is a critically important factor that must be effectively addressed in this Plan if the City is to be able to continue to develop economically.

It is anticipated that this trend of commercial and industrial development to the northwest and northeast will continue and that some conflicts between existing residential uses in these areas, particularly along portions of north Highway 281 will result. The Future Land Use Plan component of this Comprehensive Plan must determine how best to minimize these unavoidable conflicts.

In summary, historical development trends indicate that various factors will result in continued commercial and industrial development on the western and eastern peripheries of the City along Highway 20 / 275, on the northwestern periphery along Highway 281 and to a lesser extent to the northeast of the City. The most desirable locations for additional residential development will most likely continue to be in the northern portion of the urban area as this area is where land use conflicts can be minimized.

TRANSPORTATION SYSTEM IMPACTS

As previously noted, the two primary transportation corridors serving the City, Highways 20 /275 and Highway 281 have and will continue to influence the pattern of land uses as the City physically expands in the future. Due to the abandonment of the railroad serving the City, additional commercial and industrial uses will generally prefer locations along these highways.

Due to the fact that most portions of the frontage along these highways are already devoted to such uses, the demand for future expansion of the City to the west, northwest, southeast and, to a lesser extent, to the northeast will be relatively high. This implies that the City will need to plan for the expansion of the utility infrastructure along these major roadways.

A negative impact that the highway corridors have had on the City as it has grown is that all traffic, including a relatively high volume of large truck traffic, is channeled through the City and the downtown area. In the early history of the City, when traffic volumes on these roadways were more limited, this channeling of all traffic through the downtown area was a positive as it gave the local business operations exposure to the people traveling these roadways. In recent years, with the abandonment of the railroad and with the population becoming more mobile, traffic volumes on these roadways, particularly large truck traffic, has reached a point where it can be considered a negative, at least from the standpoint of customer access to those businesses in the downtown area which front on the highways. Today, it is difficult and potentially hazardous for persons wishing to shop in the downtown area to park near many of these businesses. Further, noisy truck traffic is also a deterrent to attracting shoppers to the downtown area.

This negative impact issue should be further evaluated in the Future Land Use and Transportation Plan components of the Comprehensive Plan to determine if the negative factors can be dealt with in a way which will encourage highways travelers to shop in O'Neill, but which will minimize the traffic and noise conflicts in the downtown area.

LAND USE PATTERNS

As previously noted, the City of O'Neill has developed in a fan shape oriented to the north around the downtown area. This land use pattern consist of a downtown commercial core surrounded by residential uses, which is in turn surrounded by a loose ring of public, commercial and industrial uses. In O'Neill's case, the downtown commercial core has been extended along Highway 20 /275 approximately three-fourths mile to the east and over one and one-half miles to the west due to the importance of this transportation corridor.

With the exception of the commercial growth to the west along Highway 20, the land use pattern of the City has remained quite compact. Compactness is a notable positive as it improves the efficiencies of the public facilities, utilities, streets and public services. Such compactness also typically results in more land use conflicts as land uses which are not always compatible are located closer together.

Land use incompatibilities do exist within the urban area, particularly in the older residential neighborhoods where commercial and industrial uses have occurred in close proximity to these residential uses. Newer residential neighborhoods have only minimal conflicts on the peripheries of neighborhoods. There are very limited conflicts within the neighborhoods.

A notable land use trend which has developed only in recent years is the somewhat extensive dispersion of industrial land uses. In an ideal community such uses would be concentrated in one or more areas where land use conflicts and industry related traffic conflicts with non-industrial uses can be minimized. However, in O'Neill, the trend has been that new industrial uses have begun to be scattered to the northwest and northeast portions of the City which is away from the historical industrial area along the southern periphery of the community near the now abandoned railroad. This trend is occurring primarily due to the lack of rail service in the community, forcing industrial uses to seek locations which are easily accessible by trucks to transport raw materials, supplies and finished products to market.

If there is to be additional industrial development in or near the City, it is critical that land areas that are suitable for such development be identified and reserved for such future development because areas which have highway access, which can be served with adequate water and sewer utilities and which have the potential for minimal land use conflicts are very limited in and around the City. Identification and reservation of land suitable for industrial development will avoid development of other uses on or near such land that would result in future land use conflicts.

Another notable land use trend which will have a negative impact on the future ability of the City to expand physically, if continued, is that of development of urban uses without annexation to the City. This has occurred with regard to the commercial and residential developments to the west, northwest and southeast of the City. Since the demand for future growth, particularly the development of future commercial uses will most likely be to the west,

northwest and southeast of the present urban area, further development of these areas without annexation to the City will only serve to continue a basic unfairness between businesses inside and outside the corporate limits. Without annexation, the residents and business owners enjoy the benefits of the City streets, fire protection and other public facilities and services without paying slightly higher property taxes to the City to financially support these benefits.

More importantly not annexing these areas will make it substantially more difficult to attract additional industrial development to the City. In today's competitive environment, the competition for attracting new businesses and industries is intense and prospective commercial and industrial entrepreneurs will seek the best financing possible. One of the financing tools available to the City for attracting new businesses and industries is Tax Increment Financing (TIF). However, TIF, with the exception of value-added agri-businesses, can only be used if the development on which it is applied is within the corporate limits of a municipality. Not having this financing tool available to prospective businesses through continuation of non-annexation of new developments will place the City at a severe disadvantage with regard to achieving additional commercial and industrial development, thus enhancing the local economy.

PUBLIC FACILITY IMPACTS

The locations of public and quasi-public facilities within the urban area of any community can directly influence the desirability of the surrounding areas for development of various land uses. Schools, parks, golf courses, ballparks and similar open space land uses typically attract additional residential development while other public and quasi-public uses such as government maintenance buildings and storage yards, electrical power substations, fire barns and ambulance garages tend to discourage residential development due to incompatibilities with building types, traffic, noise and similar factors.

The public open space uses and public and quasi-public facilities which exist in the City of O'Neill are distributed throughout the urban area. In recent years, the development of such uses as the golf course, the baseball complex and the soccer complex have been developed been developed on the northeastern and northern peripheries of the City, which places them at a maximum distance from where the majority of the citizens of the City live.

Due to the ability of the more attractive public facilities to encourage nearby development and attract people, the locations of future public and quasi-public facilities should not be determined solely on the basis of the availability of the location of undeveloped land and the cost of such land. Rather, as with the more recent development of the Community Center, siting of such future uses should also consider the impacts of possible locations on encouraging nearby developments and redevelopments and maximizing the accessibility of such facilities to the local citizens.

It is recommended that the City utilize this “planned impact” public facility locating concept in siting of future facilities. It is further recommended that this concept be used to encourage the redevelopment of older commercial/industrial areas near the now abandoned portions of the railroad and the resulting Cowboy Trail.

EXISTING LAND USE ANALYSIS

Essential to the formulation of a valid plan for the further development of any community is an analysis of the existing land uses and the patterns created by the existing land uses. Development of an understanding of the way land is presently used in and around a community provides information on the physical setting of the economic activity and the characteristics of life style of the residents of the community. This analysis involves not only developing an understanding of what the existing land use patterns are, but also developing and understanding of how and why the existing land use pattern came to be and what factors will encourage, discourage, control or limit future land development in and around the community.

OBJECTIVES

This existing land use analysis for the City of O'Neill, Nebraska will accomplish the following objectives:

- Define the areas of land use similarities, differences, conflict and the past logic which resulted in the existing land use pattern,
- Define the trends of decline or expansion in the various land use categories and identify those trends which are likely to continue and those trends that should be allowed to continue,
- Define the factors which will limit or otherwise affect the future land use pattern of the City,
- Provide a basis for the development of a Future Land Use Plan for the City, which is realistic and achievable.

EXISTING LAND USE CATEGORIES

Land uses are classified by the type of activity conducted on an identifiable parcel of land. Land uses in and around the City of O'Neill can be classified into nine categories as follows:

1. Residential, Single-Family …….. Land used for living purposes in single-family detached dwellings,
2. Residential, Multi-Family …….. Land used for living purposes in duplex, multi-family or group housing units,

3. Residential, Mobile Home …….. Land used for living purposes in single-family manufactured dwelling units,

4. Public and Semi-Public…… Land used for governmental, educational, religious and other public service purposes,

5. Open Space and Recreation …… Land used for parks and outdoor recreation facilities,

6. Commercial ……. Land used for wholesale, retail, business and professional service uses,

7. Industrial ……. Land used for manufacturing of products,

8. Streets and Alleys and other transportation ……Land within rights-of-way which are used for Streets, alleys, railroads and trails

9. Vacant and Undeveloped - Land that is vacant or undeveloped.

ANALYSIS

In order to provide the information needed to conduct an analysis of the land uses patterns in and around the City of O'Neill, a field survey of all land uses in and around the City was conducted in the fall of 2013. The information collected was then mapped and measured to provide a graphic depiction of the City. The depiction of the existing land uses within the corporate limits of the City is presented on Figure 3 while the land uses outside of the City, but within the City's one mile planning and zoning jurisdictional area, are depicted on Figure 4.

A quantitative analysis of land uses within the corporate limits of the City of O'Neill, together with non-agricultural land uses situated within the City's one-mile jurisdictional area is presented in Table 19. The purpose of this quantitative analysis is to develop an understanding of the intensities of use within each land use category and to develop an understanding of the proportional relationship of each type of land use to the other, as well as to the present population of the City. This analysis will provide an indication of the efficiency of the land usage and provide a historic basis for estimating future land use needs.

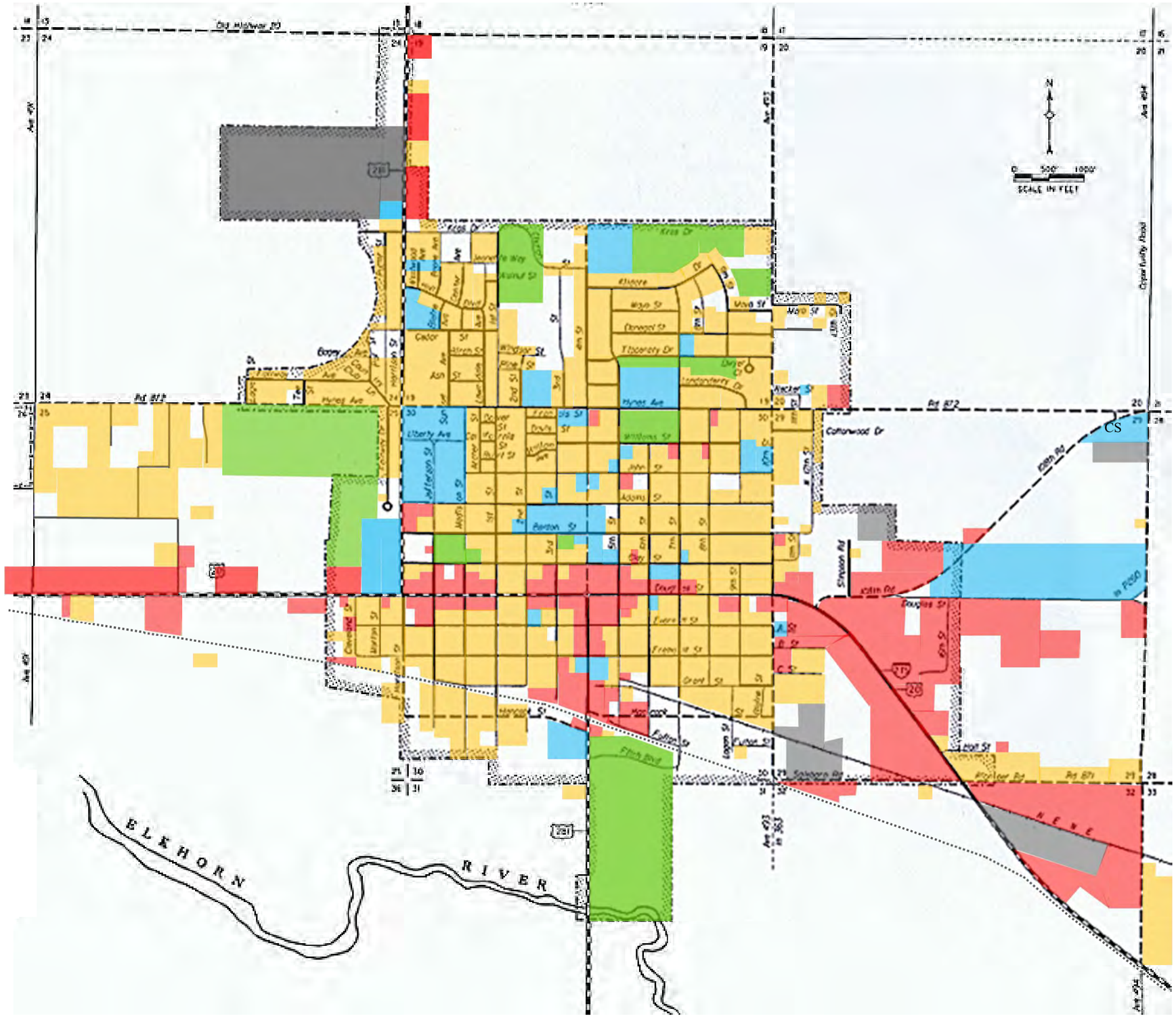


Figure 3

EXISTING LAND USE

O'Neill, Nebraska

LAND USE LEGEND

- Residential
- Commercial
- Public & Semi-Public
- Industrial
- Vacant / Undeveloped

STAHR & ASSOCIATES, INC.

Community and County Planning - Economic Development Consultants

1512 Road
York, Nebraska 68467

Telephone (402) 710-1819
Fax (402) 362-2526
E-Mail ojstahr@hotmail.com

One mile planning and zoning jurisdiction area boundaries on quarter - quarter section boundaries

14 13 18 17 16

23 24 19 20 21

26 23 28

35 36 31 32 33

1 6

ELKHORN RIVER

Figure 4

EXISTING LAND USE

One Mile Zoning Jurisdiction Area

O'Neill, Nebraska

LAND USE LEGEND

- Residential
- Commercial
- Public & Semi-Public (Buildings and Structures)
- Public & Semi-Public (Open Space / Recreation)
- Industrial
- Vacant / Undeveloped
- Municipal Corporate Limits

STAHR & ASSOCIATES, INC.

Community and County Planning - Economic Development Consultants

1512 Road
York, Nebraska 68467

Telephone (402) 710-1819
Fax (402) 362-2526
E-Mail ojstahr@hotmail.com

TABLE 19 EXISTING LAND USE - 2013
O'NEILL, NEBRASKA

Land Use Category	Land Use Area Within Corporate Area (acres)	% of Total Land Area within Corporate Limits	Land Use Area Within 1 Mile Jurisdiction Area (acres)	% of Total Developed Area	Land Area in Corporate Limits per 100 persons (acres)*	Land Area in Total Developed Area per 100 persons (acres)
Residential	470.2	30.5%	74.9	30.2%	12.7	14.2
Public & Semi-Public	91.8	6.0%	53.0	8.0%	2.5	3.8
Open Space / Recreation	127.5	8.3%	55.0	10.1%	3.4	4.7
Commercial	153.0	9.9%	28.1	10.0%	4.1	4.7
Industrial	98.5	6.4%	14.5	6.3%	2.7	2.9
Streets & Alleys	287.2	18.6%	7.9	16.4%	7.8	7.7
Other Transportation	22.5	1.5%	29.3	2.9%	0.6	1.3
Vacant / Undeveloped	289.6	18.8%	-	16.1%	7.8	7.5
TOTAL	**1,540.3**	**100.0%**	**262.7**	**100.0%**	**41.6**	**46.8**

Source: Stahr & Associates, Inc. Field Survey, Fall, 2013
*Based upon City of O'Neill, Nebraska 2010 population of 3,705 and estimated population of total developed area of 3,843.

GENERAL LAND USE

The total developed land area within the corporate limits of the City of O'Neill encompasses just over 1,540 acres. In addition, there are a total of nearly 263 acres of land located just outside the corporate limits of the City which have been developed for non-agricultural uses, including residential, commercial, industrial and public and semi-public uses. The total urban area of the City thus encompasses 1,803 acres or the equivalent of 2.8 sections of land.

As indicated in Table 19, residential land uses occupy the largest land area within the City and comprise nearly 1/3 of the total land area within the corporate limits. In addition, there is almost 75 additional acres of land used for residential purposes within the 1 mile planning and zoning jurisdiction area of the City, but these residential uses are not within the corporate limits of the City.

Historically, due to the broad floodplain of the Elkhorn River to the south of the City, virtually all urban growth, including virtually all residential growth has been to the north, northeast and northwest. Due to lack of alternatives, additional growth in these areas can be predicted, particularly to the north and northwest where non-farm housing has been developed recently.

RESIDENTIAL LAND USE

Residential land uses are predominantly single-family detached dwellings which occur in all areas of the City. Manufactured housing, comprised primarily of mobile homes, make up the second largest residential land use category. This type of housing is primarily located in eight sites scattered within the City where mobile homes are mixed in with other types of the residential dwellings. A larger mobile home park is located just beyond the southeast corporate limits. Mobile home dwellings account for 1.9% of the total land use in the City.

The residential uses in the built-up areas of the City are generally situated in areas or neighborhoods which are residential in character and thus the number of conflicts with non-residential uses are limited. Areas where conflicts do exist occur where residential uses abut commercial uses around the downtown area and adjoining the commercial uses along Highways 281 and 20. These same areas are the areas in which the older residential uses are located and are thus more susceptible to decline due to land use conflicts. In any urban setting it is impossible to avoid these proximity conflicts, but these conflicts have and will continue to negatively impact the quality and marketability of residential dwellings exposed to these conflicts. In order to minimize these conflicts and to assist in maintaining affordable housing in the community by preserving the existing housing stock, the City's zoning regulations should include landscape screening requirements and rear or side yard setback limitations so that such conflicts can be minimized in the future.

A further evaluation of residential land use densities indicates that the average single-family dwelling in the City occupies a lot containing 13,600 square feet while the average duplex, multi-family or group living facility occupies 2,533 square feet of land. Manufactured housing and mobile home densities average just over 9,000 square feet.

The relatively low residential land use densities in the City of O'Neill indicate that there is room for improvement in the efficiency of the residential land use pattern. As the cost to construct and maintain the streets, utilities, and storm drainage systems necessary to support residential development continues to increase, the cost of housing will also continue to increase. Not improving the efficiency of the residential land uses will not only affect a prospective resident's ability to find affordable housing, but will also result in higher costs to the subdivider and the City to construct and maintain a larger, less efficient, infrastructure.

Encouraging the development of housing styles which would improve the residential land use densities should be encouraged by the City through formulation of zoning and subdivision regulations which provide incentives for rather than discourage or effectively prohibit such housing styles.

The second largest land use within the City is land that is used for street, alley, railroad and pedestrian trail rights-of-way. The nearly 310 acres of land used for these purposes comprises 20.1% of all land within the City.

Land within the corporate limits which is vacant and undeveloped totals nearly 290 acres. The majority of the vacant and undeveloped land occurs on the peripheries of the community, but approximately 17% of this vacant and undeveloped land occurs within the built-up area of the City.

Other land uses, including public and semi-public uses, open space recreation facilities, commercial and industrial uses occupy some 471 acres of land within the corporate limits of the City which, combined, comprise slightly less than 1/3 of all land area in the City.

COMMERCIAL LAND USE

Commercial land uses within the corporate limits of the City occupy nearly 153 acres or 10% of the total land area in the corporate limits. An additional 28 acres of land devoted to commercial purposes is located along Highway 20 just outside the eastern and western corporate limits. Approximately 20% of this land used for commercial purposes is devoted to one use, an automobile salvage yard at the eastern periphery of the City.

As depicted in Figures 3 and 4, commercial uses within and near the City are concentrated along both highways which serve the City, as well as, along the former rail line in the southeastern portion of the City. This concentration has served to minimize land use conflicts between the commercial uses and nearby residential uses, although wherever this transition from commercial to residential use exists, land use conflicts are present.

There are eight instances where commercial uses are scattered within residential neighborhoods. Several of these uses are medical or other professional service clinics which do not present major land use conflicts with surrounding residential uses. The remaining commercial uses are not compatible with surrounding residential uses and have and will contribute to the decline in desirability of housing in the areas in close proximity.

Evaluation of the age and condition of commercial structures in the southern portion of the City along Highway 281 south of the downtown area and near the former rail line indicates that the demand for commercial uses in this area has declined. This area is now used primarily for warehouse and contractor yard uses, a category of use which is needed in any community, but the predominance of such uses along Highway 281 tends to provide a separation of the downtown area from the recreational areas to the south. This separation is unfortunate in that every effort should be made to attract the users of the recreational facilities into the downtown area.

More recent development of commercial uses along Highway 20 both east and west of the City is an indication of continued demand for land along this highway for commercial use. This trend will no doubt continue as there are few alternatives for locating such uses, except for reuse and redevelopment of existing commercial structures.

It is important to note that, with the exception of reuse and redevelopment of existing commercial buildings, virtually all of the land located along Highway 20 which is suitable for future commercial development is located outside the present corporate limits. This fact, combined with the fact that nearly 20% of the commercial uses which serve the residents of the City and its trade area are now located outside the corporate limits of the City indicates that the City should review its annexation policies and consider annexation of the existing commercial uses and annexation of future commercial uses as they develop.

INDUSTRIAL LAND USE

The City of O'Neill is somewhat unique in comparison with other municipalities in Nebraska and elsewhere in that there is a very limited amount of industrial development in and around the City. The limited industrial and manufacturing land usage is, however, quite typical of urban areas which serve as more of a retail and service center for the surrounding rural area as compared to larger urban areas or urban areas and those along the Interstate Highway system.

The uses, which are categorized as industrial usage includes grain elevators and related agri-fertilizer and chemical supply uses, a small livestock sales pavilion and yard, two smaller manufacturing operations and the hydroponic production facility on the northwestern periphery of the City.

One of the disadvantages that the City of O'Neill has with regard to further development of manufacturing and other industrial uses is that there appears to be no land which is properly located relative to major transportation corridors and neighboring land uses which has been set aside to accommodate any such future development. If the City is going to be successful in implementing its recently completed Economic Development Strategic Plan, it will be necessary to identify land best suited for industrial development and have that land zoned for such purpose, thus protecting it from development by other types of land uses and by assuring that land uses which are developed in proximity of the industrial area will be compatible with future industrial uses.

PUBLIC AND SEMI-PUBLIC LAND USE

Public and semi-public land usage is comprised of land devoted to governmental and public utility facilities and functions, schools, parks and other recreational facilities, cemeteries, and such semi-public uses as churches. Within the corporate limits of the City, public and semi-public land uses occupy just under 220 acres of land and constitute 14.3% of all land uses in the City, making this type of land use the 4th largest in the City. There are relatively few public or semi-public uses located outside of the present corporate limits of the City, but

within its one-mile jurisdictional area. The only uses of this type include the City's waste recycling center located northeast of the City and a church located north of the City.

The majority of the land used for public and semi-public land uses is used to provide recreation facilities for the residents of the City and Holt County. A wide variety of recreation opportunities are available at these facilities, including golf, baseball and softball, football, soccer, swimming, outdoor play and picnicing. The City also provides a rodeo arena for horse and rodeo activities and has developed a new Community / Event Center along Highway 281south of the downtown area. These facilities are reasonably well distributed throughout the City with respect to accessibility from the residential areas of the City. The exception to this reasonable distribution is that there is a lack of basic recreational facilities in the residential neighborhoods located south of Highway 20. The lack of such facilities in the southwest and southeast residential neighborhoods could, however, be offset by developing now vacant land along what is now the Cowboy Trail into smaller neighborhood parks.

Evaluation of the distribution of the law enforcement, fire protection and rescue service facilities indicates that, although such facilities are located in the south-central portion of the City and are thus at maximum distances from northern portions of the City, these facilities are located along major roadways which provide the quickest possible access by the community volunteers who provide such services. This accessibility assists in allowing the volunteers to maintain reasonable response times to all areas of the City.

STREET AND ALLEY LAND USE

Land devoted to public streets and alleys within the corporate limits of the City consists of over 287 acres of land, making this type of use the 3rd largest land use in the City. The fact that just under 20% of the total land area in the City is devoted to streets and alleys is typical of smaller urban areas where a grid street system combined with the predominance of single-family detached housing is prevalent.

Although the City's street system is relatively efficient, the cost of constructing and maintaining urban streets continues to escalate. Planning for future development of the City should include efforts to further improve the efficiency of the future street system through encouraging development of now vacant lots already served by the existing street system, by encouraging higher residential densities in future residential developments, utilization of non-grid street systems, reductions in street rights-of-way when not necessary to provide adequate space for the streets and utilities and continued efforts to avoid leap-frog development on the periphery of the City.

AGRICULTURAL AND UNDEVELOPED LAND

The potential for improvement in the efficiency of the overall land use pattern in the City of O'Neill is evidenced by the fact that the second largest land use category in the community is that of undeveloped land.

There are presently just over 290 acres of undeveloped land in the City, comprising nearly 19% of the total land area of the City.

Approximately one-half of this undeveloped land is situated in newer residential subdivisions, particularly in the northern part of the City, where subdivided lots have yet to be developed. The remainder of the undeveloped land consists of larger unsubdivided parcels on the periphery of the City and small undeveloped lots scattered throughout the urban area which are vacant.

The existence of nearly 300 acres of developable land within the corporate limits of the City indicates that there is adequate space for additional growth. Unfortunately most of this land is situated in predominantly residential areas and should be used for residential purposes. Providing land for additional commercial and industrial development will have to occur outside of the present corporate limits as there are few properties within the corporate limits suited to such land uses.

In order to provide an analysis of the existing land use pattern in the City of O'Neill with regard to the efficiencies, inefficiencies and any peculiarities, the land use patterns in the City are compared to other communities of similar population in Nebraska. This comparison is provided in Table 20. This comparative analysis allows the identification of aspects of the land use pattern in the City of O'Neill which are unique and which may influence future land use development patterns.

TABLE 20 EXISTING LAND USE COMPARATIVE ANALYSIS
O'NEILL, NEBRASKA

	City of O'Neill		Comparative Cities*	
Land Use Category	**% of Total Land Area within Corporate Limits**	**Acres per 100 Persons**	**% of Total Land Area within Corporate Limits**	**Acres per 100 Persons**
Residential	30.5%	12.7	38.0%	9.0
Public & Semi-Public	14.3%	5.9	11.0%	2.8
Commercial	9.9%	4.1	4.0%	1.0
Industrial	6.4%	2.7	8.0%	1.9
Streets & Alleys	18.6%	7.8	39.0%	9.6

Source: Stahr & Associates, Inc., Field Survey conducted in Fall, 2013
*James R. Anderson, Methods and Systems of Land Use Survey and Analysis, as related to Comprehensive Planning for Communities under 50,000 population, University of Nebraska, Unpublished Research Paper.

An evaluation of residential land use density, provided by calculating the total residential use acreage as a function of the total population residing within the City, indicates that for all types of housing combined just over 11 acres of land is presently used to house every 100 people. Comparing this to other communities in Nebraska, as indicated on Table 20, residential land uses are similar in density in the comparative communities.

Comparison of public and semi-public land uses in O'Neill to other communities, as presented in Table 20, indicates that O'Neill has a substantially higher percentage of land used for this purpose than the comparative communities and that the amount of public lands available for public use per 100 persons is almost 4 times that of the comparative communities. However, approximately 40 acres of this public land is occupied by the former waste disposal site just to the east of the City. Still, deducting this amount of land area for comparison purposes, the City still has a notable higher amount of land for public use. The City has had excellent foresight in past years in the development of the level of public facilities available, particularly indoor and outdoor recreation facilities.

When comparing land devoted to street and alley usage in O'Neill to other communities, as presented in Table 20, it is readily apparent that the amount of land devoted to public rights-of-way in O'Neill are slightly less than the comparative communities. This is not only an indication that the overall urban area of the City is more compact than the average community, but also that being a relatively small city, the City of O'Neill has not had to devote additional land for rights-of-way for interstate highways, and wider highways.

CONCLUSIONS

This analysis of existing land uses has resulted in the following general conclusions:

1. The floodplain of the Elkhorn River will continue to effectively limit development of the City to the south of the present urban area so future growth must occur to the east, west and north.

2. With the exception of reuse and redevelopment of existing commercial buildings or properties, development of additional commercial uses will most likely occur along U.S. Highway 20 to the east and west of the present corporate limits.

3. There are only limited areas adjoining the City which are so situated relative to major transportation corridors and compatible surrounding land uses which are suitable for additional industrial development. These areas should be delineated and protected from development by other uses.

4. There is limited for the City to consider annexation of additional land for residential development purposes as there is already over 100 acres of land suited for such development within the present corporate limits.

5. Public and semi-public land uses are well situated and with the exception of the residential neighborhoods south of U.S. Highway 20, such uses, particularly recreational uses, provide adequate recreational opportunities and are accessible from most residential neighborhoods.

6. The street system within the City is quite efficient, but there is room for improvement of street and other public infrastructure efficiency through encouraging development of now vacant lots already served by the existing street system, by encouraging higher residential densities in future residential developments, utilization of non-grid street systems, reductions in street rights-of-way when not necessary to provide adequate space for the streets and utilities and continued efforts to avoid leap-frog development on the periphery of the City.

COMMUNITY FACILITIES, UTILITIES AND SERVICES PLAN

Today's urban communities must supply a wide range of facilities, utilities and services to provide for the health, safety and general welfare of its citizens. The land, buildings, equipment and personnel employed by a community to provide these facilities, utilities and services must be consistent with the needs and desires of its citizens and be provided, operated and maintained in the most efficient manner possible in order to minimize costs to the citizens.

In order for any Comprehensive Plan to be truly "comprehensive" such plan must include an evaluation of the present adequacy of the community facilities, utilities and services and a forecast of the future adequacy of such facilities, utilities and services. Where it is determined that improvements in such facilities, utilities and services will be needed to provide for the welfare of the citizens of the future, recommendations for actions to address the needed improvements must be provided to give guidance to the municipal governing body in maintaining adequate facilities, utilities and services and to allow the various other components of the Comprehensive Plan to reflect the land use needs and other impacts that improvements to such facilities, utilities and services may have.

This component of the Comprehensive Plan shall first provide an inventory and description of existing facilities, utilities and services and then provide an evaluation in the present and future adequacy of each facility, utility and service by applying generally accepted standards and inputs from municipal officials and citizens of the community.

COMMUNITY FACILITY, UTILITY AND SERVICES INVENTORY

The following inventory of public facilities, utilities and services in the City of O'neill shall be evaluated:

- Municipal Administrative, Operation, and Maintenance Facilities and Services
- Law Enforcement Facilities and Services
- Health Care and Health Emergency Facilities and Services
- Fire Protection Facilities and Services
- Cultural and Communication Facilities
- Community Center and Meeting Facilities
- Educational Facilities and Services
- Parks, Recreation and Open Space Facilities and Services
- Solid Waste Facilities and Services

- Water Utility Facilities
- Sanitary Utility Facilities
- Electrical Power Utility Facilities
- Storm Drainage Facilities

COMMUNITY FACILITY, UTILITY AND SERVICES DESCRIPTIONS AND EVALUATIONS

City Offices

The City office is located in the Municipal Building at 401 East Fremont Street and is accessible from all areas of the municipality. This facility was constructed in 1974 and has been well maintained with various upgrades completed over the years. This includes energy efficient windows and lights, plus upgrades to meet some ADA standards. It includes a chamber for the City Council and Planning Commission meetings, plus other community groups. This chamber is moderate in size, with a seating capacity of 60 - 75. This area is handicapped accessible. This building contains sufficient room to contain/maintain all the village records and provide the services required by the public. However, it would not be adequate for larger meetings and gatherings. Larger meetings and gatherings can be held in the Community Center. There are still some upgrades needed to meat ADA standards. Other than these improvements, the facility will meet the needs for fireproof and electronic storage space through the planning period and beyond, 20 years.

Community Center and Meeting Facilities

The City of O'Neill has a recently constructed Community Center. It is located at 501 South 4th Street and can host any size of meeting or banquet. It has a large meeting room that can accommodate 500 people and a smaller room that can accommodate up to 60 people. In addition, there are two small board meeting rooms. One can accommodate up to 12 persons and the other can accommodate up to 25 persons. It will provide space for a variety of private use and community functions and is used by groups large and small. It has a small kitchen with commercial appliances available for use. This facility will provide adequate space for community functions through the planning period and beyond.

City Street Maintenance Facilities and Services

The City employs a full-time street maintenance supervisor and three (3) employees to provide the necessary maintenance of the streets, sidewalks and storm sewer/drainage infrastructure, including snow removal. The street maintenance shop is located on Highway 281 at South 4th Street, which is just south of the Burlington Northern Santa Fe railroad tracks..

The department has a variety of equipment for infrastructure maintenance. In most cases the equipment is purchased new and kept until there is NO trade-in value remaining. As indicated in Table 21, the City of O'Neill will need to begin the programming process for the replacement of maintenance equipment. Several pieces of the equipment will soon reach the end of useful life span. and most may need to be replace in the next 5 years. With the high cost of equipment, the City will need to reflect such costs in its budgets to provide adequate equipment for use by the street department.

The street maintenance equipment is housed at the same location as the street maintenance office.. There are two buildings, 50' X 120' and 50' X 100' to house the equipment, but are not enough to house the equipment. Some maintenance equipment must set outside, in particular trucks. Storing equipment outside for long periods of time can and often will increase the wear and tear on equipment, thus reducing the "useful life" years remaining. Presently, the storage space is inadequate for the equipment assigned to the street department. Additional storage space is needed and should be planned for during the early portion of the planning period.

TABLE 21 STREET MAINTENANCE EQUIPMENT
O'NEILL, NEBRASKA

Type of Equipment	Year of Manufacture	Estimated Service Remaining
Ford F70-163 Dump Truck (3 Ton)	1996	3- 4
Ford 460G-153DumpTruck (2 Ton)	1985	2 - 3
Ford F780 Dump Truck (3 Ton)	1985	3 - 4
Allis Johnson 11E-4 Street Sweeper	2007	5
Volvo G730 Motorgrader	2002	5
GMC Sierra Pickup (3/4 Ton)	1991	1 - 2
Crafco 1000 Tar Machine	1999	3 - 5
Fair 742SI Snowblower	1988	1
Case 621B Payloader	1998	3 - 5
Chevrolet Dump Truck (3 Ton)	1986	1
Chevrolet Dump Truck (2 ton)	1972	0
Champion 730A Motorgrader	1987	3 - 5
Suzuki Sprayer 4 X 4	1991	1
GMC Pickup (1/2 Ton)	2000	1
Bobcat S130 Skid Loader	2005	5
Suzuki Grizzly Sprayer	2004	5
Ford F150 Pickup (1/2 Ton)	2010	3 - 5
Case 621F Payloader	2013	5+

Source: Larry Peters, Street and Maintenance Supervisor, O'Neill, NE, 2014

There are a total of 39.18 miles of streets in O'Neill, with 30.42 miles hard surfaced and 8.76 miles that are gravel or rock. Most streets are in fairly good shape, but some areas require attention. One area that requires attention is 10th Street. It is not paved and has issues with poor drainage. However, these issues will be addressed with a 12+ block paving, curb and gutter, and storm sewer project that is scheduled for completion this year. According to the street maintenance supervisor, another area that requires some attention is maintenance of paved intersections. In the past intersections were a priority to maintain, but over the past 8 - 10 years they haven't received the attention needed.

The City of O'Neill is fairly flat in nature with sandy soils. This topographic feature, flat, often leads to issues with drainage. The City of O'Neill has trouble spots, mainly on the south end of the municipality. According to the maintenance supervisor the main drainage problems occur on 10th Street and 3rd Street. However, the drainage problem on 10th Street should be alleviated with the paving, curb and gutter, and storm sewer project. The 3rd Street drainage issue has been made a priority issue and more time has been allotted by city employees for maintaining the drainage system along 3rd Street.

The City of O'Neill has one unique program that most municipalities neglect or forget about. They have a 1 - 5 year sidewalk plan. The City should be applauded for this action. This program identifies missing sidewalks or sidewalks that are in poor or bad shape and provides funding for their replacement or repair.

During the field survey, it was evident the street maintenance department has the correct and sufficient equipment for the jobs assigned, but several pieces require replacement as they are beyond "Useful Life". The City should have a replacement program for maintenance equipment under continuous use during the planning period.

Law Enforcement Facilities and Services

The City of O'Neill has a professional police force. It enforces City Ordinances regarding nuisances, abandoned vehicles, property cleanliness, dogs running at large, etc. Presently, the force has 7 members, a secretary and a K9 Unit. It is located at the SW corner of 4th and Douglas Streets. The force also participates in several activities in the community. They include Jail N Bail Event - a fund raiser for the K9 Unit, Developing Eagles after school and summer program at the O'Neill Public School, Safe Kids Fair - held at the O'Neill Public school and Christmas Story Time. In addition, the K-9 Unit participates in Holt County Government Day with demonstrations.

Additional law enforcement presence and assistance is available form the Holt County Sheriff's Department located in O'Neill and the Nebraska State Patrol, Troop B, with headquarters in Norfolk, NE.

A field survey of the community citizens indicate this method of local ordinance enforcement is acceptable and adequate. .

Health Care, Health Emergency Facilities and Wellness/Fitness Services

The O'Neill Ambulance Service provides a BLS (Basic Life Support) level of service. It is staffed by the O'Neill Volunteer Fire Department. This Department has 33 EMT/volunteer firefighters and two EMT only certified members. The Service maintains three up-to-date ambulances for emergency responses. They are 2000 Road Rescue Ultramed Type III, a 1995 Medtec Type III and a 1993 Wheeled Coach Type III squads. The 1993 squad has been targeted for replacement, with request for bids issued in 2014. The squads conduct Inter-county, Inter-state and Intra-state patient transfer on a daily basis. Also, the City of O'Neill and the surrounding area is provided with a complete 911 emergency system.

Health care for the City of O'Neill and the surrounding area is provided by Avera St. Anthony's Hospital. It has ten (10) medical staff physicians, four (4) physician assistants, four (4) nurse practitioners and three (3) CRNAs. Also, the medical staff operates outreach clinics in the following communities: Chamber, Ewing, Page and Spencer. In addition, the hospital has a general surgery outreach clinic in Atkinson, NE. St. Anthony's has a wide range of available medical specialties. They include - Coordinated Care, Behavioral Health, Blood Bank, Cancer Care, Cardiopulmonary Rehab, counseling, health screenings, Kidney Dialysis, Nutrition Services, Orthopedics, Outpatient Rehab, Mental Health, Physical Occupational & Speech Therapy, Psychology, Radiology, Respiratory, Sleep Center, Social Services, and Women's Health.

Other nearby health care facilities include the West Holt Memorial Hospital located in Atkinson, NE some 19 miles away, Avera Creighton Hospital in Creighton, NE some 46 miles away and Alegent Creighton Plainview Hospital in Plainview, NE some 39 miles away.

West Holt Memorial Hospital is a 17 bed critical access facility, Avera Creighton Hospital is a 23 bed critical access facility and Alegent Creighton Plainview Hospital is a 16 bed critical access facility. All the facilities are modern and well staffed.

The City of O'Neill has two wellness/fitness facilities. They are Any Time Fitness and 24 Hour Fitness. They provide excellent wellness/fitness programs other than the rehab facilities in the local hosptials.

Evaluation of the health care services and facilities available to the citizens of O'Neill indicate that the level and quality of existing services and facilities is excellent and should remain so through the planning period.

Fire Protection Facilities and Services

Fire protection for the City of O'Neill is provided the combined resources of the City of O'Neill Fire Department and the Holt County Rural Fire District. The City of O'Neill Fire Department is under an inter-local agreement with the Holt County Rural Fire District. The Fire Department responds to all fire emergencies in the 98 square mile

district that surrounds the City. The Department houses and maintains all apparatus owned by the City of O'Neill and Rural Fire District.

The Fire Department is located at 401 East Fremont Street, attached to the south portion of the City of O'Neill Municipal Building. The portion of the building dedicated to the Fire Department has 5 bays and meeting rooms and was constructed in 2005. At first glance, you would think the department has sufficient space for the equipment maintained by the department. However, the facility is very crowded and additional space is needed to house all the equipment. to correct this problem, plans and specs for a 17' X 100' building addition have been completed. It will be constructed on the south end of the building and construction is expected to get underway in 2014. This addition will house one of the ambulances.

The Department has 33 EMT/volunteer firefighters, with two additional EMT only certified members. The fire fighting equipment consists 2002 - 350 gallon Laverne Rescue mini-pumper, 1995 - 1250 GPM, 1,000 gallon Laverne Freightliner pumper truck, 1992 - 2,300 gallon Laverne tanker truck, 1991 - 1,000 GPM, 1,000 gallon Laverne pumper truck, 1982 - 1,000 gallon tanker truck, 1978 Laverne Chevy 1 ton crash truck, 1978 Dodge Grass Rig, 1972 - 350 GPM, 1,200 gallon Smeal pumper truck, 1972 - 1,250 GPM Smeal Aerial Ladder truck and 1967 Jeep grass rig and the aforementioned medical emergency equipment.

The O'Neill Volunteer Fire Department participates in mutual aid agreements with other departments in Holt and Boyd Counties to provide added fire fighting capacity and emergency health care services when needed. Included in this mutual aid agreement are the communities of Atkinson, Stewart, Chambers, Ewing, Page, Lynch, Bristol, Spence, Butte and Napier. The Department is staffed with well trained volunteers and is adequately equipped.

Cultural and Communication Facilities

Cultural and communication facilities and services available in the community include the O'Neill Public Library and O'Neill Public School facilities.

The O'Neill Public library is a well maintained facility located at 601 Douglas, provides the services and amenities required by the residents of O'Neill, and is handicapped accessible. It has a meeting room to facilitate 60 persons and hours of operation to facilitate most schedules. Those hours are: 10:30 AM to 5:30PM Monday through Saturday, with later closing hours, 9:00PM on Wednesday and Thursday.

The library believes in the maintenance of an educated and democratic society and provides information through printed, audio, visual materials and technology. Special emphasis is placed on stimulating children's interest in, and appreciation of, reading and learning. The O'Neill Public Library has a good selection of books and eBooks. It is a member of the Nebraska Overdrive Libraries for Kids & Teens, acts as a technical center for the citizens of the

community with high speed internet access and is used as a community historical museum. The library has public Internet access computers that have Microsoft Word, Microsoft Excel and Microsoft Power Point. There is no fee for use of the internet access. The library has numerous programs throughout the year, including a summer reading program.

"O'Neill Friends of the Library" is a support group dedicated to improving the O'Neill Public Library for the benefit of the whole community. They host musical concerts and other cultural acts.

In addition to the O'Neill Public Library, the O'Neill Public School system has a library with a good selection of books and internet access to assist students in their studies and home work assignments.

Additional library facilities are available in Atkinson some 15 miles away, Creighton some 36 miles away, Neligh some 40 miles away and Plainview some 45 miles away. They are all similar in size and nature to the library in O'Neill.

The citizens of O'Neill have other educational opportunities available to them through a satellite campus of Northeast Community College. It offers a wide range of studies and recently broke ground to enlarge the facility to provide more opportunities. It is located at 409 East Adams Street, but has a new facility under construction.

Communication services include television access to all major networks, as well as satellite television access. They include: KOLN-TV Channel 10, Lincoln, NE; KTIV-TV Channel 4, Sioux City, IA; and KLKN-TV Channel 8, Lincoln, NE. In addition, Three River Digital provide local cable TV to O/Neill. The City of O'Neill has three radio stations in town, KBRX-AM 1350 KHZ, KBRX-FM 102.9 MHZ and KORD-FM 105.2 MHZ. In addition, the citizens of O'Neill can tune in to three other radio stations. They are: KBRB-AM 1400 KHZ, Ainsworth; KNEN-FM 94.7 MHZ, Norfolk; and KEXL-FM 106.7 MHZ, Norfolk.

Citizens of O'Neill have the availability of a number of daily newspapers. They include: Frontier and Holt County Independent, a weekly newspaper, and the daily Norfolk Daily and Omaha World Herald.

Telecommunication services is provided by Century Link. It provides state-of-the-art services with a digital central office. Services for both residential and business include: local telephone lines, long distance, Direct TV (with local stations) and DSK, high-speed Internet Service.

The citizen's of O'Neill have excellent internet service available to them. Several companies provide the service. They include: Century Link, Telebeep, Three Rivers Communications, and Quest

The City of O'Neill has many amenities that communities of the same size do not. Two of particular note are the movie theatre and bowling alley. They are very important to the community the size of O'Neill. The movie theatre the "Picture Show" theatre is located at 49177 Douglas Ave and can seat 400 people. The movies are shown nightly, and change once a week, on Friday. However, it needs some improvements. In particular, the digital cameras need to be updated/over hauled to show the latest in movies. The bowling alley, "O'Neill Lanes" is located at 49171 East Douglas Street. It is in good condition.

The existing cultural and communication facilities and services should prove to be adequate through the planning period. However, the public and private sector need to address the needs of the "Picture Show" movie theater, to keep it in operation. The movie theater is an important part of a communities cultural needs.

Educational Facilities and Services

The primary education facilities available to the citizens of the City of O'Neill include the facilities of the O'Neill Public and St. Mary's Catholic Parochial Schools. O'Neill Public school consists of an Elementary - K thru 6th, and Jr./Sr. High School - 7th thru 12th campuses. Both campuses are located in the NE quadrant of the city. The school district covers 114 sq/mi and according to the Nebraska Department of Education in 2012-2013 school year had an enrollment of approximately 754 students. Pk - 12. This is a decrease of 5% or 40 students over a decade of record keeping. Even though this is a decline in student population, it is not the deep declines experienced at most rural Nebraska schools.

O'Neill Public Schools offer a great selection of academic and non-academic courses and activities. They are a recognized leader in using technology to enhance learning. The Jr./Sr. High School has engaged in a 1 on 1 laptop 24/7 learning project during the past 4 years or so. The students can participate in a Health Careers Academy with CNA certification. Also, they can learn two languages, Spanish and Chinese.

O'Neill Public Schools have two campuses. The High School campus is located at 540 East Hynes Ave. The overall school plant is in good condition, but some improvements are needed. The high school campus has five modular classrooms put in place in 1989. They meet the needs for additional classroom space, but are getting old, more than 20 years old, and need to be replaced. The high school added and agricultural education addition in 2009 and a new wight room in 2013. However, the main campus is still somewhat crowded. Even though the student population has declined slightly over the past decade, the amount of technology and the tools needed to provide a first rate education at O'Neill Public School has increased, thus space and facilities have become somewhat crowded and are a premium.

The High School has an active FFA chapter working on several projects, a 24/7 Learning program and long distance learning to name a few of the programs that make O'Neill High School globally known. The existing school plant needs more space and some minor upgrades. Serious consideration should be given to implementing strategies to accomplish these goals during the Planning period. The O'Neill school board has implemented a goal to replace the modular classrooms and provide more room for their "first rate" school.

The Elementary campus is located at 1700 North 4th Street This campus was added to in 2011. An additional 10,739 sq/ft of classroom space was added and modular classrooms were removed., This renovation was needed to facilitate better classroom facilities.

St. Mary's Catholic School consist of Pre-kindergarten, grade school and high school. It is associated with the Omaha Archdiocese. Tuition to attend St. Mary's Catholic School is on a graduated basis, dependent upon number of family members attending and age. The curriculum abides by the State of Nebraska requirements and Archdiocesen directions.

The existing facilities and services should prove to be adequate through the planning period

Parks, Recreation and Open Space Facilities and Services

The City of O'Neill has excellent public park and recreation offerings, plus private recreation offering and wellness facilities. These public facilities are administered by the Municipal Facilities and Service Department. It has one full-time year-around director and numerous seasonal employees. There are five City parks and cover 103 acres with a swimming pool, playground equipment, picnic tables and facilities, fishing pond, lighted softball and baseball fields, tennis courts, soccer fields, horse arena and camping area. Programs offered by the department include Red Cross swimming, aquarobics lap swimming, swim team, softball, baseball and soccer. The parks are located throughout the city and include:

- Schaffer Park, is located in the northwest part of the city, at West Kros Drive, between Boone Ave and North 1st Street. There are fields for Tee Ball, Little League, Pony League and a Legion field , the largest field on the complex. A crow's nest is located on each of the fields, with radio booths in the Legion field crow's nest. In addition, former tennis courts just east of the Pony field were converted into a basketball court with six goals.

- Torpin's Soccer Field Complex is located on the north central portion of the city, at intersection of West Kros Dr. and North 4th Street, just east of the elementary school. Torpin's soccer Field Complex has ten fields of various sizes, all with underground sprinklers. It has a parking lot, concession stand

and restrooms. In the very southeast corner of the complex, a 2 - 3 acrea areas is in the lanning stages for an educational park.

- Lion's Kiddie Park is located a the intersection of North 5th and East Tipperary Streets, in the central portion of the city, north of O'Neill's High School. This playground has a large assortment of equipment for children to enjoy. Also, there are two picnic shelters with tables, with restroom facilities and water, plus a fenced tennis court.

- Ford Park is located in the west central portion of the city, at the intersection of North Jefferson and East Benton Streets. It has O'Neill's swimming pool which host at least two large swimming meets during the summer months. Also, the pool has a wading pool for toddlers, is equipped with a zero depth entrance and recently had an ADA lift added. In addition, the Park includes a large playground with a wide variety of playgournd equipment. In the east side of the park is a sand volleyball court. The park has three picnic shelters, a gazebo used for photo shots.

- Carney Park is located in the south central portion of O'Neill, on South Fitch Blvd. It has 18 camping spaces with water and electric services. Restrooms and showers with hot and cold water are located close to the pads. Also, there is a tent camping area. The park has grils and picnic tables, a three acre fishing pond, concession building, rodeo arena and bleachers and a maintenance shop. Carney Park has a tournament size complex of horseshoe pits, plus three well maintained softball fields. The softball field complex has hosted state softball tournaments.

In addition to the several public park and recreation facilities in O'Neill, there is a private recreational facility. It is the O'Neill Country Club golf course. It is located adjacent to the northwest portion of the City. It offers a 9 hole, 3,680 yard course with putting green and driving range. The club house is well maintained. It has lockers, carts and other amenities. There is league play and green fees are reasonable.

There are several other recreational facilities in the immediate area around the City of O'Neill (60 miles). They include:

- Atkinson Lake State Recreation Area: Is a 50 acre recreation area that includes a 14 surface acre lake. It is located 1 miles west of Atkinson, NE. It offers fishing for a variety of fish, boating , modern and primitive camping, hiking and picnic facilities. This area is managed by the Nebraska Game and Parks Commission.

- Fort Randall Dam & Lake Francis Case: It is a U.S. Army Corps of Engineers', Omaha District project located near Pickstown, S.D. Fort Randall Dam creates the 11th largest lake in the United States - Lake Francis Case. Lake Francis is 102,000 surface acres and offers many amenities. They include boating of all types, cabins, modern and primitive camping, a variety of game fish, playground equipment, visitor center, picnic facilities, hunting, sailing, swimming, and skiing.

- Willow Creek State Recreation Area: Is a 1,633 acre state recreation area, with a 700 acre lake. It is located 1 1/2 miles SW of Pierce, NE. It is managed by the Nebraska Game and Parks Commission. It offers a variety of game fish, boating, trails, swimming, modern and primitive camping, hiking and horseback trails, archery field course, hunting and picnic facilities.

- Niobrara State Park: Is located at the confluence of the Niobrara and Missouri rivers on Nebraska's northeastern boarder. It offers a variety of fishing, cabins, modern and primitive camping, picnic facilities, swimming pool, boating, horseback trail rides, and hiking. It is managed by the Nebraska Game and Parks Commission.

- Pibel Lake State Recreation Area: Is a 72 acre state recreating area, managed by the Nebraska Game and Parks Commission. It is located approximately 8 miles ESE of Ericson, NE. It offers primitive camping, no wake boating, picnic facilities and fishing for a variety of game fish. The lake is 24 acres in size with 48 acres of land around the lake.

- Calamus State Recreation Area: Home to Calamus Reservoir which is a 5,124 acre lake and the Calamus State Fish Hatchery and located 6 miles northwest of Burwell, NE. The lake is surround 4,958 acres of gently rolling land. If offers fishing for a variety of game fish, boating, modern and primitive camping, picnic facilities, hiking, sightseeing and hunting. The recreation area is managed by the Nebraska Game and Parks Commission.

- Lewis and Clark State Recreation Area: Home to Nebraska's second largest lake and located 7 miles north of Crofton. The lake is 7,982 acres , approximately 16 miles long and 3 miles wide. It offers fishing for a variety of game fish, boating, modern and primitive camping, lodging, swimming, trails, picnic facilities, hunting and trails. It is managed by the Nebraska Game and Parks Commission.

- Elkhorn River: Is a major river running just south of O'Neill and offers very good game fishing.

The buildings and improvements associated with the City park and recreation facilities are in great condition and, with normal maintenance, should continue to provide a variety of local recreational opportunities for the future population of the community. These facilities coupled with the state and federal recreational activities within a 60 mile radius, the residents of O'Neill have a significant variety of recreation opportunities for the present and the future.

Solid Waste Facilities and Services

Solid waste collection services are provided on a weekly basis by the City of O'Neill. The solid waste is taken to a transfer station for further transfer to the Butler County Landfill. The City does the billing to individual households and businesses for this service on a monthly basis. In addition, the City of O'Neill has a recycling center. They recycle aluminum, cardboard, newspapers, magazines, #1 & #2 plastic, and tin cans. Also, the City has a recycling trailer for quantity recycling pick up.

Water Utility Facilities

The City of O'Neill operates and maintains a water distribution system throughout the community. Water is currently supplied by 5 wells. Four of the five wells have backup power. Two of the wells have power units with right-angle-drives, one well is a VFD (variable frequency drive) with generator and one has a right-angle-drive to be driven with a tractor. The wells are centrally located from 1/2 mile to 2 miles south of town. Production from each of the wells range from 850 - 1,250 GPM. At the present time the municipal wells do not have problems with quantity and quality. The wells have nitrate levels ranging from 0 - 5 mg/l and arsenic levels ranging from 6 - 8 mg/l. The arsenic level could become an issue in the future, if the EPA should reduce the MCL to 5 mg/l. The system has a 150,000 gallon elevated tea pot water storage tank that is more than 90 years old and two 300,000 gallon aqua store, ground level storage tanks where the water is pumped by high speed pumps. The water is distributed via a system of sand cast water mains and appurtenances, through mainly undersized - 4" piping that are looped.

Water service is not provided throughout the urban area. Over the years, numerous commercial properties were developed along Highway 20, west and east of the corporate limits. These developments were not annexed into the City and public utilities (water/and sewer) were not provided. As additional development is proposed for the area the City should annex these areas and provide for extension of water and sewer utilities over time.

To ensure the system could handle this new load, a Water System Study was completed in early 2014. The study found the present system was not adequate. In fact it found that if a fire occurred with the existing commercial district, the system pressure would drop below the 20 PSI in other areas of town. The present system would not be able respond to peak flow demands. The City has under taken a project to correct this problem. The project will include the construction of a 450,000 gallon water tower, if the two existing ground level storage facilities can be

reused in the new configuration of the system . If the ground storage facilities can't be utilized, the water tower size will increase to 1,000,000 gallons. Also, this project will require the replacement of some mains.

Water quality and quantity is not an issue at the present time. However, changes that have been proposed by EPA could change that out come. The EPA has proposed lowing the MCL to 5 mg/l. This would require action by the City of O'Neill in the future. Also, there are lots available for development in areas not served by existing water mains. New main construction will be required and imperative for growth. Planning for main extension and future needs (well replacement) should be a concern of the City during the planning period. The City has a program in place to fund some infrastructure improvements.

The existing distribution system will not meet the needs of the community during the planning period. The system needs and requires up dating. It will require substantial funding and thus planning and should be under taken immediately to keep the City of O'Neill growing. Also, serious consideration should be given to changing O'Neill 's policy and ordinances concerning annexation. It is recommended that approval of any new subdivision development immediately adjacent to current corporation limit, be contingent upon annexation into the City.

The water/wastewater department has a variety of equipment for infrastructure maintenance. In most cases the equipment is purchased new and kept until there is NO trade-in value remaining. The City of O'Neill will need to begin the programming process for the replacement of maintenance equipment. Several pieces of the equipment will soon reach the end of useful life span. and most may need to be replace in the next 5 years.

The Water/Waste Water Department office is one in the same. It is located at the Waste Water treatment plant at 620 South Fitch Blvd in one of the two, 30' X 50' buildings. The office is quite small. All the equipment/supplies associated with the department are stored in these buildings, with some left outside. There is insufficient room for all the equipment. Another 30' X 50' building is needed for bulk items. The existing facilities are not adequate for the operations that need to be conducted in the water/waste water departments through the planning period.

Sanitary Utility Facilities

The City's sanitary sewer system is administered by the same individual and employees that administer the water system. This consists of a Water/Sewer Commissioner and four employees. The system consists of a series of sanitary sewer mains and an activated sludge with extended air mechanical plant. The present system appears to have sufficient room for any anticipated growth in the City of O'Neill. The system design capacity is 1,000,000 gallons during wet weather, for 8,000 people. The maximum treatment peak has been established at 800,000 gallons with average daily flow is 350,000 to 450,000 galloons. The plant does have emergency power backup.

The present treatment plant is old and is reaching a point of needing substantial upgrading or replacement. Presently, the city spends approximately $50,000 annually for repairs.

Collector mains have been installed throughout the corporate limits of O'Neill. The collector mains are either clay tile or PVC, with manholes for cleaning purposes, installed at determined distances, usually around 300'. Most manholes within the O'Neill waste water system are precast concrete, but some are brick and motor that were constructed on site in the early 1900's. They are still functional, but due to age, they need to be replaced. The clay tile mains were installed until the late 1970's with oakum and clay grout sealing material. After the late 1970's, the installed collector mains were made of PVC. The system has two lift stations. One in the northern portion of the city, installed in the early 1980's and the main lift station at the treatment plant. It was installed in May 1980.

As with the water supply service, sanitary sewer service is not provided to all of the urban area. The unannexed developments to the east and west of the City do not have sanitary sewer services. As additional development is proposed for the area the City should annex these areas and provide for extension of water and sewer utilities over time.

The existing sewage collection system provides a network of mains and laterals to all developed areas, including the very few remaining vacant lots within the City corporate limits. They are in good condition with no flow capacity issues. The system has two lift stations that will probably require replacement or rehab in the near future due to age. Also, two additional lift stations will be needed. The first will provide service to the "commercial" zone district along Highway 20. The second will provide service to the new Northeast Community College facility under construction. The treatment plant is sufficient in size for the growth of O'Neill, but the age of the facility is not an ally, it requires an every increasing amount of annual funding ($50,000) to keep it running.

There are few lots available for development in areas served by existing sewer. Future annexation of parcels will require the installation of new collector mains and lift stations. At least one new lift station will be needed immediately. Planning for main extension and future needs should be a concern of the City during the planning period. The City needs to develop and implement plan/program fund some sewer infrastructure improvements..

The collector system is in good condition. Continued maintenance of it, including inspecting and providing any needed improvements to existing manholes should be conducted during the planning period. It is recommended that the City pursue a Clean Water State Revolving Fund Facility Planning Grant offered by Nebraska Department of Environmental Quality. Maximum grant from NDEQ is $20,000 with a 10% match. This will provide the City with a funding mechanism to conduct the necessary engineering studies of the entire system to determine the needs and the priority for upgrading the treatment plant, the construction of lift stations and the installation of additional collector mains. These studies will allow the City to set utility rates, assess construction cost to developer, obtain

TIF and possible Community Block Grants to pay the improvement cost throughout the planning period. Also, emphasis should be placed on developing areas that will not require additional lift stations, flows will be accomplished through gravity means and keep costs to a minimum.

Electrical Power Utility Facilities

The City of O'Neill's electrical power system is owned and maintained by the NPPD. The City has backup power for the municipal building, and for both the water and sewer systems. Also, the O'Neill Fire Department has emergency backup power.

Natural Gas Facilities

Source Gas provides natural gas to the City of O'Neill, but the customers select their own supplier.

Storm Drainage Facilities

The storm drainage facilities within the city of O'Neill are adequate for the most part. This can be attributed to the terrain and the paved streets. Gravity drainage is provided with paved streets and the city has sufficient natural drainage along unimproved streets for the most part. Drainage problems do occur in the southeastern portions of town and especially around South 3rd Street. This can be attributed to the flat terrain and sandy soil. Emphasis has been placed on more frequent preventive maintenance by the City. Also, the paving project with curb/gutter of 10th Street will eliminate minor drainage issues.

Airport Facilities

The O'Neill Airport Authority maintains the O'Neill Municipal Airport - John L. Baker Field, located 2 miles northwest of the City of O'Neill. It has hangars and tie downs, fuel, and major airframe and power plant service. The airport has two concrete runways. They are 4,408' X 75' and 3,200' X60' in length and width and are in excellent and good condition respectively. There are 20 aircraft, 19 single engine and 1 multi engine aircraft based at the airport. The airport averages 20 aircraft operations a day. The airport provides ground transportation to nearby lodging establishments. Other nearby airports include Stuart-Atkinson Municipal Airport - 16 miles west, Creighton Municipal Airport - 36 miles east, Antelope County Airport - 36 miles southeast, Rock County airport - 39 miles west, and Wagner Municipal Airport - 40 miles northeast of O'Neill.

The airport facilities available in O'Neill and those within a 40 miles radius, will provide the citizens of O'Neill the needed services through the planning period.

FUTURE LAND USE PLAN

The physical form of most urban communities is the result of profit-oriented development in response to economic opportunities and the corresponding growth in population. This type of development is typically single-use oriented with little consideration of the impacts of such development on the whole of the community regarding land use conflicts, traffic impacts, the costs of providing public services, facilities and utilities required to support the development. Quite often, the impacts of such single-use developments, either individually or as an overall type of development, are negative or have resulted in a public outcry for governmental land use regulations to avoid or minimize negative impacts on adjoining property or the community as a whole. To avoid short-sightedness in the application of such regulations and to provide consistency in the application of such regulations, the Future Land Use Plan has evolved as a long-range guide for future development of the community and its immediate environs.

A Future Land Use Plan is intended to be used as a general guide for future land use development so that such development or redevelopment of land within a given community will result in an overall land use pattern which minimizes negative impacts on adjoining lands and the community as a whole, while maximizing the opportunities for continued profit-oriented development in support of economic expansion and population growth.

Determining a desirable pattern for and distribution of land uses within the future community is a structured process consisting of:

1. Recognition and evaluation of the existing land use pattern combined with the physical and environmental limitations for land development within and around the community as the basis for the Land Use Plan.

2. Recognition of the past growth trends in terms of directions of physical growth of the urban area as a function of market demand and acceptability and evaluation of alternatives to such historical growth patterns, if such past patterns have or will result in future land use conflicts or unacceptable negative impacts on the community as a whole.

3. Determination of the redevelopment needs of the community by identifying those areas within the existing urban area where land use conflicts, lack of public infrastructure or other negative factors have or are resulting in blighted or substandard areas in which the land uses need to be modified if such problems are to be overcome.

4. Estimation of future land use needs of the community to provide a basis for determination of the physical land area which can be expected to be developed through the Planning Period and which, in turn, must be accounted for in the Future Land Use Plan for the community and its environs.

5. Development of a Future Land Use Plan and Land Use Policies which reflect the factors listed above to provide guidance to the decision making process by private sector developers, the Planning Commission, the Mayor and City Council and the Board of Adjustment so that the result will be a future land use pattern which minimizes negative impacts while maximizing economic opportunities.

The Future Land Use Plan and policies should be establish a "local determination process" whereby local developers and local community officials can work in partnership to evaluate each land development proposal with the objective being a balance of developer needs and community needs. The advantages of the process are several:

1. The Future Land Use Plan permits the community to anticipate future land use needs thus allowing local community officials to forecast the demand for improved or expanded public services, facilities and utilities and to budget efficiently for development of such improvements or expansions.

2. The Future Land Use Plan and policies provides a clear and organized statement regarding future land use needs and relationships that the private sector developer can quickly comprehend and utilize in evaluating the initial feasibility and community acceptance of a given development project.

3. The Future Land Use Plan and Land Use Policies, in combination, provide the Planning Commission, the Mayor and City Council and Board of Adjustment a format for making appropriate and consistent decisions regarding land development projects which will be of long-term benefit to the entire community.

EXISTING LAND USE PATTERNS AND TRENDS

In order to accurately prepare a Future Land Use Plan for any community an examination of existing land use patterns and past land use trends of that community is imperative. The Existing Land Use analysis component of this Comprehensive Development Plan describes the land use patterns and trends that have occurred, and still are occurring, within and around the City of O'Neill. The following is a brief synopsis of the land use patterns and trends occurring within the community:

- RESIDENTIAL

  Residential uses have been developed in all directions from the downtown area. More recent residential development has tended to be located in the northern and northwestern portions of the City. The majority of residential uses are single-family structures, although a number of smaller multi-family residential complexes are interspersed in the residential neighborhoods as are several group homes, including nursing homes and assisted living facilities.

  Several environmental factors and man-made features have and will continue to impact future residential development. The locations of the flood hazard areas along the Elkhorn River have and will continue to discourage additional residential development to the south of the existing urban area. The location of the two highways serving the community and the resultant commercial and industrial uses which have developed along these highways has tended to discourage development of residential uses in adjoining areas due to the land use conflicts that would result. This trend will probably continue in the foreseeable future. The location of the rail lines in the southern area of the urban area has and will continue to discourage residential development near the rail line extending eastward from the City. These limitations indicate that future residential developments that will be most preferred by the market will need to occur in other peripheries of the City.

- COMMERCIAL

  Historically, the initial commercial uses in the City were developed in the area that is now at the intersection of Highways 20 and 281, the area that is now the central business district With the advent of the railroad some 6 years after the original founding of the community, development of commercial uses tended to extend southward from the downtown area to areas along the railroad. With the construction of the highways now serving the City, additional commercial uses were developed along the highways, particularly highway 20 east and west of the downtown area to take advantage of the greater customer exposure offered by the higher traffic levels on these highways. More recently commercial development has occurred along Highway 281 in the northwestern part of the community.

  These historic commercial land use trends offer clues to where future developers of future commercial land uses would prefer to locate such uses. Most developers of future commercial land uses will prefer two possible locations. Some uses, including those uses requiring larger land areas, will prefer locations along the highways on the peripheries of the City. Others will prefer a location within or closer to the built-up urban area of the City where customer exposure and access can be maximized. This indicates that future "in-town" commercial uses will need locations along the two highways serving the City.

- INDUSTRIAL

  Industrial uses, consisting primarily of grain storage, processing and shipping facilities were originally located along the railroad south of the downtown area in O'Neill. More recent industrial development has tended to be scattered in various parts of the community, due primarily to a lack of a designated industrial park or area.

  The separation between the industrial areas from the primary portion of the built-up area of the City, particularly the residential areas has, with the exception of the southern portion of the built-up area, minimized land use conflicts. However, the City does not have any area planned and designated for future industrial uses. One or more such areas in locations, preferably with highway and rail access is needed to allow the City to plan for future expansion of utilities and services to such areas, thus further encouraging additional industrial development.

- PUBLIC AND SEMI-PUBLIC LAND USE

  Public land uses, including government buildings, parks, golf courses and other recreation facilities, schools, churches, health care clinics, the hospital and the recently developed Community Center have been interspersed throughout the urban area, predominantly in residential neighborhoods.

A review of the Community Facilities, Utilities and Services Plan, a component of this Comprehensive Plan indicates that future needs for public land uses will primarily be the need for extension of water and sewer utilities to developed areas on the peripheries of the present corporate limits.

IMPACT OF LAND USE PATTERNS AND TRENDS WITHIN O'NEILL

The impacts of these past patterns and trends have, for the most part, been positive from the standpoint of avoiding land use conflicts, but negative from the standpoint that the physical growth of the City has, as discussed in the Existing Land Use Analysis component of this Plan, resulted in the growth of urban uses, particularly commercial uses, along the highways to the east, west and north of the primary urban area. This growth has contributed to a decrease in the efficiency of the overall infrastructure in the Community.

This negative impact will only intensify with continued development on the peripheries of the urban area and the generation of increased traffic volumes on both highways serving the City. However, because the urban area is already relatively compact, the future physical growth of the City on the peripheries of the City will be unavoidable. To minimize the future impact of such additional peripheral development, the City should work to accomplish two objectives. The first should be to initiate plans for the financing and extension of public utilities to the peripheral areas. The second should be to work to encourage the redevelopment of existing vacant and underutilized properties which front on the highways in the existing urban area.

The existing land use patterns and past development trends form the basis on which a Future Land Use Plan can be constructed. Past trends that have been positive in character should be continued and past trends that have been negative in character should be discontinued or minimized. Therefore, in order to create a valid plan for the future of the City, positive land use trends need to be encouraged and projects and policies designed to eliminate or modify the negative land use trends need to be established. Through this process land use planning principles can be formulated. The following sections highlight these planning principles for the City of O'Neill.

PLANNING PRINCIPLES

Like pieces of a puzzle, the various urban land uses join together to form the "City". These uses must be properly situated within the planned urban framework to achieve the most desirable environment for each type of use and to achieve the overall objective of creating and maintaining the most desirable environment in which the citizens of the City can live, work and recreate. In striving to accomplish this end, the following principles have been applied in the development of this Land Use Plan:

RESIDENTIAL

From a land use analysis standpoint, the City of O'Neill currently consists of three residential neighborhoods as defined by the locations of the highways serving the City. The following planning principles should continue to be applied to all such residential neighborhoods:

- Where possible, residential areas should not be located directly on high-volume traffic roadways. Where such locations cannot be avoided, such uses should be set back considerable distances from such streets or buffer uses should be introduced between the major street or highway and the residential dwellings.

- Proposed new residential areas should be so located as to be free from encroachment by incompatible land uses either existing or proposed.

- Where feasible, proposed residential areas should be located within easy reach of neighborhood parks and other recreational facilities. Access to such facilities from the residential neighborhoods should be safe and avoid highway and railroad crossings. Where this is not feasible, it is an indication of a lack of such facilities in that particular area of the City.

- Residential areas should provide for a full range of housing types, ranging from single-family detached housing to townhouse and mid-rise apartments and condominiums with densities ranging from 4 to 50 units per acre or higher.

- Higher density residential uses, including apartments and other attached developments should be located in relatively close proximity to collector or arterial streets to maintain adequate traffic flow capacities while avoiding introduction of heavier traffic volumes into lower density areas.

- Higher density residential uses should also be constructed in areas that serve to buffer incompatible land uses, such as commercial and industrial areas from lower density residential neighborhoods. This allows for the transition between high volume traffic areas commonly associated with commercial and industrial areas to lower volume traffic areas located in residential areas, as well as, minimizes the negative effects created when such incompatible uses abut each other.

COMMERCIAL

Commercial uses in smaller cities such as O'Neill are generally divided or categorized into two types. These include neighborhood and community commercial areas and highway commercial areas. Neighborhood and community commercial areas are developed for retail distribution of comparison and convenience goods and services. These areas serve as the predominant shopping areas of the City.

Highway commercial areas, as the description suggests, are land areas fronting on major arterial streets designed to serve the motoring public. Typical uses including convenience stores, motels, restaurants and other commercial uses that, although oriented to serving the local population, require considerable amounts of land such as automobile dealerships and implement dealerships.

In O'Neill the downtown area and the concentration of comparison goods stores along Highway 20 and, to a lesser extent, along south Highway 281 serve both as convenience and comparison goods areas or the "community shopping areas".

Planning for future commercial uses in O'Neill should include provisions for all types of commercial uses. The following principles have been applied with regard to these uses in this Land Use Plan:

- The downtown area should remain a major community shopping area and the major business and professional service center in the City. Where vacancies occur, reuse of such vacant space through active recruiting of businesses or redevelopment of vacant buildings should occur to maintain the vitality of the downtown.

- Additional commercial areas should be concentrated along major roadways and be developed to permit or require maximum use of depth from the highway frontage. This will permit clustering of the uses back away from the actual highway frontage while maintaining the necessary exposure and visibility from the highways. It will also minimize the overall length of the highway commercial areas and help to maintain the traffic handling capacity of the highway since the total number of access points to the highway would be reduced.

- Since highway commercial areas most often serve as the entrance to a community, provisions for development of landscaping along the highways and reasonable control of business signage and billboards should be pursued.

- To avoid unwarranted traffic congestion and hazards, vehicular access to individual commercial uses from the highways should be avoided. Instead, access roads or frontage roads with limited and controlled accesses should be pursued.

- Where additional commercial uses are developed adjacent to residential area, the development of landscape screens should be required to minimize land use conflicts.

INDUSTRIAL

Since the ideal industrial development site is a product of a number of variables including the overall land use pattern of the City, as well as, the requirements of individual industries, the task of identifying sites for new industrial development is difficult. There are, however, some minimum requirements that have been used in the formulation of this Land Use Plan:

- The sites should contain well drained soils and have gently sloping topography. Such sites should be free from flooding potential.

- Municipal water and sewer utilities capable of serving such uses are a must and the water system must be capable of delivering adequate quantities of water for industrial processing and fire protection.

- Adequate supplies of energy must be available at reasonable installation costs.

- Any industrial site must have good access to a major arterial street or highway and preferably access to rail facilities and direct or indirect access to air transport facilities.

- Industrial sites should be located in areas where surrounding uses, existing or proposed, will not encroach significantly on such uses and create inappropriate land use conflicts or traffic conflicts.

- Since quality industrial land availability is typically limited within the service area of any community, the majority of sites that do have such potential should be reserved for industrial use even though actual development of the sites may be deferred a number of years. Such reservation keeps such sites from being developed for other uses and serves to reduce future conflicts with new uses that may develop in proximity of the proposed industrial sites.

The application of these principles to the City of O'Neill suggests a continuation of industrial development to the northwest along the west side of Highway 281 and along the south side of Pioneer Road to the east of the built-up urban area. In addition, it would be appropriate to identify a third area for long term industrial development along

County Highway 108 to the east of the City to be certain that adequate land for industrial development will be available in close proximity to the existing urban area.

CITY OF O'NEILL FUTURE LAND USE PLAN

The Future Land Use Plan for the future physical development of the City of O'Neill consists of two elements - a future land use map and a set of land use policies. The map was constructed to provide a general guide to the community's future growth by identifying the desired overall land use pattern and the direction of growth. The land use policies are provided to allow the Planning Commission and City Council to evaluate the appropriateness of proposed new developments relative to the Land Use Plan Map.

FUTURE LAND USE PLAN MAP

The characteristics, determinants and principles previously mentioned provide the basis for the configuration of the Land Use Plan Map indicated on Figures 5 and 6. It is important to note that the land indicated for residential, commercial and industrial uses is larger than projected expansion of such land uses within the planning period. This is done to provide locational choice, competition in the real estate market and in the case of industrial areas, the need to preserve land best suited and properly located for future industrial development. The following is a review of the future land use recommendations by category:

RESIDENTIAL LAND USE

As noted previously in the Existing Land Use Analysis, there are presently nearly 100 acres of undeveloped land within the corporate limits of the City and nearly 50% of this undeveloped land occurs in areas already subdivided for residential development Although the availability of this amount of land for residential development is sufficient to satisfy anticipated future residential use expansion, it is appropriate to plan for a limited amount of additional land to allow competition for residential locations and lot costs.

The largest additional areas for proposed development, in terms of residential expansion, are indicated to continue to occur in northern and northwestern peripheries of the existing urban area. The Plan also recommends the redevelopment of older residential areas, particularly the area in the southern portion of the City. In addition, the Plan calls for encouraging infilling of vacant / undeveloped lots located within existing residential neighborhoods through allowances for increased densities, improvement of public facilities, as well as, possible financial incentives for such infilling.

Where proposed residential developments would occur in proximity to potential incompatible uses, buffer uses of higher density residential developments are proposed. Such areas could also incorporate professional office (non-retail) uses to serve as buffers.

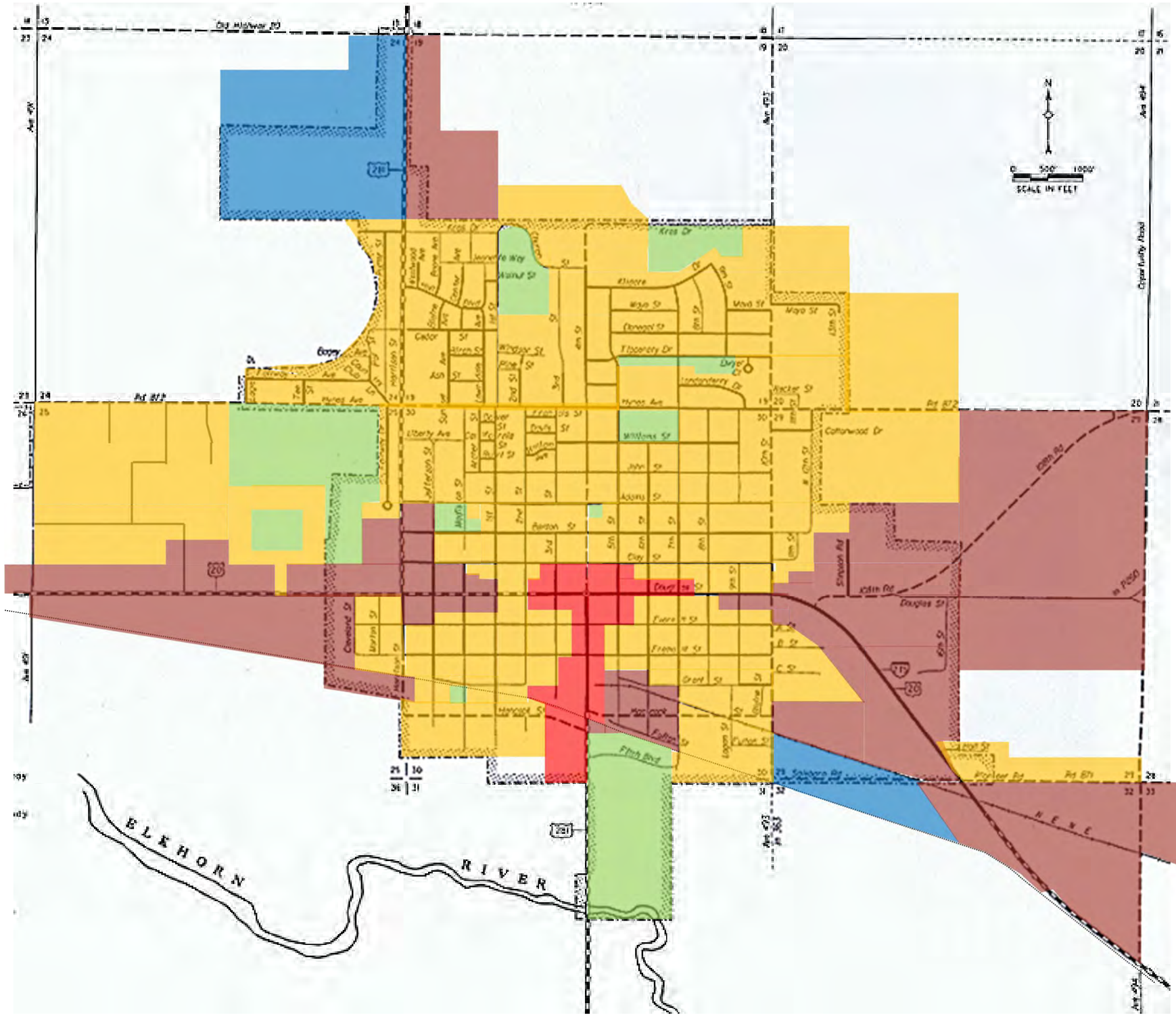


Figure 5

FUTURE LAND USE PLAN

O'Neill, Nebraska

LAND USE LEGEND

- Residential
- Central Business Commercial
- General Commercial / Light Industrial
- Industrial
- Public & Semi-Public (Open Space / Recreation
- Agricultural

STAHR & ASSOCIATES, INC.

Community and County Planning - Economic Development Consultants

1512 Road
York, Nebraska 68467

Telephone (402) 710-1819
Fax (402) 362-2526
E-Mail ojstahr@hotmail.com

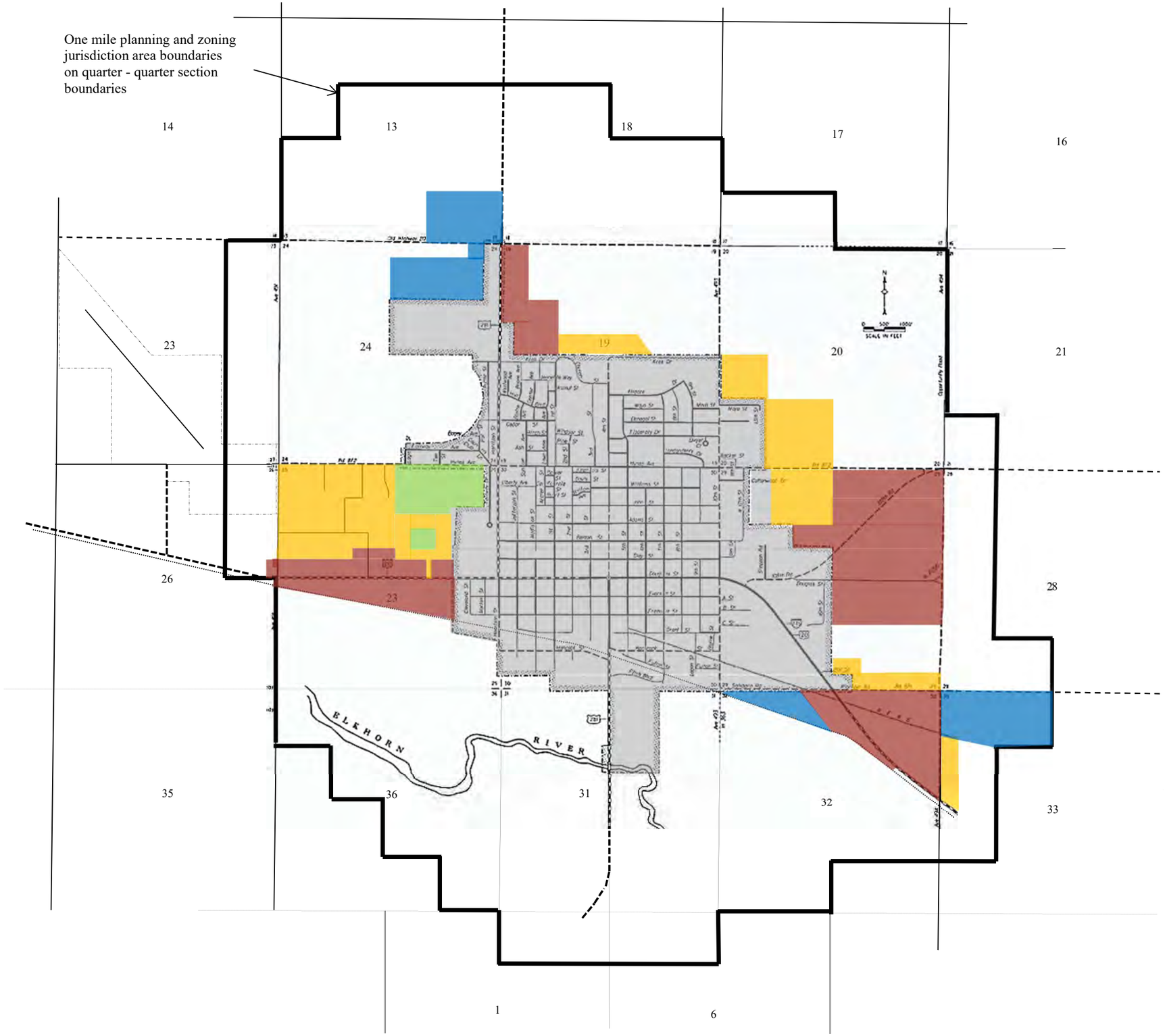


Figure 6

FUTURE LAND USE PLAN

One Mile Zoning Jurisdiction Area

O'Neill, Nebraska

LAND USE LEGEND

- Residential
- General Commercial / Light Industrial
- Industrial
- Public & Semi-Public (Open Space / Recreation)
- Agricultural
- Municipal Corporate Limits

STAHR & ASSOCIATES, INC.

Community and County Planning - Economic Development Consultants

1512 Road
York, Nebraska 68467

Telephone (402) 710-1819
Fax (402) 362-2526
E-Mail ojstahr@hotmail.com

COMMERCIAL LAND USE

There will be demand for additional commercial development in the City during the planning period. As noted previously, with the exception of reuse or redevelopment of existing vacant and underutilized buildings in the downtown area, there is virtually no land left for accommodation of such uses within the current corporate limits of the City. In addition, most such uses will prefer a location along one of the highways serving the City in order to provide maximum access by customers.

To address these limitations and needs the Land Use Plan calls for expansion of or delineation of several commercial and light industrial uses along both Highway 20 and 281. The Plan calls for land to accommodate future additional commercial and/or light industrial uses along both sides of Highway 20 east of the existing urban area, along Highway 20 west of the present corporate limits and to a limited extent along the east side of Highway 281 in the northwest part of the City. The Plan also indicates allocation of land for additional commercial and light industrial uses on Old County Highway 108 to the northeast of the City. This area would be more suitable for heavy commercial uses such as contractor's yards, auto body shops and similar commercial uses.

INDUSTRIAL LAND USE

Although industrial land uses do not presently comprise a large percentage of the urban land area, the development of such uses in the future is critical to the expansion of the local economy. To maximize the potential to develop new and expanded manufacturing and heavy commercial uses, it is imperative that the Land Use Plan reflect the locational needs of tomorrow's industrial and commerce needs while balancing those needs against the need to avoid or to at least minimize potential land use conflicts with adjoining land uses.

The City of O'Neill is blessed in that it is located in an area with large acreages of gently sloping land with soil types appropriate for industrial development. However, the amount of such land that has immediate access to the highways and railroad serving the City and that is located where development of additional industrial uses will not create land use conflicts with existing or planned urban development is quite limited. For this reason it is imperative that the land is suited for industrial development and that is located in areas that will not conflict with other land uses be preserved for such use.

As indicated on Figures 5 and 6, the Land Use Plan calls for delineation of several areas which should be reserved for future industrial and heavy commercial uses. The first of these areas are extensions of the present industrial - commercial areas on the south sides of Sale Barn Road and Pioneer Road on both sides of Highway 20 in the southeast portion of the existing urban. This area has excellent access to Highway 20 and the existing rail line serving the area. The second industrial area is a northward extension of the existing industrial area on the west side of Highway 281, north of West Kros Drive in the northwestern portion of the City. A third, but less likely used area would be along Old County Highway 108 to the northeast of the present urban area.

PUBLIC AND SEMI-PUBLIC LAND USE

As is noted in the Community Facilities, Services and Utilities component of this Comprehensive Plan, the City of O'Neill is well served by the various governmental and semi-public facilities that now exist and , with the exception of planning for eventual expansion of water and sewer utilities, little change will be needed during the Planning Period. The Land Use Plan does, however, envision several future public land uses to address existing and future needs and opportunities.

The first of these is a proposed development of an active recreation park designed to not only provide year-around recreational opportunities for local citizens, but to serve as an economic development facility to attract families from all over Holt County and surrounding counties to the City. Suggestions for the park include soccer golf, a year-around ski and sledding slope and a combination roller and ice skating rink. This type of active recreation park would be a revenue producing facility to cover the cost of maintenance and operation in the future.

An ideal location for such a park would be in the area north of Highway 20 and south of the municipal golf course. This type of facility, combined with the ability to develop lots along the golf course could make it feasible to develop a residential subdivision.

A second development includes the proposed development of a neighborhood park in an area of the Community where usable open space and recreational opportunities are now very limited. This neighborhood park would be located in the southwest residential neighborhood west of Highway 281 and south of the now Cowboy Trail. This proposed park is part of a proposed plan to encourage redevelopment of this aging residential neighborhood.

FUTURE LAND USE POLICIES

The following is a listing of Future Land Use Policies structured to reinforce the Future Land Use Plan Map and to guide specific land use (rezoning and subdivision) decisions in years to come.

POLICY 1: Encourage infilling of all vacant areas within the existing urban area. A philosophy of encouraging use of the many vacant lots within the City through appropriate zoning and subdivision incentives and development or improvement of public facilities in these areas is critical to improving the overall efficiency of land use and public facilities, utilities and services.

POLICY 2: Residential areas should be developed as integrated areas including a full range of housing types and densities. Higher density residential uses should be located with direct access to collector or arterial streets and can serve as buffers for lower density residential developments.

POLICY 3: Encourage new development to locate only in areas served by existing utilities and services or where such can be extended at reasonable costs. This policy will avoid leap-frog development or "urban sprawl" while permitting maximum land development locational choices. This policy will also facilitate an appropriate "annexation upon development policy and program".

POLICY 4: Prohibit development in any flood hazard area or permit such development only when such areas can be filled without increasing flooding upstream or in other areas not on the development site. Flood prone areas are best suited for natural or recreational uses and structural development should be avoided and can be used for trail development to effectively link residential neighborhoods with major recreational facilities, shopping areas and schools.

POLICY 5: High activity uses or those generating large traffic volumes should be located on or near arterial streets. Commercial, industrial and traffic generating public facilities should be located on or near major traffic arterials to permit easy access and avoid introduction of traffic into lower density residential areas.

POLICY 6: Provide buffers between high and low activity uses. Use of open space, landscape screening, street plantings and transitional land uses such as professional office uses and multi-family uses can effectively buffer low activity residential uses from major arterial streets or incompatible uses.

POLICY 7: Promote the economic strength of the Downtown area through revitalization and redevelopment. The downtown should remain a predominant community shopping center and the major business and professional service center in the City and improved signage access to the downtown area from should be developed along 12th Street and along M Street .

POLICY 8: Develop industrial areas consistent with the availability of land, the costs of extending utilities and the requirements of the industries themselves while assuring real estate price competition. A larger industrial site is preferable over a series of smaller sites and permits more efficient use of public facilities, services and utilities.

URBAN GROWTH AND FUTURE ANNEXATIONS

In order for any City to physically expand, it is typically necessary to include additional land within the corporate limits of the community. Inclusion of additional land within the corporate limits can occur in two different ways. First, as land development is proposed and the land is subdivided, it can be platted as an addition to the City. If the City accepts the proposed addition the land area involved is then automatically included in the corporate limits.

The second methods of adding land to the corporate area involves annexation of land areas which are "legally" annexable under Nebraska Statutes by action of the City Council. This method is typically a unilateral action on the part of the City and quite often such annexations are opposed by the owners of the land proposed to be annexed.

The inclusion of additional land within the corporate limits, using either method, should be consistent with the Future Land Use Plan and consistent with the City's ability to provide public services at the same level as is provided elsewhere in the existing City and the City's ability to extend utilities (although not necessarily at City cost) to the area within two years of such annexation.

To provide a guide for the inclusion of additional land within the future corporate limits of the City of O'Neill, an evaluation of all land now outside the existing corporate limits, but which meet the statutory requirements of being "legally" annexable was conducted. As indicated on Figure 7, there are a number of parcels which now qualify as urban or suburban in character which the City could and should annex. Only those annexable areas which are consistent with the Future Land Use Plan should be considered for annexation.

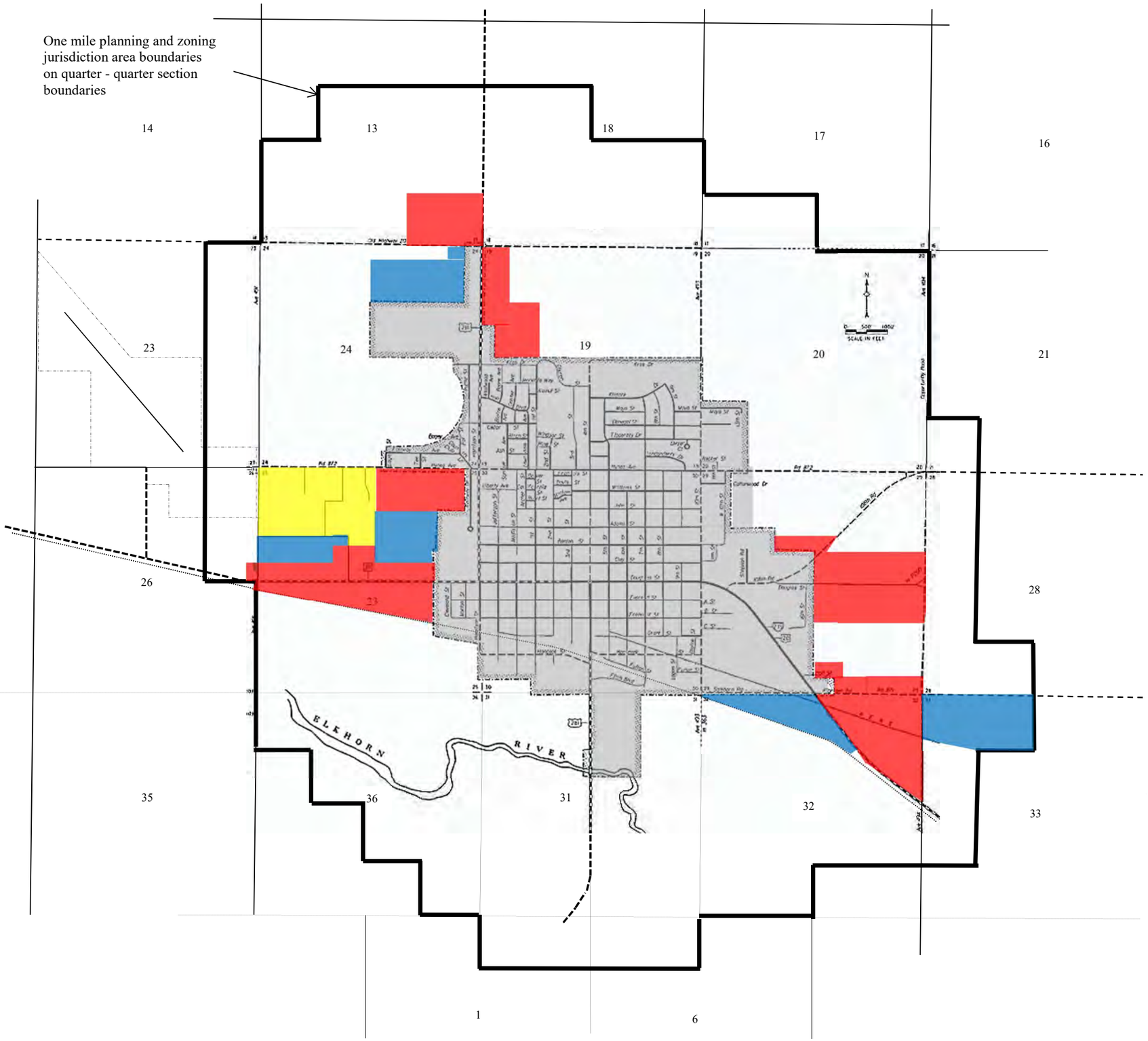


Figure 7

ANNEXATION PLAN

O'Neill, Nebraska

ANNEXATION PRIORITY LEGEND

- Existing contiguous urban development annexation (Priority 1)
- Future contiguous urban development (Priority 2)
- Future contiguous urban development (Priority 3)
- Municipal Corporate Limits

STAHR & ASSOCIATES, INC.

Community and County Planning - Economic Development Consultants

1512 Road
York, Nebraska 68467

Telephone (402) 710-1819
Fax (402) 362-2526
E-Mail ojstahr@hotmail.com

The areas which should be considered for annexation are indicated in priority of annexation in Figure 7. The priority 1 areas are those areas which are already developed and which are contiguous to the present corporate limits. The Priority 2 areas are those areas which should be annexed as they may be developed during the Planning Period. The Priority 3 areas are those areas which are only partially developed and which would require enhancements in other public facilities such as street improvements and drainage facilities.

A prerequisite for any such annexation, which is particularly important to the City, is that an evaluation regarding the City's capacity to provide public utilities within two years of such annexation must be conducted for the areas which should be considered for annexation. It is critical to understand that the City does NOT have to actually build such expanded utilities within 2 years. Annexation law only requires that the City have the capacity to provide water supplies and sewage collection and treatment capacity within the 2 year period.

Owners of property proposed to be annexed will typically argue that their property should not be annexed because their property is not provided with water and sewer utilities. It must be understood that construction of public water and sewer utilities is typically not financed through property taxes, but rather through payment of utility bills. Such bills are typically structured to generate revenues to finance the construction of the expanded utility systems. Expansion of such utilities generally results in the creation of assessment districts which enable the property owners benefitting from such utility expansions to pay for the cost of the expansion over a period of time, thus minimizing the impacts of such costs over time.

In O'Neill's case, it is critical that there be effective communication between the Mayor and City Council regarding future annexations and the City Utilities Department. Planning for the extension of public utilities and expanded utility capacities takes time and funding and the ability to plan ahead in terms of developing the financial capability to enable the City to construct such extensions and add necessary supply or treatment capacities. If annexation policy and infrastructure planning is not effectively coordinated, the ability for the City to physically expand will be severely hampered.

There are a number of reasons why any municipality should consider annexation of real property. In the opinion of Stahr & Associates, Inc. the following are the top seven reasons for annexation of property to the municipality:

1. A municipality must plan for and provide areas for future growth. Without such a plan and implementation thereof, a municipality can stagnate and suffer economically due to an inability to provide areas for additional industry, business and housing. The only option municipalities have to provide such areas for growth is through annexation. This is especially critical in municipalities like O'Neill with limited vacant, developable property within its current corporate limits.

2. Municipal annexation is a matter of fairness to its individual and industrial and business citizens for two reasons. First, if development occurs adjoining the municipality, the residents and/or employees of industries or businesses in these areas will utilize the streets, recreation facilities and programs and other cultural facilities and services provided by the taxpayers of the municipality without having to pay their fair share of the costs of providing such streets, facilities and services. Second, development of industry and

businesses adjoining the municipality will create a situation that is inherently unfair to those industries and businesses which are within the corporate limits as they may be competing with industries or businesses adjoining the municipality while having to pay higher property taxes and possibly sales taxes which are not paid by industries and businesses outside the municipality.

3. Growth of a municipality will necessarily require more infrastructure, facilities and greater levels of public services which will require more public funding. Annexation of developing areas allows the municipality to increase its tax base, which helps limit the overall tax levy for all municipal taxpayers, including those which are annexed, and provides some additional ad valorem tax revenues to help cover the added cost of providing the necessary additional infrastructure and expanded services.

4. A municipality should annex areas adjoining the corporate limits that are developing into urban uses in order to provide these urbanizing areas with the higher levels of municipal services which are needed in any urbanizing area to protect life and property. Annexation also allows the municipality to apply municipal ordinances appropriate to protect public health, safety, property values and to limit or control land uses which are deemed undesirable.

5. If a municipality allows development on lands adjoining the corporate limits without annexation, such development may determine it is less costly to provide their own water and sewer utilities than to pay for extension of municipal utilities. This typically results in creating inefficiencies in the municipal utilities systems because future development beyond the now developing areas may desire such municipal utilities, but in order to provide such utilities the municipality must utilize different routes which are more expensive and less efficient in order to serve such other developing areas. This again, raises the question of fairness to the utility rate payers within the municipality.

6. Development of any land will change the storm water runoff characteristics, typically resulting in a faster rate of runoff of storm water. If the natural drainage pattern has such storm water running from the developing area into the municipality, it may require improvements of the storm water drainage system within the municipality. The additional potential cost for such improvements again brings up the question of fairness. Annexation of such areas insures that any such additional costs will be properly and fairly shared by all taxpayers, not just those in the existing corporate limits.

7. Finally, it is typically argued that annexation of land to the municipality requires higher ad valorem taxes thus discouraging development, which, in turn, is a detriment to the economy of the municipality. It is important to understand that, when it comes to development of new businesses and industries, the City of O'Neill is in competition with any number of other municipalities in Nebraska and typically other nearby states to have such businesses or industries site their development in their community. If the City of O'Neill is to be able to compete successfully in this highly competitive economic development arena, it must be able to provide the same economic development incentives that virtually every other competing municipality can utilize. One of the most important economic development incentive tools that the Nebraska legislature has provided is the ability to provide tax increment financing when appropriate to do so. This TIF incentive can provide a greater economic incentive than simply not incurring slightly higher ad valorem taxes through non-annexation and when applied properly in accordance with the limitations of the TIF laws, can provide substantial long term benefits to the economic vitality of the City. It is imperative to realize that, in the economic development arena, the City of O'Neill is and will continue to compete with other municipalities which will provide this TIF incentive. However, the law stipulates that TIF may only be utilized if the development for which the TIF incentive is to benefit is annexed to the City.

SUMMARY

In years to come the Planning Commission and City Council should refer to this Future Land Use Plan whenever a land use issue such as a rezoning or subdivision is being considered. If a change in this Plan appears appropriate, it should be evaluated in relation to the Land Use Policies herein set forth.

TRANSPORTATION PLAN

INTRODUCTION

An efficient transportation system is a key component of the economic and physical development of any urban community. The street system, rail system, pedestrian movement system and air service effect not only the cost of virtually every commodity produced or consumed in any community, but also generates costs to the local taxpayer for transportation system improvements and maintenance.

The interrelationships between local land uses and major streets and highways can create, strengthen or damage the local economy, local property values, neighborhood quality and stability and the general quality of life in a community.

As long as physical growth continues in and around the City of O'Neill, there will continue to be a need for additional and improved transportation facilities, particularly new or extended streets and improvement of existing streets. Such expanded facilities must be properly related to the land uses served and the anticipated usage. This component of the Comprehensive Plan is structured to generate a long-range plan for local transportation facilities which will result in efficient and economically effective systems.

OBJECTIVES

The specific objectives established to guide the development of this Transportation Plan include:

- Identify transportation system inadequacies and inefficiencies in and around the City and formulate recommendations for improvement or modifications of the systems to eliminate such inadequacies or inefficiencies.

- Classify major streets according to function and establish recommended design standards for each classification of street.

- Generate a transportation system framework plan for the future physical development of the City of O'Neill that addresses the inadequacies and inefficiencies of the existing system and that reinforces the Land Use Plan for the City.

EXISTING TRANSPORTATION SYSTEM

The overall transportation system in and around the City of O'Neill consist of five major components. These include the major and minor street system, the pedestrian movement system, the railroad, the Cowboy trail, the pedestrian sidewalks and the municipal airport.

Major Roadway System

The roadway component of the City's transportation system includes two major Highways, U.S. Highway 20 / 275 and U.S. Highway 281. These two highways bisect the City from east to west and north to south and provide the primary transportation link in and out of the City. The system also includes several local streets in the built-up urban area which function as collector roadways. These include:

- 4th Street, an urban extension of Highway 281extending northward from the intersection of Highway 281 with Highway 20 & 275,
- 10th Street, a north-south street in the eastern portion of the City,
- Hynes Avenue, an east-west street in the northern portion of the City,
- Douglas Avenue (East), an eastward extension of Highway 20 / 275,
- Highway 108, a roadway extending northeast from the City,
- Sale Barn Road, a roadway extending westward from Highway 20 / 275 in the southeast portion of the City, and
- Pioneer Road, a roadway extending eastward from Highway 20 /275 in the southeastern portion of the City.

All of these roadways, except Old Highway 108 have been established as part of a grid street system in the City, with said grid system, in turn, being based on the sections of land laid out in the original survey of the County. Each of these streets is separated by a distance of one-half mile.

An evaluation of this major street system indicates that there are a limited number of inadequacies that exist at the present time. The first of these is the adequacy of the highway system serving the City, in particular Highway 20 / 275. As has occurred nationally, the level of traffic on this east-west highway has increased substantially, particularly the level of heavy truck traffic. This increased level of traffic has, as discussed in the

City's previously completed Economic Development Strategic Plan, resulted in increased traffic conflicts on the highway as it extends through the City. These conflicts have resulted in three separate problems including:

- Turning movement conflicts as drivers try to enter and exit the many driveways into the commercial uses located along the Highway from the commercial area east of 10th Street and the commercial and residential uses along the Highway from 10th Street west to Harrison Street (Highway 281),

- Traffic stacking conflicts in the downtown which result from the substantial increases in Highway 20 / 275 traffic volume, from conflicts with vehicles attempting to park in or exit from the on-street parking stalls in the downtown area, from inadequate design to accommodate left and right turning movements in the downtown area, and from inadequate traffic controls (traffic signals) to allow traffic to flow smoothly through the City, and

- Traffic noise, particularly from 10th Street west, where the present traffic control and street turning movement inadequacies causes stop and go traffic which results in unnecessary traffic noise, particularly from heavy trucks and particularly in the residential areas along the highway and in the downtown area.

These turning movement conflicts, particularly east of 10th Street have been improved with the introduction of a left-turn lane in the center of Highway 20 / 275. The traffic stacking and traffic noise conflicts have not been addressed at this point, although the Nebraska Department of Roads has presented an alternative design for the Highway and traffic control system west of 10th Street to minimize these conflicts. A modified version of the Department of Roads design is presented in the City's previously completed Economic Development Strategic Plan as elimination or at least minimization of these conflicts is a key component of maintaining the economic vitality of the downtown retail core of the City and improving the economy of the City as a whole. The key components in this alternative highway design are as follows:

- Convert the present four-lane highway section to 2 through lanes and introduce left and right turn lanes on the east and west bound lanes of Highway 20 / 275 at its intersection with Highway 281 and at the intersection of this Highway with 2nd, 3rd, 5th and 6th Streets,

- Replacement of all old traffic signals at all signalized intersections from 10th Street west and syncronization of these signals, including left turn signals, to allow traffic to flow smoothly through the City, to minimize traffic stacking and noise problems and increase traffic and pedestrian safety, particularly in the downtown area. These signals should also be equipped with pedestrian movement signals to improve pedestrian safety when crossing these major roadways.

- Conversion of the on-street parking in the downtown area to low angle (30 degrees or less) parking by slightly narrowing the very wide downtown sidewalks. This will not only make parking in the downtown area more convenient, but will lessen conflicts with moving traffic when compared with the conflicts presented by the existing parallel parking system.

The Mayor and City Council should review this concept with the business owners in the downtown area to determine if there is support for the recommended modifications. If such support is forthcoming, the City should forward its request for modifications to the Nebraska Department of Roads for inclusion in the Department's highway improvement plans.

Evaluation of the other major streets in the urban street system indicate few inadequacies. These streets are well spaced to serve the urban area and with a limited number of exceptions are capable of handling the current and projected traffic volumes. Those inadequacies that do exist deal primarily with inadequate pavement widths on 10th Street north and south of Highway 20 / 275 and on Sale Barn Road and Pioneer Road which serve commercial and industrial uses in the southeastern portion of the City. This pavement width inadequacy has been partially offset in that virtually all of the land uses along these streets have been established with adequate off-street parking areas and thus on-street parking has not been needed.

Pedestrian Movement System

A pedestrian movement system is a critical element in any urban infrastructure. Not only does the system allow movement of people to and from major shopping areas, recreation facilities, schools and other points of interest in the urban area, but it provides an alternative to use of the automobile for movement of people. In addition a pedestrian movement system enhances walking opportunities, an increasingly popular form of exercise, particularly for the elderly and the system offers a safe outdoor surface on which children can play in relative safety with regard to vehicular traffic.

The pedestrian movement system in the City of O'Neill is typical of other smaller cities in one sense and unique in another sense. It is typical from the standpoint that the sidewalk system in the City is incomplete and in several instances inadequate to facilitate desired pedestrian movement and pedestrian safety. It is unique in the sense that the City is directly served by the Cowboy Trail system, a major pedestrian and biking trail system, which is at this point in time underutilized.

The inadequacies of the existing pedestrian movement system stem from two basic factors. First, the system is incomplete and does not allow consistent pedestrian linkages to major shopping areas, schools, recreation facilities or the Cowboy Trail. Second, at points where the pedestrian movement system intersects major roadways, particularly those intersections where traffic signals are not present, pedestrian safety is an issue.

The condition of the pedestrian movement (sidewalk) system is not a major inadequacy as surveys indicate that approximately 87% of existing sidewalks are in good condition.

Recommended improvements in the pedestrian movement system designed to address these inadequacies are described later in the plan portion of this element.

Airport

Commercial air service is not available in O'Neill. The nearest commercial air service is available in Norfolk to the east and Grand Island to the south. The City is served by a municipal airfield providing service to small aircraft. The airport is located just northwest of the urban area of the City. There are only limited deficiencies for this small airport. The City should ensure that the airport is protected by any effective airport hazard regulations. Such regulations should be incorporated into the City's and Holt County's zoning regulations so that approach zones to the airport can be protected from intrusion by tall structures such as communications towers.

Street Classification and Design Standards

In any urban community it is readily apparent that there is a hierarchical relationship between the street right-of-way and pavement widths, the types of surfacing and the traffic volumes on the streets. Some streets carry more traffic and / or different types of vehicle traffic than others indicating that the function of some streets is different than others. In other words, the function of some streets is different than others and thus the design of streets should vary with the function of the streets.

The functional classification system is a system which provides definitions and standards for classifying the function of streets and which provides recommended design standards for each street classification. This classification system is utilized by both the Federal Highway Department and the Nebraska Department of Roads.

Streets can be fully efficient and safe only if their design and construction reflects the function which the streets are intended to fulfill and if such design and construction is consistent and uniform. The importance of uniform design standards must be emphasized. Varying street designs are a hazard to a driver who must continually adjust to changing street design. Non-uniformity also reduces the traffic volume capacities of streets and increases accident potentials. It is critical that the classification of streets be used in the development of new streets and the improvement of new streets so that the major street system can function properly at minimum costs and maximum safety. The following functional classification standards and associated design standards, recommended for use in this Transportation Plan, act both as a standard with which to evaluate the present street system and as a standard on which a long-range Major Street Plan can be based:

Major and Minor Arterial Streets

As defined by the Functional Classification System of the Nebraska Department of Roads, a major arterial street is an extension of a Federal or State Highway into and through an urban community.

A minor arterial street is the municipal extension of high volume rural county roads. This type of street has the function of moving relatively large volumes of traffic through the municipality and between major traffic generators.

Arterial streets should function to carry the majority of traffic within a municipality. Such streets should collect and distribute traffic from and to collector and local streets within the municipality. Preferential treatment for this type of street is usually given over other streets in order to provide a safe, uninterrupted traffic flow through the municipality. Direct access from local streets and individual properties to arterial streets should be minimized to minimize traffic turning movement conflicts on the arterial streets. This is accomplished by channeling local street traffic to collector streets and then to arterial streets and, in the case of access to private property, through the use of frontage roads or similar methods of providing traffic movement from property to property without utilizing the arterial streets. Due to the volume and relative speed of traffic on the arterial streets, vehicle parking along such streets is normally restricted or prohibited.

The following design criteria are recommended for development of new or improvement of existing major and minor arterial streets:

Right-of-Way	80 - 150 feet
Pavement Width	24 - 64 feet
Moving Lanes	2 - 4 (12 - 15 feet wide each)
Parking Lanes	None preferred (10 feet wide if permitted)
Traffic Volume (Average Daily Traffic - ADT)	Over 3,000 vehicles per day
Driving Speeds	20 to 60 MPH
Gradient (vertical)	4 - 5 percent

Highways 20 / 275 and 281 are the streets that function as major arterial streets within O'Neill. Old Highway 108 extending northeast from its intersection with Highway 20 / 275 functions as the City's only minor arterial.

Collector Streets

A collector street is a municipal extension of higher volume roadways in the County Road system. Collector streets, within the municipality, serve the function of carrying traffic desiring to travel between major and minor arterial streets and local streets and access to residential neighborhoods and major commercial and industrial areas. Collector streets provide through traffic routes along with access to properties adjacent to such streets. To maximize traffic movement capability and safety and have an integrated network of vehicle movement, collector streets are generally spaced at one-fourth to one-half mile intervals within the urban area.

The following design criteria are recommended for development of new or improvement of existing collector streets:

Right-of-Way	60 -80 feet
Pavement Width	24 - 44 feet
Moving Lanes	2 (12 feet wide each)
Parking Lanes	None preferred (10 feet wide if permitted)
Traffic Volume (Average Daily Traffic - ADT)	800 - 3,000 vehicles per day
Driving Speeds	20 to 30 MPH
Gradient (vertical)	5 - 7 percent

Streets within and around the City of O'Neill which function as collector streets include:

East - West

Hynes Avenue - from the east corporate limits to the west corporate limits

Sale Barn Road - from intersection of Highway 20 / 275 west to 10th Street

Pioneer Road - from intersection of Highway 20 / 275 east to County Road

North - South

4th Street - from intersection of Highways 20 / 275 and 281 north to corporate limits

10th Street - from intersection with Highway 20 / 275 north to corporate limits and south to Sale Barn Road

Local Streets

Local streets are defined as all other streets in the municipal street system not classified as an arterial or collector street. The primary function of a local street is to provide access to properties adjacent to such streets. Through traffic is discouraged as is a continual flow of traffic. Local streets should be designed to channel traffic to collector streets which will then carry such traffic to arterial streets. The majority of streets within a typical municipal street system are classified as local streets, but such local streets carry only a small percentage of the total vehicle miles of travel within the overall street system.

The following design criteria are recommended for development of new or improvement of local streets:

Right-of-Way	50 - 60 feet
Pavement Width	27 - 34 feet
Moving Lanes	2 (11 feet wide each)
Parking Lanes	0 - 2 (8 -10 feet wide)
Traffic Volume (Average Daily Traffic - ADT)	200 - 1,000 vehicles per day
Driving Speeds	25 MPH
Gradient (vertical)	6 - 12 percent

MAJOR STREET AND PEDESTRIAN MOVEMENT PLAN

The Major Street and Pedestrian Movement Plan, as indicated on Figure 8, is designed to create an efficient and safe traffic and pedestrian circulation system that will reinforce the proposed Land Use Plan for the City of O'Neill. The proposed major street and pedestrian movement systems utilize all of the major streets and portions of the sidewalk systems now existing in the community and recommends the development of several additional collector streets and several sidewalk extensions or improvements which are either presently needed to make the transportation system safer or more efficient or which will be needed as further land development occurs.

In addition to the proposed lane modifications, installation of left and right turn lanes and introduction of syncronized traffic signals on Highway 20 / 275 discussed previously in this Transportation Plan, the Plan envisions the need for several additional collector streets through the Planning Period. These streets include:

- An extension of Adams Street eastward from North 10th Street which would link to a north-south collector street extending southward from Hynes Avenue, approximately ¼ mile east of 10th Street. This street will be needed to accommodate additional residential development in this portion of the urban area.

- A north -south link between Highway 20 / 275 and Hynes Avenue west of the current corporate limits, which will be needed to bring traffic from this developing area to Highway 20 / 275.

- A northward extension of North 4th Street which will be needed to serve future residential development in this area.

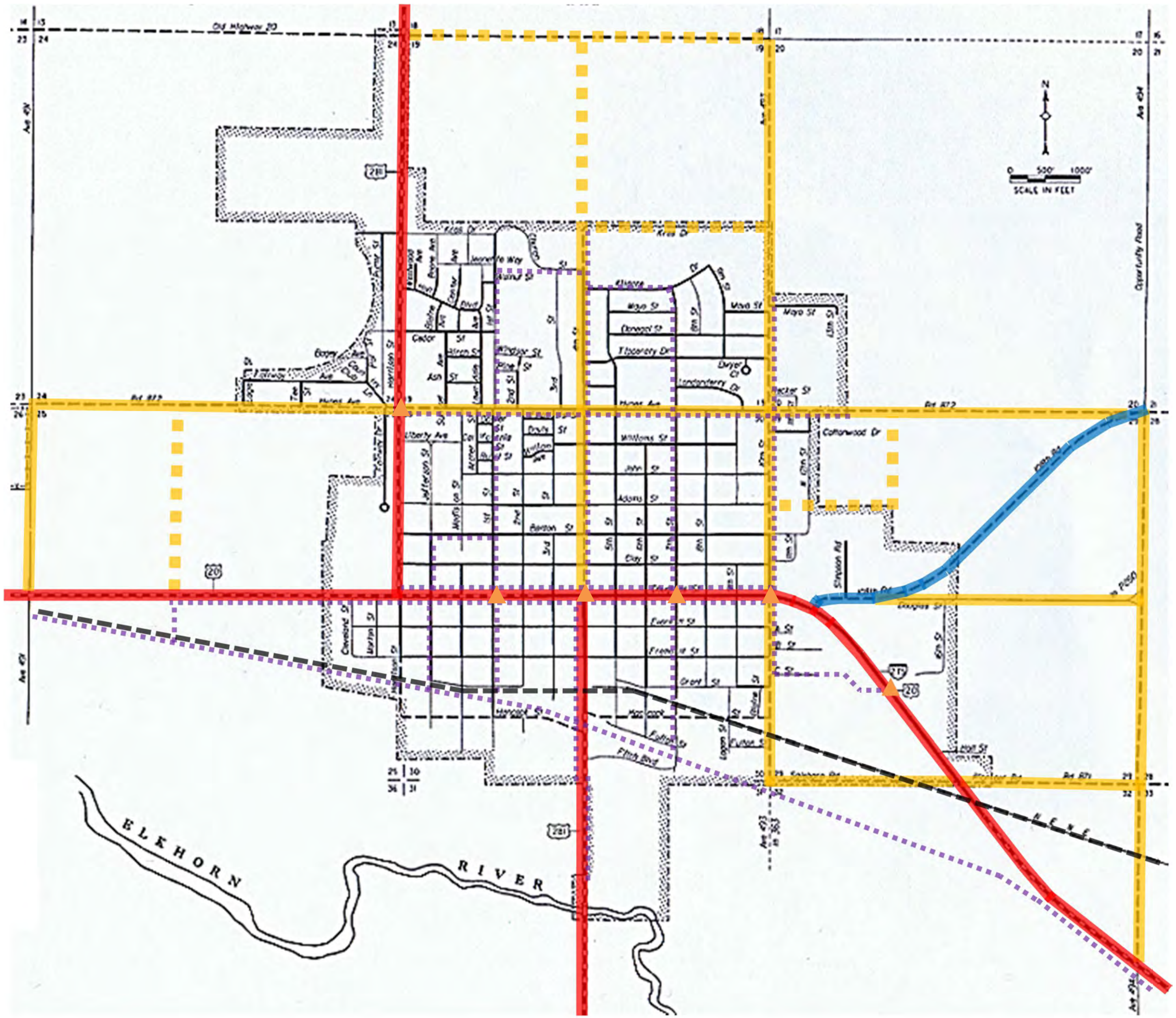


Figure 8

MAJOR STREET PLAN

ARTERIAL SIDEWALK / TRAIL PLAN

O'Neill, Nebraska

LEGEND

- Major Arterial Street
- Minor Arterial Street
- Collector Street
- Proposed Future Collector Street
- Arterial Sidewalk / Trail
- Signalized Pedestrian Crossing

STAHR & ASSOCIATES, INC.

Community and County Planning - Economic Development Consultants

1512 Road
York, Nebraska 68467

Telephone (402) 710-1819
Fax (402) 362-2526
E-Mail ojstahr@hotmail.com

This proposed Plan also recommends the implementation of several improvements to the existing pedestrian movement system in the City. These improvements consist primarily of infilling and extending the present sidewalk system so that pedestrian links are available to all major recreation, school and commercial areas in the City, as well as the Cowboy Trail. The specific recommendations for improvement of the pedestrian movement system include:

- Creation of an arterial sidewalk system which links all neighborhoods in the City to all major recreational facilities, schools, commercial areas, Cowboy Trail and the Community Center. This system would result from completing gaps that exist in the present sidewalk system and extending the sidewalk system south to provide several linkages with the Cowboy Trail.

- Establishing signalized pedestrian crossings on Highway 20 / 275 to allow safe pedestrian access to retail areas and restaurants on the east side of the City and to allow safe pedestrian access to and from the golf course area. These signals would be in addition to those proposed to be established at signalized intersections along Highway 20 / 275 from 10th Street west.

Implementation of the recommended transportation system improvements can be accomplished over time, but should be completed within the Planning Period. The design and construction of the proposed collector street linking Highway 20 / 275 and Hynes Avenue should occur when and if the land area north of Highway 20 / 275 is developed. Should proposed commercial development occur along the north side of Highway 20 / 275 prior to development to the north, a right-of-way through any commercial development for this proposed collector street should be reserved.

The recommended priorities for improvements of the transportation system are as follows:

1. Implementing the recommended turn lane, traffic signalization and parking modifications along Highway 20 / 275, from 10th west.

2. Installation of sidewalks in the gaps in the existing sidewalk system to complete the proposed arterial sidewalk system.

3. Installation of sidewalk extensions to link the community to the Cowboy Trail system.

4. Installation of signalized pedestrian crossings on both highways.

5. Construction of east side collector street as development east of the City is realized.

Maintaining the efficiency and safety of the major street system requires that the City's zoning regulations protect these roadways from unreasonable encroachment by abutting development. This is best accomplished by requiring greater front yard setbacks and, where possible, minimizing the number of driveways linking directly to the major arterial streets. Increasing front yard setbacks along major streets, particularly in residential areas, will also result in increasing the marketability of housing along these major streets as noise and safety conflicts with higher traffic volumes on these streets will be reduced.

ENERGY SUSTAINABILITY PLAN

INTRODUCTION

During the 2010 session of the Nebraska Unicameral, the State Senators approved and the Governor signed LB 997. This law requires that all counties and municipalities, except villages, in Nebraska when in the process of updating their comprehensive plans, incorporate an energy element. This statute specifies that the energy element shall: *"Assess energy infrastructure and energy use by sector, including residential, commercial and industrial sectors, evaluate utilization of renewable energy sources and promote energy conservation measures that benefit the community."*

The later portion of the above statutory wording implies that municipalities and counties should develop plans which will have the effect of reducing energy use and costs as well as creating "sustainable" communities. A "sustainable" community in this sense is a community or county that works to develop the ability to provide for present energy needs without jeopardizing the ability of future generations to live in the same or improved manner as we do today.

The need for an energy element is prompted by a convergence of factors, including fluctuating but generally rising cost of energy and the negative impacts that such rising costs have on consumers and the local economic development, dependence on imported oil and gas in a setting of global political instability, environmental concerns regarding fossil fuel pollution and mining, vulnerability of our centralized energy systems to terrorist threats, and the relationship of our energy use to climate change.

In addition to the above noted factors, it is important to understand that the production and use of energy in the United States and thus the City of O'Neill is a critical part of our quality of life and our national and local economy. Virtually every aspect of our national and local economies and quality of life is associated with the use of energy. We all use energy in some form to light and heat our homes, operate our businesses and industries, producing, preparing and preserving our food, transportation, law enforcement, fire protection, health care and even our recreational opportunities.

These factors and the reality of dwindling supplies of non-renewable fossil fuels world-wide has prompted the Federal Government and the State of Nebraska to adopt policies that are more insistent on curbing increased reliance on fossil fuels. For example, Federal policy has set a goal

of 20% of electrical power generation in the United States by the year 2010 be from renewable sources such as wind, solar, nuclear, or other renewable sources.

Successful energy strategies will decrease our overall energy use through conservation and efficiency and the development of renewable forms of energy. The benefits of successful strategies include:

- Decreasing costs to taxpayers, energy utility rate payers, individual households, businesses and industries,
- Enhancing spendable incomes of local citizens and enhancing opportunities for future local economic development,
- Increasing comfort in a northern climate,
- Decreasing pollution,
- Diversifying and distributing our energy systems to increase energy security,
- Decreasing carbon and other emissions which many believe is contributing to global climate change.

Local citizens will question what a small city like O'Neill can do to make a better environment and enhance the "sustainability" of the City. The reality is that City leaders and every citizen can make a small, but positive, impact for a better environment now and for the future sustainability of the City for the next generation.

This energy element is structured to not only comply with the requirements of LB 997, as indicated above, but will also identify strategies that the City governing officials and citizens of the City can utilize to reduce energy use and costs now and in the foreseeable future, as well as enhance the present and future environment and local economic development opportunities.

ENERGY INFRASTRUCTURE AND USE

The energy infrastructure in the City of O'Neill consists of publicly and privately owned and operated facilities and services to provide:

- electrical power,
- natural gas,
- petroleum products, and
- other energy sources such as combustion of wood, geothermal and solar energy for heat and/or cooling.

An analysis of energy use within this infrastructure in O'Neill has considerable variables resulting from anything from local annual changes in economic activity to year to year weather conditions. For these reasons and for lack of data for some types of energy, it is more reasonable and most likely more accurate to utilize documented statewide statistics and averages regarding energy consumption to evaluate local energy use.

The following is a statistical analysis of energy use in the City which utilizes statewide data converted to the population and economic activity in O'Neill utilizing per capita statewide energy use data and population data for the City in 2012. It is important to understand that this data includes the City population's share of energy use by energy providers to provide the energy at the local level. The data includes, for example, the energy used to produce electricity which is in turn used by customers in O'Neill.

The data presented is in the form of British Thermal Units (Btu's) which is a standard measure of heat energy. A British Thermal Unit is defined as the energy it takes to raise the temperature of water by one degree Fahrenheit at sea level. For example it takes approximately 2,000 Btu to brew a pot of coffee. A Btu is equivalent to 0.293 watthours.

Estimated energy consumption by sector in the City of O'Neill for 2012, the last year with complete data, is indicated in Table 19. The estimated total energy use in the City in 2011 was 1,481,559,000,000 (1.481 trillion) Btu's.

The local transportation sector is the largest consumer of energy. This sector, which consists primarily of automobile and truck usage of energy, used just over 634,000,000,000 Btu's or 42% of the total energy consumed in O'Neill in 2011. It is important to understand that this usage includes the energy used in the production of ethanol in the State. Deducting the ethanol production usage results in a net transportation sector usage of 524,900,000,000 Btu's or 35.4% of the total energy consumed locally.

TABLE 19

TOTAL ESTIMATED ENERGY CONSUMPTION BY SECTOR – 2011
O'Neill, Nebraska

Use Sector	Estimated Energy Consumption (Btu's)	% of Total Consumption
Commercial	275,739,000,000	18.6%
Industrial	245,184,000,000	16.5%
Residential	326,383,000,000	22.1%
Transportation	634,253,000,000	42.8%
TOTAL	**1,481,559,000,000**	**100.0%**

Source: Nebraska Department of Energy with conversion of statewide data by Stahr & Associates, Inc.

The residential sector utilized 326,383,000,000 Btu's of energy in 2011 making it the second largest energy user in the City, accounting for nearly ¼ of all local energy consumption. Residential energy use consists of energy used for heating, cooling, heating of water, food preparation and preservation, lighting, ventilation and communications including television and computer use.

The third largest energy use sector in the City is the commercial sector. The sector utilized just under 20% of total energy consumption in the City in 2011.

The industrial sector in City is the smallest energy consumer, using just over 16% of total energy consumption in the City in 2011.

In order to have a better understanding of energy consumption in the City and to provide information regarding which end use sectors have the most potential for energy conservation, an analysis of the types of energy used by each sector is needed.

The data presented in Table 20 provides details regarding which sectors uses which forms of energy together with which sector utilized what portions of each type of energy.

NATURAL GAS CONSUMPTION

As indicated in Table 20, in 2011 an estimated 255,200,000,000 Btu's of natural gas was consumed in the City. Of this total, the industrial sector utilized over 88,700,000,000 Btu's or just over one-third of all natural gas consumed in the City.

TABLE 20

TOTAL ESTIMATED ENERGY CONSUMPTION BY SECTOR AND TYPE OF ENERGY - 2011
O'Neill, Nebraska

	Type of Energy Consumption (billion Btu's)								Total
Use Sector	**Natural Gas**	**% of Total**	**Petroleum**	**% of Total**	**Electricity[1]**	**% of Total**	**Other[2]**	**% of Total**	
Commercial	65.9	25.8%	4.3	0.9%	201.7	37.2%	1.5	0.6%	273.4
Industrial	88.7	34.8%	35.9	8.2%	118.1	21.8%	4.2	1.7%	246.9
Residential	81.5	31.9%	16.6	3.8%	221.8	41.0%	6.5	2.7%	326.4
Transportation	19.1	7.5%	383.1	87.1%	0.00	0.0%	232.1	95.0%	634.3
TOTAL	**255.2**	**100%**	**439.9**	**100%**	**541.6**	**100%**	**244.3**	**100%**	**1,481.0**

Source: Nebraska Department of Energy with conversion of statewide data by Stahr & Associates, Inc.

1. Electricity consumption includes transmission energy losses
2. Other energy consumption includes geothermal, wood, solar energy and losses and co-products associated with renewable energy production
3. Industrial consumption includes agricultural production consumption

The residential sector in the City consumed the second largest amount of natural gas. In 2011, residential uses consumed 81,500,000,000 Btu's or just under one-third of total natural gas consumption. In this sector natural gas is used primarily for heating of residential dwellings, heating of water and cooking and baking of food. This sector has considerable potential for energy conservation through enhancement of the energy efficiency of each residence. Even only a 10% reduction in consumption would result in a savings or some 30,000,000,000 Btu's of natural gas per year. At current prices for natural gas, this would result in a savings of over $37,000.00 per year for local residents.

The commercial sector consumed just under 26% of the natural gas consumed in the City in 2011. The estimated 65,900,000,000 Btu's consumed by the commercial sector was used for a variety of purposes including heating and food preparation. Like the residential sector, there is considerable potential for energy conservation through enhancement of the energy efficiency of commercial buildings and processes.

The transportation sector consumed only a quite limited quantity of natural gas in 2011.

PETROLEUM CONSUMPTION

In 2011 an estimated 439,900,000,000 Btu's of petroleum products were consumed in the City of O'Neill. As would be expected the vast majority of petroleum product consumption was used for transportation of people and goods. Of the total petroleum products consumed 41% was motor gasoline and 47% was diesel fuel. Diesel fuel is used primarily in the transportation of crops, livestock and goods while motor gasoline is used for transportation of people - our automobiles and pickup trucks.

There is considerable potential for reductions in both diesel fuel and motor gasoline consumption through either conversion to renewable sources or through reductions in usage. The use of bio-diesel can substantially reduce the use of petroleum based diesel fuel while the use of higher levels of ethanol enriched motor gasoline can substantially reduce the use of petroleum based gasoline. A change of only 5% in the type of diesel and motor gasoline could have considerable impact on the demand for oil based fuels. A 5% conversion of the type of diesel and motor gasoline would result in a reduction of 22,000,000,000 Btu's of consumption of oil based fuels.

ELECTRICAL ENERGY CONSUMPTION

Consumption of electrical energy in O'Neill in 2011 is estimated to have been 541,600,000,000 Btu's. This consumption is comprised of two parts. The first part is the net consumption of electrical energy by all use sectors in the City. The second part is the energy loss in the electrical energy transmission system that represents the City's portion of the total energy delivery system loss on a per capita basis. Approximately 31% of the electrical energy consumption, some 167,900,000,000 Btu's, consists of actual use by all sectors in the City. The balance of the total consumption (69%) or some 373,700,000,000 Btu's represents the electrical energy loss in the transmission system to get the electrical energy to the City.

The majority of electrical energy consumption in the City of O'Neill in 2011 was somewhat evenly split between the residential and commercial sectors. Combined these two sectors consumed some 423,000,000,000 Btu's or nearly 80% of total local energy. There is considerable potential for conservation of energy in these sectors. A large portion of electrical energy consumption is used for heating, cooling, food preparation, lighting, water heating and appliance use. The enhancement of these consumption components in terms of energy efficiency would result in substantial electrical energy conservation in each of these use sectors.

Electrical energy consumption by local industrial operations in and around the City of O'Neill totaled some 118,000,000,000 Btu's in 2011. This limited usage reflects the limited industrial uses in the City.

There was no usage of electrical energy in the transportation sector.

ENERGY CONSUMPTION FROM RENEWABLE SOURCES

It is estimated in 2011 all economic sectors consumed approximately 244,000,000,000 Btu's in energy derived from renewable sources. However, as indicated in Table 20, 47% of renewable energy consumption occurred as losses and co-products generated in the production of ethanol, thus the net consumption of energy from renewable sources in the City is estimated to have been only 135,000,000,000 Btu's. This amounted to only 9.5% of total energy consumption in 2011.

As indicated in Table 21, of the total renewable energy resources consumed in the City in 2011, 46% was use of ethanol and bio-fuel products consumed by the primarily by the transportation sector.

The second largest consumption of renewable energy was the estimated 8,660,000,000 Btu's of wood and waste consumed primarily by the residential and industrial sectors.

The third largest consumption category of renewable energy was in the form of geo-thermal energy used primarily in water to air heat pump systems for heating and cooling of commercial buildings and residential housing units.

TABLE 21

ESTIMATED ENERGY CONSUMPTION BY SECTOR FROM RENEWABLE ENERGY SOURCES - 2011
O'Neill, Nebraska

	Type of Energy Consumption (billion Btu's)										
Use Sector	**Ethanol & Bio-Fuel**	**% of Total**	**Losses & Co-Products**	**% of Total**	**Wood & Waste**	**% of Total**	**Geo-Thermal**	**% of Total**	**Solar**	**% of Total**	**TOTAL**
Commercial	0.03	0.3%	-	-	0.06	0.7%	1.46	46.2%	-	-	1.55
Industrial	-	-	111.1	100.0%	3.90	45.0%	-	-	-	-	115.00
Residential	-	-	-	-	4.70	54.3%	1.70	53.8%	0.01	100.0%	6.41
Transportation	10.00	97.7%	-	-	-	-	-	-	-	-	10.00
TOTAL	**10.03**	**100%**	**111.1**	**100%**	**8.66**	**100%**	**3.16**	**100%**	**0.001**	**100%**	**132.96**

Source: Nebraska Department of Energy with conversion of statewide data by Stahr & Associates, Inc.

ENERGY EFFICIENCY AND CONSERVATION STRATEGIES

Energy conservation is the wise use of energy and the avoidance of waste. Energy efficiency refers to achieving the same desired goal, such as powering a building while reducing the energy inputs or "doing more with less". Energy savings are often achieved by substituting technology more advanced equipment to produce the same level of end-use.

Conservation can be achieved on several levels, from walking or biking instead of use a car to adding more insulation to a building. Efficiency examples include using high efficiency Energy Star appliances and systems, substituting compact florescent (CFL) or light emitting diode (LED) light bulbs for less efficient incandescent lighting.

Energy conservation is the first priority in achieving energy efficiency in existing buildings. A stepwise approach using energy assessment, audit and weatherization is recommended. An assessment of energy intensity or general energy use of a residential, commercial, industrial or governmental building can be done using an online energy assessment calculator such as the EPA Home Energy Yardstick.

Where an energy use assessment indicates notable energy use inefficiencies, the assessment can be followed up by an energy audit which is usually performed by a building science professional and may employ technology such as infrared cameras and pressurizing equipment. Weatherization or energy retrofit is based on the results of the assessment and audit. Significant decreases in electric and thermal energy needs can be achieved by this approach and the cost of the energy audit and the work is offset by the energy cost savings and possible rebates from state or federal sources.

Using efficient building methods and efficient systems for new construction will reduce energy use and operating costs over time. Creating local requirements that new construction meet or exceed the State Energy Code is one approach worth considering by the City.

ENERGY EFFICIENCY AND CONSERVATION GOALS AND STRATEGIES

The best way to achieve higher energy efficiencies in the short and near term in the City is to encourage the implementation of energy conservation measures in all energy use sectors and implement programs and projects to improve energy efficiency in City buildings and operations.

The following goals and strategies are recommended to maximize the potential for energy conservation:

GOAL: Improve the energy efficiency of City Buildings and Operations

The City of O'Neill should lead by example to show residents and businesses in the City how they can conserve energy, reduce their impact on climate change and reduce their dependence on fossil fuel energy. In order to accomplish this goal the following strategies are recommended:

- Assess and benchmark the energy efficiency of all City buildings,
- Audit and retrofit those City buildings where the assessment and audit indicates additional energy efficiency can be achieved.
- Evaluate the City's vehicle fleet, including automobiles, trucks and road maintenance equipment with regard to use of higher levels of ethanol fuel and biodiesel fuel. In the case of gasoline with higher levels of ethanol such as E-85 and biodiesel, the costs are slightly higher than standard oil based fuels. However, the benefits of generating higher demand for these renewable fuels will help reduce costs in the long term.
- Implement a purchasing strategy for future acquisitions of Energy Star equipment in all City facilities.
- Analyze street lighting efficiencies and replacement of street lighting if energy efficiencies are sufficient to warrant a conversion.

GOAL: Promote conservation and energy efficiency in the private sectors of the local economy.

For the benefit of all of its citizens, the City should take the lead in promoting energy efficiency and conservation in the private sectors of the local economy by implementing the following programs:

- Showcase City actions to educate the public on successes of energy conservation measures. Communicating the energy conservation actions and results can be accomplished through newspaper coverage and having such information available in the City's web site.

- Work with the Holt County Independent and the Nebraska Energy Office to create an on-going communication program which promotes energy conservation by informing readers what they can do to conserve energy. Through an on-going series of articles, this program should address a number of energy conservation elements including:

    - How readers can access and utilize the EPA Home Energy Yardstick to provide a no-cost initial energy consumption assessment.

    - How to access energy audit expertise if a detailed energy audit is desired by any reader.

    - What specific energy conservation actions can be taken together with typical costs and pay periods. This component should address all aspects of energy conservation ranging from replacement of incandescent light bulbs with compact florescent bulbs, addition of installation, installation of programmable thermostats, installation of low -e windows and doors and installing Energy Star appliances, furnaces and air conditioning equipment.

    - What programs and incentives are available to help pay for the cost of energy conservation efforts and how to access these programs.

    - Consumer guides to the utilization of small wind energy systems, solar panels and geo-thermal equipment and the pay-back periods associated with each.

RENEWABLE ENERGY

General Characteristics

The U.S. Department of Energy defines renewable energy as "energy which comes from sources whose supplies are regenerative or virtually inexhaustible". Proponents recommend expansion of these sources to meet future energy demands, diversify energy sources and minimize environment impacts.

While there are a host of benefits to renewable energy projects including reduced emissions and decreased transmission losses in a decentralized energy grid, there are negative impacts. These include environmental impacts to wildlife habitat, visual changes to the landscape and economic constraints.

Renewable energy sources are inexhaustible, although sometimes limited in the amount of energy available per unit of time. A wind power generator may generate a lot of energy when the wind is blowing, but no energy when there is no wind. Both the positive and negative impacts need to be weighed against each other so an informed and educated decision can be made about their expanded role in Nebraska and the City of O'Neill.

Renewable energy contributes to energy assurance by adding diversity and additional energy resources to meet the City's needs. It also provides energy security by using indigenous energy resources which are less subject to geopolitical influences. These sources provide environmental protection by reducing pollution and other negative impacts on air, water and land while meeting the energy demand in ways that can be maintained indefinitely. There are also opportunities to create economic stability and growth by using renewable energy technology to retain dollars in-state and in-county, create new jobs and stimulate the local economy.

Development of additional renewable energy sources is also important due to our increased use of energy. From 2001 to 2011 total energy consumption in Nebraska increased by over 217,500,000,000,000 (217 trillion) Btu's representing an increase of over 33%. As non-renewable energy sources become more scarce and as prices for more scarce resources increase, the need for the development of renewable energy sources also increases.

Renewable Energy in Nebraska

In Nebraska there are abundant renewable energy possibilities, especially wind, solar, wood, geothermal, biomass (ethanol), biodiesel, hydroelectric and methane gas. Currently some of these renewable energy resources (especially wind, geothermal and methane gas) are greatly underutilized. In Nebraska, from 2001 to 2011, energy use from renewable sources increased by 29.1%. However, use of renewable energy sources in 2011 still constitutes only 9.1% of total energy consumption.

The greatest progress in renewable energy technology has occurred within the wind power industry. In the early years of wind energy technology, electricity production cost was approximately 30 cents / kwh. By 2002, cost of electricity production from wind energy systems dropped dramatically to 3 to 5 cents / kwh and has remained relatively stable since. Although improvements in technology for small wind energy generators has improved, but energy production cost vary

widely depending on the application. Energy production costs for these small systems range from 11 to 90 cents / kwh.

Geothermal technologies have not had such a dramatic advancement, however, these systems are among the cheapest renewable energy sources to produce electricity at 2 to 4 cents /kwh. This cost is the average for geothermal power plants. Another form of geothermal energy use is the use of geothermal heat pumps. These systems are becoming very popular for commercial and residential applications because they are 3 to 4 times more efficient than a typical high efficiency fossil fuel furnace for space heating.

The highest price for electricity from a renewable energy source is from photovoltaic panels which average about 38 cents / kwh.

For comparison, electricity produced from traditional fuel sources cost approximately:

- 4 - 5 cents / kwh for coal
- 10-12 cents / kwh for oil
- 4-5 cents /kwh for natural gas, and
- 3-4 cents / kwh for nuclear produced electricity
- 4-10 cents / kwh for wind
- 5-8 cents / kwh for geothermal
- 8-18 cents for solar

Therefore it can be said that properly sited renewable energy projects are price competitive with traditional fuel sources.

Renewable Energy in the City of O'Neill

As a single governmental entity, the City 'Neill is somewhat limited in what it can do to encourage the development of renewable energy generation projects, but the City can and should implement several strategies and projects to encourage the use of renewable energy sources in the City. These can include:

- The Mayor and Council should evaluate the potential cost savings of retrofitting the municipal office building and or other major City-owned buildings with closed-loop

geothermal heat pumps and, where there would be a notable savings, budget for and implement such projects.

- Adopt codes that require compliance with the Nebraska State Energy Code for all new and retrofitted buildings utilizing compliance certification by the Nebraska Energy Office and encourage green building design, geothermal and solar energy production systems.

- Evaluate the benefits of utilization of gasoline with a higher percentage of ethanol and bio-diesel in the City's automobile and street maintenance fleets.

- Similarly, as increased availability of electric and hybrid vehicles occurs, the City should evaluate such vehicles to determine if replacement of existing vehicles would be warranted.

It should also be noted that the local energy consumption sectors in the City will now and in the future be utilizing electrical power generated by more renewable energy sources. The Nebraska Public Power District, which supplies electrical power to the City, has agreed that it will utilize renewable energy sources to produce 10% of its total electric energy by the year 2020. This will be a notable increase in electric power produced by the use of renewable sources. In 2011 production of electrical energy from renewable resources amounted to 9.1% of total electric power generated, a substantial increase over the last decade.