

BOONE COUNTY, IOWA

COMPREHENSIVE DEVELOPMENT PLAN

ZONING AND SUBDIVISION REGULATIONS--2007



**COMPREHENSIVE
DEVELOPMENT PLAN UPDATE
2007 to 2027**

Prepared For
BOONE COUNTY
IOWA

Prepared By



Boone County, Iowa

Comprehensive Development Plan 2007 Project Participants

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Public Participation and Meeting Summary

Throughout the planning process for the updating of the Plan, over 40 meetings were held over a two year period throughout Boone County. Meetings, open houses, and posting locations are listed below.

Town Hall Meetings		
January 5, 2006 Leonard Good Center 3:00 P.M.		
January 5, 2006 United Community School 7:00 P.M.		
January 9, 2006 Boone Historical Museum 3:00 P.M.		
January 9, 2006 DMACC 7:00 P.M.		
January 10, 2006 Pilot Mound Community Center 3:00 P.M.		
January 10, 2007 Madrid Public Library 7:00 P.M.		
Steering Committee Meetings		
2005	2006	2007
July 11, 2005	January 9, 2006	January 8, 2007
November 14, 2005	February 13, 2006	February 12, 2007
December 12, 2005	March 13, 2006	March 12, 2007
	April 10, 2006	April 9, 2007
	May 8, 2006	
	June 12, 2006	
	July 10, 2006	
	August 14, 2006	
	September 11, 2006	
	October 9, 2006	
	November 13, 2006	
	December 11, 2006	
Zoning Commission Meetings		
2005	2006	2007
July 25, 2005	January 30, 2006	March 26, 2007
August 29, 2005	February 27, 2006	April 16, 2007
September 26, 2005	May 22, 2006	April 23, 2007
	October 30, 2006	April 30, 2007
		May 21, 2007
Open Houses		
April 25, 2007 Boone Fair Grounds 6:00 - 8:30 P.M.		
May 8, 2007 Madrid Community Room 2:00 - 5:00 P.M.		
May 8, 2007 United Community School 6:00 - 8:30 P.M.		
May 9, 2007 Ogden Community Center 9:00 A.M. - 12:00 P.M.		
Various meetings with the Board of Supervisors		

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INTRODUCTION

Portions of the Introduction have been excerpted from the Boone County Comprehensive Plan completed in 2001/2002 by students from Iowa State University, unless otherwise noted. Excerpts are not noted and may have been modified for this document by the planning staff of JEO Consulting Group, Inc. or members of the Boone County Steering Committee.

Location

Boone County is located in central Iowa and is bordered by Webster and Hamilton counties to the north, Greene County to the west, Story County to the east, and Dallas and Polk counties to the south. Boone County is located approximately twenty miles west of Interstate 35 and thirty-five miles north of Interstate 80.



Residents of Boone County are also located within an hour's drive of Iowa's capital city, Des Moines. As a result of this location and other characteristics, Boone County is considered to be a rural county located adjacent to a metropolitan area (Des Moines). The picture above shows Boone County and its proximity to neighboring counties and the cities of Des Moines and Ames.

The ten incorporated cities within Boone County are Boone, Beaver, Berkley, Boxholm, Fraser, Luther, Madrid, Ogden, Pilot Mound, and Sheldahl. These communities range in population from as few as 24 persons (Berkley) to as many as 12,803 located in the county-seat, the city of Boone (U.S. Bureau of the Census, 2000). Boone County consists of 571 square miles. The majority, 554 square miles, is considered to be the unincorporated area of the county.

History of Boone County

One of the most valuable assets of Boone County is its rich history. History is important to consider and understand when preparing a land use plan. It is history that allows one to understand the present and begin focusing on the future.

The settlement patterns of the past, along with natural history, influence the patterns we see today. In addition, the past provides an opportunity for lessons to be learned. It is these lessons, if taken to heart, that help guide the decisions of tomorrow. A historical timeline of important events related to Boone County indicates key points in Boone County's development. These historical events have helped shape both the environment and the people. Development of the county has evolved over the last two centuries into the social and physical environment we know today.

Boone County Historical Timeline

1835	U.S. Dragoons (including Boone County's namesake Captain Nathan Boone) travel through Boone County, exploring the Des Moines River valley.
1846	Iowa became a state.

	Charles Gaston, first permanent resident of Boone County, built his cabin near present day Madrid.
1847	Boone County established but the judicial, voting and revenue factors remained as a part of Polk County.
1848	First mill erected at Elk Rapids, opened in 1850.
1849	Boone County organized. First school in Boone County established approximately 1.5 miles southeast of Boone near Honey Creek. First post office in Boone County established in Belle Point within Douglas Township.
1851	First township established in Boone County. County seat formed in Boonesboro (western section of Boone) The towns of Elk Rapids and Swede Point were platted.
1852	Townships organized.
1854	Western Stage Company established service between Boone and Des Moines
1856	First newspaper, The Boone County News, published in the county.
1857	First courthouse completed. The town Swede Point changed to Madrid.
1859	Attempts at making Des Moines River navigable to Fort Dodge.
1864	First banking institution in Boone County – Black’s Bank in Boonesboro
1865	City of Boone changed name from Boone to Montana Ogden and Moingona were formed by the railroad. The railroad arrived in Montana
1867	The first coal mine opened west of Boonesboro. Railroad station established at Beaver.
1871	City of Montana renamed to Boone.
1877	First fire department in Boone called the Neptune Hose Company.
1881	City of Pilot Mound formed. Kate Shelley crossed bridge to warn passenger train.
1882	The City of Sommersville established – later renamed Berkley.
1884	Oil drilling in Douglas Township. Electricity connected to homes in Boone.
1886	The City of Boonesboro annexed into Boone.
1890	Doud Packing Company established in Boone by J.M. Doud and Royal. A result of a community effort to recruit industry
1891	Boone Valley Coal and Mining and Railroad Company established at Fraser. Later became Newton and Northwestern, then Fort Dodge, Des Moines and Southern.
1893	The Cities of Luther and Fraser established.
1896	Mamie Doud Eisenhower (wife of President Dwight David Eisenhower) was born in Boone.
1898	F.W. Fitch opens a barbershop in Boone and begins manufacturing Fitch Shampoo – Opened a plant in 1909 and then moved to Des Moines in 1917.
1900	Construction on Eleanor Moore Hospital in Boone (a gift of S.L. Moore) – became Boone County Hospital in 1917. The plat for the town of Boxholm filed in courthouse.
1901	The Chicago and Northwestern Railroad completed the Des Moines River Viaduct, High Bridge – currently known as the Kate Shelley High Bridge.
1906	The Boone News Republican newspaper first published.
1907	Fort Dodge, Des Moines and Southern Railroad electrified and builds power plant at Fraser. City State Bank in Ogden incorporated.
1909	The Quinn Wire Company founded in Boone.
1918	Current Boone County Courthouse completed.
1924	Ledges State Park dedicated south of Boone.
1938	Fareway Stores established in Boone.
1949	First radio station in Boone County approved (KWBG).
1953	Ogden’s coal mining industry closes down.
1955	Fort Dodge, Des Moines and Southern Railroad passenger trolley service ceases.

1967	Iowa Arboretum established near Luther.
1968	Fort Dodge, Des Moines and Southern Railroad becomes part of the Chicago and Northwestern Railroad Construction begins on Des Moines Area Community College.
1976	Pufferbilly Days begin in Boone as an annual festival.
1978	County adopts 911 emergency telephone services.
1984	The 11-mile Boone and Scenic Valley Railroad established service.
1988	Historical Museum Society of Boone County opens museum. Dedicated in 1990.

Population and Early Settlement

Prehistoric people inhabited Boone County at one time. There were several Native American tribes who occupied the area prior to European settlement. Ioways, descendants of the pre-historic Oneotas, lived in the area in the seventeenth and eighteenth centuries. The Sac and Fox tribes fled from the French in Wisconsin and escaped by way of the Des Moines River Valley, annihilating the Ioways on their way.

Iowa formally became a state in 1846. The first permanent settler in Boone County was Charles Gaston, who was a member of the Dragoon regiment. By 1851 enough settlers had arrived in Boone County that a county seat was designated in Boonesboro, which is now the western part of Boone. Railroad interests also platted a city one mile east of Boonesboro and named it Montana. The community of Montana grew at a faster rate than Boonesboro. By 1866, Montana changed its name to Boone. In 1887, Boonesboro merged with the nearby city of Boone and is known today as the city of Boone.

Throughout the nineteenth century, several cities were founded in Boone County. These settlements included Elk Rapids in 1851, and Swede Point, which later became Madrid. Other towns founded in Boone County from 1866 to 1900 included Ogden, Moingona, Pilot Mound, Luther, Fraser, and Boxholm. These cities were primarily platted by either railroad or mining companies that did business in Boone County.



DES MOINES RIVER VALLEY

THE PURPOSE OF COMPREHENSIVE PLANNING

The Boone County Comprehensive Development Plan is designed to promote orderly growth and development for the county and its communities for the next twenty years. The Comprehensive Development Plan will provide policy guidelines to enable citizens and elected officials to make informed decisions about the future of the county.

The Plan acts as a tool to “Develop a road map that guides the community through change.”

The Comprehensive Development Plan will provide a guideline for the location of future development within the planning jurisdiction of Boone County. The Comprehensive Development Plan is intended to encourage a strong economic base for the county so the goals of the county are achieved.

The plan will assist Boone County in evaluating the impact of development (i.e., economic, social, fiscal, service and amenity provisions, health, safety, and general welfare) and encourage appropriate land uses throughout the jurisdictional area of the county. The objective of planning is to provide a framework for guiding the community toward orderly growth and development. The plan assists the county in balancing the physical, social, economic, and aesthetic features as it responds to private sector interests.

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

THE COMPREHENSIVE PLANNING PROCESS

DATA GATHERING - HISTORY

Comprehensive planning begins with the data collection phase. Data are collected that provide a snapshot of the past and present county conditions. Analysis of this data provides the basis for forecasting future land-use demands in the county.

GOALS

The second phase of the planning process is the development of general goals and policies, based upon the issues facing the county. These are practical guidelines for improving existing conditions and guiding future growth. The Comprehensive Development Plan is a vision presented in text, graphics, and tables that represent the desires of the county for the next twenty years.

ASSESS

The Comprehensive Development Plan represents a blueprint designed to identify, assess, and develop actions and policies in the areas of population, land use, transportation, housing, economic development, community facilities, environment, and utilities. The Comprehensive Development Plan contains recommendations that, when implemented, will be of value to the county and its residents.

IMPLEMENTATION

Implementation is the final phase of the process. A broad range of development policies and programs are required to implement the Comprehensive Development Plan. The Comprehensive Development Plan identifies the tools, programs, and methods necessary to carry out the recommendations. Nevertheless, the implementation of the development policies contained within the Comprehensive Development Plan is dependent upon the adoption of the Plan by the governing body and the leadership of the present and future elected and appointed officials of the county.

The Plan was prepared under the direction of the Boone County Zoning Commission and the Planning and Development Department, with the assistance and participation of the Boone County Board of Supervisors, the Comprehensive Plan Steering Committee, and citizens of Boone County. The planning time period for achieving goals, programs, and developments identified in the Boone County Plan will be 20 years (2027). However, the county officials should review the Plan annually and update the document every ten to fifteen years, or when a pressing need is identified. Updating the Comprehensive Development Plan will allow the county to incorporate ideas and developments unknown at the time of the present comprehensive planning process.

COMPREHENSIVE PLAN COMPONENTS

The Comprehensive Development Plan document consists of both graphic and textual materials. The Boone County Comprehensive Development Plan is comprised of the following chapters and sections:

- Introduction to Boone County
- Profile Boone County
 - County Assessment – Conditions and Trend Analysis
 - County Facilities
 - Existing Land Use
 - Environmental Conditions
- Envision Boone County
 - Town Hall Meeting Results
 - Goals and Policy Development
- Achieve Boone County
 - County Land Use Management Policy (CLUMP)
 - Future Land Use Plan
 - Transportation Plan
- Boone County Plan Implementation

Analyzing past and existing demographic, housing, economic, and social trends permits the projection of likely conditions in the future. Projections and forecasts are useful tools in planning for the future; however, these tools are not always accurate and may change, due to unforeseen factors. Also, past trends may be skewed or data may be inaccurate, creating a distorted picture of past conditions. Therefore, it is important for Boone County to closely monitor population, housing, and economic conditions that may impact the county. Through periodic monitoring, the county can adapt and adjust to changes at the local level. Having the ability to adapt to socio-economic changes allows the county to maintain an effective Comprehensive Development Plan for the future, to enhance the quality of life, and to raise the standard of living for all residents.

The Plan records where Boone County has been, where it is now, and where it may be in the future. Having this record in the Plan serves to inform county officials as much as possible in making responsible decisions for the future. The Plan is an information and management tool for county leaders to use in their decision-making process when considering future developments. It is not a static document and should evolve as changes in the land-use, population, or local economy occur during the planning period. This information is the basis for Boone County's evolution as it achieves its physical, social, and economic goals.

GOVERNMENTAL AND JURISDICTIONAL ORGANIZATION

The Boone County Board of Supervisors, which is a board of elected officials, performs the governmental functions for the county. Each incorporated community in Boone County also has elected officials and officers who oversee how their community is governed.

The planning and zoning jurisdiction of Boone County, pursuant to the Code of Iowa, includes all of the unincorporated portions of the county. Only Boone, Madrid, Perry, and Ames have subdivision review requirements within two-miles of their corporate limits and Gilbert is nearby.

PROFILE BOONE COUNTY

DEMOGRAPHIC PROFILE

Population statistics aid decision-makers by developing a broad picture of Boone County. It is important for Boone County to understand where it has been, where it is, and where it appears to be going. Population is the driving force behind housing, local employment, economic, and fiscal stability of the county. Historic population conditions assist in developing demographic projections, which, in turn, assist in determining future housing, retail, medical, employment, and educational needs within the county. Projections provide an estimate for the county to base future land-use and development decisions. However, population projections are only estimates and unforeseen factors may affect projections significantly.

Population Trends and Analysis

Table 1 indicates the population for the incorporated communities in Boone County, the unincorporated areas, and Boone County as a whole, between 1980 and 2004. This information provides an understanding of the past 25 years, and present population trends and changes. Boone County's population in 2000 was 26,224 persons, which was an increase of 1,038 persons, or 4.1%, from 1990. The county's population in 2004 was estimated to be 26,478, an increase of 254 persons, 1.0%, over 2000.

TABLE 1: POPULATION TRENDS, BOONE COUNTY & COMMUNITIES, 1980 TO 2004

Community	1980	1990	% Change 1980 to 1990	2000	% Change 1990 to 2000	2004	% Change 2000 to 2004	% Change 1980 to 2004
Beaver	85	46	-45.9%	53	15.2%	53	0.0%	-37.6%
Berkley	49	39	-20.4%	24	-38.5%	28	16.7%	-42.9%
Boone	12,602	12,392	-1.7%	12,803	3.3%	12,856	0.4%	2.0%
Boxholm	267	214	-19.9%	215	0.5%	209	-2.8%	-21.7%
Fraser	139	120	-13.7%	137	14.2%	119	-13.1%	-14.4%
Luther	155	154	-0.6%	158	2.6%	155	-1.9%	0.0%
Madrid	2,281	2,395	5.0%	2,264	-5.5%	2,416	6.7%	5.9%
Ogden	1,953	1,909	-2.3%	2,023	6.0%	2,018	-0.2%	3.3%
Pilot Mound	223	199	-10.8%	214	7.5%	209	-2.3%	-6.3%
Incorporated Areas	17,754	17,468	-1.6%	17,891	2.4%	18,063	1.0%	1.7%
Unincorporated Areas	8,430	7,718	-8.4%	8,333	8.0%	8,415	1.0%	-0.2%
Boone County	26,184	25,186	-3.8%	26,224	4.1%	26,478	1.0%	1.1%

Source: U.S. Census Bureau, Census of Population and Housing, 1980 - 1990, 2000, 2004

The table indicates Boone County had a net increase of 294 persons or 1.1% between 1980 and 2004. This was driven primarily by an increase in the populations of Boone County's incorporated areas. The greatest population increases, with regard to percentages, for the incorporated areas, occurred in Madrid. Boone County saw only four of its communities (Boone, Luther, Madrid, and Ogden) increase or hold steady between 1980 and 2004. However, examining the changes in population between 1990 and 2000, there were seven communities that saw growth during that period.

Between 1990 and 2000, Boone County exhibited its greatest population gain, both in terms of total number of persons and in percentage. Table 1 shows a recorded increase of 1,038 persons, or 4.1%. During this period, the unincorporated areas of Boone County experienced a population gain of 615 persons, or 8.0%, and the incorporated areas increased by

423 persons, or 2.4%. Since 2000, estimates for Boone County show the population has continued to increase slowly overall.

Migration Analysis

Migration analysis allows a county to understand how specific dynamics influence population change. *Migration indicates the population who have migrated in or out of the county.* The migration number is determined by subtracting the natural change in population (i.e., births minus deaths) from the total change in population. Table 2 shows the total change in population for Boone County from 1990-2003 and 2001-2003. A negative number in the “Total Migration” column indicates the number of persons who have left the county, while a positive number indicates the number of persons who have moved into the county. Unfortunately, this analysis is primarily available for the county as a whole. These data have limited availability for communities.

TABLE 2: MIGRATION ANALYSIS, BOONE COUNTY, 1990 TO 2003

Time Period	Total Change (persons)	Natural Change (persons)	% Natural Change	Total Migration (persons)	% Migration
1990-2000	1,038	40	-	998	-
2000-2003	26	75	-	(49)	-
Total	1,064	115	10.8%	949	89.2%

Source(s): U.S. Census Bureau, Census of Population and Housing, 1990, 2000, 2003
Iowa Department of Public Health, Vital Statistics Report(s), 1990 –2003

Migration analysis is important to understand, since it offers an explanation of what has affected population changes over time. This analysis can determine how much of a population change was due to persons moving in or out of an area, and how much was due to births or deaths in the area. For example, assume an area had a total change of 100 persons during any given time period, but there were 15 more births than deaths during that same time period. Looking at the natural change only, the area should have grown by 15 persons. However, when the total change of 100 is taken into account, those births need to be subtracted in order to determine what caused the remaining change. If the total change of 100 was an increase, then 85 people moved into the area (100 increase – 15 births that occurred in area = 85 additional people in the area). If, however, the total change of 100 represented a loss, then 115 people moved from the area (100 decrease + 15 births in the area that did not increase the population = 115 people moved from the area).

Table 2 indicates births exceeded deaths in Boone County for each reporting period. Based upon this information and the migration analysis formula, the primary factor of Boone County’s increasing population can be determined for any given period. From 1990 to 2000 it was in-migration. However, the 2000-2003 data indicate there was an overall out-migration. It is important to note that both migration and the natural change for these periods were positive. However, the population increases affected by in-migration impacted the county by over 8:1 over the natural change.

Age Structure Analysis

Age structure analysis is an important component of population analysis. By analyzing the age structure, one can determine which age groups (cohorts) within Boone County are being affected by population shifts and changes. Each age cohort affects the population in a number of different ways. For example, the existence of more young cohorts (20-44 years) means there is a greater ability to sustain future population growth than older cohorts. On the other hand, if the

greater, young cohorts maintain their relative population, but do not increase the population as expected, they will, as a group, tend to strain the resources of an area as they age. Understanding what is happening within the age groups of the county's population is necessary to effectively plan for the future.

Table 3 exhibits the age cohort structure for Boone County in 1990 and 2000. Population age structure may indicate significant changes affecting the different population segments within the county. Realizing how many persons are in each age cohort, and at what rate the age cohorts are changing in number, will allow for informed decision-making in order to maximize the future use of resources. As shown in Table 3, changes between 1990 and 2000 occurred within a number of different age group cohorts.

TABLE 3: AGE-SEX CHARACTERISTICS, BOONE COUNTY, 1990 TO 2000

Age	1990		2000		1990-2000		1990-2000	
	Male and Female	% of Total	Male and Female	% of Total	Net Change	% Change	Cohort Change	% Change
0-4	1,664	6.6%	1,593	6.1%	-71	-4.3%	1,593	-
5-9	1,915	7.6%	1,761	6.7%	-154	-8.0%	1,761	-
10-14	1,699	6.7%	1,946	7.4%	247	14.5%	282	16.9%
15-19	1,511	6.0%	1,936	7.4%	425	28.1%	21	1.1%
20-24	1,322	5.2%	1,492	5.7%	170	12.9%	-207	-12.2%
25-29	1,700	6.7%	1,450	5.5%	-250	-14.7%	-61	-4.0%
30-34	2,108	8.4%	1,566	6.0%	-542	-25.7%	244	18.5%
35-44	3,802	15.1%	4,088	15.6%	286	7.5%	280	7.4%
45-54	2,524	10.0%	3,727	14.2%	1,203	47.7%	-75	-2.0%
55-64	2,410	9.6%	2,390	9.1%	-20	-0.8%	-134	-5.3%
65-74	2,236	8.9%	2,036	7.8%	-200	-8.9%	-374	-15.5%
75 & older	2,295	9.1%	2,259	8.6%	-36	-1.6%	-2,272	-50.1%
Total	25,186	100.0%	26,244	100.0%	1,058	4.2%	1,058	4.2%

Selected Characteristics	1990		2000		Total Change	
	Under 18 years of age	6,206	Under 18 years of age	6,515	18 and under	309
	% of total population	24.6%	% of total population	24.8%	% change	5.0%
	Total 65 yrs and older	4,531	Total 65 yrs and older	4,295	65 and older	-236
	% of total population	18.0%	% of total population	16.4%	% change	-5.2%
	Median Age	36.6	Median Age	38.6	Median Age	2
	Total Females	13,160	Total Females	13,387	Total Females	227
	Total Males	12,026	Total Males	12,837	Total Males	811
	Total Population	25,186	Total Population	26,224	Total Change	1,038

Source: U.S. Census Bureau, Census of Population and Housing, STF-1A, 1990; DP-1 2000

One method of analyzing cohort movement in a population involves comparing the number of persons aged between 0 and 4 years in 1990 with the number of persons in the same age cohort 10 years later, or aged between 10 and 14 years in 2000. For example, in Boone County, there were 1,664 children between the ages of 0 and 4 in 1990, and in 2000 there were 1,946 children between the ages of 10 and 14, an increase of 282 children. A review of population by this method permits one to undertake a detailed analysis of which cohorts are moving in and out of the county. *The positive change in this cohort indicates in-migration.* The increase from 1990 to 2000 for the 30-34 year old group indicates people are moving back to Boone County.

Boone County experienced growth in many of its age cohorts. The 0 to 4 and 5 to 9 cohorts always indicate an increase, since the persons in these groups, were not born when the previous census was completed. Note the cohorts represented

in Table 3 differ from those listed below, due to the consolidation of the 25-29 and 30-34 cohorts from 1990 into a 35-44 cohort in 2000. Increases in the cohorts occurred in four age groups between 1990 and 2000. These cohort shifts are displayed below in Table 4.

TABLE 4: POSITIVE AGE COHORTS, BOONE COUNTY, 1990 TO 2000

1990 Age Cohort	Number (persons)	2000 Age Cohort	Number (persons)	Change (persons)
NA	NA	0-4 years	1,593	+1,593
NA	NA	5-9 years	1,761	+1,761
0-4 years	1,664	10-14 years	1,946	+282
5-9 years	1,915	15-19 years	1,939	+21
20-24 years	1,322	30-34 years	1,566	+244
25-34 years	3,808	35-44 years	4,088	+280
TOTAL CHANGE				+4,181

Source: JEO Consulting Group, Inc. U.S. Census Bureau 2000

Outside of the 2000 age groups of 0-4 and 5-9 years, the greatest increases included the 10-14 (2000) and 35-44 (2000) age groups. An important trend to note in Boone County is the increase into the 2000 cohorts of 15-19 and 30-34. Typically, in the more rural Midwestern areas, these cohorts decrease, due to the movement of high school graduates into other locations for employment or educational opportunities. This movement to secondary educational institutions is the exact reason why Boone County has seen an increase, since Boone County is home to Des Moines Area Community College, a campus located in Boone. Some of this increase may be the county's proximity to Ames and Iowa State University. In addition, the increases seen in the 2000 cohorts of 10-14 and 35-44 indicate a solid in-migration of family populations between 1990 and 2000.

Decreases in cohorts occurred in a number of age groups between 1990 and 2000. These cohort shifts are displayed below in Table 5.

TABLE 5: NEGATIVE AGE COHORTS, BOONE COUNTY, 1990 TO 2000

1990 Age Cohort	Number of Persons	2000 Age Cohort	Number of Persons	Change in persons
10-14	1,699	20-24	1,492	-207
15-19	1,511	25-29	1,450	-61
35-44	3,802	45-54	3,727	-75
45-54	2,524	55-64	2,390	-134
55-64	2,410	65-74	2,036	-374
65 years +	4,531	75 +	2,259	-2,272
TOTAL CHANGE				-3,123

Source: JEO Consulting Group, Inc. U.S. Census Bureau 2000

Six of the age-cohorts that existed in 1990 and 2000 declined in number. While the county population increased during this ten-year span, an analysis of where the changes took place will lead to an understanding of what services will be needed in the future.

The three age cohorts, from 2000, representing the most negative change, are the 65-75, 75 years and older, and 20-24 age cohorts. The changes in the 75 years and older age cohort were most likely due to either deaths or people moving into elderly care facilities located in other counties or states. The changes in the 20-24 age cohorts in 2000 is most likely related to persons completing their secondary education and moving onto new careers outside of the county. The change in the latter cohort indicates that the county and communities need to focus on economic development strategies that attempt to capture a larger share of that age group as they finish their college education. However, the 2000 U. S. Census indicates that a large number of families are moving to Boone County once they pass into the older age group. Some of this may be due to increased employment opportunities in the county, or can be attributed by Boone County's close proximity to Ames and the Des Moines Metropolitan Area.

The median age in Boone County increased from 36.6 years in 1990 to 38.6 years in 2000. The proportion of persons less than 18 years of age increased slightly in total population between 1990 and 2000, while those aged 65 years and older decreased by 5.2%, overall. The 10- to 14-year old age group of 2000 showed an increase of 282 persons, which leads to the assumption that people with young families may be drawn to Boone County because of its quality of life and close proximity to Ames and the Des Moines Metropolitan Area.

The change in people ages 55-74 has decreased by 508 persons. In order to accommodate a growing number of elderly, who tend to desire to remain in place as they age, Boone County, in cooperation with the communities, should be involved in developing facilities that can house those who need assistance and allow them to feel safe and comfortable. *To encourage a return of the younger and middle age groups, the county should be involved in economic development activities, including affordable housing options and the continued maintenance and improvement of infrastructure to accommodate new growth, making Boone County an attractive place to live and work.* Having commuters live in Boone County is fine for increasing the population base, but Boone County needs a plan to also develop its economic base. With a larger, secure economic base, Boone County would be better positioned to plan for and meet its future service needs.

Population Projections

Population projections are estimates based upon past and present circumstances. These projections allow Boone County to estimate what the population will be in future years by looking at past trends with current parameters. By analyzing population changes in this manner, the county will be able to develop a baseline of change from which they can create different future scenarios. A number of factors (demographics, economics, social, etc.) may affect projections positively or negatively. At the present time, these projections are the best crystal ball Boone County has for predicting future population changes. There are many methods to project future population trends; the three projections used below are intended to give Boone County a broad overview of the possible population changes that could occur in the future. They are the trend line analysis of 1940 to 2004, 1990 to 2004, and 2000 to 2004; cohort survival analysis and modified cohort survival analysis, and a population projections series as displayed in Table 6 below.

Trend Line Analysis

Trend Line Analysis is a process of projecting future populations based upon changes during a specified period of time. In the analysis of Boone County, three different trend lines were reviewed: 1940 to 2004, 1990 to 2004, and 2000 to

2004. A review of these trend lines indicates Boone County will continue to increase in population through 2030. The following projections summarize the decennial population for Boone County through 2030.

TABLE 6: TREND ANALYSIS, BOONE COUNTY

Year	1940 to 2004	1990 to 2004	2000 to 2004
2010	26,298 persons	26,897 persons	26,669 persons
2020	26,421 persons	27,882 persons	27,314 persons
2030	26,544 persons	28,904 persons	27,979 persons

Source: JEO Consulting Group, Inc. U.S. Census Bureau 2000

Cohort Survival Analysis

Cohort Survival Analysis reviews the population by different age groups and sex. The population age groups are then projected forward by decade, using survival rates for the different age cohorts. This projection model accounts for average birth rates by sex and adds new births into the future population but not migration factors.

The Cohort Survival Model projection indicates Boone County's population will increase each decade through 2030.

TABLE 7: COHORT SURVIVAL ANALYSIS, BOONE COUNTY 2010-2030

Year	Cohort
2010	25,458 persons
2020	26,826 persons
2030	28,249 persons

Modified Cohort Survival Analysis

The Modified Cohort Survival Analysis reviews the populations generated by the cohort model and adjust the population for migration. The adjustments are based upon assumed levels of migration. In the case of Boone County, it was in-migration.

TABLE 8: MODIFIED COHORT SURVIVAL ANALYSIS, BOONE COUNTY 2010-2030

Year	Cohort
2010	26,859 persons
2020	28,393 persons
2030	29,988 persons

Summary of Population Projections

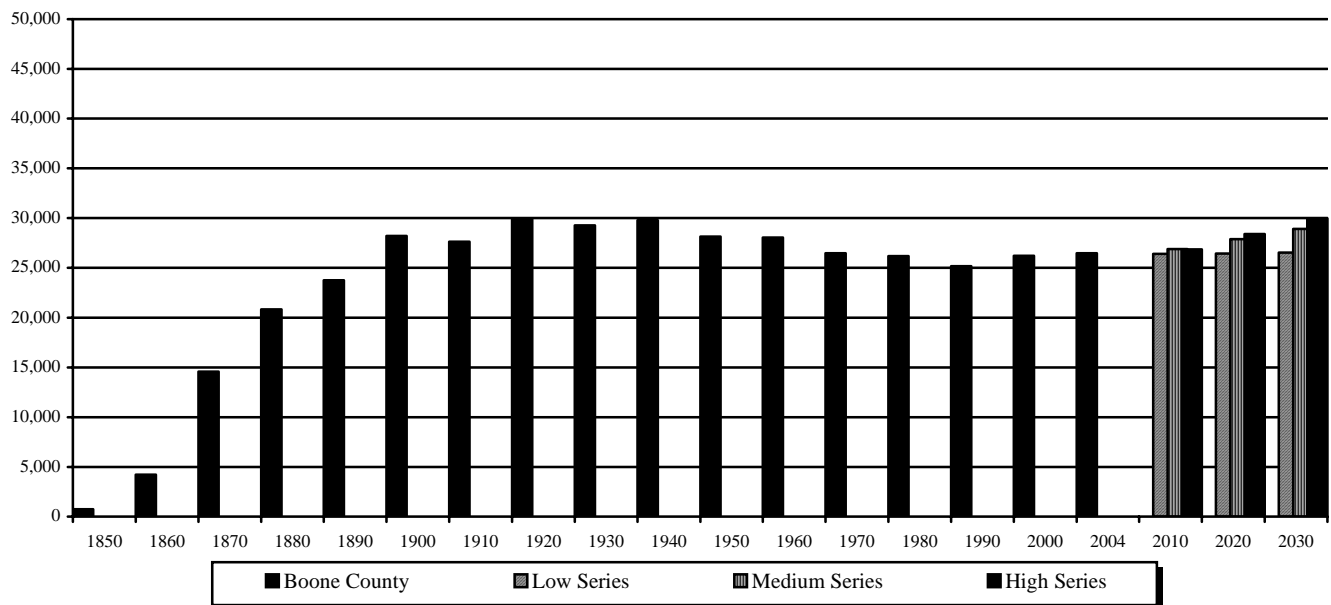
Using the modeling techniques discussed in the previous paragraphs, a summary of the population projections for Boone County through the year 2030 is shown in Figure 1. Three population projection scenarios, shown in Table 9, were selected and include a low series, a medium series, and, a high series. All of the projections forecast an increase in county population through the year 2030. The following population projections indicate the different scenarios that may be encountered by Boone County through the year 2030.

TABLE 9: SUMMARY OF POPULATION PROJECTIONS, BOONE COUNTY

Year	Low Series = 1940-2004	Medium Series = 1990-2004	High Series = Modified Cohort
2010	26,298	26,897	26,859
2020	26,421	27,882	28,393
2030	26,544	28,904	29,988

Figure 1 reviews the population history of Boone County between 1850 and 2004, and identifies the three population projection scenarios into the years 2010, 2020, and 2030. Figure 1 indicates the peak population for Boone County occurred in 1920 with 29,782 people. Beginning in 1900, Boone County has had an overall steady population. The only major changes occurred during the 1960s.

FIGURE 1: POPULATION TRENDS AND PROJECTIONS, BOONE COUNTY, 1850 TO 2030



Source: U.S. Census Bureau, Census of Population and Housing, 1850-2000, 2003

As stated previously, these projections have been developed from data and past trends, as well as present conditions. A number of external and internal demographic, economic, and social factors may affect these population forecasts. Boone County should monitor population trends, size, and composition periodically in order to understand the direction its community is heading.

TABLE 10: POPULATION PROJECTION SERIES, BOONE COUNTY AND COMMUNITIES, 2000 TO 2030

Community	2000 Census	Low Series			Medium Series			High Series		
		2010	2020	2030	2010	2020	2030	2010	2020	2030
Beaver	53	53	53	54	54	56	58	54	57	61
Berkley	24	24	24	24	25	26	26	25	26	27
Boone	12,803	12,839	12,899	12,959	13,132	13,612	14,111	13,113	13,862	14,641
Boxholm	215	216	217	218	221	229	237	220	233	246
Fraser	137	137	138	139	141	146	151	140	148	157
Luther	158	158	159	160	162	168	174	162	171	181
Madrid	2,264	2,270	2,281	2,292	2,322	2,407	2,495	2,319	2,451	2,589
Ogden	2,023	2,029	2,038	2,048	2,075	2,151	2,230	2,072	2,190	2,313
Pilot Mound	214	215	216	217	219	228	236	219	232	245
Incorporated Areas	17,891	17,941	18,025	18,109	18,350	19,022	19,719	18,324	19,371	20,459
Unincorporated Areas	8,333	8,357	8,396	8,435	8,547	8,860	9,185	8,535	9,022	9,529
Boone County	26,224	26,298	26,421	26,544	26,897	27,882	28,904	26,859	28,393	29,988

Source: Population projections, JEO Consulting Group, 2005

Table 10 shows the population projection by series for each of the areas within Boone County. The population projections for the communities were found by determining the proportion of the total population that each community had in 2000 and calculating that percentage for each series. This projection method is helpful and gives an idea of where people are likely to live. *However, this method does not consider the social issues that people use when choosing a place to live, which have the potential to alter population projections in any direction substantially.*

HOUSING PROFILE

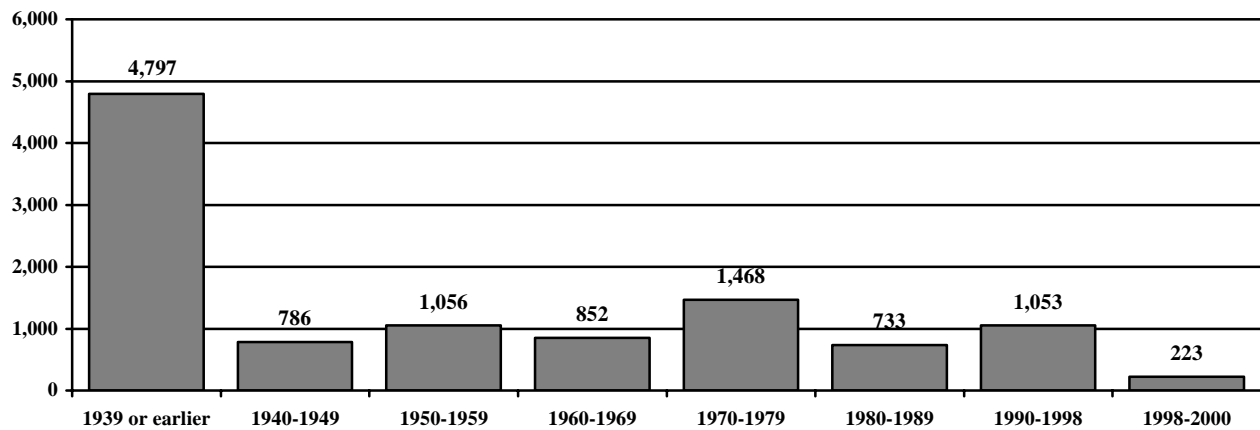
The Housing Profile in this Plan identifies existing housing characteristics and projected housing needs for residents of Boone County. The primary goal of the housing profile is to allow the county to determine what needs to be done in order to provide safe, decent, sanitary and affordable housing for every family and individual residing within Boone County. The housing profile is an analysis that aids in determining the composition of owner-occupied and renter-occupied units, as well as the existence of vacant units. It is important to evaluate information on the value of owner-occupied housing units, and monthly rents for renter-occupied housing units, to determine if housing costs are a financial burden to Boone County residents.

To project future housing needs, several factors must be considered. These factors include population change, household income, employment rates, land use patterns, and residents' attitudes. The following tables and figures provide information to aid in determining future housing needs and develop policies designed to accomplish the housing goals for Boone County.

Age of Existing Housing Stock

An analysis of the age of Boone County's housing stock reveals a great deal about population and economic conditions of the past. The age of the housing stock may also indicate the need for rehabilitation efforts, or new construction within the county. Examining the housing stock is important in order to understand the overall quality of housing and the quality of life in Boone County.

FIGURE 2: AGE OF EXISTING HOUSING STOCK, BOONE COUNTY, 2000



Source: U.S. Census Bureau, Census of Population and Housing, SF3, 2000

Figure 2 indicates 4,797, or 43.7% of Boone County's 10,968 total housing units, were constructed prior to 1940. There were 1,468 housing units, or 13.4% of the total, constructed between 1970 and 1979; this indicates a strong economy during this time. In addition, 1,053 housing units or 11.6% of the total units were built between 1990 and March 2000. Nearly half of Boone County's housing units were built prior to 1940, which may indicate a need for a housing rehabilitation program to improve the quality and energy efficiency of these older homes. Additionally, demolition of units beyond rehabilitation may be necessary.

Housing Trends

An analysis of housing trends can reveal a great deal about the different sectors of the population in the county. Housing trends may also indicate the potential demand for additional owner- or renter-occupied housing. Examining housing trends is important in order to understand the overall diversity of the population and their quality of life within Boone County.

TABLE 11: COMMUNITY HOUSING TRENDS, BOONE COUNTY, 1990 AND 2000

Selected Characteristics	1990	2000	Change	% Change 1990-2000
Population	25,186	26,224	1,038	4.1%
Persons in Household	24,129	25,264	1,135	4.7%
Persons in Group Quarters	1,057	960	(97)	-9.2%
Persons per Household	2.46	2.44	-0.02	-0.8%
Total Housing Units	10,371	10,968	597	5.8%
Occupied Housing Units	9,827	10,374	547	5.6%
Owner-occupied units	7,064	7,862	798	11.3%
Renter-occupied units	2,763	2,512	(251)	-9.1%
Vacant Housing Units	544	594	50	9.2%
Owner-Occupied vacancy rate	-	1.6%	-	-
Renter-Occupied vacancy rate	-	6.1%	-	-
Median Contract Rent - 1990 and 2000				
Boone County	\$230	\$443	\$213	92.6%
Iowa	\$336	\$470	\$134	39.9%
Median Value of Owner-Occupied Units - 1990 and 2000				
Boone County	\$40,300	\$74,900	\$34,600	85.9%
Iowa	\$45,900	\$82,500	\$36,600	79.7%

Source: U.S. Census Bureau, Census of Population and Housing, STF-1A, 1990, DP-4 2000

Table 11 indicates the number of persons living in households increased between 1990 and 2000 by 1,135 persons, or 4.7%, and the number of persons in group quarters decreased by 97 persons, or -9.2%. In addition, the number of persons per household decreased from 2.46 to 2.44 persons.

Table 11 also indicates the number of occupied housing units increased from 9,827 in 1990 to 10,374 in 2000, or 5.6%, while vacant housing units increased, from 544 in 1990 to 594 in 2000, or 9.2%. The increase in the number of housing units is due to new home construction, and potentially the rehabilitation and use of vacant housing in the county.

Median contract rent in Boone County increased from \$230 per month in 1990 to \$443 per month in 2000, or 92.6%. The state's median monthly contract rent increased by 39.9%. This indicates Boone County has seen contract rent increase at a greater rate than the state and has surpassed the state's average. This likely will continue to increase as more commuters make the choice to live in a rural setting, or small communities, near Ames and the Des Moines Metropolitan Area. Comparing changes in monthly rents between 1990 and 2000 with the Consumer Price Index (CPI) enables the local housing market to be compared to national economic conditions. Inflation between 1990 and 2000 increased at a rate of 32.1%, indicating Boone County rents increased at a rate nearly three times faster than the rate of inflation. Thus, Boone County tenants were paying considerably higher monthly rents in 2000, in terms of real dollars, than they were in 1990, on average.

The median value of owner-occupied housing units in Boone County increased from \$40,300 in 1990 to \$74,900 in 2000 and represents an increase of 85.9%. The median value for owner-occupied housing units in the state showed an increase of 79.7%. Housing values in Boone County increased at a rate over two times greater than the CPI. This indicates housing values statewide and countywide exceeded inflation and were valued considerably higher in 2000, in terms of real dollars, than in 1990, on average.

In terms of real dollars, tenants in Boone County were paying greater contract rent. In addition, the residents in the county saw a substantial increase in housing costs. This trend is consistent with the state, as data show housing costs across Iowa have exceeded inflation. This trend has created a seller's market, it can also act as an incentive to property owners to update and rehabilitate housing units.

TABLE 12: HOUSING UNITS BY COMMUNITY, BOONE COUNTY - 2000

Community	Housing Units 2000	Occupied Housing Units 2000	Vacant Units 2000	Owner Occupied 2000	Renter Occupied 2000	Persons per Household 2000
Beaver	26	21	5	19	2	2.52
Berkley	11	11	0	10	1	2.18
Boone	5,585	5,313	272	3,728	1,585	2.34
Boxholm	108	103	5	88	15	2.09
Fraser	55	49	6	41	8	2.80
Luther	59	55	4	48	7	2.87
Madrid	975	914	61	716	198	2.48
Ogden	879	823	56	669	154	2.41
Pilot Mound	102	96	6	77	19	2.23
Incorporated Areas	7,800	7,385	415	5,396	1,989	2.44
Unincorporated Areas	3,168	2,989	179	2,466	523	*
Boone County	10,968	10,374	594	7,862	2,512	2.44

Source: U.S. Census Bureau, Census of Population and Housing, SF1 – DP1 2000

* Data not available

Table 12 examines housing units based upon the communities in Boone County, as well as the units in the unincorporated areas for 2000. This table indicates that the majority of the housing units are located in the communities. However, quantifying these numbers will allow the county to understand the conditions within the unincorporated areas of Boone County. Based upon Table 12, 28.9% of the housing units were located within the unincorporated areas of Boone County. However, 30.1% of the vacant units were located in the unincorporated areas. In regards to renter occupied units, only 20.8% of the units were in the unincorporated areas.

TABLE 13: TENURE OF HOUSEHOLD BY SELECTED CHARACTERISTICS, BOONE COUNTY, 1990 TO 2000

Householder Characteristic	1990				2000				O.O.	R.O.
	Owner- Occupied	% O.O	Renter- Occupied	% R.O	Owner- Occupied	% O.O	Renter- Occupied	% R.O	Percent Change	
Tenure by Number of Persons in Housing Unit (Occupied Housing Units)										
1 person	1,459	20.7%	1,075	38.9%	1,619	20.6%	1,147	45.7%	11.0%	6.7%
2 persons	2,837	40.2%	765	27.7%	3,142	40.0%	690	27.5%	10.8%	-9.8%
3 persons	1,072	15.2%	398	14.4%	1,204	15.3%	321	12.8%	12.3%	-19.3%
4 persons	1,099	15.6%	331	12.0%	1,197	15.2%	225	9.0%	8.9%	-32.0%
5 persons	445	6.3%	131	4.7%	470	6.0%	82	3.3%	5.6%	-37.4%
6 persons or more	152	2.2%	63	2.3%	230	2.9%	47	1.9%	51.3%	-25.4%
TOTAL	7,064	100.0%	2,763	100.0%	7,862	100.0%	2,512	100.0%	11.3%	-9.1%
Tenure by Age of Householder (Occupied Housing Units)										
15 to 24 years	110	1.6%	354	14.1%	179	2.3%	455	18.1%	62.7%	28.5%
25 to 34 years	979	13.9%	865	34.4%	950	12.1%	542	21.6%	-3.0%	-37.3%
35 to 44 years	1,514	21.4%	514	20.5%	1,679	21.4%	526	20.9%	10.9%	2.3%
45 to 54 years	1,124	15.9%	234	9.3%	1,760	22.4%	327	13.0%	56.6%	39.7%
55 to 64 years	1,161	16.4%	200	8.0%	1,186	15.1%	164	6.5%	2.2%	-18.0%
65 to 74 years	1,162	16.4%	250	10.0%	1,080	13.7%	186	7.4%	-7.1%	-25.6%
75 years and over	1,014	14.4%	346	13.8%	1,028	13.1%	312	12.4%	1.4%	-9.8%
TOTAL	7,064	100.0%	2,763	110.0%	7,862	100.0%	2,512	100.0%	11.3%	-9.1%

Source: U.S. Census Bureau, Census of Population and Housing, STF-1A, 1990 / SF4 2000

Table 13 shows tenure (owner-occupied and renter-occupied) of households by number and age of persons in each housing unit. Analyzing these data allow the county the ability to determine where there may be a need for additional housing. In addition, the county could target efforts for housing rehabilitation and construction at those segments of the population exhibiting the largest need.

The largest section of owner-occupied housing in Boone County in 2000, based upon number of persons, was two-person households, with 3,142 units, or 40.0% of the total owner-occupied units. By comparison, the largest household size for rentals was the one-person households, which had 1,147 renter-occupied housing units, or 45.7% of the total renter-occupied units. Boone County was comprised of 6,598 one- or two-person households, or 63.6% of all households. Households having five or more persons comprised only 8.9% of the owner-occupied segment, and 5.1% of the renter-occupied segment. Countywide, households of five or more persons accounted for only 829 units, or 8.0% of the total.

When compared to 1990, six of the six owner-occupied household groups grew in number. Owner-occupied household groups of six persons or more grew by the greatest number, increasing by 78 units, or 51.3%. Only one of the six renter-occupied housing unit groups increased, with one-person units increasing the most with 72 new units, or a 6.7% increase. Renter-occupied units with five persons had the greatest decrease, losing 49 units or -37.4% from 1990.

According to the 2000 data in Table 13, the largest groups of the owner-occupied units were the 35 to 44 years and 45 to 54 years. These age groups accounted for 21.4% and 22.4% of the total, respectively. The two groups combined totaled 43.8%. Tenure by age indicates 64.3% of owner-occupied housing units were comprised of persons aged 45 years and

older, while 39.3% of renter-occupied units were comprised of persons aged 45 years and younger. Boone County, typically, has a lower percentage of renter units leased to people 45 years and older; this is due, in part, to the secondary educational system available in Boone. Rental units in the possession of persons less than 34 years of age accounted for 60.7% of the total rental units. The largest category of renter-occupied units was the 25 to 34 age group, with 21.6% of the renter-occupied total; this was followed closely by the 15 to 24 age group with 18.1%.

TABLE 14: SELECTED HOUSING CONDITIONS, BOONE COUNTY, 1990 AND 2000

Housing Profile	Boone County		State of Iowa	
	Total	% of Total	Total	% of Total
1990 Housing Units	10,371		1,143,669	
1990 Occupied Housing Units	9,827	94.8%	1,064,325	93.1%
2000 Housing Units	10,968		1,232,511	
2000 Occupied Housing Units	10,374	94.6%	1,149,276	93.2%
Change in Number of Units 1990 to 2000				
Total Change	597	5.8%	88,842	7.8%
Annual Change	60	0.6%	8,884	0.8%
Total Change in Occupied Units	547	5.6%	84,951	8.0%
Annual Change in Occupied Units	55	0.6%	8,495	0.8%
Characteristics				
1990 Units Lacking Complete Plumbing Facilities	125	1.2%	9,771	0.9%
1990 Units with More Than One Person per Room	89	0.9%	5,354	0.5%
2000 Units Lacking Complete Plumbing Facilities	19	0.2%	9,790	0.8%
2000 Units with More Than One Person per Room	72	0.7%	20,538	1.7%
Substandard Units				
1990 Total	214	2.1%	15,125	1.3%
2000 Total	91	0.8%	30,328	2.5%

Source: U.S. Census Bureau, Census of Population and Housing, STF-3A, 1990, DP-4 2000

Table 14 indicates changes in housing conditions and includes an inventory of substandard housing for Boone County. The occupancy household rate in Boone County decreased from 94.8% of all housing in 1990 to 94.6% of all housing in 2000. Between 1990 and 2000, the number of housing units in Boone County increased by 597, or an average of 60 units per year. However, there was an increase of 547 new occupied housing units. This indicates the loss of vacant housing in the county was partly due to these units becoming inhabited.

According to the U.S. Department of Housing and Urban Development (HUD) guidelines, housing units lacking complete plumbing or are overcrowded are considered substandard housing units. HUD defines a complete plumbing facility as hot and cold-piped water, a bathtub or shower, and a flush toilet. HUD defines overcrowding as more than one person per room according to the Housing and Community Development Act of 1974, Section 102(a)(10). When these criteria are applied to Boone County, there were 91 housing units, or 0.8% of the total units, considered substandard in 2000. It should be noted, however, this figure was reached by adding together the number of housing meeting one criterion to the number of housing units meeting the other criterion. However, the largest amount of substandard units was based on overcrowding.

What these data fail to consider are housing units that have met both criterion and any such housing units were counted twice, once under each criterion. Even so, the county should not assume these data overestimate the number of substandard housing units. Housing units containing major defects requiring rehabilitation or upgrading to meet building, electrical, or plumbing codes should also be included in an analysis of substandard housing.

ECONOMIC AND EMPLOYMENT PROFILE

Economic data are collected in order to understand area markets, changes in economic activity, and employment needs and opportunities within Boone County. In this section, employment by industry, household income statistics, transfer payments, and basic/non-basic analyses were reviewed for Boone County and Iowa.

Income Statistics

Income statistics for households are important for determining the earning power of households in a community. The data presented here show household income levels for Boone County in comparison to the state. These data were reviewed to determine whether households experienced income increases at a rate comparable to the state of Iowa and the Consumer Price Index (CPI).

TABLE 15: HOUSEHOLD INCOME, BOONE COUNTY, 1990 AND 2000

Household Income Ranges	1990				2000			
	Boone County	% of Total	State of Iowa	% of Total	Boone County	% of Total	State of Iowa	% of Total
Less than \$10,000	1,551	15.8%	173,098	16.2%	786	7.5%	93,783	8.2%
\$10,000 to \$14,999	1,093	11.1%	111,561	10.5%	644	6.2%	77,333	6.7%
\$15,000 to \$24,999	2,052	20.9%	221,213	20.8%	1,367	13.1%	165,122	14.4%
\$25,000 to \$34,999	1,829	18.6%	194,997	18.3%	1,556	14.9%	168,713	14.7%
\$35,000 to \$49,999	1,918	19.5%	191,863	18.0%	2,065	19.8%	218,204	19.0%
\$50,000 and over	1,369	14.0%	172,511	16.2%	3,997	38.4%	427,042	37.1%
Total	9,812	100.0%	1,065,243	100.0%	10,415	100.0%	1,150,197	100.0%
Median Household Income	\$26,110		\$26,229		\$40,763		\$39,469	
Number of Households	9,812		1,065,243		10,415		1,150,197	

Source: U.S. Census Bureau, Census of Population and Housing, STF-3A, 1990 / DP-3 2000

Table 15 indicates the number of households in each income range for Boone County for 1990 and 2000. In 1990, the household income range most commonly reported was \$15,000 to \$24,999, which accounted for 20.9% of all households. By 2000, the income range reported most was the \$50,000 and over, which accounted for 38.4% of the total. Those households earning less than \$15,000 decreased from 26.9% in 1990 to 13.7% in 2000, nearly half of the 1990 total.

The median household income for Boone County was \$26,110 in 1990, which was \$119 lower than the state's average. **By 2000, the median household income increased to \$40,763 or an increase of 56.1% and was over \$1,200 higher than the state's average.** The CPI for this period was 32.1%, which indicates incomes in Boone County did exceed inflation. Boone County households were earning more, in real dollars, in 2000 than in 1990.

TABLE 16: HOUSEHOLD INCOME BY AGE (55 YEARS & OLDER) BOONE COUNTY, 2000

Income Categories	55 to 64 years	65 to 74 years	75 years and over	Households age 55 and over	Households age 55 and over	Total Households	% of Total Households age 55 & over
Less than \$10,000	155	138	169	462	11.5%	786	58.8%
\$10,000 to \$14,999	40	102	224	366	9.1%	644	56.8%
\$15,000 to \$24,999	124	266	299	689	17.1%	1,367	50.4%
\$25,000 to \$34,999	201	265	256	722	17.9%	1,556	46.4%
\$35,000 to \$49,999	265	203	192	660	16.4%	2,065	32.0%
\$50,000 or more	609	344	171	1,124	27.9%	3,997	28.1%
Total	1,394	1,318	1,311	4,023	100.0%	10,415	38.6%

Source: U.S. Census Bureau, Census of Population and Housing, SF4 2000

Table 16 indicates household income for Boone County householders aged 55 years and over in 2000. The purpose for this information is to determine the income level of Boone County's senior households. The table indicates 4,023 households meet this criterion. Of the 4,023 households in Table 16, 1,517 or 37.7% had incomes less than \$25,000 per year. Furthermore, 828 of these households, or 20.6% of the total households, had incomes less than \$15,000 per year; in addition, these 828 households accounted for 57.9% of all households in the County earning less than \$15,000. This information indicates many of these households could be eligible for housing assistance to ensure they continue to live at an appropriate standard of living. The number of senior households could easily continue to grow during the next twenty years. As the size of the 55 and over age cohort increases, these typically fixed income households may be required to provide their entire housing needs for a longer period of time. Also, the fixed incomes that seniors tend to live on generally decline at a faster rate than any other segment of the population, in terms of real dollars.

The last two columns of Table 16 indicate the total number of households in each income level and the proportion of those households that were age 55 years and older. Note that in the income level of less than \$10,000, 58.8% of all households were over the age of 55. By contrast, only 32.0% of all households in the \$35,000 to \$49,999 income range are over 55 years of age, and only 28.1% of all households in the \$50,000 or more income range was over 55 years of age. This indicates that those who are over 55 years of age in Boone County account for a strong part of these income groups and appear to be increasing in line with all ages in these income groups. As noted above, the over 55 age group may increase faster than any other cohort in the next twenty years.

TABLE 17: HOUSING COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME, BOONE COUNTY, 2000

Income Categories	Owner-Occupied Households	% O.O. Households	Renter-Occupied Households	% R.O. Households	Total Households	% of Total Households
Less than \$10,000						
Less than 30% of income	65	1.1%	101	4.6%	166	2.0%
More than 30% of income	157	2.6%	244	11.1%	401	4.9%
\$10,000 to \$19,999						
Less than 30% of income	345	5.8%	262	12.0%	607	7.5%
More than 30% of income	216	3.6%	289	13.2%	505	6.2%
\$20,000 to \$34,999						
Less than 30% of income	1,017	17.1%	447	20.4%	1,464	18.0%
More than 30% of income	277	4.7%	24	1.1%	301	3.7%
\$35,000 to \$49,999						
Less than 30% of income	1,231	20.7%	416	19.0%	1,647	20.2%
More than 30% of income	98	1.6%	5	0.2%	103	1.3%
\$50,000 or more						
Less than 30% of income	2,487	41.8%	402	18.4%	2,890	35.5%
More than 30% of income	60	1.0%	0	0.0%	60	0.7%
TOTAL	5,953	100.0%	2,190	100.0%	8,143	100.0%
Housing Cost Analysis						
Less than 30% of income	5,145	86.4%	1,628	74.3%	6,773	83.2%
More than 30% of income	808	13.6%	562	25.7%	1,370	16.8%
TOTAL	5,953	100.0%	2,190	100.0%	8,143	100.0%

Source: U.S. Census Bureau, Census of Population and Housing, SF 3 Table H73 and H97, 2000

Table 17 shows owner-occupied and renter-occupied housing costs as a percentage of household income in 2000. In addition, the table identifies the number of households experiencing a housing cost burden. Note, the total number of households is different, due to the use of a different survey form. A housing cost burden, as defined by the U.S. Department of Housing and Urban Development (HUD), occurs when gross housing costs, including utility costs, exceed 30% of the gross household income, based on data published by the U.S. Census Bureau. Table 17 shows 6,773 households, or 83.2% of the total households, paid less than 30% of their income towards housing costs. This means the remaining 1,370 households, or 16.8% of the total, experienced a housing cost burden.

There were 808 owner-occupied households and 562 renter-occupied households that experienced this housing cost burden. However, even though the total number of owner-occupied units exceeded the renter-occupied, only 13.6% of the owner-occupied households had a housing cost burden, while 25.7% of the renter-occupied households had a housing cost burden. The median rent in Boone County, \$443, and was slightly less than the state's median \$470.

Table 18 shows owner and renter costs those age 65 and over. Similar trends are shown in Table 18 as shown in Table 17. A housing cost burden affects 417 households age 65 and over. In 2000, there were 260 owner-occupied households age 65 and over with a housing cost burden or 15.2% of the total households with this burden. However, 157 renter-occupied households age 65 and over experienced a housing cost burden, or 38.2% of the total households with this burden. While only 16.8% of the county's population as a whole experienced a housing cost burden, 19.7% of all households over age 65 experienced a housing cost burden. This finding is of particular importance because it shows that elderly households account for 30.4% of all the households, indicating a housing cost burden; all while they continue to face increasing housing costs and fixed or decreasing incomes.

TABLE 18: AGE 65 AND OLDER COSTS AS PERCENTAGE OF INCOME, BOONE COUNTY, 2000

Income Categories	Owner-Occupied Households	% O.O. Households	Renter-Occupied Households	% R.O. Households	Total Households age 65 and Over	% of Total Households
Housing Cost Analysis						
Less than 30% of income	1,445	84.8%	254	61.8%	1,699	80.3%
More than 30% of income	260	15.2%	157	38.2%	417	19.7%
TOTAL	1,705	100.0%	411	100.0%	2,116	100.0%

Source: U.S. Census Bureau, Census of Population and Housing, SF 3 Table H71 and H96, 2000

Income Source and Public Assistance

Table 19 shows personal income by source for Boone County and the State. Between 1970 and 2000, the CPI was 345.1%. Total income, non-farm income and per capita income, showed tremendous growth. Non-farm income increased from \$83,432,000 in 1970 to \$713,184,000 in 2000, or an increase of 610.9%, nearly one and three-quarters times the CPI. In 2000, farm income decreased from \$16,886,000 to \$5,999,000, or -64.5%, approximately one-fifth of the CPI. Farm income was the only category of the three income factors to indicate a declining trend. Per capita income increased from \$3,777 in 1970 to \$27,164 in 2000, or an increase of 619.2%, again far greater than the CPI. The rate at which non-farm income and farm income were changing suggests that farm related employment activities are being replaced by non-farm related jobs. These data indicate Boone County has been going through an economic transformation.

TABLE 19: INCOME BY SOURCE, STATE AND BOONE COUNTY, 1970 TO 2000

Income Characteristics	1970	1980	1990	2000	% Change 1970-2000	% Annual Change
Boone County						
Total Personal Income	\$100,318,000	\$263,217,000	\$435,077,000	\$713,184,000	610.9%	22.6%
Non-farm Income	\$83,432,000	\$244,310,000	\$420,832,000	\$707,185,000	747.6%	27.7%
Farm Income	\$16,886,000	\$18,907,000	\$14,245,000	\$5,999,000	-64.5%	-2.4%
Per Capita Income	\$3,777	\$10,041	\$17,265	\$27,164	619.2%	22.9%
State of Iowa						
Total Personal Income	\$10,931,457,000	\$27,929,932,000	\$48,357,991,000	\$77,762,743,000	611.4%	22.6%
Non-farm Income	\$9,737,226,000	\$27,258,964,000	\$46,123,917,000	\$76,124,449,000	681.8%	25.3%
Farm Income	\$1,194,231,000	\$670,968,000	\$2,234,074,000	\$1,638,294,000	37.2%	1.4%
State of Iowa						
Per capita income	\$3,865	\$9,585	\$17,389	\$26,554	587.0%	21.7%

Source: Bureau of Economic Analysis, Regional Economic Information System, 2000

The per capita income in Boone County has historically increased at a rate higher than the state as a whole. Boone County's per capita income has remained higher than the state of Iowa and appears to have a strong economic base. However, the county still needs to monitor and manage its resources and continue to develop its economic base so that it can sustain its per capita income growth rate.

Table 20 indicates transfer payments to individuals in Boone County from 1970 to 2000. Note, the total amount of transfer payments equals government payments to individuals plus payments to non-profit institutions plus business payments. The remaining categories listed in Table 20 are sub-parts of the government payments to individuals category.

Total transfer payments between 1970 and 2000 showed an increase in each reporting period. Government payments, retirement and disability insurance benefits, and medical payments comprised the majority of total transfer payments. The largest percentage increase occurred within medical payments, which increased by over \$66,127,000 or 4,007.70%. Retirement, disability and insurance benefits also had considerable increases; increasing by \$45,755,000 or 717.95%. Income maintenance payments had the third largest increase. These payments, which include SSI, AFDC, and food stamps, increased by \$13,638,000, or 434.13%.

TABLE 20: TRANSFER PAYMENTS, STATE AND BOONE COUNTY, 1970 TO 2000

Payment Type	1970	1980	1990	2000	% Change 1970 to 2000	% Change Per Year
Boone County						
Government payments to individuals	\$10,131,000	\$33,923,000	\$91,440,000	\$128,681,000	1170.17%	39.0%
Retirement, Disability & Insurance Benefits	\$6,373,000	\$20,178,000	\$36,224,000	\$52,128,000	717.95%	23.9%
Medical Payments	\$1,650,000	\$7,727,000	\$48,737,000	\$67,777,000	4007.70%	133.6%
Income Maintenance Benefits (SSI, AFDC, Food Stamps, etc)	\$838,000	\$2,665,000	\$3,365,000	\$4,476,000	434.13%	14.5%
Unemployment Insurance Benefits	\$297,000	\$1,498,000	\$1,094,000	\$1,320,000	-11.88%	-0.6%
Veteran's Benefits	\$924,000	\$1,697,000	\$1,469,000	\$2,567,000	177.81%	5.9%
Federal Education and Training Assistance	(L)	\$156,000	\$294,000	\$326,000	108.97%	5.4%
Payment to Non-profit Institutions	\$462,000	\$1,242,000	\$1,969,000	\$3,674,000	695.24%	23.2%
Business Payments	\$280,000	\$729,000	\$1,772,000	\$2,966,000	959.29%	32.0%
Total	\$10,873,000	\$35,894,000	\$95,181,000	\$135,321,000	1144.56%	38.2%
Transfer Payments Per Capita	\$409	\$1,369	\$3,777	\$5,154	1160.1%	43.0%
Total Per Capita Income	\$3,777	\$10,041	\$17,265	\$27,164	619.2%	22.9%
Per Capita Transfer Payments as % of Per Capita Income	10.8%	13.6%	21.9%	19.0%	75.2%	2.8%
State of Iowa						
Total	\$992,236,000	\$3,405,442,000	\$6,609,056,000	\$10,787,153,000	987.16%	36.6%
Transfer Payments Per Capita	\$351	\$1,169	\$2,376	\$3,684	950%	35%
Total Per Capita Income	\$3,865	\$9,585	\$17,389	\$26,554	587%	22%
Per Capita Transfer Payments as % of Per Capita Income	9.1%	12.2%	13.7%	13.9%	52.8%	2.0%

(L) – Less than \$50,000, estimates are included in totals.

Source: Bureau of Economic Analysis, Regional Economic Information System, 2004

The trend for transfer payments per capita between 1970 and 2000 indicates payments increased significantly to individuals in Boone County, increasing by 1,160.1% in 30 years. However, transfer payments, as a proportion of per capita income, increased at a much lower rate between 1970 and 2000. In 1970, transfer payments comprised 10.8% of total per capita income, and in 2000, transfer payments were 19.0% of total per capita income. During this 30-year period, Boone County's proportion increased far greater than the state, which only saw 13.9% of the per capita income comprised of transfer payments.

In 1970, total transfer payments for Boone County were \$10,873,000, compared to \$992,236,000 for the state of Iowa. Boone County had approximately 1.1% of the Iowa total. By 2000, total transfer payments for Boone County were \$135,321,000, or an increase of 1,144.56%, compared to \$10,787,153,000 for the state. In 2000, Boone County accounted for 1.25% of the state's total. In 30 years, Boone County has seen its share of state transfer payments increase by 13.6%. In 2000, transfer payments per capita in Boone County were \$5,154.00, while the state of Iowa indicated only \$3,684.00.

Industry Employment

Analyzing employment by industry assists a county in determining the key components of its labor force. This section indicates the type of industry comprising the local economy, as well as identifying particular occupations that employ residents. Table 21 indicates employment size by industry for Boone County and the state of Iowa between 1970 and 2000.

TABLE 21: EMPLOYMENT BY INDUSTRY, STATE AND BOONE COUNTY, 1970 - 2000

Boone County	1970	% of Total	1980	% of Total	1990	% of Total	2000	% of Total	% Change 1970 to 2000
Farm Employment	1,689	19.4%	1,517	14.7%	953	9.2%	943	7.4%	-44.2%
Non-farm Employment	8,725	100.0%	10,319	100.0%	10,377	100.0%	12,716	100.0%	45.7%
Ag. Serv. forestry, fishing, mining and other	36	0.4%	59	0.6%	122	1.2%	181	1.4%	402.8%
Construction	413	4.7%	572	5.5%	425	4.1%	864	6.8%	109.2%
Manufacturing	682	7.8%	871	8.4%	943	9.1%	1,059	8.3%	55.3%
Transportation and Public Utilities	744	8.5%	947	9.2%	848	8.2%	852	6.7%	14.5%
Wholesale Trade	333	3.8%	491	4.8%	575	5.5%	814	6.4%	144.4%
Retail Trade	1,678	19.2%	1,914	18.5%	2,206	21.3%	2,611	20.5%	55.6%
Finance, Insurance & Real Estate	598	6.9%	644	6.2%	476	4.6%	606	4.8%	1.3%
Services	1,832	21.0%	2,083	20.2%	2,295	22.1%	3,308	26.0%	80.6%
Government and Government Enterprises	2,409	27.6%	2,738	26.5%	2,487	24.0%	2,421	19.0%	0.5%
Totals - Non-farm	8,725	100.0%	10,319	100.0%	10,377	100.0%	12,716	100.0%	45.7%
State of Iowa									
Farm Employment	170,932	15.2%	161,699	11.7%	130,807	8.6%	109,624	6.0%	-35.9%
Non-farm Employment	1,123,669	100.0%	1,379,345	100.0%	1,515,137	100.0%	1,824,453	100.0%	62.4%
Ag. Serv. forestry, fishing, mining and other	15,318	1.4%	13,297	1.0%	23,317	1.5%	28,801	1.6%	88.0%
Construction	63,507	5.7%	74,100	5.4%	71,317	4.7%	98,810	5.4%	55.6%
Manufacturing	221,422	19.7%	249,837	18.1%	242,401	16.0%	266,961	14.6%	20.6%
Transportation and Public Utilities	62,033	5.5%	69,388	5.0%	69,125	4.6%	91,574	5.0%	47.6%
Wholesale Trade	50,191	4.5%	83,066	6.0%	82,511	5.4%	90,846	5.0%	81.0%
Retail Trade	217,964	19.4%	254,670	18.5%	280,114	18.5%	327,569	18.0%	50.3%
Finance, Insurance & Real Estate	83,713	7.4%	109,213	7.9%	109,038	7.2%	135,113	7.4%	61.4%
Services	219,180	19.5%	305,028	22.1%	403,725	26.6%	528,528	29.0%	141.1%
Government and Government Enterprises	190,341	16.9%	220,746	16.0%	233,589	15.4%	256,251	14.0%	34.6%
Totals - Non-farm	1,123,669	100.0%	1,379,345	100.0%	1,515,137	100.0%	1,824,453	100.0%	62.4%

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System, 2004

Between 1970 and 2000, Boone County experienced many changes within its industries. Overall, the workforce in Boone County increased by 3,991 jobs, or 45.7%. The state of Iowa had an increase of 700,784 positions, or 62.4%. Boone County's workforce increased at a considerably slower rate than the state.

Boone County industries with the greatest percent increases were:

- Agricultural services, forestry, fishing, mining and other with an increase of 145 jobs or an increase of 402.8%,
- Wholesale trade with an increase of 481 jobs or 144.4%,
- Construction with an increase of 451 jobs or 109.2%, and

- Services with an increase of 1,476 jobs or 80.6%.

In comparison, the state of Iowa's largest percent changes are as follows:

- Services with an increase of 309,348 jobs or 141.1%,
- Agricultural services, forestry, fishing, mining and other, with an increase of 13,483 jobs or an increase of 88.0%,
- Wholesale trade with an increase of 40,655 jobs or 81.0%, and
- Finance, insurance and real estate (F.I.R.E) with an increase of 51,400 jobs or 61.4%.

The greatest increases in Boone County were similar to those of the entire state. The one difference was the construction industry versus the F.I.R.E industry. Changes with The Principal and other financial companies in Des Moines fueled the F.I.R.E increases at the state level, in part.

Increases in employment positions occurred in all industry categories:

• Services	+ 1,476 jobs
• Retail Trade	+ 933 jobs
• Wholesale Trade	+ 481 jobs
• Construction	+ 451 jobs
• Manufacturing	+ 377 jobs
• Ag. Services, Forestry, Fishing, Mining, Other	+ 145 jobs
• Transportation and Public Utilities	+ 108 jobs
• Government and Government Enterprises	+ 12 jobs
• Finance, Insurance, and Real Estate	+ 8 jobs

The only industry that indicated a loss of employment was farm employment, which lost 746 jobs overall between the 1970 to 2000 time period.

Changes within Boone County are reflective of the move nationally for more service-related industries. Boone County, together with its economic development partners, needs to continually work to identify county and community assets. The county can play heavily on its proximity to Ames, the Des Moines Metropolitan Area, and major transportation routes when recruiting businesses and industry. As new jobs come to Boone County, so will the demand for residential development. As stated previously, a solid population base is reflective of all other aspects of the county's economic health.

Commuter Trends

Tables 22 and 23 show the commuter characteristics for Boone County. Table 22 indicates where the residents of Boone County work by county. A trend seen between 1970 and 2000 indicates the resident workforce employed in Boone County increased, as did the number of residents commuting out of the county.

TABLE 22: COMMUTER POPULATION TRENDS, RESIDENTS OF BOONE COUNTY, 1970 TO 2000

County of Residence	Work County	1970	1980	1990	2000	Change 1970-2000	% of 1970 Total	% of 2000 Total
Boone County	Black Hawk County	0	0	0	8	8	0.0%	0.1%
	Boone County	6,968	7,751	7,410	7,785	817	72.8%	58.4%
	Dallas County	248	510	364	439	191	2.6%	3.3%
	Greene County	70	73	62	87	17	0.7%	0.7%
	Hamilton County	7	21	53	92	85	0.1%	0.7%
	Hardin County	0	0	0	20	20	0.0%	0.1%
	Marshall County	0	35	8	18	18	0.0%	0.1%
	Polk County	591	692	1,226	1,715	1,124	6.2%	12.9%
	Story County	1,135	1,896	2,294	3,070	1,935	11.9%	23.0%
	Warren County	0	0	0	19	19	0.0%	0.1%
	Webster County	52	38	97	84	32	0.5%	0.6%
	Elsewhere	496	0	0	0	-496	5.2%	0.0%
	Total	9,567	11,016	11,514	13,337	3,770	100.0%	100.0%
	Total Commuter	2,599	3,265	4,104	5,552	2,953		
	% Commuter	27.2%	29.6%	35.6%	41.6%	57.9%		

Source: Bureau of Economic Analysis, Regional Economic Information System, 2004

The number of Boone County residents employed in Boone County increased by 817, while the number of Boone County residents commuting out of Boone County increased by 3,770 people. The majority of the outgoing commuter increase was to Story County (Ames), which had 1,935 of the 3,770 or 51.3% of the total increases in the commuter workforce. The total workforce commuting to Story County for employment increases from 11.9% of the total in 1970, to 23.0% of the total in 2000. The percentage of Boone County residents working in Boone County decreased from 72.8% in 1970, to 58.4% in 2000. The remaining 18.6% of the 2000 workforce were scattered between at least 10 other counties in the region.

TABLE 23: COMMUTER POPULATION TRENDS; WORKERS IN BOONE COUNTY, 1970 TO 2000

Work County	County of Residence	1970	1980	1990	2000	Change 1970-2000	% of 1970 Total	% of 2000 Total
Boone County	Boone County	6,968	7,751	7,410	7,785	817	89.7%	76.6%
	Carroll County	0	0	0	22	22	0.0%	0.2%
	Dallas County	399	649	511	600	201	5.1%	5.9%
	Greene County	40	43	93	157	117	0.5%	1.5%
	Guthrie County	17	0	35	49	32	0.2%	0.5%
	Hamilton County	60	93	94	166	106	0.8%	1.6%
	Hardin County	0	0	0	16	16	0.0%	0.2%
	Jasper County	17	0	0	0	-17	0.2%	0.0%
	Johnson County	0	0	24	0	0	0.0%	0.0%
	Marshall County	0	3	47	42	42	0.0%	0.4%
	Polk County	41	91	184	294	253	0.5%	2.9%
	Story County	207	290	383	890	683	2.7%	8.8%
	Warren County	0	0	0	35	35	0.0%	0.3%
	Webster County	22	8	74	91	69	0.3%	0.9%
	Wright County	0	0	0	16	16	0.0%	0.2%
	Total	7,771	8,928	8,855	10,163	1,575	10.3%	23.4%
	Total Commuters	781	1,169	1,371	2,236	1,455		
	% Commuters	10.1%	13.1%	15.5%	22.0%	186.3%		

Source: Bureau of Economic Analysis, Regional Economic Information System, 2004

The number of Boone County residents employed in Boone County increased by 817, while the number of workers commuting into Boone County increased by 1,455. The majority of the incoming commuter population came from Story County (Ames), which added 683, or 330.0%, of the total increase of 1,455 in the commuter workforce. The total workforce commuting from Story County for employment increased from 2.7% of the total in 1970, to 8.8% of the total in 2000. In addition, the workforce coming to Boone County from Dallas County increased from 5.1% in 1970 to 5.9% in 2000. The percentage of Boone County workers living in Boone County decreased from 89.7% in 1970, to 76.6% in 2000. The remaining 23.4% of the 2000 workforce commute into Boone County from 12 other counties in the region.

During 1970, there were 2,599 workers living in Boone County who commuted elsewhere for employment. There were also 781 workers living elsewhere who commuted into Boone County for employment. By 2000, these numbers changed to 5,552 commuting out of Boone County, and 2,236 commuting into Boone County. These changes represent an increase of 113.6% in the number commuting out, and 186.3% in the number commuting into Boone County. The percentage of workers commuting into Boone County grew, compared to those commuting out of the county. However, the number of workers leaving the county for employment is over twice the number of workers coming into the county for employment.

The information in Tables 22 and 23 allows the county to identify how much money is leaving the county every day in the pockets of resident commuters. In addition, the county can get an idea of how much is coming into the county from non-resident commuters. By knowing how many residents are leaving the county for employment, Boone County can develop strategies to create jobs within the county that will attract and keep its own residents in the county, spending their money on goods and services provided by the county's workforce.

Travel time to work is another factor that can be used to gauge where Boone County's workforce has been commuting. Table 24 shows how many residents of Boone County travel to work in each of several time categories.

TABLE 24: TRAVEL TIME TO WORK, BOONE COUNTY, 1990 TO 2000

Travel Time Categories	1990	% of Total	2000	% of Total	% Change
Less than 5 minutes	745	6.4%	944	7.0%	26.7%
5 to 9 minutes	2,510	21.6%	2,699	20.1%	7.5%
10 to 19 minutes	2,974	25.6%	3,341	24.9%	12.3%
20 to 29 minutes	1,960	16.8%	2,510	18.7%	28.1%
30 to 44 minutes	1,611	13.8%	1,955	14.6%	21.4%
45 to 59 minutes	600	5.2%	691	5.1%	15.2%
60 minutes or more	499	4.3%	607	4.5%	21.6%
Worked at home	739	6.3%	688	5.1%	-6.9%
Total	11,638	100.0%	13,435	100.0%	15.4%
Mean Travel Time (minutes)	19.4		20.9		7.7%

Source: U.S. Census Bureau, Census of Population and Housing, STF-3A, 1990 – SF 3 Table PCT56 and DP3, 2000

Table 24 indicates the workforce in 2000 spent 1.5 minutes more traveling to work than in 1990. The average travel time increased from 19.4 minutes in 1990 to 20.9 minutes in 2000. The largest increase occurred in the 20 to 29 minutes

category, which increased by 550 persons or 28.1 %. The next largest increase occurred in the less than 5 minutes category, which increased by 199 persons or 26.7%. Finally, the 60 minutes or more category was the third largest increase with 108 commuters or 21.6%. Increases in travel times are more likely due to the population commuting to the Ames area than other places.

The number of persons working at home had the only decrease. The number of persons working from home had a decrease of 51 people, or -6.9% from 1990 to 2000. This may have been caused by the availability of more and better paying jobs in the area, but also may be a result of a population that has fewer children care at home, and is therefore able to work farther from home.

Regional Basic/Non-Basic Analysis

The following data examine six occupational areas established by the U.S. Census Bureau to evaluate trends in employment and the area economy. Basic employment and non-basic employment are defined as follows:

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

This analysis is used to further understand which occupational areas are exporting goods and services outside the area, thus importing dollars into the local economy. The six occupational categories used in the analysis are listed below:

- Management, professional, and related occupations
- Service occupations
- Sales and office occupations
- Farming, fishing, and forestry occupations
- Construction, extraction, and maintenance occupations
- Production, transportation, and material moving occupations

A related concept to the basic/non-basic distinction is that of a basic multiplier. The basic multiplier is a number, which represents how many non-basic jobs are supported by each basic job. A high basic multiplier means that the loss of one basic job will have a large potential impact on the local economy if changes in employment occur. The rationale behind this analysis is that if basic jobs bring new money into a local economy, that money becomes the wages for workers in that economy. Finally, the more money generated by basic jobs within a county, the more non-basic jobs supported.

Table 25 indicates the occupation category, the percent of Boone County residents employed in each category, the percent of state residents employed in each category, and the basic and non-basic employment for that category in Boone County. The formula for determining the basic or non-basic nature of an occupation entails subtracting the State's percentage of workforce in a particular occupation from the percentage of the workforce in that occupation in the county. If the county has a lower proportion of its workforce employed in an occupation than the state as a whole, then that occupation is non-basic.

TABLE 25: BASIC/NON-BASIC EMPLOYMENT BY OCCUPATION, BOONE COUNTY, 2000

Occupation Category	Number of Boone County Workforce	% of Boone County Workforce	% of State Workforce	Boone County minus State of Iowa	Basic	Non-Basic
Management, professional, and related occupations	3,721	27.3%	31.3%	-4.0%	0.0%	27.3%
Service occupations	2,373	17.4%	14.8%	2.6%	2.6%	14.8%
Sales and office occupations	3,517	25.8%	25.9%	-0.1%	0.0%	25.8%
Farming, fishing, and forestry occupations	214	1.6%	1.1%	0.5%	0.5%	1.1%
Construction, extraction, and maintenance occupations	1,584	11.6%	8.9%	2.7%	2.7%	8.9%
Production, transportation, and material moving occupations	2,210	16.2%	18.1%	-1.9%	0.0%	16.2%
TOTAL	13,619	100%	100%		5.8%	94.1%
Economic base multiplier	16.92					

Source: U.S. Census Bureau, Census of Population and Housing, DP-3, 2000

In Boone County, there are three basic occupation industries: 1) Service occupations, 2) Farming, fishing, and forestry occupations, and 3) Construction, extraction, and maintenance occupations. Goods and services from these occupations are exported to markets outside of Iowa, which, in turn, generate an infusion of dollars into the local economy. Table 25 shows that 94.1% of the jobs in Boone County are non-basic, while only 5.9% provide goods and services outside the county. With three of the six categories indicating exports, this is not a bad balance; however, nearly 90% of the exports are within two of the categories. If an economic downturn occurs in this area, it could have a major impact on the county's economy.

The basic multiplier for Boone County is 16.92. This number indicates that 16.92 non-basic jobs support every one basic job in Boone County. Every time Boone County loses a job in 1) Service occupations, 2) Farming, fishing, and forestry occupations, and 3) Construction, extraction and maintenance occupations, the county potentially could lose 16.92 non-basic jobs. *In order to decrease this potential, Boone County needs to accentuate the basic jobs by diversifying the employment base even more.* Counties want a balance of basic and non-basic employment in their economy to ensure future economic stability.

TABLE 26: REGIONAL AND STATE LABOR FORCE COMPARISONS, BOONE COUNTY, 2000

Location	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6	Base Multiplier
Iowa	31.3%	14.8%	25.9%	1.1%	8.9%	18.1%	NA
Boone County	27.3%	17.4%	25.8%	1.6%	11.6%	16.2%	16.92
Dallas County	35.9%	13.5%	27.6%	1.3%	9.1%	12.6%	14.87
Greene County	31.7%	15.1%	20.1%	1.7%	10.7%	20.7%	17.25
Hamilton County	30.2%	13.8%	21.0%	2.3%	9.4%	23.2%	14.56
Polk County	36.7%	13.5%	30.7%	0.2%	7.6%	11.3%	9.7
Story County	43.0%	15.1%	25.2%	1.0%	6.5%	9.1%	8.28
Webster County	28.0%	16.5%	25.2%	1.2%	9.4%	19.8%	24.58
Average of Counties	33.3%	15.0%	25.1%	1.3%	9.2%	16.1%	15.2

Occupation 1 = Management, professional, and related occupations

Occupation 2 = Service occupations

Occupation 3 = Sales and office occupations

Source: U.S. Census Bureau, Census of Population and Housing, DP-3, 2000

Occupation 4 = Farming, fishing, and forestry occupations

Occupation 5 = Construction, extraction, and maintenance occupations

Occupation 6 = Production, transportation, and material moving occupations

Table 26 indicates the 2000 percentage of employment by occupational categories for residents of the State of Iowa, Boone County, and surrounding counties. Boone County is located near the middle or top of each occupational category. In only one case does Boone County have the lowest percentage of employment, Occupation 1. Interestingly, Boone County's basic multiplier is higher than most of the surrounding counties.

While the surrounding counties have a multiplier in the range of 8.28 to 24.58, Boone County's multiplier is 16.92. The impact of such a high multiplier is that Boone County is much more sensitive to the loss of one basic position, compared to some of Boone County's neighboring counties, especially since nearly 90% of the basic employment is in two categories. The reason for the higher multiplier is that the workforce is only 5.9% basic. This indicates a very small proportion of the workforce is responsible for generating the flow of new money into the county. The higher the basic percentage becomes, the lower the basic multiplier will become. There is no perfect multiplier number; however, a balanced multiplier provides a more balanced economy.

One way for the County to increase the proportion of basic labor would be to increase the number of jobs in the existing basic categories, 1) Service occupations, 2) Farming, fishing, and forestry occupations, and 3) Construction, extraction and maintenance occupations. Another strategy would be for Boone County to diversify its employment opportunities and increase the strength and security of its workforce. To do this, Boone County must bring some of its non-basic jobs into the basic category.

TABLE 27: BASIC/NON-BASIC EMPLOYMENT BY INDUSTRY, BOONE COUNTY, 2000

Industry Categories	Boone County		State of Iowa		Boone County minus State of Iowa	Basic	Non-Basic
	2000	% of Total	2000	% of Total			
Agriculture, forestry, hunting and mining	642	4.7%	65,903	4.4%	0.3%	0.3%	4.4%
Construction	1,117	8.2%	91,824	6.2%	2.0%	2.0%	6.2%
Manufacturing	1,395	10.2%	253,444	17.0%	-6.8%	0.0%	10.2%
Wholesale Trade	409	3.0%	53,267	3.6%	-0.6%	0.0%	3.0%
Retail Trade	1,903	14.0%	179,381	12.0%	1.9%	1.9%	12.0%
Transportation and warehousing and utilities	827	6.1%	73,170	4.9%	1.2%	1.2%	4.9%
Information	342	2.5%	41,970	2.8%	-0.3%	0.0%	2.5%
Finance, Insurance, Real Estate and rental and leasing	616	4.5%	100,395	6.7%	-2.2%	0.0%	4.5%
Professional, scientific, management, administration, and waste management service	754	5.5%	90,157	6.1%	-0.5%	0.0%	5.5%
Educational , health, and social services	3,510	25.8%	324,142	21.8%	4.0%	4.0%	21.8%
Arts, entertainment, recreation, accommodation and food services	759	5.6%	98,819	6.6%	-1.1%	0.0%	5.6%
Other services (except public administration)	710	5.2%	66,286	4.4%	0.8%	0.8%	4.4%
Public Administration	635	4.7%	51,058	3.4%	1.2%	1.2%	3.4%
Total	13,619	100.0%	1,489,816	100.0%		11.4%	88.6%
Base Multiplier	7.74						

Source: US Census – 2000 DP-3

Table 27 shows that two of the non-basic occupation categories are very close to the same percentage as the state, so it is possible these categories could become basic, if additional jobs were created. If these occupational areas were to surpass the state percentage, they would start to contribute to the basic employment of the county, which, in turn, would lower

the basic multiplier. However, as jobs are added to one occupation category, the percentages for all of the industries will change. This makes forecasting future basic and non-basic occupations complex and difficult.

Table 27 offers another basic/non-basic analysis. This approach is based upon Industry Categories instead of Occupation Categories. With the data presented in this table, Boone County will have more detailed information to define where job growth needs to occur. Note, the total percentage of basic and non-basic employment is calculated in this table.

According to Table 27, the following industries are strong in Boone County:

- Agriculture, forestry, fishing, hunting, and mining
- Construction
- Retail trade
- Transportation, warehousing, and utilities
- Educational, health, and social services
- Other services
- Public administration

These industries provide many of the basic jobs that support non-basic employment. The industries with the most room for growth are manufacturing, finance, insurance, real estate, arts, entertainment, recreation, accommodations, and food services. These industries fail to meet the state's average by 6.8%, 2.2%, and 1.1% respectively.

Tables 26 and 27 combine to give Boone County a picture of the employment conditions. In order to boost the economy of the county, there must be a flow of money into the county from other regions. To do this, the county needs to offer goods and services to those other areas. The county could also diversify its economic structure, which will add strength and stability.

Agricultural Profile

The agricultural profile enables a county to evaluate the influence of the agriculture industry on the area economy. Since most Iowa counties were formed around county seats and agriculture, the agricultural economy, historically, has been the center of economic activity for counties. The U.S. Census Bureau, Census of Agriculture tracks agricultural statistics every five years. Since that frequency does not coincide with the decennial U.S. Census of Population and Housing, it is difficult to compare sets of census data.

Agriculture Trends

Table 28 identifies key components affecting Boone County's agricultural profile. This table indicates the number of farms within Boone County decreased between 1987 and 2002, likely due to an agricultural sector that has operated with economic instability. The average size of farms increased from 327 acres in 1987 to 381 acres in 2002. The average value of land and buildings increased from \$386,353 per farm in 1987 to \$936,262 per farm in 2002 and from \$1,134 per acre in 1987 to \$2,151 per acre in 2002. The typical trend in the Midwest has been for the number of farms to decrease, but increase in size and value. The number of acres committed to crops decreased in the 15-year period; while, the acres actually harvested, had an increase.

TABLE 28: AGRICULTURAL PROFILE, BOONE COUNTY, 1987-2002

Agricultural Characteristics	1987	1992	1997	2002	% Change 1987-2002
Number of Farms	1,029	923	863	827	-19.6%
Land in Farms (acres)	336,666	330,080	328,906	312,708	-7.1%
Average size of farms (acres)	327	358	381	378	15.6%
Total land area for Boone County	365,440	365,440	365,440	365,440	0.0%
Percentage of land in farm production	92.1%	90.3%	90.0%	85.6%	-7.1%
Total cropland (acres)	302,707	300,885	297,488	280,874	-7.2%
Harvested cropland (acres)	245,517	278,180	283,902	267,212	8.8%
Estimated Market Value of Land & Bldg (avg./farm)	\$386,353	\$572,822	\$770,510	\$936,262	142.3%
Estimated Market Value of Land & Bldg (avg./acre)	\$1,134	\$1,607	\$2,160	\$2,151	89.7%

Source: U.S. Census of Agriculture, 1992, 1997, 2002

The average size of farms in Boone County has increased by 15.6%. The period between 1987 and 2002 was one of great turmoil for the agriculture industry. Looking only at the period from 1987 to 2002, Table 28 shows the average value per farm increased by 142.3% and the average value per acre increased by 89.7%.

TABLE 29: NUMBER OF FARMS BY SIZE, BOONE COUNTY, 1987-2002

Farm Size (acres)	1987	1992	1997	2002	% Change 1987-2002
1 to 9	71	80	64	70	-1.4%
10 to 49	125	102	129	177	41.6%
50 to 179	260	239	203	180	-30.8%
180 to 499	345	265	234	187	-45.8%
500 to 999	179	168	158	115	-35.8%
1,000 or more	49	69	75	98	100.0%
Total	1,029	923	863	827	-19.6%

Source: U.S. Census of Agriculture, 1992, 1997, 2002

The size of farms, in acres, is indicated in Table 29. Table 29 shows between 1987 and 2002 there was a mixture of change with regard to farm size. Those farms 1 to 9 acres in size saw a -1.4 change while those 10 to 49 acres saw an increase of 41.6%. Furthermore, the number of farms between 180 and 999 acres decreased by 222 farms or -42.4%. Finally, those farms over 1,000 acres doubled in the 15-year period, increasing by 100.0%. Boone County has seen some unique changes with regard to the number of farms by size.

Table 30 indicates the number of farms and livestock by type for Boone County between 1987 and 2002. The predominant livestock raised in Boone County are hogs and pigs as well as cattle and calves. All livestock productions showed a decline in the number of farms raising animals. During the 15-year period, only hogs and pigs hit their peak number of animals. This was in 1997 with 101,679 animals. Average livestock numbers per farm were calculated for each type of operation and the results indicated that every livestock group, except chickens and sheep and lambs, increased despite the declining number of farms.

TABLE 30: NUMBER OF FARMS & LIVESTOCK BY TYPE, BOONE COUNTY, 1987 TO 2002

Type of Livestock	1987	1992	1997	2002	% Change 1987 to 2002
Cattle and Calves					
farms	318	251	231	183	-42.5%
animals	23,077	21,791	14,451	17,309	-25.0%
average per farm	73	87	63	95	30.3%
Beef Cows					
farms	222	185	191	144	-35.1%
animals	5,403	5,571	5,850	4,468	-17.3%
average per farm	24	30	31	31	27.5%
Milk cows					
farms	26	14	6	10	-61.5%
animals	552	236	104	288	-47.8%
average per farm	21	17	17	29	35.7%
Hogs and Pigs					
farms	257	212	111	65	-74.7%
animals	90,597	98,653	101,679	63,649	-29.7%
average per farm	353	465	916	979	177.8%
Sheep and lambs					
farms	97	88	52	49	-49.5%
animals	4,206	2,877	1,703	1,917	-54.4%
average per farm	43	33	33	39	-9.8%
Chickens (layers and pullets)					
farms	45	33	16	22	-51.1%
animals	244,311	D	D	D	-
average per farm	5,429	-	-	-	-

Source: U.S. Census of Agriculture, 1992, 1997, 2002

Table 31 indicates the number of farms and crop by type for the period from 1987 to 2002. This table shows the prominent crops grown in the county. In addition, the table indicates the total number of farms producing a specific crop and finally an average per farm. Corn and soybeans have been the two most frequently raised crops in Boone County since 1987. Three of the seven categories showed an increase in acres farmed; these include corn for grain, corn for silage, and sorghum. The crop with the largest increase is corn for grain with an increase of 22.2%, while corn for silage increased by 6.6%. Finally, all of the crops indicated an increase in the average acres per farm. This indicates the farms that are continuing to grow these crops are getting larger; this is a statewide as well as a nationwide trend.

TABLE 31: NUMBER OF FARMS & CROPS BY TYPE, BOONE COUNTY, 1987 TO 2002

Type of Crop	1987	1992	1997	2002	% Change 1987 to 2002
Corn for Grain					
farms	632	724	825	522	-17.4%
acres	112,738	144,447	140,660	137,717	22.2%
average per farm	178	200	170	264	47.9%
Corn for Silage					
farms	30	35	28	19	-36.7%
acres	561	908	1,535	598	6.6%
average per farm	19	26	55	31	68.3%
Sorghum					
farms	-	-	-	4	-
acres	-	-	-	144	-
average per farm	-	-	-	36	-
Wheat					
farms	11	9	2	2	-81.8%
acres	167	264	D	D	-
average per farm	15	29	-	-	-
Oats					
farms	148	94	59	46	-68.9%
acres	3,031	1,880	1,224	1,099	-63.7%
average per farm	20	20	21	24	16.7%
Soybeans					
farms	795	667	625	485	-39.0%
acres	122,615	126,604	137,120	120,863	-1.4%
average per farm	154	190	219	249	61.6%
Alfalfa					
farms	341	328	281	269	-21.1%
acres	8,786	6,579	5,695	7,187	-18.2%
average per farm	26	20	20	27	3.7%

Source: U.S. Census of Agriculture, 1992, 1997, 2002

COUNTY FACILITIES

COUNTY FACILITIES

State and local governments provide a number of goods and services for their citizens. The people, buildings, equipment and land utilized in the process of providing these goods and services are referred to in the public facilities inventory.

Public facilities represent a wide range of buildings, utilities, and services that are built and maintained by the different levels of government. Such facilities are provided to insure the safety, well being, and enjoyment of the residents of a jurisdiction; in this case, Boone County. These facilities and services provide County residents with social, cultural, educational, and recreational opportunities, as well as law enforcement and fire protection services, designed to meet area needs. It is important for all levels of government to anticipate the future demand for their goods and services if they are to remain strong and vital.

An important step is to establish a list of services and facilities currently provided to citizens of the county. In some instances, there are a number of goods and services not provided by the local or state governmental body and thus are provided by non-governmental private or non-profit organizations for the county. These organizations are important providers of goods and services, especially in sparsely populated rural counties.

Boone County Facilities Inventory

The Facilities Inventory component of a Comprehensive Development Plan lists all services and facilities available in Boone County. This inventory provides decision-makers a resource to evaluate future demands. Information was gathered by JEO Consulting Group, Inc. staff and Boone County staff.

The facilities inventory for Boone County is divided into the following categories:

- Recreational Facilities
- Educational Facilities
- Fire and Police Protection
- County Buildings
- Transportation Facilities
- Communication Facilities
- Public Utilities
- Health Facilities

RECREATIONAL FACILITIES

Boone County is located in central Iowa along the Des Moines River. The river corridor has not been urbanized within Boone County and its surroundings remain relatively untouched due in part to ownership by government. This river corridor offers many recreational opportunities.

State Recreational Facilities

Although some of the parks listed below may be located outside Boone County these resources are still utilized by the residents of Boone County. A general distance of 30 miles was used when determining what sites to include in the following:

TABLE 32: STATE PARKS

Name	County	Size	Features	Amenities
Ledges State Park	Boone	1,200 Acres	Sandstone ledges, streams (2), lake, and pond	campground, hiking and natural trails, boating, stream fishing, snow mobiles, cross county skiing, scenic overlooks
Brushy Creek State Recreation Area	Webster	6,000 Acres+	690 acre lake, creek, and Des Moines River	Equestrian camping, non-equestrian camping, fishing, boating, swimming, 50 miles of multi-purpose trails (horseback riding, hiking, snowmobiling, cross country skiing, and mountain biking).
Dolliver Memorial State Park	Webster	457 Acres	Sandstone formations, petrified logs and sticks, Prairie Creek, Indian mounds, canyons, and wooded hillsides	Camping, nature trails, boating and fishing, picnicking, shelters, and a lodge
Big Creek State Park	Polk	3,550 Acres	866 acre lake	Picnicking, shelters, camping, 26 miles of multi-purpose trails (bicycling, hiking, cross country skiing), hunting, and shooting range)

Source: Iowa Department of Natural Resources

These four facilities provide multiple opportunities to the residents of Boone County for recreating. All four of these parks are either in Boone County or in adjacent counties.

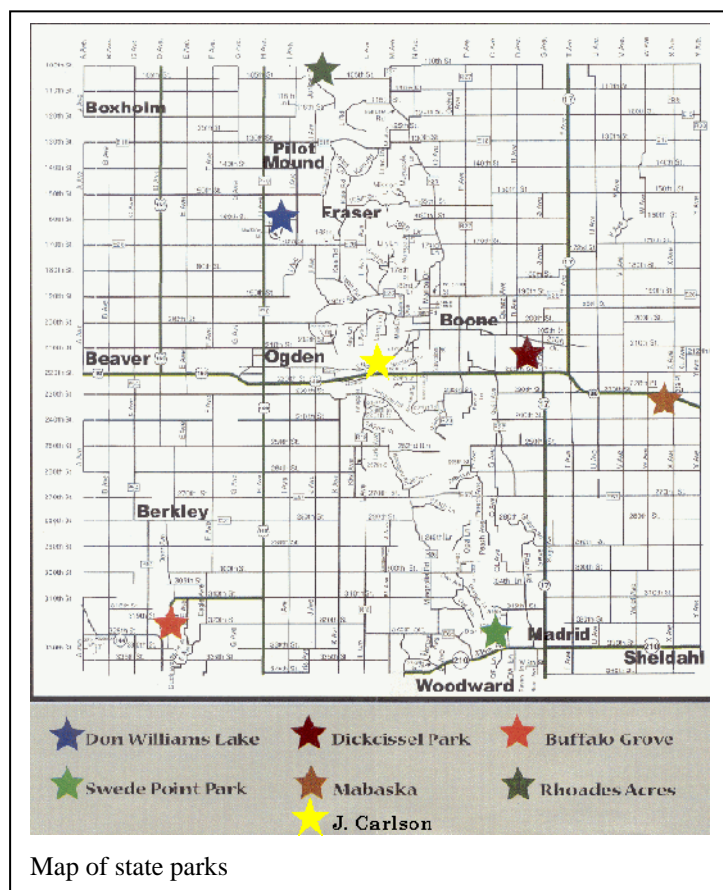
Boone County Conservation is responsible for seven different facilities within Boone County. These include Buffalo Grove, Dickcissel Park, Mabaska, Rhoades Acres, J. Carlson Wildlife Area, Swede Point Park and Don Williams Lake. The features of each park are outlined below in Table 33. Most county parks have places designated for passive recreation such as camping, hiking, and picnicking. These activities do not have an intense impact on the environment. However, some of the county parks do provide more specialized recreational activities including golfing and boating.

TABLE 33: BOONE COUNTY PARKS AND FACILITIES

Name	Type of Facility	Size	Features	Activities
Buffalo Grove	Wildlife Area	126 Acres	Prairie grass and woodlands, and Beaver Creek.	Hunting and fishing
Dickcissel Park	Park	38 Acres	Trumpeter Swans (winter only)	Picnicking, fishing, wildlife viewing.
Mabaska	Wildlife Area	17 Acres	Pond, Trumpeter swans	Wildlife viewing
Rhoades Acres	Hunting Area	150 Acres	Floodplain, native grasses and timber	Hunting
J. Carlson Wildlife Area	Wildlife Area	80 Acres	Newly planted sand prairie, fishing pond	Hunting and Fishing
Swede Park Point	Passive park	108 acres		Hiking Camp Ground

Don Williams Park	Park	600 acres	160 acre lake	Enclosed Shelter Hiking Camp Grounds Fishing Public Beach Golf course Restaurants (2)
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Source: Boone County Conservation website



Boone County has three Iowa State Forests located in its boundaries. The total area of the three is 386 acres. The forests only add to the recreational opportunities for the residents of Boone County. The three forests are Barkely State Forest, Holst State Forest, and Pilot Mound State Forest.

TABLE 34: STATE FORESTS IN BOONE COUNTY

Name	Size	Activities
Barkely State Forest	40 Acres	Hunting and nature study
Holst State Forest	313 Acres	Hunting, used for research, experimentation, nature study and management.
Pilot Mound State Forest	33 Acres	Picnicking, Hiking, Hunting

Source: Iowa State University Study, 2002

Other Recreational Activities

Golf Courses

There are eight golf courses in or within close proximity to residents in Boone County. The golf courses in the general vicinity of Boone County include the following:

TABLE 35: GOLF COURSES IN BOONE COUNTY

Course	Type	Location	Distance from Boone
Boone Golf and Country Club	Private	Boone	NA
Ames Golf and Country Club	Private	Ames	18
Homewood Municipal Golf Course	Public	Ames	18
Oak Public Golf Course	Public	Ames	18
Veenker Memorial Golf Course	Public	Ames	18
Perry Golf and Country Club	Semi-private	Perry	35
Honey Creek Golf Club	Public	Boone	NA
Don Williams Golf Course	Public	Odgen	8

Source: www.golfable.com

Boone Speedway

Boone County Speedway is located along the south edge of Boone along US Highway 30. The track is a one-third mile dirt high banked oval. The speedway's season runs from early-April to early-September.

The speedway is host to the IMCA Super Nationals during the month of September. The Nationals include stock cars, hobby stock, late models, sprint cars, sportmod, and the Sunoco modifieds.

Boone County Scenic Railroad

The Boone and Scenic Valley Railroad is located in Boone. The railroad was started in 1983 as the Boone Railroad Historical Society. The organization purchased over 11 acres of land including the bridges along the route. The railroad operates a gift shop and museum at their Boone location. Currently, the railroad has purchased an additional 25 acres for expanding the museum operation. The railroad gives rides with various train equipment, as well as dinner and dessert trains between Memorial Day weekend and the end of October.

Equipment owned/restored/operated by the Boone and Scenic Railroad includes:

- **The Wolf Dessert Train** – This train has first class service on the historic, “City of San Francisco” or “City of Los Angeles.”
- **JS8419 Steam Locomotive**
- **Electric Trolley** – The restored 1915 Charles City & Western electric trolley.
- **Diesel Engine**
- **Chicago Northwestern Railroad 11068 Caboose**
- **Chicago Great Western Railroad caboose 606** – A “Eastern” cupola caboose constructed in 1946
- **FtDDM&S Box Car** – The box car was constructed in 1919 and served on the FTDDM&S beginning in 1938
- **6540 Engine**
- **Chicago Great Western Tank Car**

More information can be found at the facility or online at <http://www.scenic-valleyrr.com>

Boone County Historical Society and Museum

The Boone County Historical Society and Museum is located in Boone at the northeast corner of Sixth Street and Story Street.

Kate Shelley Railroad Museum and Park

The Kate Shelley Railroad Museum and Park is located in Moingona, Iowa at 1198 – 232nd Street. The museum does not have specific hours of operation. There is no admission fee for the museum. The facility honors 15-year old Kate Shelley's heroic actions in 1881 when she saved a passenger train from disaster. The facility is owned by the Boone County Historical Society.

Seven Oaks

Seven Oaks is a multi-recreational facility located off US Highway 30 between Boone and Ogden. The facility offers several types of seasonal recreational opportunities for the family. These recreational opportunities include:

- Snow tubing
- Skiing
- Snowboarding
- Canoeing, kayaking, and river tubing
- Moto X courses
- Mountain bike courses
- Two paintball courses
- Camping

Besides the activities listed above, the park area has facilities for several types of occasions including a lodge. In addition, the snowboarding facilities are host to two United States of America Snowboarding Association snowboard competitions.

More information can be found at the facility or online at <http://www.sevenoaksrec.com>

Iowa Arboretum

The Iowa Arboretum is located on 378 acres in Boone County. The arboretum contains hundreds of species of trees, shrubs, and flowers. The facility contains the “Library Trail” that allows the user the opportunity to experience 19 different plant collections, plant groupings with similar uses. The preserve offers woodland trails with scenic overlooks, deep ravines, and streams. The Iowa Arboretum is owned and operated by a private non-profit corporation. The arboretum was established in 1966 from a 40-acre parcel.

Mamie Doud Eisenhower Birthplace

The Mamie Doud Eisenhower Birthplace is located in Boone at 709 Carroll Street. Mamie Doud Eisenhower was the wife of President Dwight D. Eisenhower. The house has been converted to a museum. The museum contains numerous pieces of historic information and memorabilia from her life and the life of the former president. The house is owned by the Boone County Historical Society.

Recreation in Des Moines Area

Iowa State Fair Campgrounds

The State Fair Campgrounds are filled with century-old trees, woodland flora, and small wildlife. More than 160 acres are home to thousands of campsites, part of the historic Iowa State Fairgrounds' versatile complex of permanent buildings and exhibit facilities. Camping facilities include more than 1,800 sites with water and electrical hookups, hundreds more without, and nearly 600 sites with sewer. There are four large bathhouses with showers, toilets and sinks. New office and bathhouse facilities were constructed in 2002. Three dumping stations provide convenient waste disposal for RVs and trailers. A brand new safe shelter was completed in 2003. (www.iowastatefair.com)

Adventureland Amusement Park

Adventureland Amusement Park is located in Altoona, the northeastern part of the Des Moines Metropolitan Area. Adventureland Park, Adventureland Inn, and Adventureland Campground all make up this resort complex. The Park

contains over 100 rides, shows, and attractions, including roller coasters and thrill rides. Adventureland presents a full array of shows in the park from live music to magic to song and dance. (www.adventureland-usa.com)

Des Moines Botanical Center

The Des Moines Botanical Center is a popular cultural attraction within the state of Iowa. The center provides educational, recreational, and community resources to thousands. Its goal is to provide botanical displays and educational services for the people of Iowa. It is located on 14 acres along the east bank of the Des Moines River, close to downtown Des Moines.

The botanical center is owned by the City of Des Moines and operated under the Des Moines Water Works Department. Support for the Des Moines Botanical Center comes from both public and private dollars, including tax revenues from the City of Des Moines and other surrounding communities. In addition, revenues are received from memorials, contributions, grants, membership fees, and fundraising events by the Friends of the Botanical Center. The Des Moines Botanical Center is a member of the American Association of Botanical Gardens and Arboreta.

(www.botanicalcenter.com)

Professional/Semi-Professional Athletics

The Des Moines area has four professional/semi-professional athletic organizations. They include:

- Des Moines Buccaneers Hockey
- Des Moines Menace Soccer
- Iowa Cubs Baseball
- Iowa Stars Hockey

Prairie Meadows

Prairie Meadows has been a part of central Iowa since 1989. According to the Prairie Meadows website, the mission of Prairie Meadows is to promote economic development, agriculture, jobs, tourism, and entertainment.

The facility includes a 1,500 slot machine casino open 24-hours, seasonal live Thoroughbred, Quarter Horse and Harness racing from April – November (including daily simulcast horse and greyhound wagering). The Track Apron Stage hosts national headliners who perform throughout the year. (www.prairiemeadows.com)

Blank Park Zoo

Blank Park Zoo is located in south Des Moines. The facility is open year-round. During the months of May-September the zoo is open daily from 10 am-5 pm. During the months of October through April both the indoor and outdoor exhibits are open daily from 10:00 am to 4:00 pm. Hours are subject to weather conditions. In addition, the zoo is closed for Thanksgiving, Christmas, and New Year's Day. (www.blankparkzoo.com)

State of Iowa Historical Building

The Iowa Historical Building houses several functions. One of those functions is the historical museum. The facility is located in downtown Des Moines at 600 East Locust. The facility is open Tuesday through Saturday from 9:30 a.m. to 4:30 p.m.; Sunday noon to 4:30 p.m. and Monday 9:00 a.m. to 4:30 p.m. during June, July and August. The building is closed on Monday, New Year's Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

In addition to the museum, the building also houses the historical library and archives, historic preservation offices, administrative offices of the Department of Cultural Affairs, the State Historical Society of Iowa, the Historical Foundation, and the Iowa Arts Council. (www.iowahistory.org)

EDUCATIONAL FACILITIES

There are 13 school districts that serve the residents of Boone County. Of the 13, three districts only have elementary schools. The three are Grand, Stratford and United. However, these districts are affiliated with larger districts containing middle school and high school facilities.

Figure 3 shows the school district boundaries. Thirteen school districts are located either entirely or partly in Boone County. The ability and opportunity for parents to provide their children with a quality education within a close proximity has a major impact where families locate. Areas experiencing growth must also plan for an expanding school system. Specific information pertaining to the various school districts is given below.

TABLE 36: BOONE COUNTY SCHOOLS BY SCHOOL DISTRICT

School District	District #	Elementary	Middle School	High School	Affiliated District
Ballard	0472	East, West Schools	Ballard Jr. High	Ballard Senior High School	None
Boone	0729	Bryant, Franklin, Garfield, Lincoln, Lowell, Page	None	Boone Jr. / Sr. High School	None
East Greene	1967	Rippey	None	Grand Junction High School	None
Gilbert	2466	Gilbert Elementary School	None	Gilbert Jr. / Sr. High School	None
Grand	2570	Grand Elementary School	None	None	Southeast Webster
Madrid	3942	Madrid Elementary School	Madrid Jr. High School	Madrid High School	None
Ogden	4878	Howe Elementary School	North Middle School	Ogden High School	None
Perry	5184	Perry Elementary School	Perry Middle School	Perry High School	None
Roland-Story	5643	Roland-Story Elementary School	Roland-Story Middle School	Roland-Story High School	None
South Hamilton	6095	South Hamilton Elementary	None	South Hamilton Middle/High School	None
Stratford	6246	Stratford Elementary School	None	None	Webster City
United	6561	United Elementary School	None	Non	Boone
Woodward-Granger	7110	Woodward-Granger Elementary School	Woodward-Granger Middle School	Woodward-Granger High School	None

Source: Iowa State University Study, 2002 and Iowa Department of Education

The enrollments are shown in Table 36. At present, most of the districts are indicating small amounts of growth; however, Stratford has experienced a severe decline in student numbers. In addition, Gilbert, Ogden, Perry, Roland-Story, and Grand Community districts are all growing at a faster rate than the rest of the county.

Parochial Schools

Besides the education provided to residents of Boone County via the public school system, the residents also have the availability of parochial (non-public) education systems. Both systems are religion-based schools. The parochial districts in Boone County are Sacred Heart School and Trinity Lutheran School.

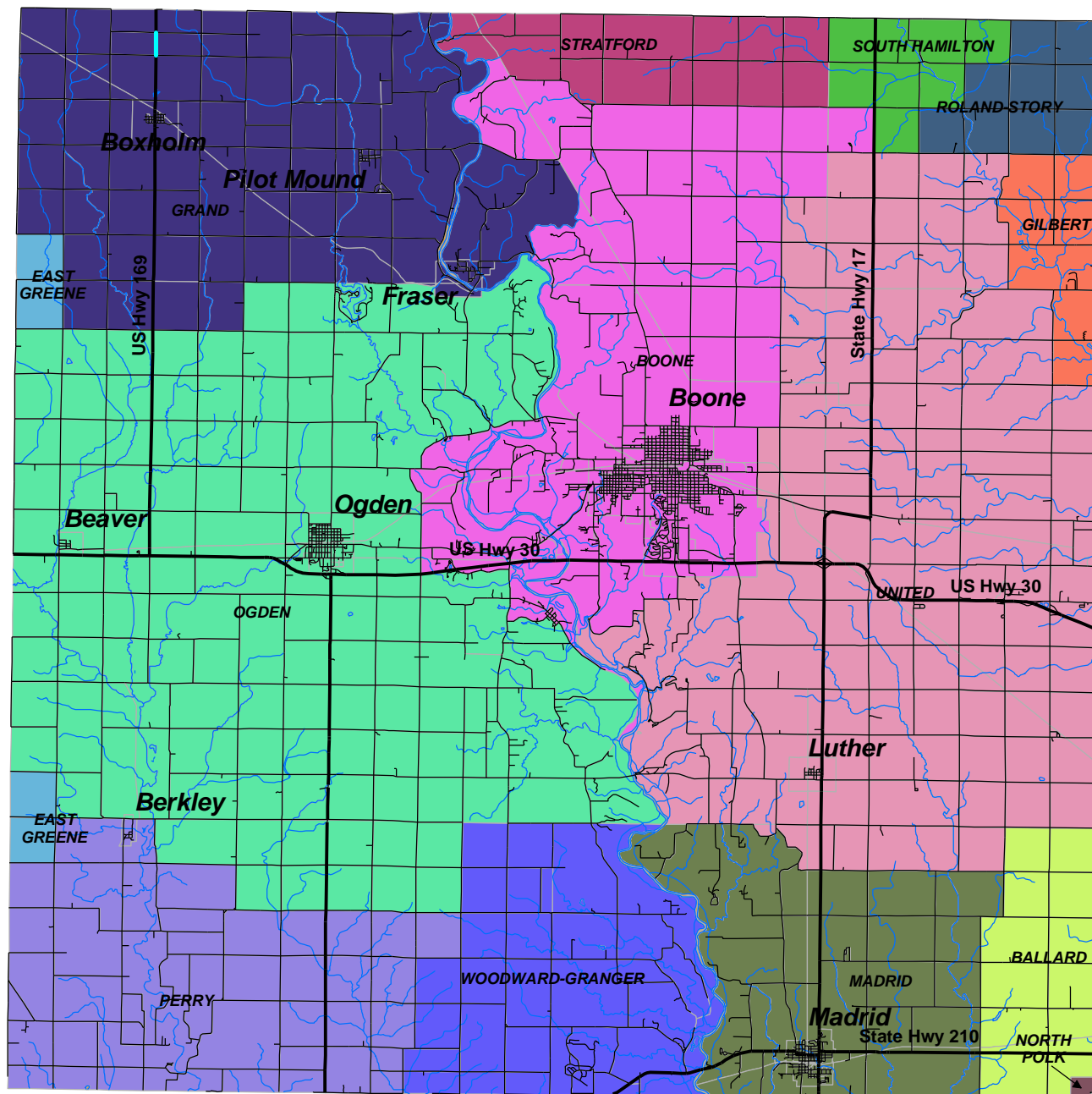


Figure 3: School Districts
Boone County, Iowa



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Prepared By: JEO Consulting Group, Inc.
Soils Data: Soils Survey Geographic (SSURGO) Data/USDA - Natural Resources Conservation Service
GIS Process: ArcView 9.0

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CREATED BY: J.J. JUL 2008

TABLE 37: SCHOOL DISTRICT TOTAL ENROLLMENTS AND PERCENT CHANGE

	1990-1991	2000-2001	% Change	Projected
	Total	Total	From	Enrollments
SCHOOL DISTRICTS	Enrollment	Enrollment	1990 to 2000	2006
Ballard Community School District	1,188	1,291	9%	1,381
Boone Community School District	2,299	2,297	0%	2,295
East Greene Community School District	376	449	19%	432
Gilbert Community School District	632	947	50%	1,101
Grand Community School District	101	128	27%	130
Madrid Community School District	605	596	-1%	573
Ogden Community School District	650	796	22%	873
Perry Community School District	1,546	1,810	17%	1,795
Roland-Story Community School District	1,008	1,169	16%	1,184
South Hamilton School District	760	749	-1%	740
Stratford Community School District	205	114	-44%	132
United Community School District	360	385	7%	385
Woodward-Granger School District	623	633	2%	620

Source: Iowa State University Study, 2002

Post Secondary Schools

There are several post secondary institutions that serve the Boone County area. The following are some of the main facilities:

- Iowa State University
- Drake University
- Grand View College
- Central College
- Simpson College
- Faith Baptist Bible College
- Des Moines Area Community College
- Iowa Valley Community College
- Northern Iowa Area Community College
- University of Osteopathic Medicine (Des Moines University)
- American Institute of Business
- Vatterott College
- Mercy College of Health Sciences
- Hamilton College
- Marshalltown Community College

FIRE AND POLICE PROTECTION

Fire and Rescue

Fire and emergency medical services are also provided in the county. The City of Boone is the only community in the county that has paid fire fighters, while the other communities, Ogden, Boxholm, Madrid, Pilot Mound, and Woodward all consist of volunteer forces. Many small towns in Iowa are serviced by volunteer fire departments. These volunteer fire departments respond to emergencies within rural portions of the county. A portion of the Stratford, Story City, Kelley, Polk City, and Rippey Fire and Rescue Districts also extends into Boone County. The Fire and Rescue Districts are shown in Figure 4.

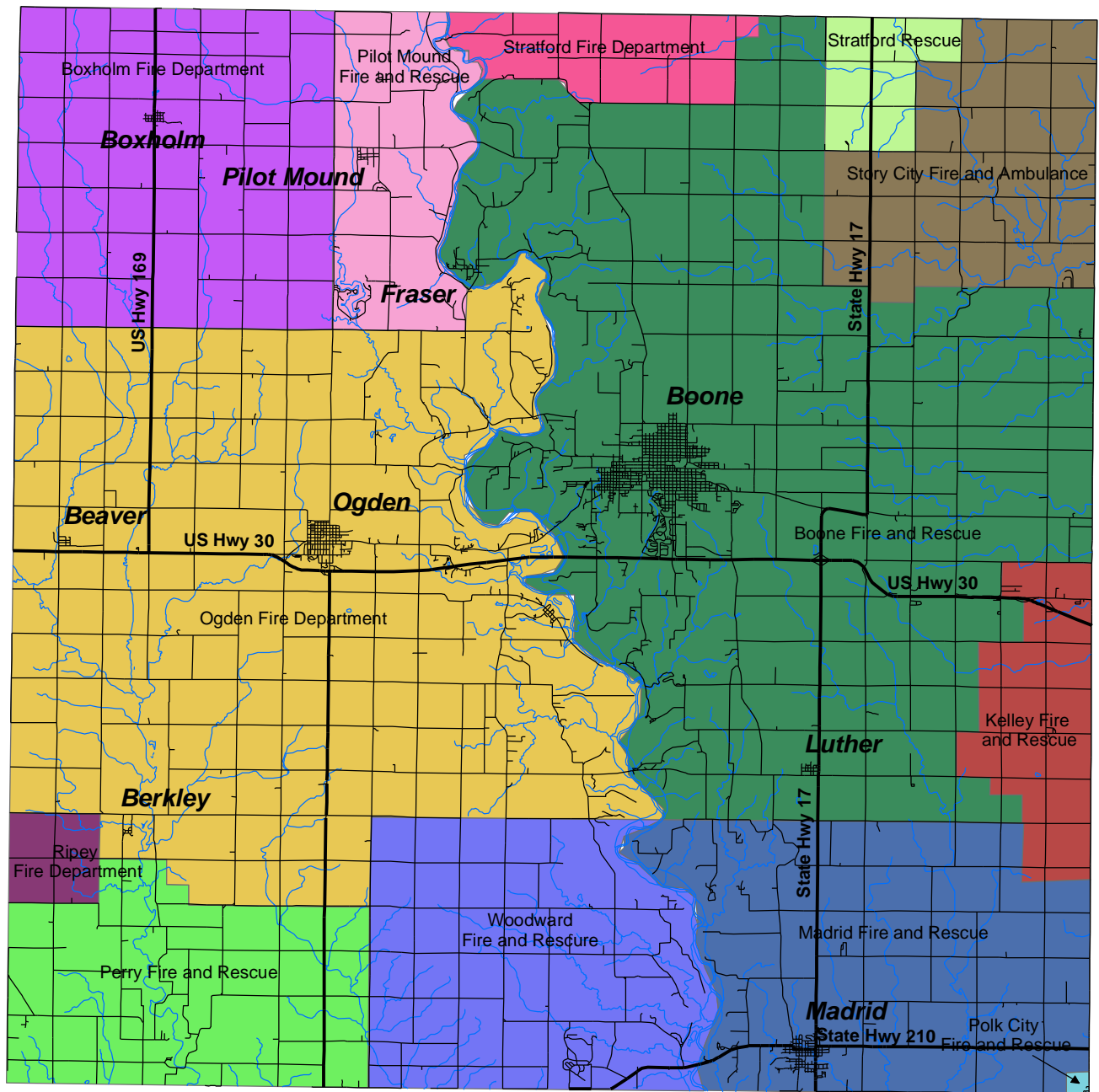


Figure 4: Fire District Map
Boone County, Iowa

Department	Ogden Fire Department	Story City Fire and Ambulance
Boone Fire and Rescue	Perry Fire and Rescue	Stratford Fire Department
Boxholm Fire Department	Pilot Mound Fire and Rescue	Stratford Rescue
Kelley Fire and Rescue	Polk City Fire and Rescue	Woodward Fire and Rescue
Madrid Fire and Rescue	Ripley Fire Department	

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Prepared By: JEO Consulting Group, Inc.
Scale: Data: State Survey Geographic (SRS/2000) Data: USDA - National Resources Conservation Service
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LAW ENFORCEMENT

Law enforcement in Boone County is the responsibility of the Boone County Sheriff. The office of the Boone County Sheriff is located at 1019 West Mamie Eisenhower Avenue in the city of Boone. The County also has a Corrections Facility located across the street from the courthouse.

Boone County has a number of facilities to serve its residents. Table 38 identifies the number of sworn officers serving Boone County and the neighboring counties. The years are 2000 through 2003, per the available data through the Iowa Uniform Crime Report. The number of sworn officers is then converted to officers per 1,000 people; this conversion is done in order to better compare counties with different populations. The proportionate data are also present as a means to compare, but there are not any hard standards that need to be followed.

TABLE 38: SWORN OFFICERS, BOONE AND SURROUNDING COUNTIES, 2002 - 2007

County	2002		2003/2004		2005/2006		2007	
	Sworn Officers	Officers per 1,000	Sworn Officers	Officers per 1,000	Sworn Officers	Officers per 1,000	Sworn Officers	Officers per 1,000
Boone	10	0.38	10	0.38	10	0.38	11	0.42
Dallas	16	0.39	16	0.37	18	0.40	21	0.45
Greene	7	0.68	7	0.69	7	0.69	7	0.70
Polk	181	0.48	181	0.48	182	0.47	184	0.47
Story	33	0.41	33	0.41	33	0.41	33	0.41
Webster	15	0.37	15	0.37	16	0.40	18	0.45

Source: Iowa Uniform Crime Report, US Census 2000 population and 2001-2003 population estimates



Boone County Correctional Center

The data indicate Boone County has been steady in the number of officers employed, with a slight increase between 2001 and 2002. These indicate that in 2000 and 2001 there were nine sworn officers; then, in 2002 and 2003 the number increased to 10 sworn officers. As stated, these are only sworn officers and not total employees.

In 2000 and 2001, the number of officers per 1,000 people was 0.34; while this increased to 0.38 for 2002 and 2003.

The county with the largest proportion in 2003 was Greene County; however, Greene County during this period added a total of one officer and actually lost population based upon the population estimates. Boone County has one of the lowest proportions in these comparisons; however, some of this can be attributed to the fact that the cities of Boone, Madrid, and Ogden have their own police forces. These two municipalities basically have jurisdiction over 15,000 people in the county. Therefore, the county has primary jurisdiction over a much smaller share of the population. Besides the rural residents of Boone County, the Sheriff's Department has 28E agreements in place to patrol all of the communities in Boone County, except, Boone, Ogden, and Madrid. It is much more cost effective and efficient for the Sheriff's Department to patrol these communities compared to each community having their own police department.

TABLE 39: SWORN OFFICERS, OTHER BOONE COUNTY LAW ENFORCEMENT, 2000 - 2003

City Agency	2000		2001		2002		2003	
	Sworn Officers	Officers per 1,000	Sworn Officers	Officers per 1,000	Sworn Officers	Officers per 1,000	Sworn Officers	Officers per 1,000
Boone PD	15	1.17	16	1.26	17	1.33	17	1.33
Ogden PD	3	1.48	3	1.45	3	1.48	3	1.49
Madrid PD	NA	NA	NA	NA	NA	NA	NA	NA

Source: Iowa Uniform Crime Report, 2000-2003

Table 39 is similar to Table 38 but the data are concerned only with the number of sworn officers in the cities of Boone and Ogden. *Madrid, IA currently has five full-time officers and three-reserve officers, however, there is no data listed in the 2003 Iowa Uniform Crime Report.* The same proportional comparison was completed for the municipalities. These departments aid in lessening the demand placed on the Sheriff's Department and add to the availability of trained officers in the county as a whole.

County Buildings

Boone County Courthouse (pictured to the right) is located at 201 State Street in Boone. This facility houses the Boone County Auditor, County Court, Board of Supervisors, County Assessor, County Attorney, Public Defender, Recorder of Deeds, County Treasurer, Planning and Development (including Building Inspections, GIS, and Sanitarian), Retired Senior Volunteer Programs, and County Engineer.



Boone County Courthouse

Fairgrounds

The Boone County Fairgrounds are located in Boone on the eastern edge of the community. The fairgrounds are host to the annual County Fair.

Central Iowa Expo

The Central Iowa Expo is currently being developed on a 600-acre tract at the intersection of US Highway 30 and Iowa Highway 17 and will be host to the Farm Progress Show every other year. This long-term facility will be the largest outdoor farm show in the United States starting in 2008. While the facility if not being used for the Farm Progress Show it will be used for other activities.

County Historical Sites and Buildings

Within Boone County there are various places of historical significance. They are listed below in Table 40.

Department of Human Services

The Department of Humans Services (DHS) building is located at 900 West 3rd Street. This building houses both DHS and the veteran's affairs.

TABLE 40: NATIONAL REGISTER OF HISTORIC PLACES, BOONE COUNTY

Registered Historic Site	Location	City	Date placed on register
Barkley, Alonzo J. and Flora House	326 Boone Street	Boone	July 21, 1995
Beaver Creek Bridge	210th Street over Beaver Creek	Ogden vicinity	June 25, 1998
Big Creek Bridge	2110 300th Street over Big Creek	Madrid vicinity	June 25, 1998
Big Creek Bridge 2	2130 320th Street over Big Creek	Madrid vicinity	June 25, 1998
Boone Bridge	Old US 30 over Des Moines River	Boone vicinity	June 25, 1998
Boone Bridge 2	1000 200th Street over Des Moines River	Boone vicinity	June 25, 1998
Boone County Courthouse	N. State and W. 2nd Streets	Boone	July 2, 1981
Viaduct	W of Boone	Boone	November 17, 1978
Cassel, Carl and Ulrika Dalander House	415 W. 2nd Street	Madrid	April 12, 1982
Champlin Memorial Masonic Temple	602 Story Street	Boone	December 20, 1990
Ericson Public Library	702 Greene Street	Boone	May 23, 1983
First National Bank	8th and Story Streets	Boone	June 23, 1989
Herman, John H. House	711 S. Story Street	Boone	June 28, 1989
Perrigo-Holmes House	721 Carroll Street	Boone	August 8, 1994
Riekenberg, J.H. House	310 N. Tama Street	Boone	April 11, 1988
Squaw Creek Bridge	120th Street and V Avenue over Squaw Creek	Ridgeport vicinity	June 25, 1998
Squaw Creek Bridge 2	110th Street and V Avenue over Squaw Creek	Ridgeport vicinity	June 25, 1998
Stoll Building Works	824 Allen Street	Boone	May 2, 1997

Source: National Register of Historic Places, National Park Service, 2004

Boone County Historic Center located at 602 Story Street in Boone. The center houses:

- Displays,
- Dioramas,
- Collections preserving Boone County's history,
- Kate Shelley items,
- Coal mining items, and
- Military and natural history

COMMUNICATION FACILITIES

Telephone Services

There are multiple telephone providers in Boone County for both local and long distance service. One of particular interest is the Ogden Telephone Company, which is an independent telephone provider located in the City of Ogden.

Cellular Providers

The mobile phone providers in Boone County include US Cellular, Verizon, Sprint, Nextel, and Cingular.

Internet Providers

There are several Internet providers in Boone County including:

Qwest	Galaxylynx	Bentsinger Consulting LLC	Heartland technology
OpenCom	Vistastorm	Colo Telephone Co.	Solutions
PeoplePC	Parie Inet	Cramer Development	ICS
MSN	Hughsnet	Cylosoft	Internet Consulting Services
AOL	Earthlink	Dex Media	MCLEODUSA
Iowa Telecom	Wildblue	Global-Reach Internet	MediaCom Online
Netins	A-Tech Group	Production	Midiowa Net
Mediacom	ASPi Solutions Inc.		

Radio

There are several radio stations in the Boone County area that provide music, entertainment, and information to County residents. Among these radio stations are:

WOI 640 AM	KDFR 91.3 FM	KSTZ 102.5 FM	KRNT 1350 AM
KPSZ 940 AM	KJY 92.5 FM	KAZR 103.3 FM	KXLQ 1490 AM
WHO 1040 AM	KIOA 93.3 FM	KLTI 104.1 FM	KBIG 740 AM
KWKY 1150 AM	KKEX 94.5 FM	KCCQ 105.1 FM	KWBG 1590 AM
KXNO 1460 AM	KGGO 94.9 FM	KVJZ 106.3 FM	
KDPS 88.2 FM	KRKQ 98.3 FM	KJJC 106.9 FM	
KWDM 88.7 FM	KZZO 99.5 FM	KKDM 107.5 FM	
WOI-FM 90.1	KMXD 100.3 FM	KCBC 1390 AM	

Television

Boone County residents are served by several regional television stations, including:

- WOI-TV Channel 5 ABC
- KCCI Channel 8 CBS
- KDIN Channel 11 Iowa Public Television PBS
- WHO-TV Channel 13 NBC
- KDSM Channel 17 Fox
- KPWB Channel 23

Cable Television Providers

Mediacom provides cable television service to residents of Boone County.

Newspapers

There are various newspapers serving the residents of Boone County. Listed below are newspapers in circulation in or near Boone County:

- Des Moines Register
- Ames Tribune
- Fort Dodge Messenger
- Madrid Register
- Ogden Reporter
- Boone News Republican
- Nevada Journal
- Story City Herald
- Tri county Times
- Dayton Review
- Perry Chief
- Ames Daily Tribune

PUBLIC UTILITIES

Utility services, including power, water, telephone, and waste disposal, are essential factors for the development of residential, commercial, and industrial areas. One of Boone County's goals should be to provide adequate services to county residents. The following identifies and discusses certain utilities found in Boone County. These sections have been edited from the Iowa State plan completed during the 2001-2002 academic year.

Electrical Service

Boone County is served by two electrical service providers as well as municipal systems. The service area for these two utilities is determined by the Iowa Utilities Board. The two companies are Midland Power Cooperative and Alliant Energy (formally Iowa Electric Services).

Midland Power Cooperative, based in Jefferson, Iowa, purchases power from Central Iowa Power Company (CIPCO) and Corn Belt Power Cooperative. Their service area is throughout Boone County. Midland is a member-owned cooperative with about 2,800 member accounts in Boone County. Due to the utility being a member-owned utility, improvements on the system tend to be driven by member demands.

Alliant Energy is a private corporate supplier of electricity in Boone County. The company's service area includes all of the communities in Boone County, except Ogden. Currently, the company has approximately 9,200 customers in the county, including natural gas customers. Alliant distributes power, to the area, that has been generated at its plants in Des Moines and Cedar Rapids. Company officials based in Cedar Rapids determine any improvements that are or will be needed to the system.

The City of Ogden owns and operates its own municipal electrical system. In 2001, the city generated or purchased approximately 13.5 million kilowatt-hours (kWh). Their distribution was approximately 12.7 million kWh to 1,116 customers in and around incorporated area.

The Story City Municipal Utility also provides electrical services to a small portion of northeastern Boone County.

Natural Gas

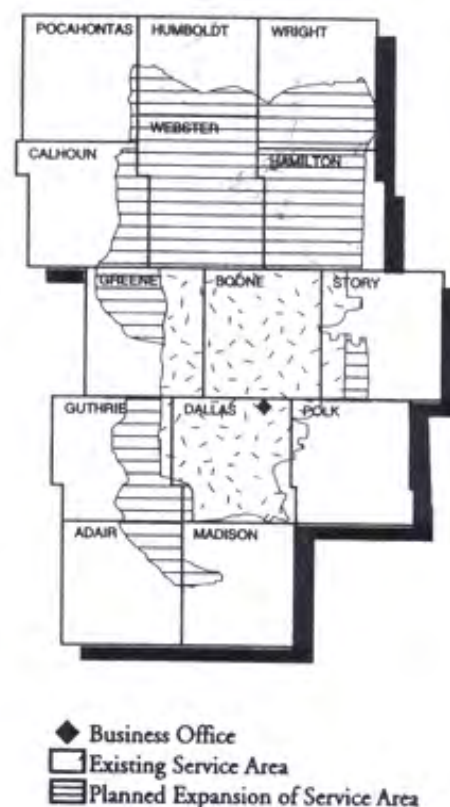
There are three main natural gas companies that have pipelines in Boone County. These companies include Alliant Energy, Northern Natural Gas, and Aquila.

Rural Water Systems

Xenia Rural Water District

The primary rural water provider in Boone County is Xenia Rural Water District. The Xenia Rural Water District is a non-profit governmental organization led by an elected board of directors. The district was incorporated in 1977. Xenia serves a large portion of central Iowa, including 75 percent of the potential customers in Boone County. The remaining residents are members of small water cooperatives or own their own wells. The following map identifies the Xenia Rural Water District's service area.

The District serves approximately 2,300 customers in the rural areas of Boone County (including the communities of Luther, Fraser, Beaver, and



Xenia Rural Water District

Boxholm).

The system is comprised of water lines ranging from two inches to 12 inches in diameter. The smallest lines are service lines extending directly to the customers. Xenia has end valves of various sizes throughout the county that could potentially be used by fire departments in emergency situations.

Xenia's primary source of water comes from its main plant located south of the City of Woodward in northern Dallas County. In addition, the company purchases water from Ames, Boone, Madrid, and Des Moines. These sources combine to give Xenia a total supply capacity of approximately 12.7 million gallons per day (MGD) system-wide.

Other sources

Boone County has a number of additional water cooperatives. These are generally loose associations of members who purchase water collectively from other systems. These cooperatives include:

- Coal Valley Water District -- 100 people in Boone County;
- Benefit Water District # 2 -- 95 people;
- Logansport Water District #1 -- 150 people, and
- Pilot Mound Water System -- 200 customers (EPA, 2001).

Municipal Water Systems

The Ogden Municipal Utilities, Boone Water Works, and Madrid Water Department are the three main municipal water providers in the county.

Madrid's water system was built in 1994 and was designed with the capacity to produce and distribute up to 600,000 gallons of water per day. The system is at approximately 50 percent of capacity; daily usage ranges from 285,000 to 350,000 gallons of water per day. There are approximately 920 residential and 40 commercial customers online. The current service area is restricted to the corporate limits of Madrid, with the exception of a small number of developments outside the corporate boundary.

The City of Ogden's water system has the capability of producing and distributing approximately 676,000 gallons per day. The system is currently operating at approximately 50 percent of capacity. The system has approximately 1,100 water meters connected to its system, thus supplying water to approximately 1,900 people. In addition, the system also provides service to a small number of residents outside of the city's limits. Ogden also sells water to some of the smaller water district cooperatives in the county.

The City of Boone's water treatment plant and pumping station were constructed in 1999. The system has the capability to supply 6.6 million gallons of water-per-day. However, the capacity of the well field is 4.3 million gallons-per-day. There are plans to add a new well to the system. The new well will increase the capacity by approximately half million gallons of water-per-day. The plant treats approximately 2 million gallons of water-per-day. The system has over 5,000 meters connected. The water system is limited to about 120 customers outside of the corporate limits, excluding water distributed to the Xenia Rural Water District.

Sanitary Sewer

Wastewater services in the rural areas are generally in the form of septic tanks on individual properties. Some communities are exploring the option of having Xenia Rural Water District manage their wastewater.

Solid Waste Disposal Facilities

Two landfills currently operate in Boone County, the North Dallas Landfill and the Boone County Landfill.

The North Dallas Landfill is located in the southwest corner of Boone County. The facility is a private landfill owned by Reinhart Construction of Des Moines. The facility is managed through a 28E intergovernmental agreement with the North Dallas Regional Solid Waste Commission. This commission is composed of member communities using the landfill. The commission also manages the waste reduction plans. The service area of this landfill covers certain portions on neighboring Dallas County. The landfill does not accept any waste from Boone County.

The primary disposal facility for residents of Boone County is the Boone County Landfill. The landfill is located off U.S. Highway 30, west of the City of Boone. The landfill became operational in 1970 and has been operated by Boone County since 1990. The facility also accepts waste from Greene County (excluding the City of Jefferson), two communities in Dallas County (Bouton and Granger), and three communities in Calhoun County. The facility also acts as the secondary waste facility for the City of Ames. The landfill accepts an average of 30 percent of Ames' solid waste. The current annual disposal is between 43 and 45 thousand tons. The capacity of the landfill was expanded five years ago. This expansion has allowed the facility to serve the solid waste needs of the area for approximately another forty years. Finally, Boone County coordinates solid waste management plans for both Boone and Greene Counties, as well as the coordination for the recycling of certain materials. Recycling efforts are located at the landfill location.

HEALTH FACILITIES

Health care facilities are critical to the quality of life and safety of a county and its residents. The facilities include hospitals, clinics, and elderly care facilities. These facilities need to be located in key areas of a county in order to provide efficient and cost effective health care.

Medical care and services are of particular importance to the large number of elderly residents in the county. There are three medical clinics in the county, as well as the Boone County Hospital. Additional medical facilities can be found in the larger population centers

of Story County (Ames) and Polk County (Des Moines); these counties border Boone County to the east and south, respectively. The facilities in Story and Polk Counties have excellent medical facilities available for medical conditions that require more than what the Boone County Hospital is equipped to handle.



Boone County Hospital

Hospitals

Boone County Hospital, located in Boone, serves the entire county with a fully staffed hospital. The facility is capable of handling many different types of care. Some of the services the facility is equipped to handle include 24-hour ambulance care, cardiopulmonary rehabilitation, ICU, obstetrics, specialty physicians, and a laboratory. The hospital is able to handle most of the health care situations occurring in the county.

Medical Clinics

Boone County has three primary medical clinics serving the residents. These clinics are the Boone and Ogden Family Medicine and the Sandhouse Clinic in Madrid. The Ogden facility is staffed by only one physician. However, the Boone clinic has three general practice physicians and two surgeons on staff. The staffing of the Boone clinic allows the clinic to deal with more diverse health issues. The third facility is the Sandhouse Clinic in Madrid. In previous years, this clinic has had difficulty keeping a practicing physician on staff. As a result of the staffing problems, the services offered at the clinic have become limited. This has forced the residents to travel to nearby clinics to seek more specialized medical care. Traditionally, a physician from Dallas County has come to the clinic on a regular basis to take care of any basic family practice patients.

Nursing Home Facilities

Nursing home facilities can range from fully staffed assisted-living arrangements to an apartment-like setting staffed by few persons, who may have only basic medical knowledge. These facilities are designed to accommodate persons in various health conditions in a setting that provides as much independence as possible to the resident. There are long-term care facilities in Boone County. Additionally, many long-term care facilities are located in nearby Story and Polk Counties. Area nursing homes include the following:

- Eastern Star Masonic Home, Boone
- Evangelical Free Church Home, Boone
- Ogden Manor, Ogden
- Madrid Home, Madrid
- Ballard Creek Community Home, Madrid
- Woodward Resource Center, Woodward
- Grandview Care Center, Dayton
- Stratford Care Center, Stratford

ENVIRONMENT, NATURAL AND MAN-MADE RESOURCES

INTRODUCTION

In order to formulate a truly valid and “comprehensive” plan for the future development of Boone County, it is necessary to evaluate the environment and man-made conditions which currently exist and determine the impacts these factors may have on limiting future land uses in the county. This component of the Boone County Comprehensive Development Plan provides a general summary of the environmental and man-made conditions present in the county, and identifies and qualifies the characteristics of each which will directly or indirectly impact future land uses in the county.

Nearly all of the data in this section are available through other sources. The intent of this plan is to bring critical information from those sources and include it within the plan. The inclusion of these data provides the Zoning Commission, County Board of Supervisors, and County staff with key tools at their fingertips. In some cases the data in this plan may require more detail research in order to find specific information. The data included in this section are not an attempt to provide all the pertinent data available.

Natural Environmental Conditions

- Climate and Topography
- Wildlife
- Watersheds (Water Quantity and Quality)
- Wetlands
- Soil Association
- Capability Grouping
- Prime Farmland
- Soil Limitations

Natural Conditions

Climate

(This information was taken from the Boone County Soil Survey by the United States Department of Agriculture – Soil Conservation Service – 1979)

Boone County is cold in winter and hot in summer. There are occasional cool spells in summer. Precipitation in winter frequently occurs as snowstorms. During the summer warm moist air moves in from the south, and precipitation is chiefly showers, which are often heavy. Total annual rainfall is normally adequate for corn, soybeans, and small grains.

In winter the average temperature is 22 degrees F, and the average daily minimum temperature is 13 degrees. The lowest temperature on record, which occurred at Boone on January 13, 1974, is -27 degrees. In summer the average temperature is 72 degrees, and the average daily maximum temperature is 84 degrees. The highest temperature, recorded on July 30, 1974, is 104 degrees.

The total annual precipitation is 33.4 inches. Of the total, 24 inches, or 73 percent, usually falls in April through September, which includes the growing season for most crops. In 2 years out of 10, the rainfall in April through September is less than 20 inches. The heaviest 1-day rainfall during the period of record was 4.09 inches at Boone on June 25, 1968. Thunderstorms occur on about 50 days each year, and most occur in summer.

Average seasonal snowfall is 32 inches. The greatest snow depth at any one time during the period of record was 35 inches. On an average of 25 days, at least 1 inch of snow in on the ground. The number of such days varies greatly from year-to-year.

The average relative humidity in mid-afternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 81 percent. The sun shines 70 percent of the time possible in summer and 50 percent in winter. The prevailing wind is from the northwest. Average wind speed is highest, 13 miles per hour, in April. Tornadoes and severe thunderstorms occur occasionally. These storms are local and brief. They cause scattered damage in narrow belts. Hailstorms occur during the warmer part of the year in irregular patterns and in relatively small areas.

Relief/Topography

(The following information was taken from the Boone County Soil Survey by the United States Department of Agriculture – Soil Conservation Service – 1979)

Boone County's relief or topography ranges from nearly level to very steep. Relief is an important factor in soil formation because it affects drainage, runoff, the height of the water table, and erosion. A difference in topography is the main reason for the different properties of some of the soils in the county.

These terms are used in the following paragraphs and need to be defined:

1. "Soil Horizon" means a layer of soil, approximately parallel to the surface, having distinct characteristics produced by the soil-forming process.
2. "A Horizon" means the mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral matter.
3. "B Horizon" means the mineral horizon below an "A horizon". The "B horizon" also has distinctive characteristics. The combination of the A and B horizons are generally called the solum or true soil.
4. "C Horizon" means the mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties of the A and B horizons.
5. "O Horizon" means an organic layer of fresh and decaying plant residue at the surface of a mineral soil.
6. "R Layer" means consolidated rock beneath the surface.

The thickness and color of the A horizon and the thickness of the solum are related to slope because slope affects erosion and on the amount of water that runs off or percolates through the soil. For example, differences in the thickness and color of the A horizon of Storden, Clarion, and Nicollet soils, which formed in similar parent material, are related to topography. Storden soils are mainly strongly sloping to steep, Clarion soils are mainly gently sloping or moderately sloping, and Nicollet soils are mainly nearly level. As the slope decreases, the thickness of the A horizon increases, and the color darkens. Likewise, the thickness of the solum increases and depth to carbonates increases from the Storden soils to the Clarion and Nicollet soils. In soils that have a wide range in slope, the depth to carbonates and the thickness of the solum decreases as the slope increases and becomes more complex. In Boone County this pattern is best exemplified by the gently sloping to very steep Hayden soils.

Relief affects the color of the B horizon through its effect on drainage and soil aeration. The subsoil of a soil that has good drainage generally is brown because iron compounds are well distributed throughout the horizon and are oxidized.

On the other hand, if a soil has restricted drainage or poor aeration because of wetness and a high water table, the subsoil is generally grayish and mottled. Canisteo and Okoboji soils are examples of poorly drained and very poorly drained, nearly level and depressional soils in which evidence of wetness is expressed in the soil profile. Clarion soils are well drained and have a brownish B horizon. Nicollet soils are somewhat poorly drained and have a grayish brown B horizon, indicating that they are intermediate in drainage.

Wildlife

(Some of the following information was taken from the Boone County Plan by Iowa State University, 2002)

Boone County is home to a diverse wildlife make up. The wildlife of the county consists of birds, mammals and amphibians. Much of the wildlife present is due to the presence of the Des Moines River and other waterways within Boone County.

Many bird species inhabit the river corridors of Boone County. Some protected species found in Boone County are the Bald Eagle (State Endangered, Federally Threatened), the Least Tern (State Endangered, Federally Endangered), the Piping Plover (State Endangered, Federally Threatened) and the Peregrine Falcon (State Endangered). Bald Eagles are commonly seen in the area during the winter. Many bird species use the river valley during their spring migration. The density and diversity of bird species depends on the vegetative quality and width of the corridor.

Mammals depend upon river corridors too. The combination of water, food and tree cover makes it an optimal habitat. They especially depend on protective tree cover during the winter. Some significant protected species in the area are the Indiana Bat (State Endangered, Federally Endangered), the Bobcat (State Endangered) and the River Otter (State Threatened). There have been a number of recent sightings of Bobcats in Iowa. Most of these have occurred along streams or rivers. In addition, the vegetation cover and the water corridors of the county provide a habitat for deer to live.

There are many different species of amphibians and reptiles that depend heavily on wetland areas. They need these corridors for use as connecting lanes to suitable habitat in other areas. Protected amphibians in the region are the Crawfish Frog and the Mudpuppy. Protected reptiles in the area include the Slender Glass Lizard, the Copperhead, the Western Hognose Snake and the Speckled King Snake. All of these amphibians and reptiles are on the state endangered species list.

Poor vegetation and land fragmentation could negatively affect wildlife diversity in the county. Wildlife diversity will improve if most plants are native and in good condition. The second concern is the presence of small breaks in vegetation cover along the Des Moines River Valley; these can negatively impact certain species that need larger pieces of contiguous land as an environment.

Wetlands

Wetlands are areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods during the year, including during the growing season. Water saturation (hydrology) largely determines the soil development and the types of plant and animal communities living in and on the soil. Wetlands may support both aquatic and terrestrial species. The prolonged presence of water creates conditions that favor the growth of specially adapted plants (hydrophytes) and promote the development of characteristic wetland (hydric) soils. Wetlands vary widely

because of regional and local differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors, including human disturbance. Two general categories of wetlands are recognized: coastal or tidal wetlands and inland or non-tidal wetlands.

Inland wetlands found in Boone County are most common on floodplains along rivers and streams (riparian wetlands), in isolated depressions surrounded by dry land (for example, playas, basins, and "potholes"), along the margins of lakes and ponds, and in other low-lying areas where the groundwater intercepts the soil surface or where precipitation sufficiently saturates the soil (vernal pools and bogs). Inland wetlands include marshes and wet meadows dominated by herbaceous plants, swamps dominated by shrubs, and wooded swamps dominated by trees. Certain types of inland wetlands are common to particular regions of the country:

- wet meadows or wet prairies in the Midwest
- prairie potholes of Iowa

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

The federal government protects wetlands through regulations (like Section 404 of the Clean Water Act), economic incentives and disincentives (for example, tax deductions for selling or donating wetlands to a qualified organization and the "Swampbuster" provisions of the Food Security Act), cooperative programs, and acquisition (for example, establishing national wildlife refuges). Beyond the federal level, a number of states have enacted laws to regulate activities in wetlands, and some counties and towns have adopted local wetlands protection ordinances or have changed the way development is permitted. Few states, however, have laws specifically regulating activities in inland wetlands, although some states and local governments have non-regulatory programs that help protect wetlands.

Partnerships to manage whole watersheds have developed among federal, state, tribal, and local governments; nonprofit organizations; and private landowners. The goal of these partnerships is to implement comprehensive, integrated watershed protection approaches. A watershed approach recognizes the inter-connection of water, land, and wetlands resources and results in more complete solutions that address more of the factors causing wetland degradation.

The government achieves the restoration of former or degraded wetlands under the Clean Water Act Section 404 program as well as through watershed protection initiatives. Together, partners can share limited resources to find the best solutions to protect and restore America's natural resources. While regulation, economic incentives, and acquisition programs are important, they alone cannot protect the majority of our remaining wetlands. Education of the public and efforts in conjunction with states, local governments, and private citizens are helping to protect wetlands and to increase appreciation of the functions and values of wetlands. The rate of wetlands loss has been slowing, but there is still work to be done. Approximately 75 percent of wetlands are privately owned, so individual landowners are critical in protecting these national treasures.

Wetlands play an important role in the ecology of Boone County. Wetlands are home to many species of wildlife, many of which live only in wetland areas. Wetlands also provide an important service to nearby areas by holding and retaining

floodwaters. These waters are then slowly released as surface water, or are used to re-charge groundwater supplies. Wetlands also help regulate stream flows during dry periods.

The U.S. Fish and Wildlife Service (FWS) produce information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats. This information has been compiled and organized into the National Wetlands Inventory (NWI). At the time of this Plan, the FWS has mapped 89% of the lower 48 states. Maps produced by the NWI are available through their website or national office.

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

Boone County experiences each of these three other wetland systems. The wetlands in Boone County are scattered throughout the county and most dominate along the Des Moines River. The following figures depict common ways in which these three systems develop. These figures were produced by the United States Fish and Wildlife Service, and are taken from their 1979 publication entitled "Classification of Wetlands and Deepwater Habitats of the United States." Figures 5, 6, and 7 depict common examples of the riverine, lacustrine, and palustrine wetlands, respectively. Figure 8 shows the occurrence of wetlands in Boone County.

FIGURE 5: RIVERINE WETLAND SYSTEM

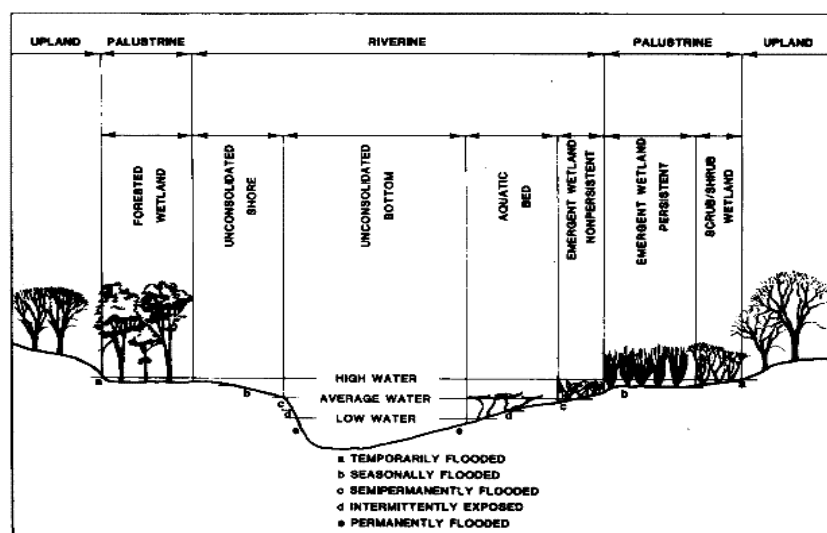
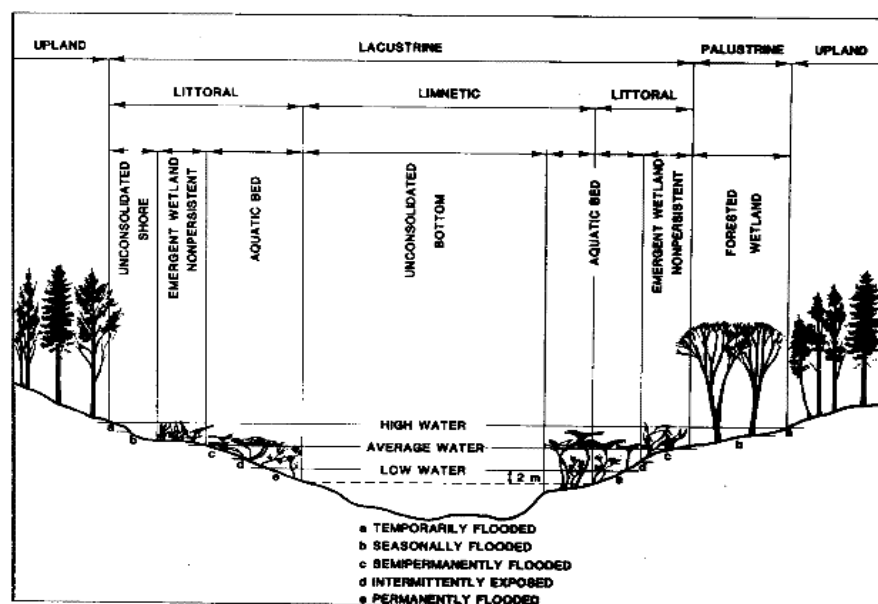


Figure 5 shows the riverine system includes all wetlands that occur in channels, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean derived salts in excess of 0.5%. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water. Therefore, water is usually, but not always, flowing in the riverine system.

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

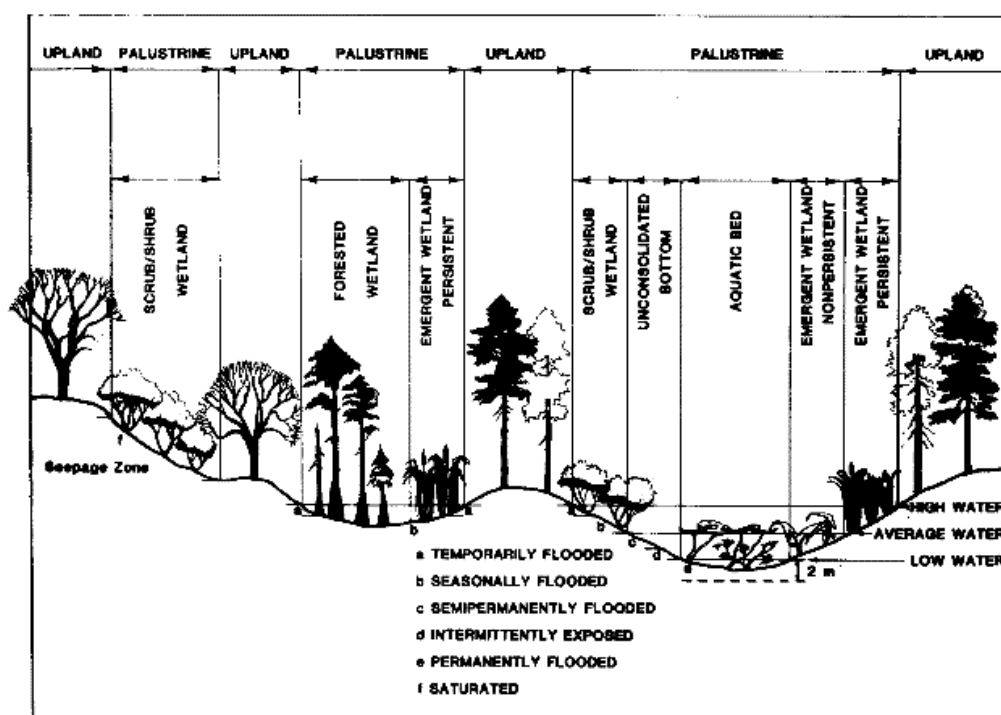
FIGURE 6: LACUSTRINE WETLAND SYSTEM



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

The Lacustrine System includes permanently flooded lakes and reservoirs (e.g. Lake Superior), intermittent lakes (e.g. playa lakes), and tidal lakes with ocean-derived salinities below 0.5% (e.g. Grand lake, Louisiana). Typically, there are extensive areas of deep water and there is considerable wave action. Islands of Palustrine wetlands may lie within the boundaries of the Lacustrine System.

FIGURE 7: PALUSTRINE WETLAND SYSTEM



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

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

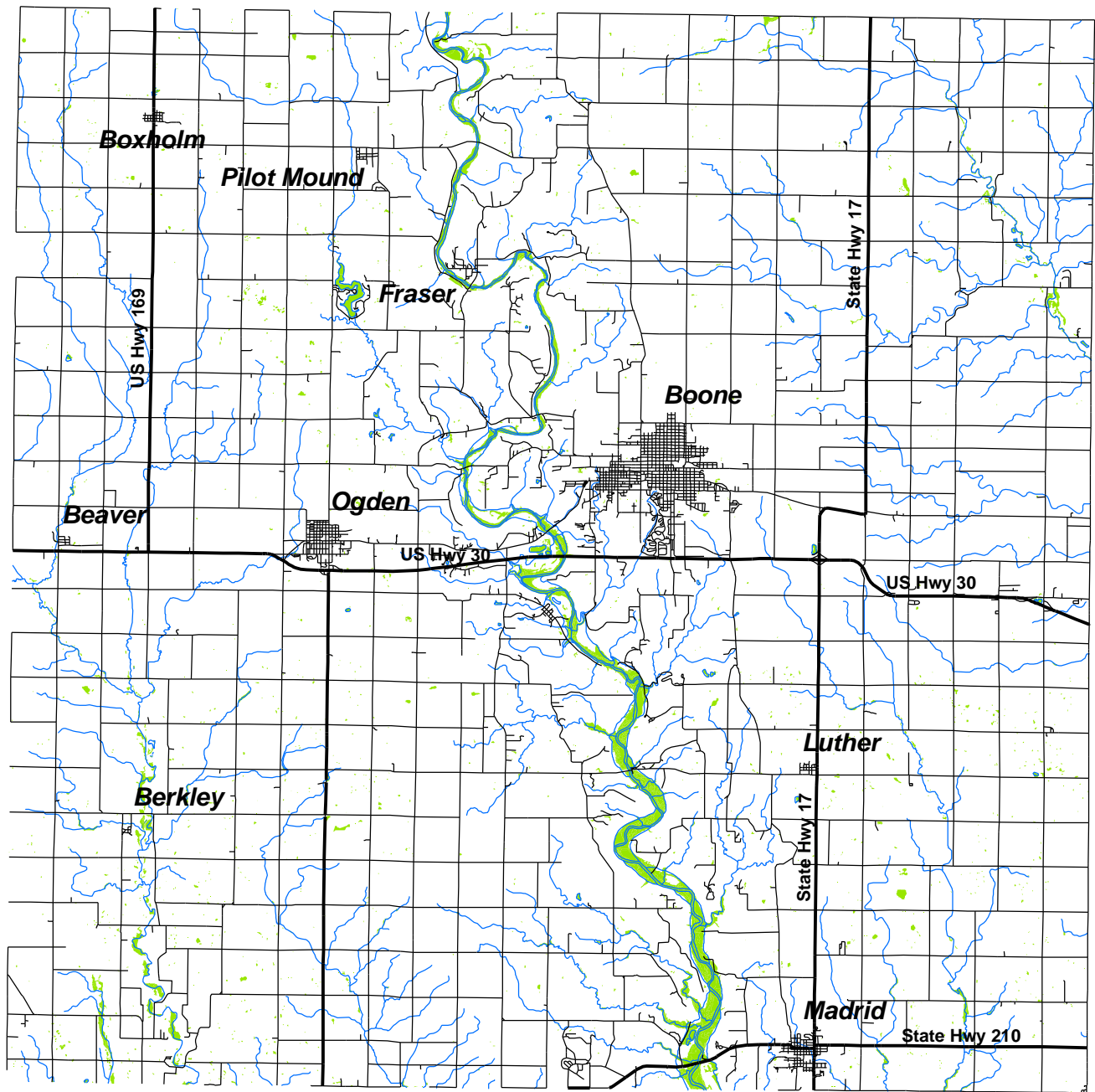


Figure 8: Wetlands

Boone County, Iowa

Wetlands

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Prepared By: JEO Consulting Group, Inc.
Soils Data: Soils Survey Geographic (SSURGO) Data USDA - Natural Resources Conservation Service
GIS Process: ArcView 9.3

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CREATED BY: J.J. JUL 2005

Soil Formation and Classification

Factors of Soil Formation

Soil is produced through an interaction of materials that have been deposited or accumulated by geologic process. The characteristics of the soil at any given point are determined by (1) the physical and mineralogical composition of the parent material; (2) the climate under which the soil material has accumulated and existed since accumulation; (3) the plant and animal life on and in the soil; (4) the relief, or lay of the land; and (5) the length of time the forces of soil development have acted on the soil material.

Climate and vegetation are active factors of soil genesis. They act on the parent material that has accumulated through the weathering of rocks and slowly change it into a natural body with genetically related horizons. The effects of climate and vegetation are conditioned by relief. The parent material also affects the kind of profile that can be formed, and in extreme cases, determines it almost entirely. Finally, time is needed for the changing of the parent material into a soil profile. It may be much or little, but some time is always required for horizon differentiation. Generally, a long time is required for the development of distinct horizons.

The five factors of soil genesis are so closely interrelated in their effects on the soil that few generalizations can be made regarding the effect of any one factor unless conditions are specified for the other four. Many of the processes of soil development are unknown.

Soil Association

The Soil Association data were taken directly from the Boone County Soil Survey by the United States Department of Agriculture – Soil Conservation Service – 1979)

CANISTEO-CLARION-NICOLLET ASSOCIATION

Nearly level to moderately sloping, poorly drained, well drained, and somewhat poorly drained, loamy soils on uplands

This association consists of nearly level to gently rolling soils in swells and swales. Many potholes are scattered throughout the broad level areas. Natural drainage is very poor. The soils in most of the areas are drained by tile and surface inlets. Large drainage ditches have been dug to provide outlets for tile drains.

This association makes up about 78 percent of the county. It is about 29 percent Canisteo soils, 27 percent Clarion soils, 14 percent Nicollet soils, and 30 percent minor soils.

Canisteo soils are nearly level and are on broad upland flats. They are poorly drained. Typically, their surface layer is black calcareous silty clay loam about 8 inches thick. The subsurface layer is black and very dark gray calcareous clay loam about 10 inches thick. The subsoil is about 18 inches thick. In the upper part it is dark gray and olive gray, mottled calcareous loam. The substratum to a depth of about 60 inches is light olive gray, mottled calcareous loam.

Clarion soils are gently and moderately sloping. They are well drained. Typically, their surface layer is black loam about 8 inches thick. The subsurface layer is very dark grayish brown loam about 4 inches thick. The subsoil is dark brown, brown, and yellowish brown loam about 28 inches thick. The substratum to a depth of about 60 inches is light yellowish brown, mottled calcareous loam.

Nicollet soils are very gently sloping. They are somewhat poorly drained. Typically, the surface layer is black loam about 8 inches thick. The subsurface layer is brown loam about 9 inches thick. The subsoil is about 20 inches thick. It is dark grayish brown, mottled loam. The substratum to a depth of about 60 inches is grayish brown and olive gray, mottled loam.

The minor soils in this association are Webster, Okoboji, Harps, and Storden soils. Webster soils are nearly level and are poorly drained. They are mainly in swales and drainage ways that are generally slightly concave. In some areas they are on nearly level flats. Okoboji soils are in closed depressions and are very poorly drained. Harps soils are highly calcareous and are mainly on narrow rims around depressions. Storden soils are on moderately and strongly sloping convex knolls and are well drained.

Corn and soybeans are the principal crops on these intensively cultivated soils. Cash grain farming is the dominant type of farming. The content of organic matter is high to moderate, and the available water capacity of the major soils is high. The main concern of management is important of drainage and control of erosion on the sloping soils.

The major soils in this association are suitable for all crops grown in the county. These soils are poorly suited to urban development. Low soil strength, high shrink swell potential, and a seasonal high water table are major hazards.

HAYDEN-STORDEN ASSOCIATION

Very steep, well drained, loamy soils on uplands

These soils are on uplands along the Des Moines River. The uplands are generally very steep; numerous ravines and gullies cut back into the upland. The contrast in relief between the valley slopes and the narrow drainage ways is a distinctive feature of this association.

This association makes up about 7 percent of the county. About 75 percent of the association is Hayden-Storden loams soil complex, and 25 percent is minor soils.

The Hayden-Storden loams are on the very steep valley slopes. Areas of the Hayden and Storden soils are so intermingled that they were not mapped separately.

Typically, the surface layer of the Hayden soils are very dark grayish brown loam about 12 inches thick. The subsurface layer is dark grayish brown loam about 8 inches thick. The subsoil is brown and yellowish brown clay loam about 12 inches thick. The substratum is yellowish brown, mottled calcareous loam to a depth of 60 inches.

Typically, the surface layer of the Storden soils is brown loam about 6 inches thick. The substratum is yellowish brown loam. Storden soils are calcareous throughout.

The minor soils in this association are Spillville and Buckney soils. These soils are gently sloping and are on narrow bottom lands. They are subject to flooding by the adjacent streams.

In most areas the soils in this association are wooded. Generally they are used for pasture rather than as woodland, but a few small tracts are managed as woodland. The soils have good potential for use as wildlife habitat. The main concern of management is control of water erosion.

The major soils in this association are poorly suited to cultivated crops and to urban development. Slope is the major limitation.

HAYDEN-LESTER-LUTHER ASSOCIATION

Nearly level to moderately sloping, well drained and somewhat poorly drained, loamy soils on uplands

This association consists of soils on rises and in swales. The topography is nearly level to gently rolling. The swales connect with deep gullies extending from the side slopes of the Des Moines River Valley. Some strongly sloping soils are along the drainage ways and gullies that extend into areas of this association.

This association makes up 7 percent of the county. About 35 percent of the association is Hayden soils, 20 percent is Lester soils, and 10 percent is Luther soils. The rest is minor soils.

Hayden soils are on convex rises and narrow ridge tops and are gently and moderately sloping. They are well drained. Typically, their surface layer is very dark grayish brown loam about 2 inches thick. The subsurface layer is dark grayish brown loam about 8 inches thick. The subsoil is yellowish brown clay loam about 32 inches thick. The substratum to a depth of 60 inches is light olive brown calcareous loam.

Lester soils are in convex rises and narrow ridge tops and are gently and moderately sloping. They are well drained. Typically, their surface layer is very dark grayish brown loam about 7 inches thick. The subsoil is dark yellowish brown clay loam about 25 inches thick. The substratum to a depth of 60 inches is mottled brown loam.

Luther soils are in flat to slightly convex areas and are nearly level. They are somewhat poorly drained. Typically, their surface layer is very dark grayish brown loam about 4 inches thick. The subsurface layer is dark grayish brown loam about 10 inches thick. The subsoil is brown clay loam about 20 inches thick. The substratum to a depth of 60 inches is mottled, grayish brown and yellowish brown calcareous loam.

The minor soils in this association are the Le Sueur, Webster, and Dundas soils. Webster and Dundas soils are in swales and low concave areas and are poorly drained. Le Sueur soils are on slightly convex rises and are somewhat poorly drained.

Corn, soybeans, and hay are the principal crops. In a few areas the soils are in permanent pasture or wooded pasture. Some farms are strictly cash-grain, but most also have income from livestock. The content of organic matter is moderate to low, and the available water capacity of the major soils is high. The main concern of management is control of water erosion on the sloping soils and improvements of drainage on the poorly drained soils in the swales.

The major soils in this association are suitable for all crops grown in the county. These soils are suitable for urban development. Medium soil strength, moderate shrink-swell potential, and, in a few places, slope are hazards.

CLARION-ZENOR ASSOCIATION

Gently sloping to strongly sloping, well drained, and somewhat excessively drained, loamy soils on uplands

These soils are on undulating to rolling convex knolls and in knobby outwash areas. They are predominantly gently and moderately sloping. They are steeper along major drainage ways.

This association makes up about 3 percent of the county. About 25 percent of the association is Clarion soils, 25 percent is Zenor soils, and 50 percent is minor soils.

Clarion soils are gently and moderately sloping and are well drained. Typically, their surface layer is black and very dark grayish brown loam about 12 inches thick. The subsoil is brown and yellowish brown loam about 28 inches thick. The substratum to a depth of about 60 inches is light yellowish brown, mottled, calcareous loam.

Zenor soils are gently sloping to strongly sloping and are somewhat excessively drained. They are in knobby outwash areas on uplands. Typically, the surface layer is very dark brown sandy loam about 12 inches thick. The subsoil is dark yellowish brown loam and sandy loam. It is underlain by yellowish brown loamy sand at a depth of about 28 inches.

The minor soils in his association are Storden, Salida, and Coland soils. Storden soils are moderately sloping to steep and are well drained. They are calcareous throughout. These soils are on convex slopes and are adjacent to Zenor and Salida soils. Salida soils are moderately sloping to steep and are excessively drained. They are gravelly throughout. Coland soils are nearly level and are poorly drained. They are on bottom lands along drainage ways.

Corn and soybeans are raised on the less sloping soils. The steeper soils are used for hat and pasture. Raising cash crops and livestock are the main enterprises. The content of organic matter is moderate, and the available water capacity of the major soils is moderate to high. The main concern of management is control of water erosion on the sloping soils.

These soils are suitable for all crops grown in the county. The strongly sloping soils in most areas are eroded, and natural fertility is lower. The soils in this association are suitable for urban development. In some areas slope is a hazard.

COLAND-TALCOT-WADENA ASSOCIATION

Nearly level and gently sloping, poorly drained and well drained, loamy soils on bottom lands and stream benches

This association consists of nearly level to undulating convex rises, swales, and flats. It is on bottom lands, alluvial fans, and stream benches along Beaver Creek.

This association makes up about 3 percent of the county. About 20 percent of the association is Coland soils, 12 percent is Talcot soils, and 10 percent is Wadena soils. The rest is minor soils.

Coland soils, on first bottom lands, are nearly level and are poorly drained. Typically, their surface layer is black clay loam about 9 inches thick. The subsurface layer is black clay loam about 32 inches thick. The substratum to a depth of 60 inches is black clay loam that has mottles.

Talcot soils, on stream benches and terraces, are nearly level and are poorly drained. Typically, their surface layer is black clay loam about 7 inches thick. The subsurface layer is black clay loam about 16 inches thick. The subsoil is dark

gray and olive gray, mottled, firm clay loam. It is underlain by olive gray sand and gravel at a depth of 38 inches. The soil is calcareous throughout.

Wadena soils, on stream benches and terraces, are nearly level and gently sloping and are well drained. Typically, their surface layer is very dark brown loam about 7 inches thick. The subsurface layer is very dark brown and very dark grayish brown loam about 13 inches thick. The subsoil is brown loam and sandy loam about 18 inches thick. It is underlain by variegated, calcareous coarse sand at a depth of about 38 inches.

The minor soils in this association are Cylinder, Biscay, Canisteo, and Clarion soils. Cylinder soils, on slightly convex rises on stream benches, are nearly level and are somewhat poorly drained. Biscay soils are in the nearly level areas on stream benches and are poorly drained. Canisteo soils, on broad upland flats adjacent to the stream benches, are nearly level and are poorly drained. Clarion soils are in the gently sloping upland areas adjacent to the stream benches and are well drained.

Corn, soybeans, and hay are the principal crops. The soils adjacent to Beaver Creek are used for pasture. Most farms are strictly cash-grain, but there are beef cow herds on some farms. The content of organic matter is moderate to high, and the available water capacity of the major soils is moderate to high. These soils tend to be somewhat droughty if rainfall is below normal. The main concern of management is improvement of drainage on the poorly drained soils.

The major soils have good potential for all crops grown in the county. These soils have poor potential for urban development. Low soil strength, high shrink-swell potential, a seasonal high water table, and the hazard of flooding are limitations. The soils have poor potential for sewage lagoons. Ground water contamination is a hazard because of the sand and gravel underlying the soils in most areas.

BUCKNEY-MOINGONA-SATTRE ASSOCIATION

Nearly level to moderately sloping, excessively drained, moderately well drained, and well drained, loamy soils on bottom lands, alluvial fans, foot slopes, and stream benches.

These soils are along the Des Moines River and are predominantly gently and moderately sloping. They are steeper in a few places on the lower side slopes of the Des Moines River Valley.

This association makes up about 2 percent of the county. About 41 percent of the association is Buckney soils, 30 percent is Moingona soils, and 20 percent is Sattre soils. The rest is minor soils.

Buckney soils are on bottom lands and are very gently sloping. They are excessively drained. In areas adjacent to the Des Moines River they are frequently flooded and receive deposition. Typically, the surface layer is very dark brown and very dark grayish brown fine sandy loam about 12 inches thick. The subsurface is very dark grayish brown and dark brown fine sandy loam about five inches thick. The substratum is brown and very dark grayish brown loamy sand and sand loam.

U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 IOWA AGRICULTURE AND HOME ECONOMICS EXPERIMENT STATION
 COOPERATIVE EXTENSION SERVICE, IOWA STATE UNIVERSITY
 DEPARTMENT OF SOIL CONSERVATION, STATE OF IOWA

GENERAL SOIL MAP BOONE COUNTY, IOWA



SOIL LEGEND*

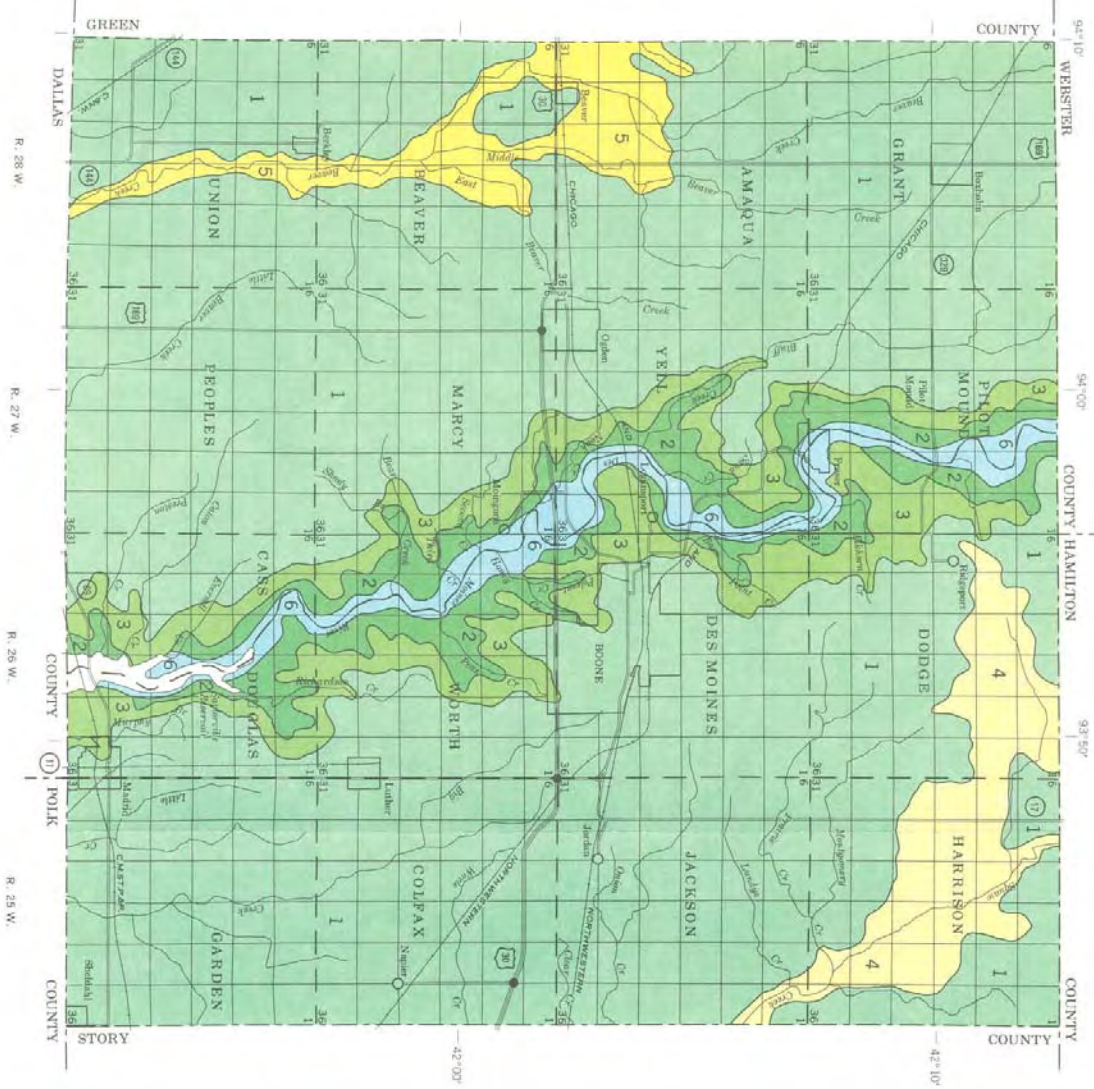
- 1 Gladstone-McClure association. Heavy level to moderately sloping, poorly drained, well drained, and somewhat poorly drained, heavy soils on uplands.
- 2 Hayden-Stoddard association. Very steep, well drained, heavy soils on uplands.
- 3 Hagden-Lewis-Luther association. Nearly level to moderately sloping, well drained and somewhat poorly drained, heavy soils on uplands.
- 4 Clarion-Kearney association. Gently sloping to rough sloping, well drained and somewhat excessively drained, heavy soils on uplands.
- 5 Grand-Jackson association. Nearly level and gently sloping, poorly drained and well drained, heavy soils on bottom lands and stream terraces.
- 6 Blacky-McGregor-Sentry association. Nearly level to moderately sloping, excessively drained, moderately well drained, and well drained, heavy soils on bottom lands, alluvial fans, foot slopes, and stream terraces.

*The feature given in the descriptive heading refers to the texture of the surface layer of the major soils in each association.

Compiled 1973

SECTIONALIZED
TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36



Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

Moingona soils are on foot slopes and are gently and moderately sloping. They are moderately well drained. Typically, the surface layer is black loam about seven inches thick. The subsurface layer is very dark grayish brown loam about five inches thick. The subsoil is about 28 inches thick. It is brown loam in the upper part and dark yellowish brown clay loam in the lower part. The substratum is dark grayish brown sandy loam to a depth of about 60 inches.

Sattre soils are on stream benches and are nearly level to moderately sloping. They are well drained. Typically, the surface layer is very dark grayish brown loam about nine inches thick. The subsurface layer is brown loam about six inches thick. The subsoil is brown loam and dark yellowish brown loamy sand about 28 inches thick. The substratum is yellowish brown sand.

The minor soils in this association are Coland and Hanlon soils. Coland soils are poorly drained and are subject to flooding. Hanlon soils are on natural levees and are moderately well drained.

In many areas along the river the soils in this association are wooded. The nearly level soils are used for cultivated crops; however, those soils may be flooded occasionally. Corn, soybeans, and hay are the principal crops. The content of organic matter is moderated, and moderate to high. The main concern of management is control of water erosion on the sloping soils.

The major soils have fair potential for all crops grown in the county, provided the soils are protected from flooding. The sloping soils have good potential for dwellings. The nearly level soils have poor potential for dwellings and urban development because of the hazard of flooding.

Approximately 60 percent of this soil association is within the flood pool of Saylorville Lake. The soils in this area may be subject to flooding of long duration.

CAPABILITY GROUPS OF SOILS

The capability classification is a grouping that shows, in a general way, how suitable soils are for most kinds of farming. It is a practical grouping based on limitations of the soils, the risk of damage when they are used, and the way they respond to treatment.

In this system, all the kinds of soil are grouped at three levels, the capability class, subclass, and unit. The eight capability classes in the broadest grouping are designated by Roman numerals I through VIII. Class I soils have few limitations, the widest range of use, and the least risk of damage when they are used. The soils in the other classes have progressively greater natural limitations. In class VIII are soils and landforms so rough, shallow, or otherwise limited do not produce worthwhile yields of crops, forage, or wood products.

The subclasses indicate major kinds of limitations within the classes. Within most of the classes there can be up to four subclasses. The subclass is indicated by adding a small letter, e, w, s, or c, to the class numeral, for example, "IIe". The letter "e" shows the main limitation risk is erosion unless close-growing plant cover is maintained. A "w" means that water in or on the soil will interfere with plant growth or cultivation (in some soils wetness can be partly corrected by artificial drainage). An "s" shows the soil is limited mainly because of shallow, droughty, or stony. Finally, a "c" when used, indicates that the chief limitation is climate that is too cold or too dry.

In Class I there are no subclasses, because the soils of this class have few or no limitations. Class V can contain, at the most, only subclasses “w”, “s”, and “c”, because these soils have little or no susceptibility to erosion but have other limitations limiting their use largely to pasture, range, woodland, or wildlife.

Within the subclasses, there are additional capability units. These groups of soils are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity and other responses to management. Thus, the capability unit is a convenient grouping for making many statements about management of soils. Capability units are generally identified by numbers assigned locally, for example, IIe-1 or IIIe-1.

Soils are classified in capability classes, subclasses, and units in accordance with the degree and kind of their permanent limitations. This is done without consideration to major and expensive land forming that would change the slope, depth, or other characteristics of the soil; and without consideration of possible but unlikely major reclamation projects.

The eight classes in the capability system and the subclasses and units in this county are described in the list that follows.

Soil Capability System, Boone County, Iowa

- Class I** Soils that have a few limitations that restrict their use. These soils are suitable for intensive cultivation over long periods and do not require special practices other than those used for good farming. (No subclasses).

- Class II** Soils that have some limitations that reduce the choice of plants or require moderate conservation practices. They are suitable for tilled crops, pasture, or woodland.

- Class III** Soils that have severe limitations that reduce the choice of plants, or require special conservation practices, or both. These soils are suitable for tilled crops, pasture, woodland, or wildlife.

- Class IV** Soils that have very severe limitations that restrict the choice of plants, require very careful management, or both. They are suited to tilled crops, but need intensive management. They are also suited to pasture, woodland, or wildlife.

- Class V** Soils are not likely to erode but have other limitations, impractical to remove, that limit their use largely to pasture, range, woodland, or wildlife.

- Class VI** Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife.

- Class VII** Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife.

- Class VIII** Soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife, or water supply, or to esthetic purposes.

Class I through Class III soils, even with some limitations are the best soils in a county. Any soil rated higher, typically, will present some significant limitations, thus having an impact on the actual use of the land. The following table lists the different soils and their rating.

TABLE 41: SOIL CAPABILITY TABLE

Symbol	Mapping Units	Capability Rating
6	Okoboji silt clay loam, 0 to 1 percent slope	IIIw
27C	Terril loam, 5 to 9 percent slopes	IIIe
28B	Dickman fine sandy loam, 1 to 5 percent slopes	IIIe
28C	Dickman fine sandy loam, 5 to 9 percent slopes	IIIe
55	Nicollet loam, 1 to 3 percent slopes	I
62C2	Stordem loam, 5 to 9 percent slopes	IIIe
62D2	Stordem loam, 9 to 14 percent slopes, moderately eroded	IIIe
62E2	Stordem loam, 14 to 18 percent slopes, moderately eroded	IVe
62F	Stordem loam, 18 to 25 percent slopes	VIe
73D	Salida gravelly sandy loam, 5 to 14 percent slopes	IVe
73F	Salida gravelly sandy loam, 14 to 25 percent slopes	VIe
90	Okoboji mucky silt loam, 0 to 1 percent slopes	IIIw
95	Harps loam, 0 to 2 percent slopes eroded	IIw
107	Webster silty clay loam, 0 to 2 percent slopes	IIw
135	Coland clay loam, 0 to 2 percent slopes	IIw
138B	Clarion loam, 2 to 5 percent slopes	Ile
138C	Clarion loam, 5 to 9 percent slopes, moderately eroded	IIIe
138D2	Clarion loam, 9 to 14 percent slopes, moderately eroded	IIIe
167	Ames silt loam, 0 to 1 percent slopes	IIIw
168B	Hayden loam, 2 to 5 percent slopes	Ile
168C	Hayden loam, 5 to 9 percent slopes	IIIe
168D2	Hayden loam, 9 to 14 percent slopes, moderately eroded	IIIe
168E	Hayden loam, 14 to 18 percent slopes	IVe
203	Cylinder loam, 32 to 40 inches to sand and gravel, 0 to 2 percent slopes	I
221	Palms muck, 0 to 1 percent slopes	IIIw
224	Linder sandy loam, 0 to 2 percent slopes	IIs
236B	Lester loam, 2 to 5 percent slopes	Ile
236C2	Lester loam, 5 to 9 percent slopes, moderately eroded	IIIe
259	Biscay clay loam, 32 to 40 inches to sand and gravel, 0 to 2 percent slopes	IIw
307	Dundas silt loam, 0 to 2 percent slopes	IIIw
308	Wadena loam, 32 to 40 inches to sand and gravel, 0 to 2 percent slopes	IIs
308B	Wadena loam, 32 to 40 inches to sand and gravel, 2 to 5 percent slopes	Ile
325	Le Saur loam, 0 to 2 percent slopes	I
335	Harcot loam, 0 to 2 percent slopes	IIw
354	Palms muck, ponded, 0 to 1 percent slopes	VIIw
355	Luther loam, 0 to 2 percent slopes	I
356G	Hayden-Storden loams, 25 to 50 percent slopes	VIIe
383	Marna silty clay loam, 0 to 2 percent slopes	IIw
385B	Guckeen clay loam, 1 to 4 percent slopes	Ile
444C	Jacwin loam, 3 to 9 percent slopes	IIIe
485	Spillville loam, 0 to 2 percent slopes	IIw
485B	Spillville loam, 2 to 5 percent slopes	Ile
507	Canisteo silty clay loam, 0 to 2 percent slopes	IIw
511	Blue Earth mucky silt loam, 0 to 1 percent slopes	IIIw
536	Hanlon fine sandy loam, 0 to 2 percent slopes	IIs
559	Talcot clay loam, 32 to 40 inches to sand and gravel, 0 to 2 percent slopes	IIw
556B	Moingona loam, 1 to 5 percent slopes	Ile
556C	Moingona loam, 5 to 9 percent slopes	IIIe
556D	Moingona loam, 9 to 14 percent slopes	IIIe
585B	Corland-Sillville complex, 2 to 5 percent slopes	IIw
636	Buckney fine sandy loam, 1 to 3 percent slopes	IIIs
639D	Storden-Salida complex loam, 14 to 25 percent slopes	VIe
655	Crippin loam, 1 to 3 percent slopes	I
733	Calco silty loam, 0 to 2 percent slopes	IIw
778	Sattre loam, 0 to 2 percent slopes	I
778B	Sattre loam, 2 to 5 percent slopes	Ile
823	Ridgeport sandy loam, 0 to 2 percent slopes	IIIs
823B	Ridgeport sandy loam, 2 to 5 percent slopes	IIIe
823C	Ridgeport sandy loam, 5 to 9 percent slopes	IIIe
828B	Zenor sandy loam, 2 to 5 percent slopes	IIIs
828C	Zenor sandy loam, 5 to 9 percent slopes	IIIe
828C2	Zenor sandy loam, 5 to 9 percent slopes, moderately eroded	IIIe
829D2	Zenor-Storden complex, 9 to 14 percent slopes, moderately eroded	IVe
829E2	Zenor-Storden complex, 14 to 25 percent slopes, moderately eroded	VIe
1135	Coland clay loam, channeled, 0 to 2 percent slopes	Vw
1636	Buckney fine sandy loam, channeled, 0 to 2 percent slopes	VIw
2485B	Spillville-Buckney complex, 2 to 5 percent slopes	VIw
4055	Nicollet-Urban land complex, 1 to 3 percent slopes	NA
4138B	Clarion-Urban land complex, 2 to 5 percent slopes	NA
4138C	Clarion-Urban land complex, 5 to 9 percent slopes	NA
4507	Canisteo-Urban land complex, 0 to 2 percent slopes	NA
5010	Pits, gravel	NA
5020	Dumps, mine	NA
5040	Orthents, loamy	NA

Source: Soil Survey of Boone County, Iowa, United States Department of Agriculture, 1979
 NA = Not Assigned

Table 41 indicates the soil symbol, the soil type, the percent slope, and the soil classification. There are 74 different soil types identified in the Soil Survey. Of the 74 soil types, five of the soil types have been rated a Class I. Class II soil types accounted for 22 of the soil types. Finally, Class III had 26 soils listed. The top three Class's accounted for 71.6% of the total soils. Most of the subclasses present in the Soil Survey were "e" and "w". These two indicated that the soils in Boone County have strong characteristics based upon erodability and wetness.

SOIL SUITABILITY

The characteristics of soils play a major role in determining the potential compatibility of certain uses on the land. The ability to absorb certain liquids such as water and wastewater are different for certain soils. In addition, as noted in the capabilities section, how sensitive an area is to erosion or how shallow the soils are in an area can have a major impact on the ability to develop a specific area of Boone County. These conditions have an impact on a soils ability to support certain types of uses. This ability to support certain uses is referred to as limitations.

Soil Limitations

The interpretations are based on the engineering properties of soils and test data for soils in the survey area. Ratings are used to summarize limitations or suitability of the soils for certain purposes. Soil limitations are indicated by the ratings slight, moderate, and severe. Slight means that soil properties are generally favorable for the rated use, or in other words, that limitations are minor and easily overcome. Moderate means that some soil properties are unfavorable but can be overcome or modified by special planning and design. Severe means that soil properties are so unfavorable and so difficult to correct or overcome as to require major soil reclamation, special designs, or intensive maintenance.

Conventionally, the septic tank-absorption field system has proven satisfactory for many areas when properly designed, installed, and maintained. However, conditions do exist where this system is not suitable. Areas of seasonal high groundwater tables, bedrock in close proximity to the soil surface, or soils having very fast or very slow percolation rates are not suited for the septic tank-absorption field system. Other limitations for this system include topography, small lot size and proximity to water supplies used for drinking or recreation.

Slope

The slope of the soil also has an impact on the ability to use a piece of land for specific uses. The natural slope is somewhat determined by the type of soil association. Slope is a major determining factor in soil suitability with regard to septic absorption, sewage lagoons, prime farmland, and dwelling units.

Figure 10 indicates the percent slope of the land within Boone County. The data were taken from the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS). The map was generated using SSURGO soil data from this agency. The data are tied to actual soil types and associations and then mapped based upon the specific locations of these soil types.

The map in Figure 10 indicates that the majority of Boone County has slight to moderate slopes. However, slopes are steepest along the Des Moines River and along other waterways. The slopes in these areas of Boone County range from 9% to 50%. These areas are where the greatest amount of vegetation in Boone County can be found.

Prime Farmland

The **Prime farmland** classification identifies map units as all prime farmland, prime farmland if drained, or not prime farmland. Farmland classification identifies the location and extent of the most suitable land for producing food, feed, fiber, forage, and oilseed crops (USDA, 2004)

In general, prime farmland has an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable sodium content, and few or no rocks. They are permeable to water and air. Prime farmland is not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

Boone County has an abundance of prime farmland. This can be seen in Figure 11. The prime farmland is located throughout the county. However, the northeast corner of the county along with the river corridor has the majority of land considered to be “not prime”. Due to the importance of prime farmland the county may want to add special protection to these areas identified.

Dwellings without Basements and Dwellings with Basements

The ability for soils to handle different structural uses such as residential dwellings is dependant upon a number of conditions. It is these conditions that determine the level of suitability of the soil for this specific use. Based upon the data in the Soil Survey of Boone County, Iowa, there are a number of factors that influence the suitability of the soil.

These factors are:

- wetness,
- flooding,
- shrink-swell capacity of the soil,
- slope of the soil,
- low strength

The soils for this category are rated as Severe Limitations, Moderate Limitations, and Slight Limitations. Any one of these factors can play a significant role in the type of construction methods that will need to be employed in constructing a residence in Boone County. Thus, Severe Limitations does not necessarily disqualify the use but merely indicates that special circumstances exist and these need to be accounted for in the design of the structure. Figure 12 and 13 indicate the level of suitability for these uses throughout Boone County.

The limitations in Boone County’s soils for both uses are somewhat equal between the moderate and severe limitations categories. However, there are some locations in the county where severe limitations begin to become more dominate. There is not a solid distinction between the three categories; this will require, in some cases, more detail information to be collected as a dwelling unit is proposed and constructed.

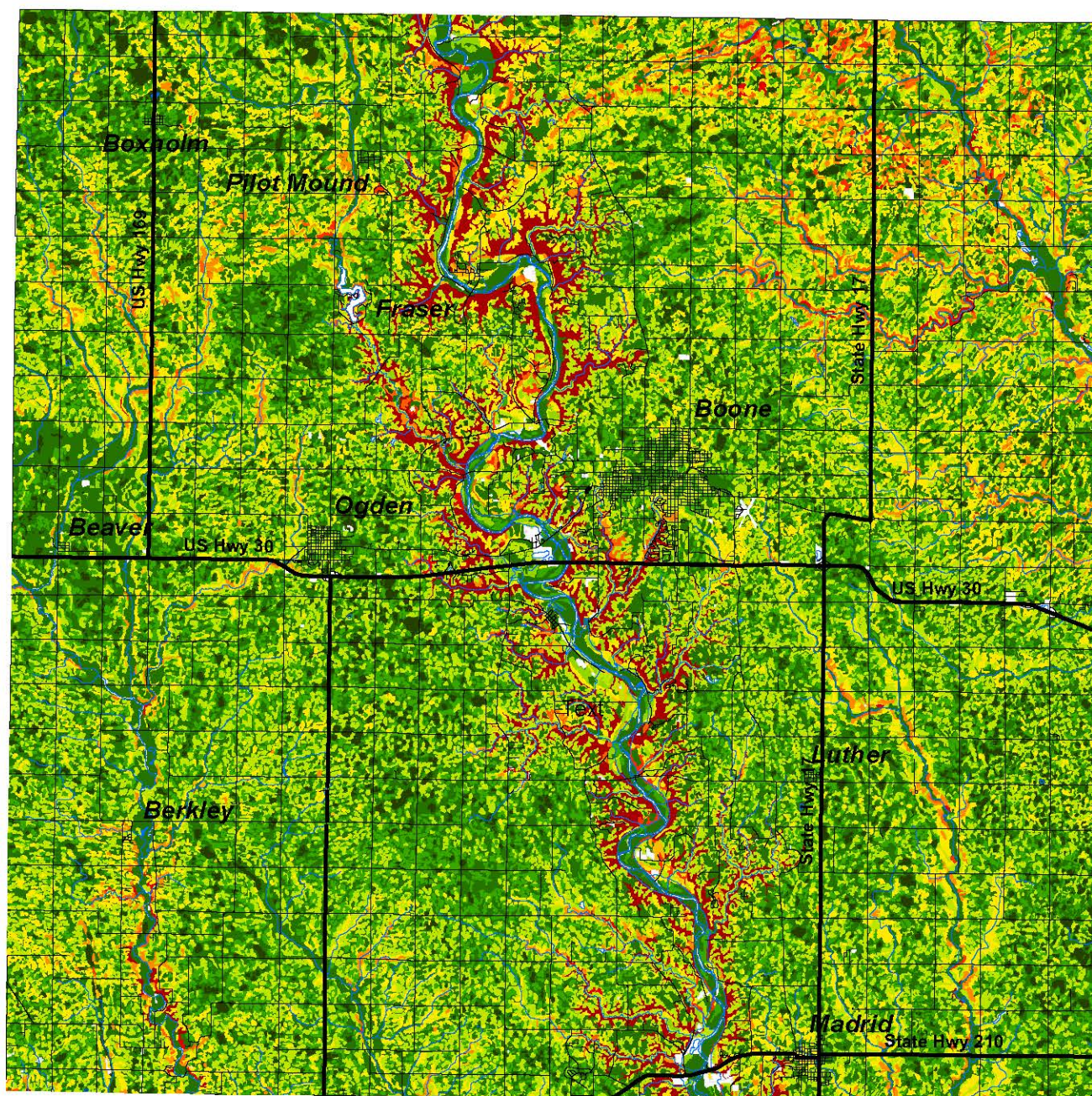


Figure 10: Slope by Associations
Boone County, Iowa

Slope	1 to 4 percent	5 to 9 percent	14 to 25 percent
0 to 1 percent	1 to 5 percent	5 to 14 percent	18 to 25 percent
0 to 2 percent	2 to 5 percent	9 to 14 percent	25 to 50 percent
1 to 3 percent	3 to 9 percent	14 to 18 percent	Unknown

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Prepared By: JEO Consulting Group, Inc.
Soil Data Set: Survey Data (1990-2000) Data Set: National Resources Geographic Service
08/19/2000 (1/1/2000)
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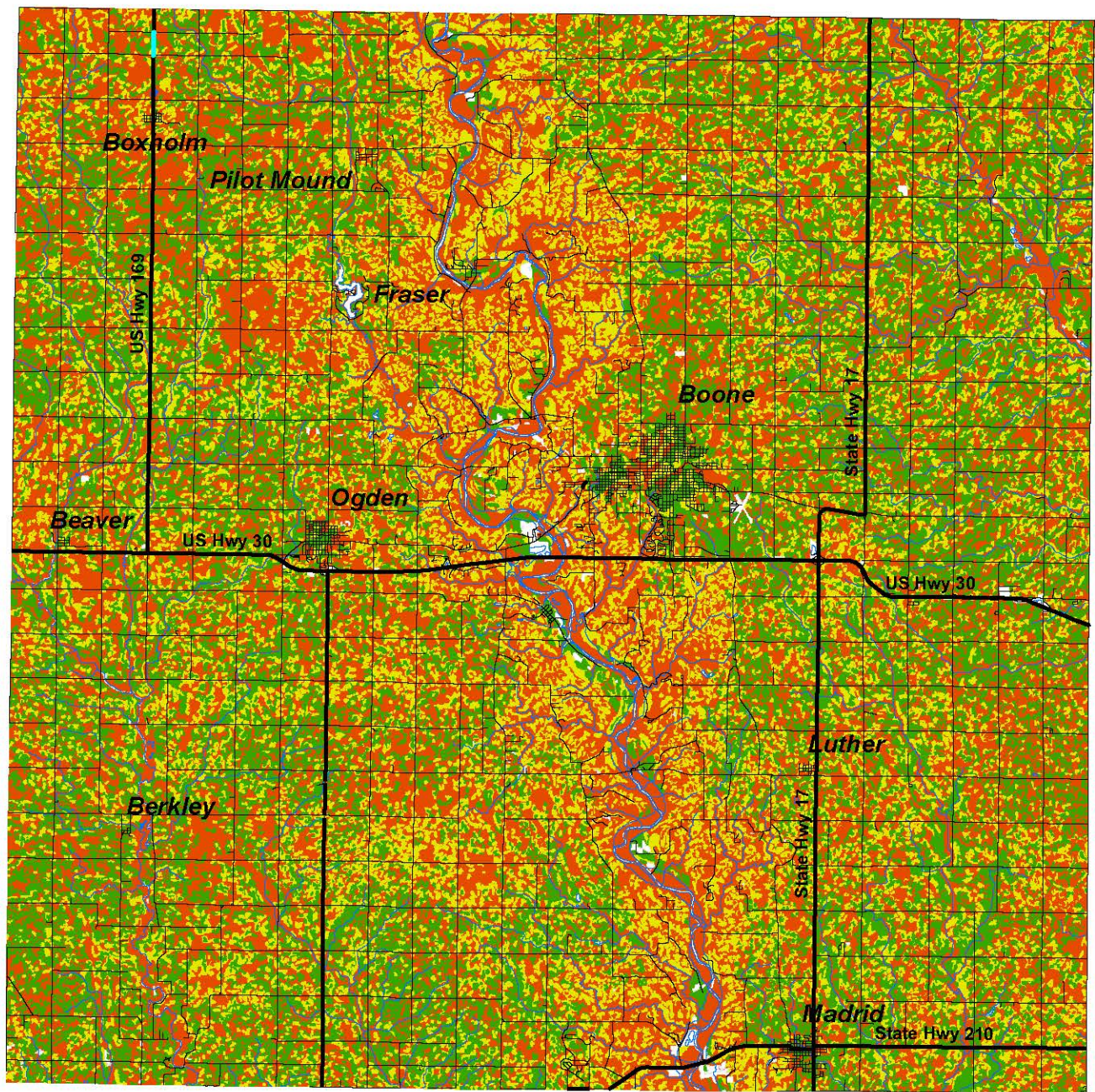


Figure 12: Dwellings with Basements
Boone County, Iowa

Dwellings w/ Basements

- Severe
- Moderate
- Slight
- Unknown

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Data: Data from the Department of the Interior, Bureau of Reclamation, National Water Research Institute
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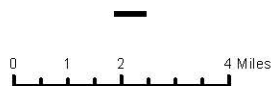
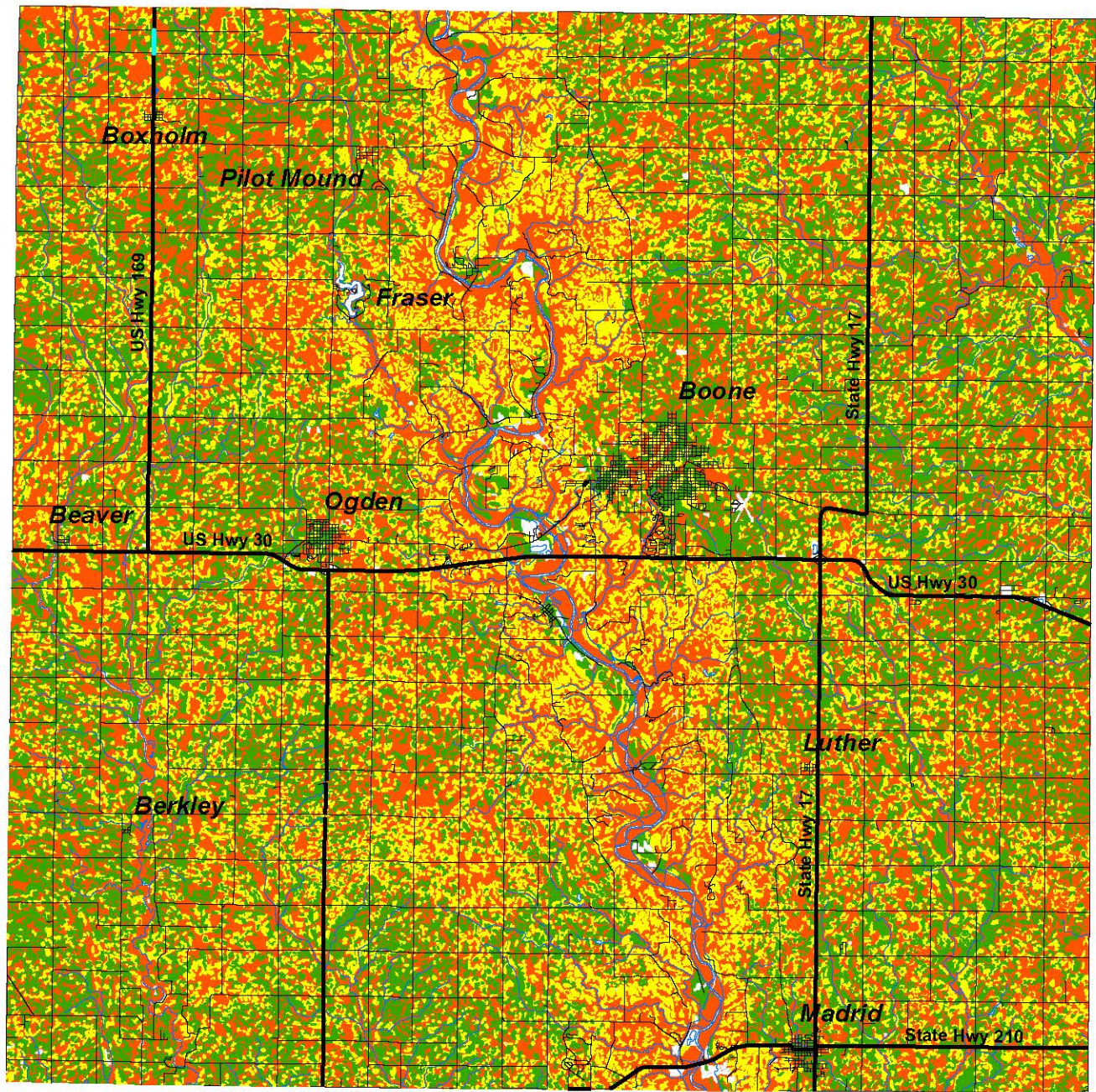


Figure 13: Dwellings w/o Basements
Boone County, Iowa

Dwellings w/o Basements

- Severe
- Moderate
- Slight
- Unknown

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Satellite Imagery: Google Earth (2008-09-09) Data: USDA - National Resources Conservation Service
GIS Database: ArcView 9.3

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Septic System

The typical septic tank-absorption field onsite wastewater treatment system consists of two major components--the septic tank and the absorption field. In the septic tank, solids are separated from the liquid, undergo anaerobic digestion and are stored as sludge at the bottom of the tank. The liquid (septic tank effluent) flows to the absorption field where it percolates into the soil. The soil acts as a final treatment by removing bacteria, pathogens, fine particles, and some chemicals.

Septic tank absorption fields are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into natural soil. The soil material between depths of 18 inches and six feet is evaluated. The soil properties considered are those that affect both absorption of effluent and construction and operation of the system. Properties that affect absorption are:

- wetness of the soil
- flooding
- percolation rate of the soil
- poor filter characteristics
- slope of the soil

Slope affects difficulty of layout and construction and also the risk of erosion, lateral seepage, and down slope flow of effluent. The other properties impact the use in a manner that a conventional system will not operate properly, thus creating problems within the overall system and even with the environment.

The capability of soils in Boone County regarding the use of septic system absorption fields is shown in Figure 14. The use and the soils are rated as Severe Limitations, Moderate Limitations or Slight Limitations. The soils in Boone County appear to be predominately severe or slight. There are some areas where Moderate Limitations are identified, primarily along the river corridor.

Again, these conditions will need to be addressed when designing and constructing a septic tank and absorption field. In a number of situations, these conditions may be overcome by special designs or alternative treatment systems.

Local roads and streets

Local roads and street have an all-weather surface expected to carry automobile traffic year round. There is a subgrade of underlying soil materials; a base consisting of gravel, crushed rock, or soil material stabilized with lime or cement; and a flexible or rigid surface, commonly asphalt or concrete. These roads are graded to shed water and have ordinary provisions for drainage. They are typically built from soils at hand. Soil properties that most affect design and the construction of roads and streets are the load supporting capacity, the stability of the subgrade, and the workability and quantity of cut and fill material available. Design and capacity of roads and streets should follow the AASHTO and Unified classifications of the soil materials.

The soils in Boone County are defined as one of three ways; Slight Limitations, Moderate Limitations and Severe Limitations. The majority of Boone County is considered to have Moderate Limitations. This condition is based upon a varying number of reasons including:

- Wetness
- Low strength
- Floods

- Frost action
- Slope
- Shrink-swell properties

Again, these conditions will need to be addressed when designing and constructing a roads and streets within Boone County. In a number of situations, these conditions may be overcome by special designs; however, some of the conditions impacting the construction will completely halt the ability at certain sites.

Sanitary Landfills

Sanitary Landfills are becoming more of an issue in current times and are likely to increase in their importance to our society during the planning period. Regionalization of sanitary landfill for solid waste disposal will likely become more popular during this planning period. Boone County is already practicing regionalism at a smaller level. With both the North Dallas landfill and the Boone County landfill located within the county. The North Dallas facility being privately owned and operated and has been contracted to accept solid waste from portions of Dallas County but none of Boone County's refuse is placed within this facility. The Boone County facility is more of a regional facility which accepts waste from Boone County, portions of Greene County, Dallas County and part of the waste generated in the City of Ames. The life expectancy of the Boone County facility is forty years.

As studies occur examining the feasibility of additional solid waste facilities in Boone County, by either Boone County residents or by other public and/or private owners/operators, soil conditions will be critical to the location, size, and overall feasibility of a facility. Figure 16 indicates three levels of suitability regarding landfills. These suitability levels are Slight Limitations, Moderate Limitations, and Severe Limitations. Boone County is predominately influenced by Slight and Severe Limitations. Some of the conditions influencing these ratings is as follows:

- Wetness
- Seepage
- Depth to rock
- Floods
- Slope

Again, these conditions will need to be addressed when designing and constructing sanitary landfills within Boone County. In a number of situations, these conditions may be overcome by special designs; however, some of the conditions impacting the construction will completely halt the ability at certain sites.

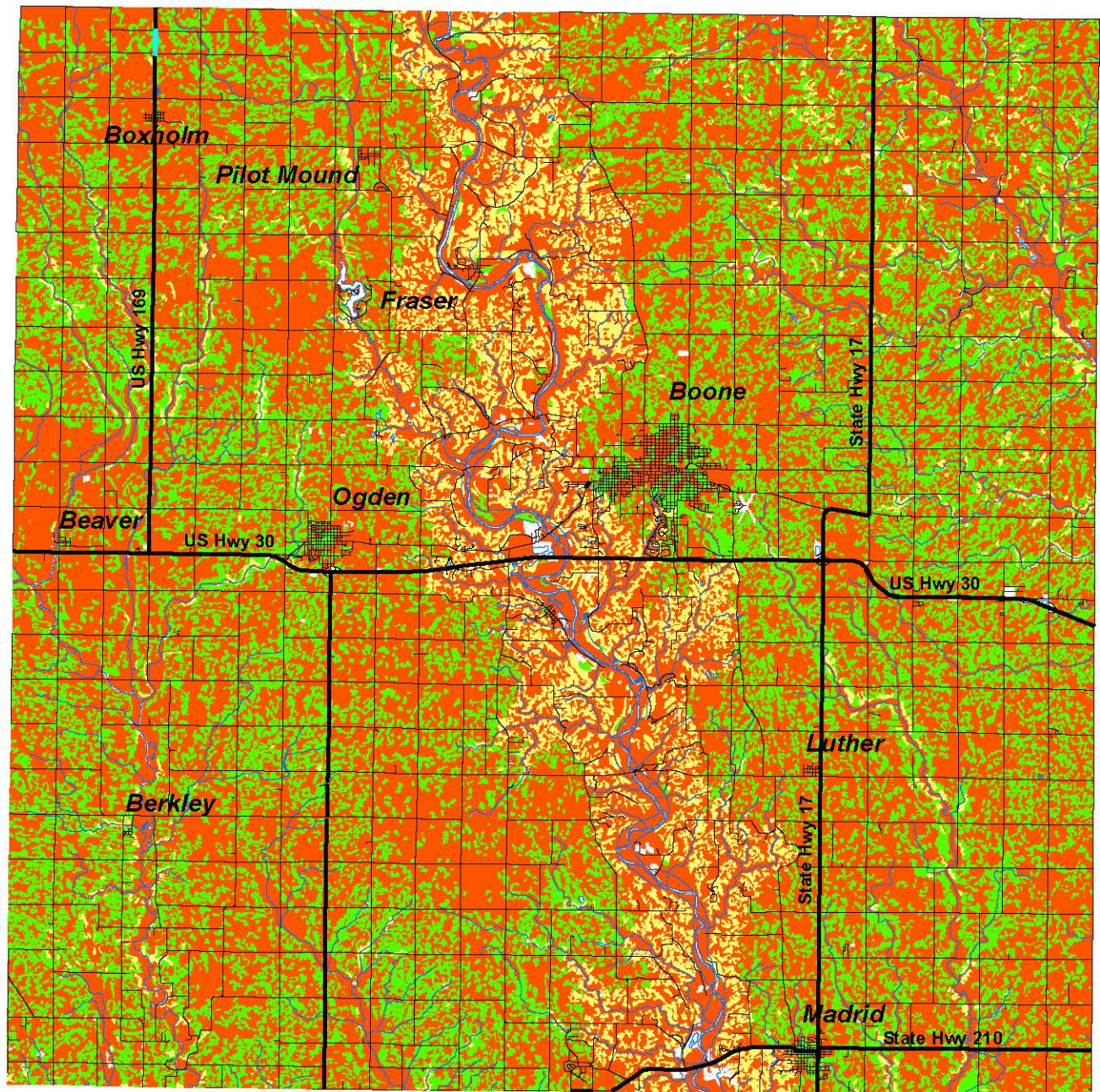


Figure 14: Sewage Treatment Systems
Boone County, Iowa

Limitations of Sewage Treatment Systems

- severe
- moderate
- slight
- Unknown

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Soil Data: Soil Survey Data (2008-03) Data (2008-03) Manual Processed Data (2008-03)
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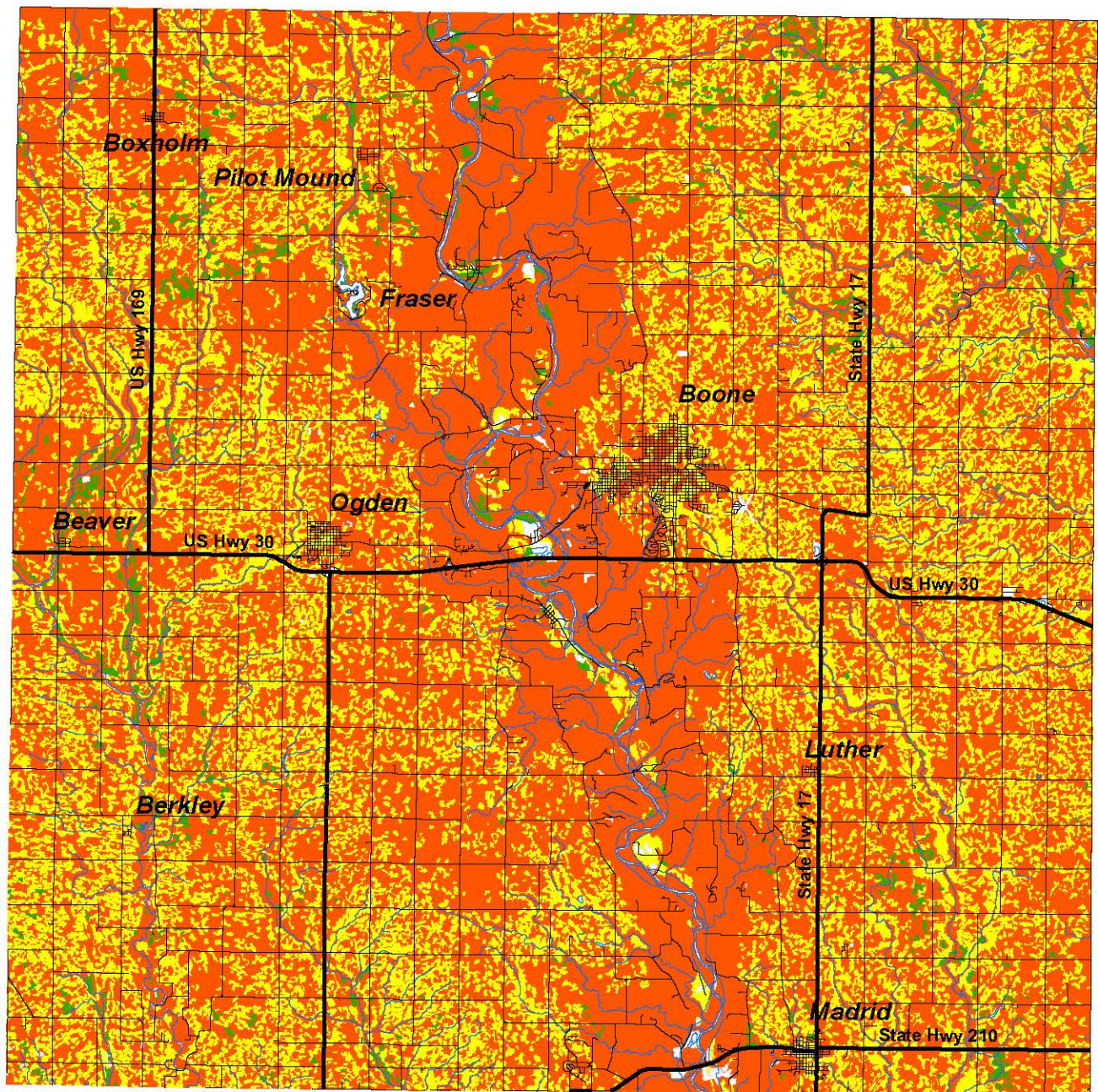


Figure 15: Local Roads and Streets
Boone County, Iowa

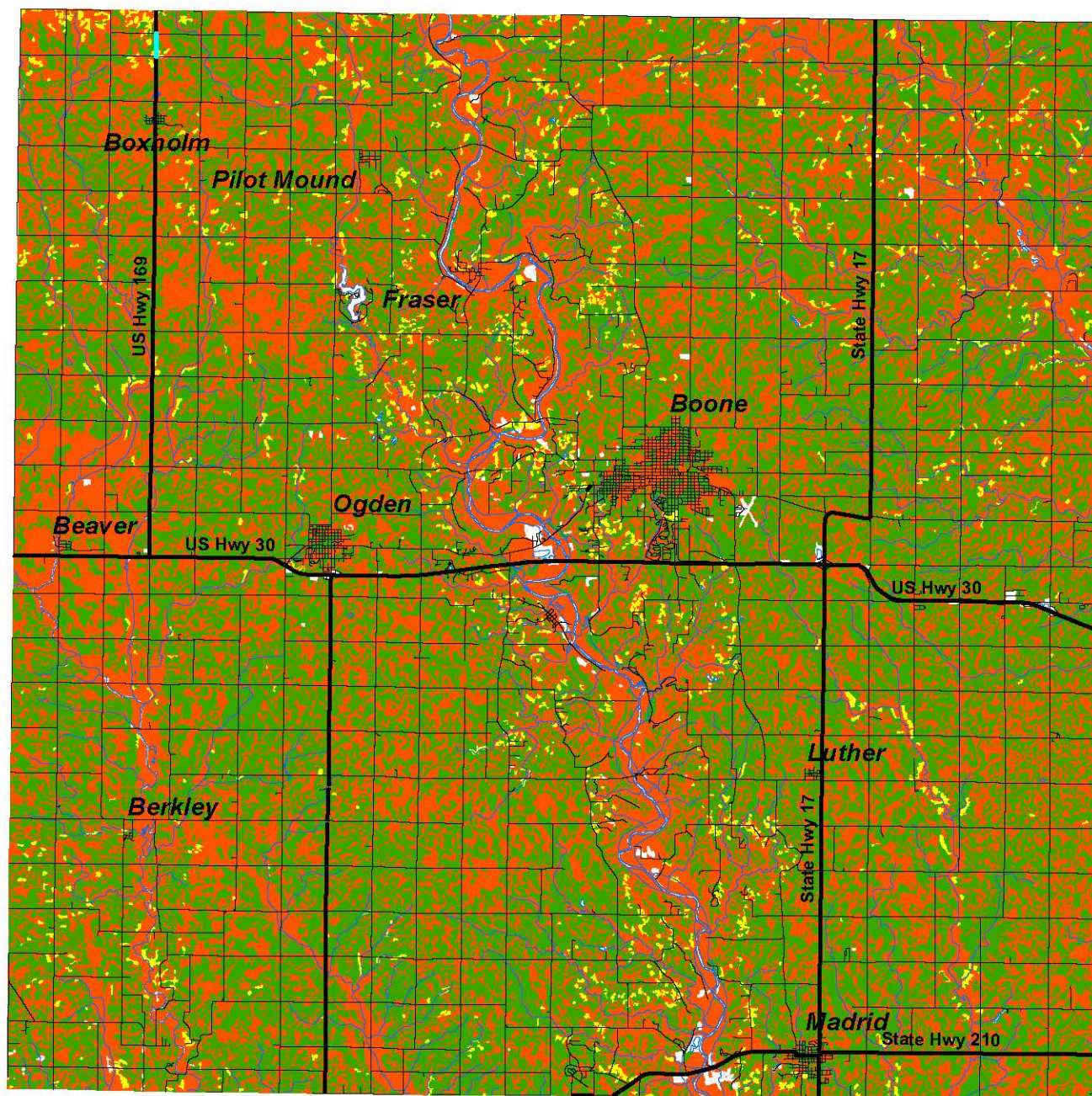
Local Roads and Streets



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0 1 2 4 Miles

Figure 16: Sanitary Landfills
Boone County, Iowa

Sanitary Landfills

- severe
- moderate
- slight
- Unknown

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WATER AND THE IMPACT ON BOONE COUNTY

Water; along with the soil conditions discussed in this section are the two most restricting environmental conditions facing land use planning in the future. Damaging either one of these two elements will impact the residents of a county for years to come. As with the soil descriptions and conditions, it is important to discuss the water factors impacting Boone County during the present and the coming planning period. Water in this section will apply to two different topics, surface water and ground water.

Surface Water

Surface water applies to any water running across a surface that eventually runs into a minor or major drainage area; eventually ending up in a major waterway such as the Des Moines River. However, a certain portion of surface water can and is absorbed by the soil in order to support plant life including, corn, soybeans and grass lawns. In addition, this absorption is critical to charging aquifers and wetland areas. Figure 17 indicates the ability of specific soils to drain.

These areas are defined as:

- Excessively drained,
- Well drained,
- Moderately well drained,
- Somewhat poorly drained,
- Poorly drained, and
- Very poorly drained.

Boone County has a mixture of drainage levels throughout the county. There does not appear to be a single classification that dominates the county. The only place any one category dominates is along the Des Moines River, with the majority of the soils being classified as Well Drained.

Drainage Basins (From Iowa State University Study – 2002)

A drainage basin is a network of creeks, rivers and other drainage districts where water will predictably flow through. Five main drainage basins lie in Boone County: the Des Moines River, Skunk River, Frog Creek, Squaw Creek, and Beaver Creek. Of these, the primary basin is the Des Moines River, which lies in the center of the county and flows from the north to the south all the way through the city of Fraser and ending up passing through Ledges State Park. The cities of Pilot Mound, Boone, Luther, and Madrid are also located along this river basin.

Two drainage basins that border the Des Moines River Basin are the Beaver Creek Basin located to the west of the Des Moines River and the Squaw Creek Basin located to the east of the Des Moines River. The Beaver Creek Basin consists of a collection of creeks flowing from north to south in the western half of Boone County. The cities that lie in this basin include Boxholm, Beaver, Ogden, and Berkley. The Squaw Creek Basin includes the collective Squaw Creek area that flows from north central Boone County to the east. There are no cities in this immediate area of northeastern Boone County. However, this drainage area should be looked at in order to take into account the potential overflow of growth from western Story County.

The remaining two drainage basins, the Skunk River and Frog Creek basins, are located in the extreme northeast and southwest portions of Boone County, respectively. These basins are a part of larger basin systems located in the surrounding counties. No cities currently lie within these two drainage basins but they are important to consider in terms of rural development opportunities that may arise and the impacts that possible development might have on the area.

Permeability

Permeability rates as shown in Figure 18 indicate the rate at which water will transfer through soils. This is also known as the Percolation Rate. This process is important since the transfer rate of water through the soil can greatly impact the ability of aquifers and water tables to be recharged. One factor that will greatly impact the permeability of soil is the amount of clay in the soil type. The higher the clay content the lower the permeability. The data in the Soil Survey is based upon the percentage of clay less than two millimeters in thickness.

A low permeability rate typically means that groundwater in that area is going to be difficult to recharge via surface water and the rain and snow cycle. While higher rates will allow the water to be absorb at greater rates into the groundwater system. Figure 18 reviews the Permeability Rates for Boone County, the rates were derived straight from the Soil Survey of Boone County by the United States Department of Agriculture. The ranges for these data are:

- 0.06 – 0.2 inches per hour Very Low Permeability
- 0.2 – 0.6 inches per hour Low Permeability
- 0.2 – 6.0 inches per hour Large range of Permeability
- 0.6 – 2.0 inches per hour Moderate Permeability
- 0.6 – 6.0 inches per hour Large range of Permeability
- 2.0 – 6.0 inches per hour High Permeability

Examining the engineering tables within the Soil Survey, the cause for the different, ranges, especially the large ranges, are due to many different factors including the clay content, depth of the soil, moisture content, and more. The majority of soil within Boone County has a permeability rating of 0.6 – 2.0 inches per hour. Portions of the Northeast corner have permeability rates in the 2.0 – 6.0 inches per hour range. However, portions of the Northwest corner have soils rated at 0.06 – 0.2 inches per hour.

Hydric Soils

Hydric soils are formed under conditions of saturation, flooding, or ponding. The process has to occur long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soils along with hydrophytic vegetation and wetland hydrology are used to define wetlands. (USDA/NRCS, Fall 1996) Figure 19 indicates where the different levels of hydric soils are located in Boone County. The soils are classified as the following:

- All Hydric,
- Partially Hydric, and
- Not Hydric

The majority of the soils in Boone County are considered either Not Hydric or All Hydric. The greatest area of Not Hydric soils is along the Des Moines River, while the largest areas of Hydric soils is located in the Northwest corner and Southeast of Ogden.

The following data were compiled directly from USDA/NRCS descriptions.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. The soils in the United States are placed into four groups A, B, C, and D, and three dual classes, A/D, B/D, and C/D. Definitions of the classes are as follows:

Hydric Soil Class	Description
A	Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
B	Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.
C	Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
D	Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Dual hydrologic groups, A/D, B/D, and C/D, are given for certain wet soils that can be adequately drained. The first letter applies to the drained condition, the second to the undrained. Only soils that are rated D in their natural condition are assigned to dual classes.

TABLE 42: HYDROLOGICAL CHARACTERISTICS

Map Symbol	Soil Name	Hydrological Group	Rating
6	OKOBOJI	B/D	All hydric
27C	TERRIL	B	Not hydric
28B, 28C	DICKMAN	A	Not hydric
55	NICOLLET	B	Not hydric
62C2, 62D2, 62E2, 62F	STORDEN	B	Not hydric
73D, 73F	SALIDA	A	Not hydric
90	OKOBOJI	B/D	All hydric
95	HARPS	B/D	All hydric
107	WEBSTER	B/D	All hydric
135	COLAND	B/D	All hydric
138B, 138C, 138C2, 138D	CLARION	B	Not hydric
167	AMES	C/D	All hydric
168B, 168C, 168C2, 168D2, 168E	HAYDEN	B	Not hydric
203	CYLINDER	B	Not hydric
221	PALMS	A/D	All hydric
224	LINDER	B	Not hydric
236B, 236C2	LESTER	B	Not hydric
259	BISCAY	B/D	All hydric
307	DUNDAS	B/D	All hydric
308, 308B	WADENA	B	Not hydric
325	LE SUEUR	B	Not hydric
335	HARCOT	B/D	All hydric
354	PALMS	A/D	All hydric
355	LUTHER	B	Not hydric
356G	HAYDEN-STORDEN	B - B	Not hydric
383	MARNA	D	All hydric
385B	GUCKEEN	C	Not hydric
444C	JACWIN	B	Not hydric
485, 485B	SPILLVILLE	B	Not hydric
507	CANISTEO	C/D	All hydric
511	BLUE EARTH	B/D	All hydric
536	HANLON	B	Not hydric
559	TALCOT	B/D	All hydric
566B, 566C, 566D	MOINGONA	C	Not hydric
585B	COLAND-SPILLVILLE COMPLEX	B/D - B	Partially hydric
636	BUCKNEY	B	Not hydric
639D, 639E	STORDEN-SALIDA COMPLEX	B - A	Not hydric
655	CRIPPIN	B	Not hydric
733	CALCO	B/D	All hydric
778, 778B, 778C	SATTRE	B	Not hydric
823, 823B, 823C2	RIDGEPORT	B	Not hydric
828B, 828C, 828C2	ZENOR	B	Not hydric
829D2, 829E2	ZENOR-STORDEN COMPLEX	B - B	Not hydric
1135	COLAND	B/D	All hydric
1636	BUCKNEY	B	Not hydric
2485B	SPILLVILLE-BUCKNEY COMPLEX	B - B	Not hydric
4055	NICOLLET-URBAN LAND COMPLEX	B -	Unknown
4138B, 4138C	CLARION-URBAN LAND COMPLEX	B -	Unknown
4507	CANISTEO-URBAN LAND COMPLEX	C/D	Partially hydric
5010	PITS, GRAVEL		Unknown
5020	DUMPS, MINE		Unknown
5040	ORTHENTS, LOAMY		Unknown
W	WATER		Unknown

Source: Soil Survey of Boone County, Iowa, United States Department of Agriculture, 1979

Groundwater

Groundwater deals with the water under the surface. Groundwater has three primary zones.

The first is the aeration zone. The aeration zone is that area from ground level to the point where plant roots absorb moisture. This area is typically unsaturated.

The second zone is called the water table. The water table is that area below the aeration zone and bedrock. This water is essential that water not absorb by plant life. This area is typically saturated and has some acts more like a sponge rather than an underground lake. Their location is very dependant upon the underground geology of the area and the soil conditions and types.

The final groundwater type is the aquifer. Aquifers are large or small areas of water usually within a half mile of the surface. Some aquifers can be closer than others to the surface. These areas are sometimes referred to as underground lakes. Each of these zones is at varying levels below the surface. Their location is very dependant upon the underground geology of the area and the soil conditions and types. .

Most public and private wells will drill into either the water table zone or the aquifer zone, especially when is in close proximity to the surface.

Aquifers (From Iowa State University Study – 2002)

In addition to the topical flow of water, further issues arise with aquifers and their relationship to cities and areas of possible development. One should keep in mind that a shallow water table could cause development problems. A shallow aquifer carries the risk of flood, pollution, or erosion. Currently, agricultural production techniques and development threaten Boone County's "surficial aquifers", since these aquifers lie near just below the topsoil. Information on surficial aquifers can be obtained from the Iowa Rural Water Association's website: <http://www.iarwa.org>.

Underground water sources for Boone County include a system of surficial aquifers that are a part of a larger, regional system. Surficial aquifers are made up of two types of systems presently found in Boone County: Alluvial and Buried Channel Systems.

Alluvial Aquifers are found underneath or near current rivers or streams and are sustained by these water sources. In Boone County, the location of this type of aquifer is underneath the Des Moines River. Since alluvial aquifers in Iowa and in Boone County are usually in predominately agricultural areas, there is a threat of contamination in chemical or animal waste form. There is a threat of contamination due in large part to the depth of the alluvial aquifers. In general, this type of aquifer is shallow in nature, usually ranging from 10 to 100 feet deep. In response to this situation, the Iowa Department of Natural Resources has developed separation distances from municipal wells set in alluvial aquifers. This information can be found in the Iowa Administrative Code; 567 Chapter 41 Table C. In most cases, the setback is set at a 200-foot or greater distance from areas where chemicals or animal waste are being applied. By following these guidelines, Boone County can help protect the valuable alluvial aquifer that lies underneath the Des Moines River. Areas that should be examined closely when development is proposed near the alluvial aquifer in Boone County include the three cities of Pilot Mound, Fraser and Madrid, the two state parks: Barkley Memorial State Park and Ledges State Park, and Woodward State Hospital.

Buried Channel Aquifers are aquifers that once had the form of alluvial aquifers, but were covered by glacial advances over the last 500,000 years. The result of the glacial advances is an old channel that has large deposits of gravel and sand covered by a layer of low permeable glacial till. This type of aquifer has many of the same traits as the alluvial type, but is not as vulnerable to contamination. Like the alluvial aquifer, this type is located in predominately farming areas, but is different in that its location is not underneath waterways. This type of aquifer affects three areas of Boone County. The first area is a narrow band that stretches from the northwest corner of the County to the south-central border of the County. The second area is a narrow band that encompasses a portion of land that extends from the north-central border of the County to the southeast corner of the County. The last and final area that has this type of aquifer underneath it is the extreme northeastern corner of the County.

Areas that are in proximity to the buried channel aquifers in Boone County include the three cities of Beaver, Boone, and Luther. As mentioned before, there is a second buried channel aquifer in the northeastern portion of Boone County. This aquifer is not located in close proximity to any cities or parks, but its presence should be noted for it is an important part of the regional aquifer system and should to be taken into consideration when determining future use.

Keeping in mind the larger scope of Boone County's water supply, both above and below ground, is an important aspect to consider when contemplating development. Great respect and attention should be given to water sources when making decisions on land use. Aquifers lie unseen below the ground, yet are an important part of the hydrological system, providing residents with a reliable, clean water source. Another important part of the hydrological system of the County is the observable system of water flowing above ground, composing the drainage basins.

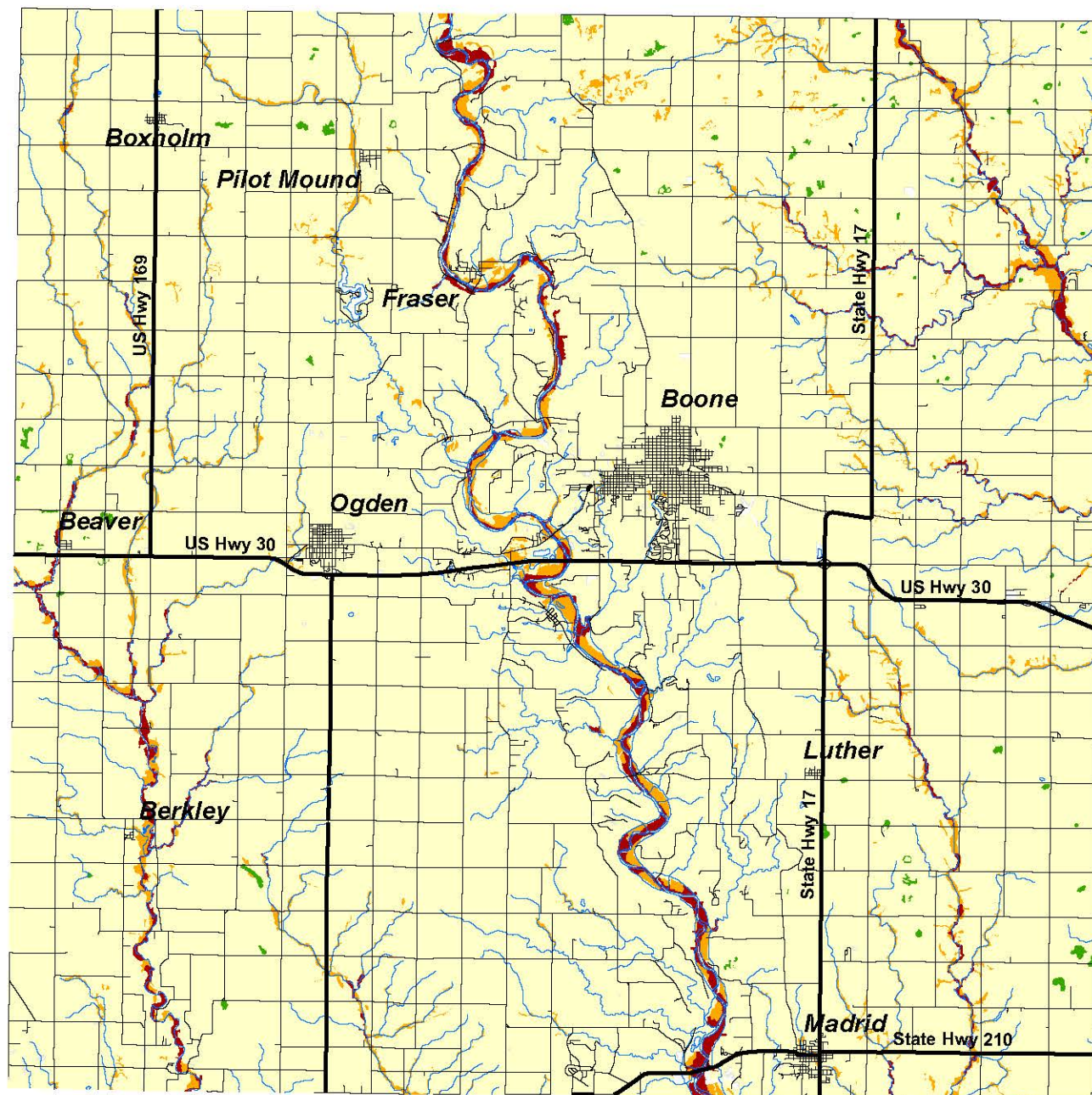


Figure 20: Flood Frequency
Boone County, Iowa

Flood Frequency

- Frequent
- Occasional
- Rare
- None
- Unknown

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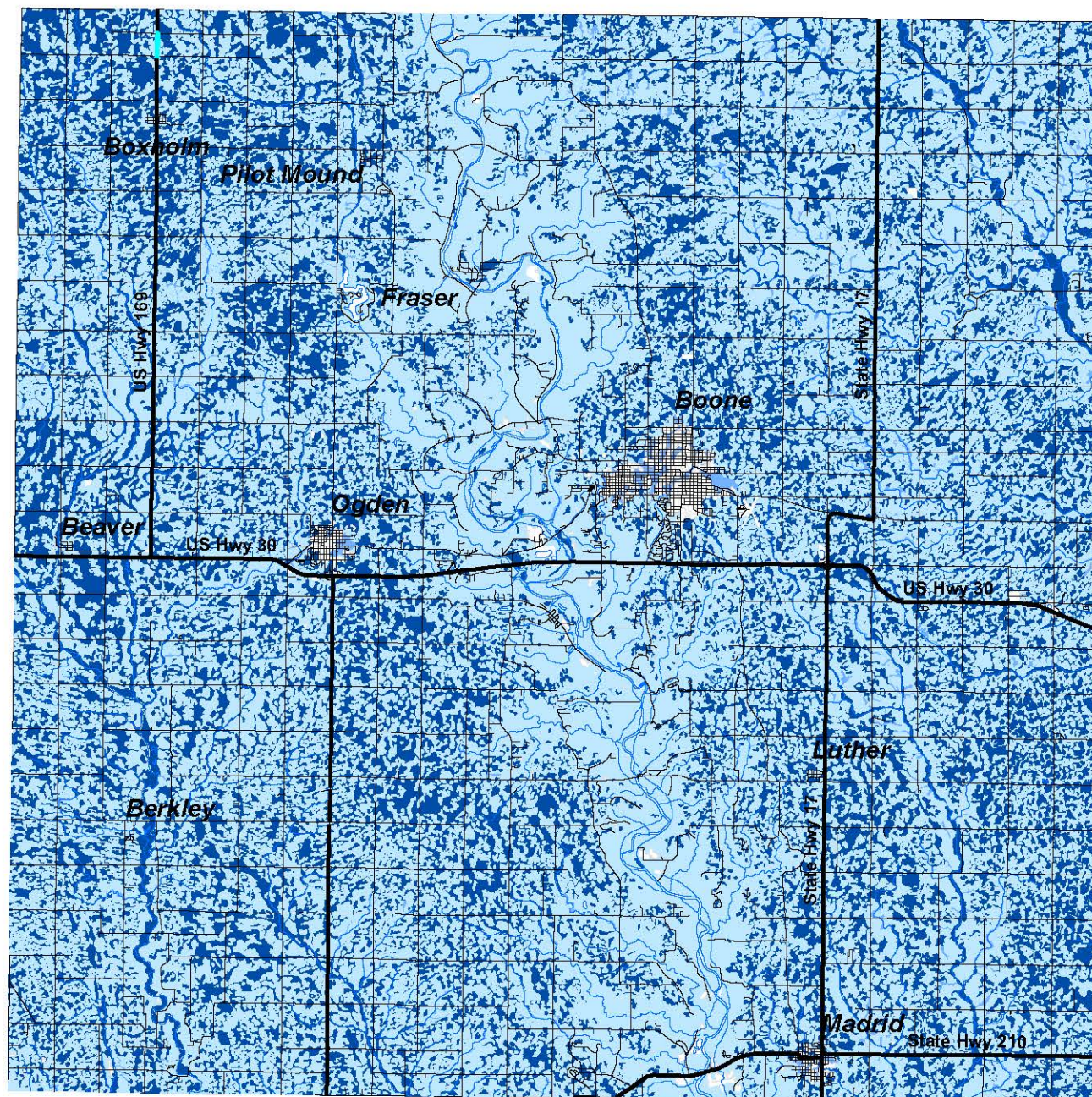


Figure 19: Hydric Soils
Boone County, Iowa

Hydric Soils

- All hydric
- Partially hydric
- Not hydric
- Unknown

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GIS Project: 01/09/09

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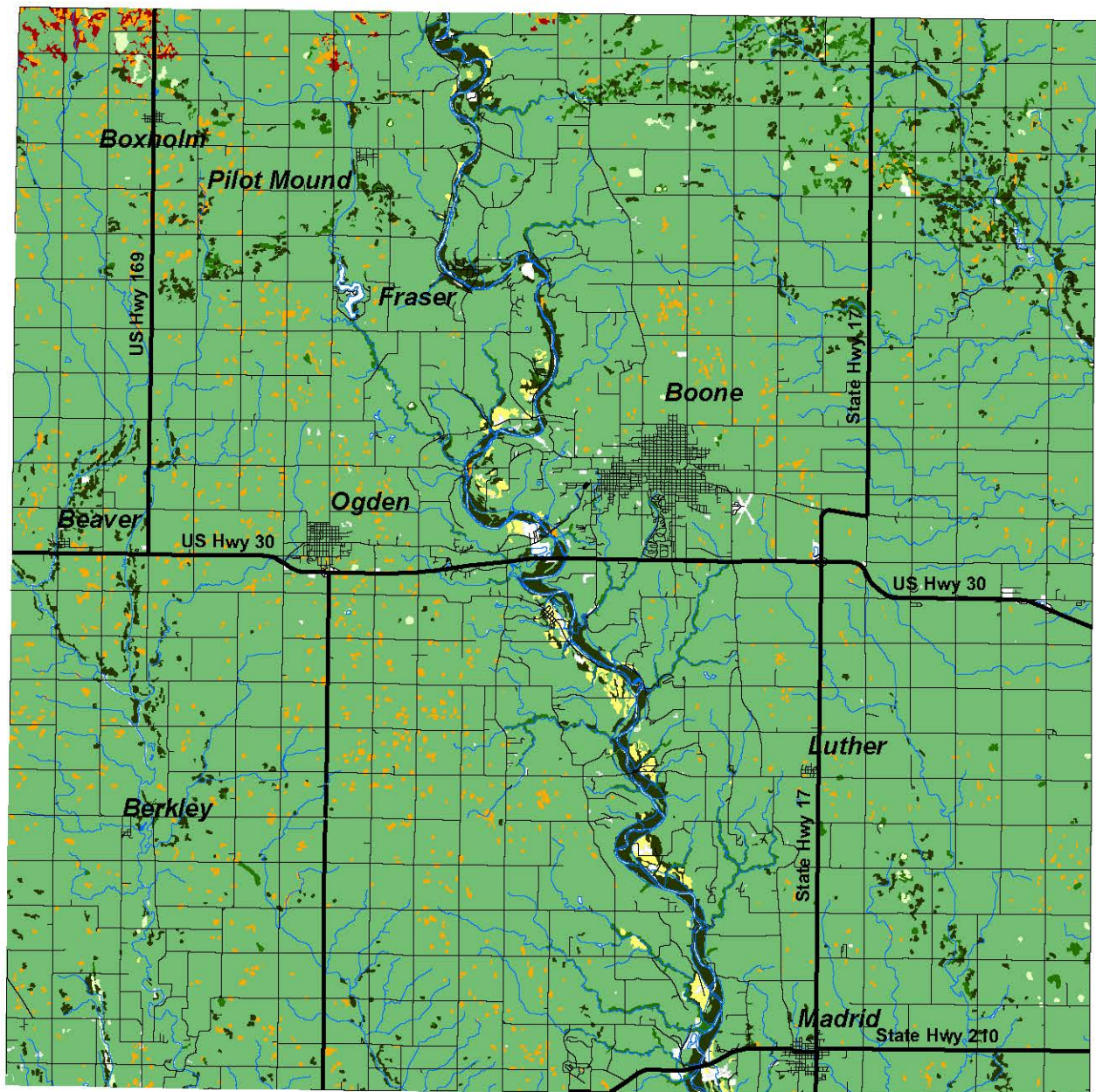
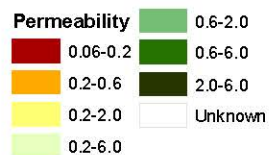


Figure 18: Permeability by Associations
Boone County, Iowa



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Prepared By: JEO Consulting Group, Inc.
Data Provided: Various Sources (GIS/RS) Data: USDA - National Wetlands Inventory
GIS Platform: ArcView 9.0

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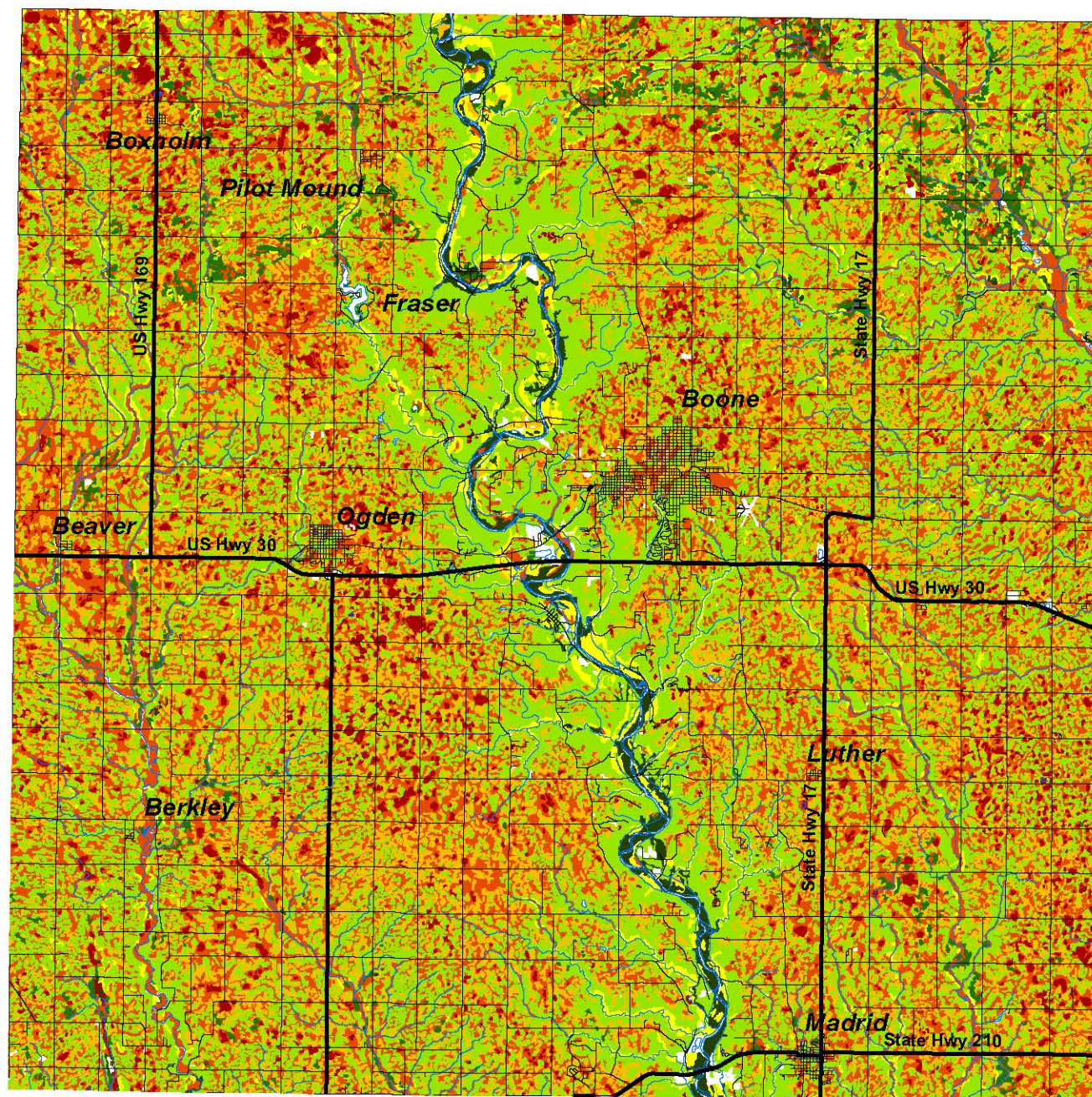


Figure 17: Drainage by Associations
Boone County, Iowa



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Data Provided: Soil Survey Data (SSURGO) Data (USDA) - National Resources Conservation Service
GIS Project: Aerial View 0.0

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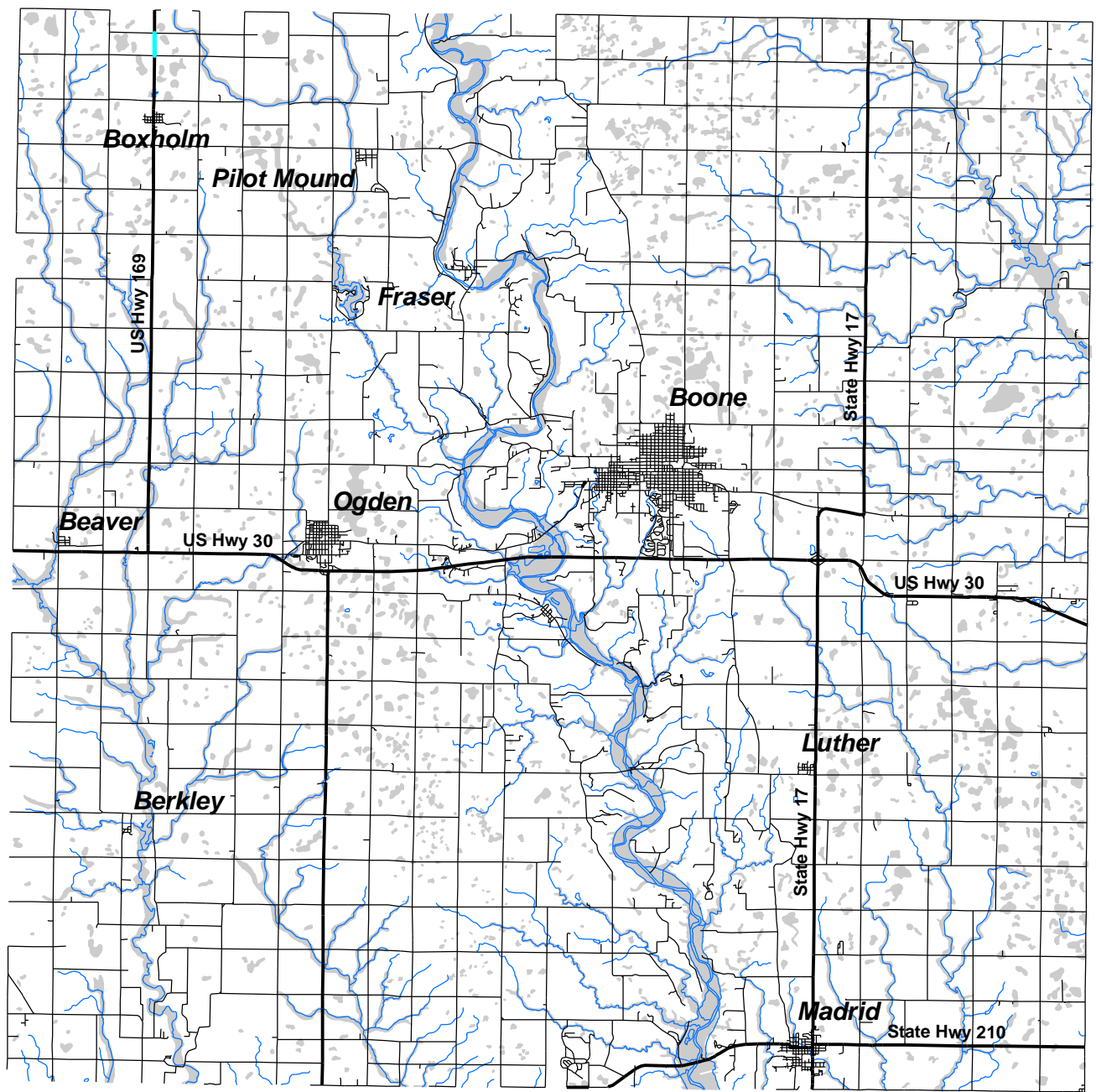


Figure 21: FEMA Floodplains
Boone County, Iowa

 FEMA Floodplains

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Soils Data: Soils Survey Geographic (SSURGO) Data/USDA- Natural Resources Conservation Service
GIS Process: ArcView 9.0

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Flooding Frequency

Flooding Frequency examines how often flooding occurs based upon the soil types. Figure 20 indicates the flooding frequency of Boone County. The map is divided into four different categories, these categories are:

- Frequent
- Occasional
- Rare
- None

The majority of Boone County falls under the category of none; however, there are areas where the flooding is considered to be frequent. All of the frequent areas are not surprising considering they appear along the Des Moines River and other waterways and drainage areas. Areas with frequent flooding should be avoided for development purposes.

Floodplain – FEMA

Figure 21 indicates the general locations of floodplains in Boone County according to the Federal Emergency Management Agency (FEMA). The majority of floodplain occurs along the Des Moines River and other waterways and drainage areas. However, there are smaller areas noted throughout the county that are not directly connected to drainage areas.

Squaw Creek Watershed Social Assessment: September 2003 (Taken from ISU Study, September 2003)

Iowa State University conducted a social assessment of the values, beliefs, and perceptions of water quality and landscape change within the Squaw Creek Watershed. (Part of the Squaw Creek watershed encompasses approximately the northeast quarter of Boone County). The primary objective was to understand how residents perceive water quality and other natural resource issues in the region. Fifty-nine residents representing a broad range of interest within the watershed were individually interviewed. The participant's responses were compared to information received from local newspapers and technical experts.

The study found that many residents assumed that the term "water quality" referred to the quality of their drinking water. The majority of the subjects thought they already had high quality drinking water. Most subjects demonstrated a fairly low level of understanding about the typical causes and sources of impaired conditions in watersheds such as Squaw Creek. Many subjects held conflicting sets of expectations about what the quality of water in lakes and streams should be – what was acceptable to one subject is likely unacceptable to another. Many subjects struggled to contemplate the entire watershed basin and instead focused on landscape conditions close to their home or work.

Overall, the term water quality lacks a consistent meaning among those included in the study. It is defined and perceived differently-both among them and between them and technical experts. When many subjects read or hear the term "water quality problems" from a technical source they are likely to attribute it to something very different that it is intended. Expectations of what water quality or conditions of the water is appropriate or necessary vary greatly. Some may believe the purpose of Squaw Creek is to drain water off of farmland, while another may believe Squaw Creek was high environmental values such as habitat for wildlife or recreational values.

CONCLUSIONS

Boone County is and will continue to be faced with a number of land use and growth issues through the planning period. Future decisions regarding the location of land uses will likely create a significant cause and effect scenario for the current and future residents as well as the environment of Boone County.

Boone County has an excellent quality of life and the quality is a direct result of the environmental aspects within the boundaries of the county. How the County chooses to address the growth pressures being seen from the east and what policies are adopted to protect the existing residents and environment of Boone County will drive the future outcome. This is not advocating that nothing should occur since it may negatively impact the environment; but what Boone County needs to do is determine where the balance is for protecting these interests while allowing appropriate growth in the County. This section of the Comprehensive Development Plan is not advocating pure environmentalism but is providing the County's governing body, zoning commission, as well as the residents a tool box for making sound decisions during the planning period. How these issues are addressed during this planning period will greatly influence the future of Boone County.

EXISTING LAND USE

INTRODUCTION

Evaluating the land uses that presently exist within Boone County is critical to the formulation of the Comprehensive Development Plan. The analysis of land, including location, size, and characteristics, is important in understanding the pattern of development, past land use trends, and other significant factors shaping the existing layout of Boone County. This analysis is essential to the preparation of the Future Land Use Plan. In order to realistically plan for future growth and development in Boone County, the starting point is the existing shape, form, and amount of land presently used to provide for county functions. It also assists in the formulation of workable zoning regulations to protect existing uses.

Land Use Categories

To evaluate these land uses in Boone County, a Land Use Survey was undertaken by an Iowa State University planning class in the spring of 2002. The intent of this project was to determine, evaluate, and map the various existing land uses located throughout the county. The location of each specific use of land is shown graphically on the Existing Land Use Map, Figure 22. The existing land uses of Boone County were classified under the following categories:

- Agriculture
- Agriculture Storage
- Commercial
- Farmstead
- Livestock Confinement
- Public
- Quasi-Public
- Recreation
- Rural Residential

Those areas not classified by one of the categories above are considered agricultural. The above land use categories may be generally defined in the following manner:

Agriculture- Row crop, alfalfa, pasture land, and all grain crops are considered agriculture land uses. Boone County is largely an agricultural-based county and the Existing Land Use Map verifies this. According to the 2002 Agricultural Census, 85.5% of the entire county is agricultural land use.

Agriculture Storage- This category consists of uses related to agricultural storage, including grain, livestock or mechanical storage. Storage buildings can range from grain bins to abandoned buildings, with no human occupancy. These particular uses are scattered throughout the county.

Commercial- Uses in this category consist of convenient stores; entertainment facilities; feed, seed, automobile and machinery sales; petroleum sales; large home businesses such as mechanical and welding shops, etc. Commercial uses tend to be located near urban areas or in proximity to highways for accessibility.

Farmsteads- Uses in this category are residential dwellings that have adjacent operational agriculture buildings and/or family livestock operations. Residential units of this type are evenly distributed throughout the county. The majority of farmsteads are located near county roads and in areas where soils are conducive to high crop production.

Livestock Confinement- Feedlots and confinements of high production densities comprise the uses of livestock confinement areas. These uses may be large or small, a family operation, or a commercial operation. Also included in

this category are commercial kennels and hog/cattle confinements or feedlots no longer in operation. These operations are scattered throughout the county.

Public- This category consists of all historical markers, nature preserves, and rural school houses scattered throughout the county. Many rural school houses are abandoned or have other uses. Some of these current uses have been illustrated, while some may not have been shown on the map.

Quasi-Public- The quasi-public category includes rural churches and cemeteries. Cemeteries near churches or along roadsides range in size from an acre to a few graves to an acre.

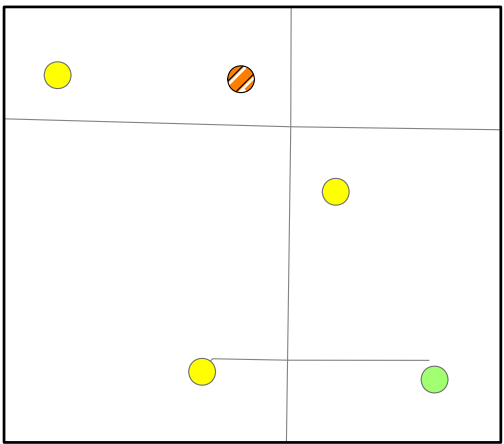
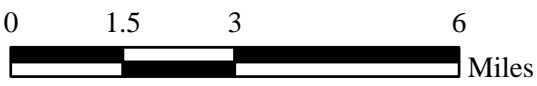
Recreation - This category includes state parks, forests, and/or wildlife management areas, camping areas, and private hunting/recreational areas, trails, or camps owned and operated by clubs or organizations.

Rural Residential- This use comprises residential dwellings not related to agriculture or confinements and includes single residential dwellings located on county roads, highways, or private drives. A predominate number of these uses are scattered throughout the county with the majority of the locations being from the west of Boone and south to the county line.

Figure 22: Existing Land Use

Land Use Classifications

- Corporate Limits
- Agricultural Storage
- Commercial/Industrial
- Farmstead
- Livestock Confinement
- Public
- Quasi-public
- Recreation
- Rural Residential

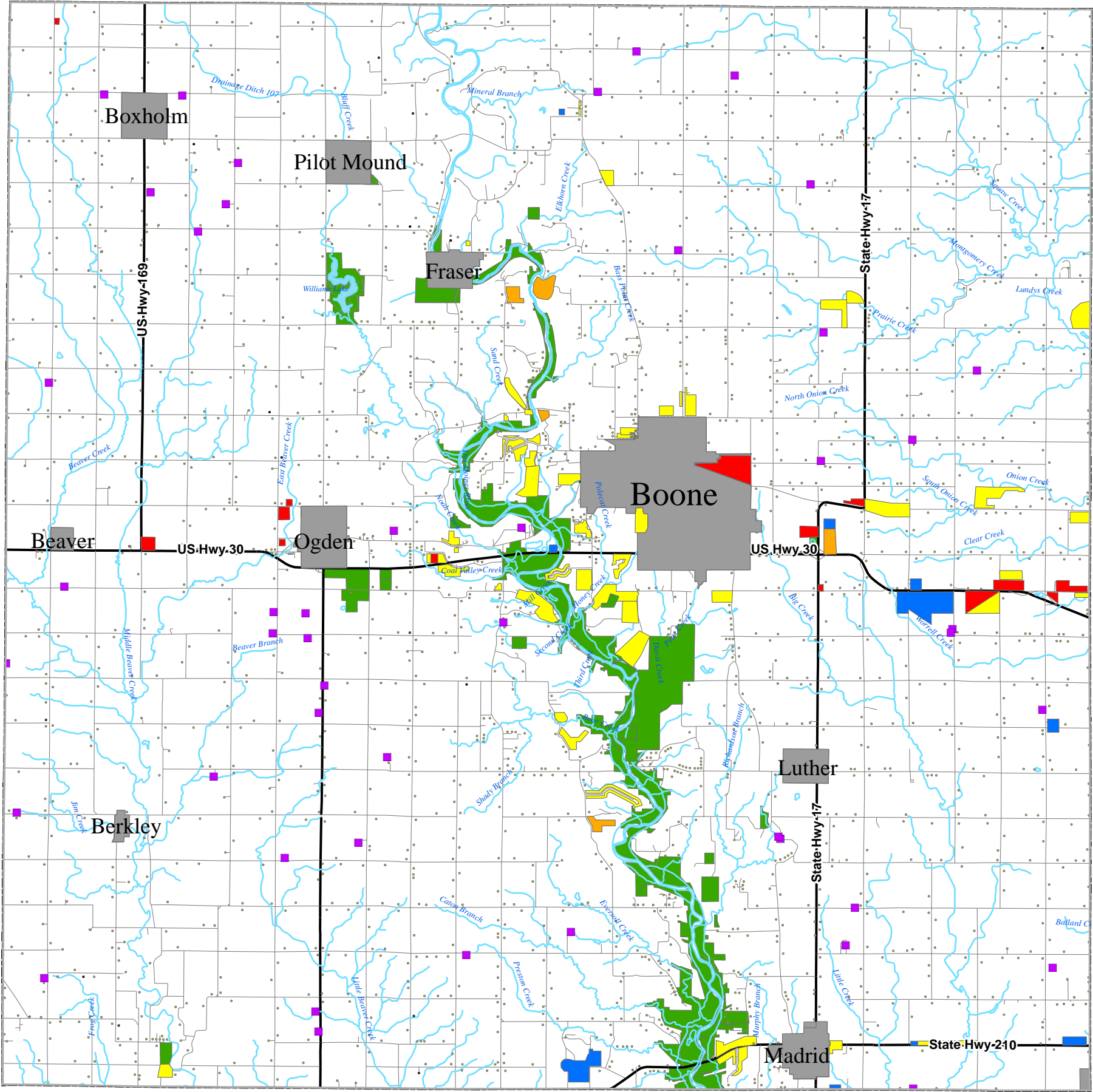


A zoomed in view of the small points indicating single rural residential, farmsteads, and Agricultural Storage Facilities

Prepared By: JEO Consulting Group, Inc.
Source: 2002 Color Infra-Red Aerial Photo, GISU (Iowa State)
GIS Process: ArcView 9.0

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CREATED BY: S.E.H., NOVEMBER 2005
REVISED BY: C.P.W., MAY 2007



Existing Land Use Analysis**Physical Character of Boone County**

One of the most critical factors, with regards to land use development in any area is the physical characteristics of the area. The physical character of Boone County is dominated at the central portion of the county with the Des Moines River Valley with agricultural dominance in land use both west and east of the river valley. However, the river valley area has experienced the majority of the rural growth. Most of the development has been low density residential or commonly known as acreage development. The main attribute is the scenic nature of the area. The eastern portion of the county is experiencing urban growth from the western outskirts of Ames, Iowa.

Rural Unincorporated Land Uses***Agriculture Development***

The vast majority of the 365,760 acres of land within the county is used for agricultural production. The most prominent agricultural activities are crop production. According to the 2002 Census of Agriculture County Profile, Boone County has 312,708 acres of land in agricultural production or 85.5% of the entire county. The average size of the 827 farms was 378 acres in 2002. Corn and soybeans accounted for 258,580 acres, or 82.6% of the acres in agricultural production.

Livestock Confinement

Industrial agricultural operations of varying sizes, including confined livestock feeding operations, are spread across Boone County. Figure 22 displays 26 livestock confinement facilities. The digital file used contains locations of confinement feeding operations that are registered with the Iowa DNR. This digital, geographically referenced data set was developed by the Iowa Department of Natural Resources (2007) to carry out agency responsibilities related to management, protection, and development of Iowa's natural resources. This coverage supplants the CAFOs coverage, due to the legal definition for CAFO meaning only facilities with 1000 animal units or more. The existing operations within Boone County, in most instances, are located a substantial distance from the urban areas of the county. These uses are indicated as Livestock Confinement on the existing land use map, Figure 22. Generally, many of the industrial agricultural uses are located in areas where rural farmsteads are the predominant land use. The development of these uses in close proximity with farmsteads in the county has occurred for the same reasons original farmsteads were constructed; the availability of adequate water, supplies, higher crop production potentials, and the desire to have the confined feeding facilities located near the producers' farming or ranching operations.

Agriculture Storage

Figure 22 indicates the amount of agriculture storage in Boone County. Aside from agricultural development, agriculture storage is the leading use of land in the rural portions of the county. As stated before, this land use could include vacant farmsteads, mechanical storage, and agriculture storage such as grain or livestock. Usually this type of land use has a relatively low impact on the land. These storage facilities are evenly distributed throughout the county; usually close to a farmstead, but some do stand alone. Some of these uses could be seasonal, thus, when locating future agriculture storage sites, certain guidelines should be followed.

Farmstead Development

As indicated in Figure 22, farmsteads are evenly scattered throughout the county. Examination of the land use pattern, with regard to farmstead development, reveals no specific pattern aside from the fact that the majority of farmsteads

were developed in areas where the soils are the most conducive to crop production and near a major transportation route. Limited farmstead development has occurred in areas of the county where the soils are not conducive to crop production, which, in most instances, is in areas where there are steep slopes.

Rural Residential Development

Non-farm rural residential development is a growing trend throughout Iowa over the past two or three decades. This has been driven by market demand for larger parcels of land and larger homes outside of the corporate boundaries of communities. In most instances, larger parcels of land are not available within the corporate limits of smaller cities; as a result, development has occurred in rural areas. This trend should continue to occur throughout the county in the future. It is important for the governing body of Boone County to acknowledge the potential increase in non-farm residents in the future, and design regulations that adequately manage their impact on the existing uses within the county.

Non-farm rural residential development has occurred in select areas within the county. The majority of non-farm residential development, as indicated in Figure 22, has occurred in the central portion of the county along the Des Moines River Valley to the east and south of Boone. This increase is due, in part, to the scenic nature of this area. Also, the eastern half of the county has developed over the last 10 years due to the proximity to Ames and other urbanized areas.

Commercial/Industrial Development

As indicated in Figure 22, rural commercial development is limited in Boone County. The majority of most commercial operations and businesses are located within the corporate limits of the communities within the county. Some rural commercial development can be found near U.S. Highway 30 and Iowa Highway 17 and northwest of Ogden.

The Boone County Existing Land Use Map displays industry northeast of Boone. However, the majority of industrial land uses are agricultural in nature and may be found scattered throughout the county.

Public Development

As shown in Figure 22, public land use sites are located throughout Boone County. Public developments in Boone County include research facilities, resource centers, public service infrastructure, schools, and mental care facilities.

Quasi-Public Development

Quasi-public developments are typically owned by a governmental agency, non-profit, or religious entity. Many quasi-public developments are camps including; the 4-H camp and Boy Scout Camp south of the City of Boone, and the Girl Scout Camp north of the City of Boone.

Recreation Development

At the present time, Boone County has a limited amount of recreational development. One large state park, Ledges State Park, as well as Holst State Forest, and Don Williams County Park. Recreational development includes golf courses, state parks, county parks, public hunting facilities, and private noncommercial facilities.

Existing Residential Density

Two different residential density maps, (Figures 23-24), derived from the 2007 Boone County assessment records, depict the density of residential development within Boone County. The maps were developed in direct response to the growing concerns of rural residential growth in rural areas of the county, primarily in the central and eastern areas of Boone County and also around Boone. These maps display spatially where and how much rural residential development has been allowed to occur in the county. These maps can be utilized, when making future land use decisions as well as future transportation decisions.

For example, if a particular section of land has been deemed a higher density area with rural residential properties, then this specific section should be given due amount of care when future residential growth decisions are proposed. Additionally, when future transportation project decisions are visited at a county level, again this particular area of the county should given a higher priority when making these decisions to meet the needs of these county residents. In addition to land use and transportation decisions, services and facilities also must be weighed, depending upon the density of development in that area of the county. This allows the planning commission and the governing body of Boone County to fully analyze the ratio of development and the services that need to be provided to residents in a specific area of the county.

Figure 23 and Figure 24 show density by quarter-quarter section, or 40-acre tracts. The data utilized to create the maps came from 2007 Boone County assessment records and 2007 parcel data. Density calculations were performed using ArcView 9.2. The methodology of the calculations utilized properties classified as residential or agriculture which also contained a home or E911 address. The Geographic Information System (ArcView 9.2) performed this calculation and counted parcels meeting the above noted criteria. This information was then used to group quarter-quarter sections according to total density. The graduated color ramp indicates darker colors for higher densities. The inverse of lighter colors are shown for areas having lower densities.

Acreage Density by Quarter-Quarter Section

Figure 23 displays the acreage density per quarter-quarter section (40 acres) for Boone County. Acreage development does not include farms. The map displays graduated density levels by quarter-quarter sections.

The majority of development appears primarily in the area directly west of Boone extending south along the Des Moines River to Madrid.

Total Residential Development by Quarter-Quarter Section

Figure 24 displays the total residential development per quarter-quarter section Boone County. Total residential includes farm developments which include a home. The map displays graduated density levels by quarter-quarter section. 0 units

When including farm developments, the map appears much more dense.

BOONE COUNTY, IOWA

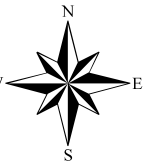
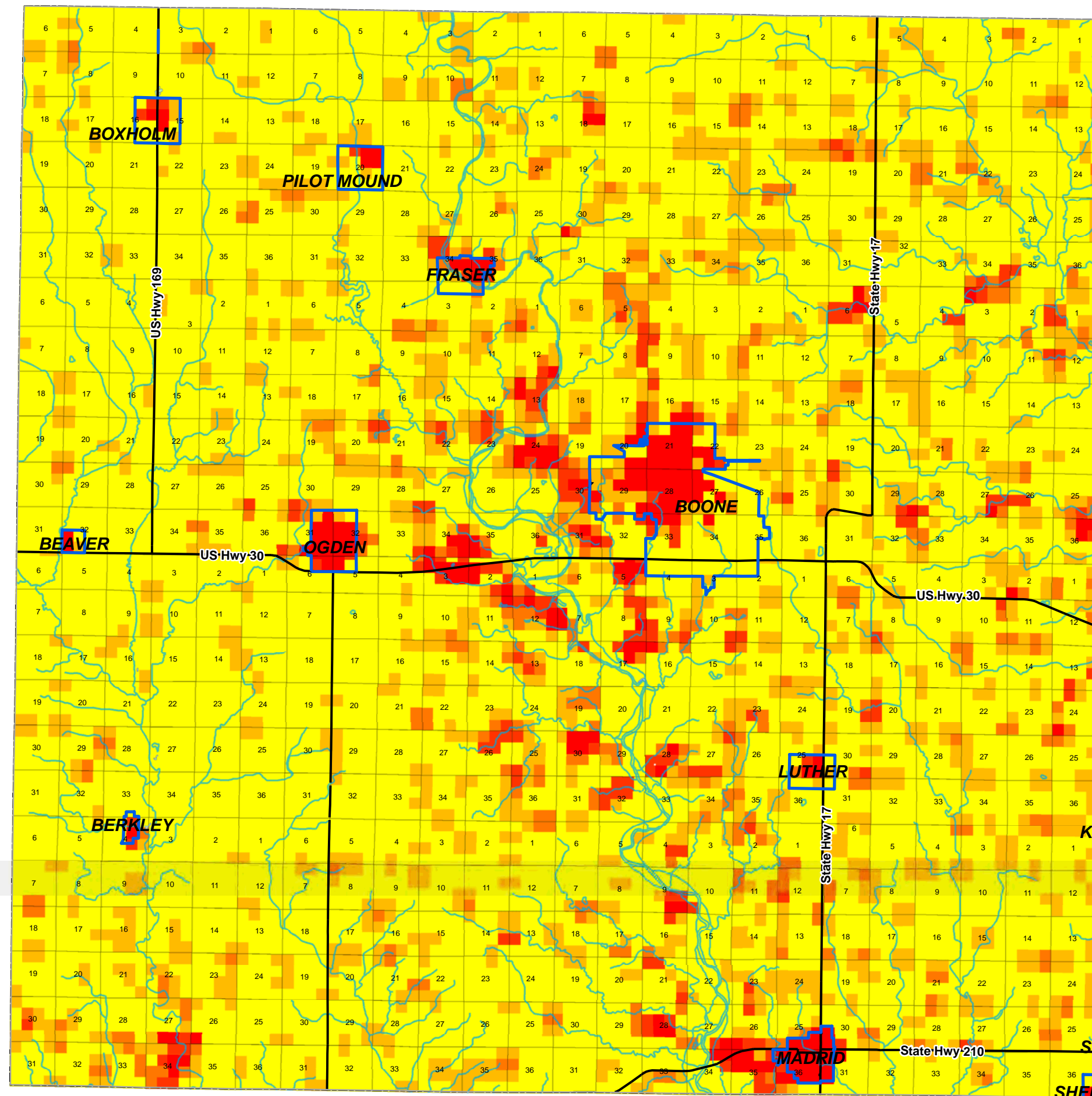
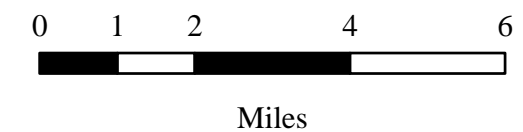


Figure 23: Acreage (Non-ag) Density Per Quarter-Quarter Section



Acreage Density

- Low Density
-
- High Density
- Corporate Boundaries



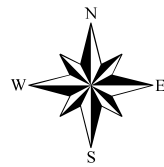
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Source: 2002 Color Infra-Red Aerial Photo, GISU (Iowa State)
GIS Process: ArcView 9.0

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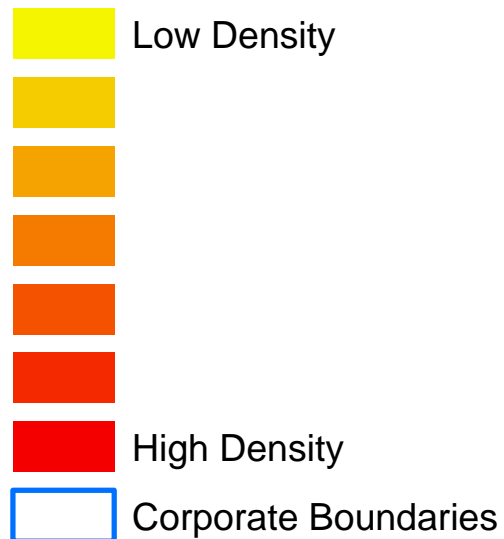


BOONE COUNTY, IOWA



**Figure 24: Total Residential Density
Per Quarter-Quarter Section**

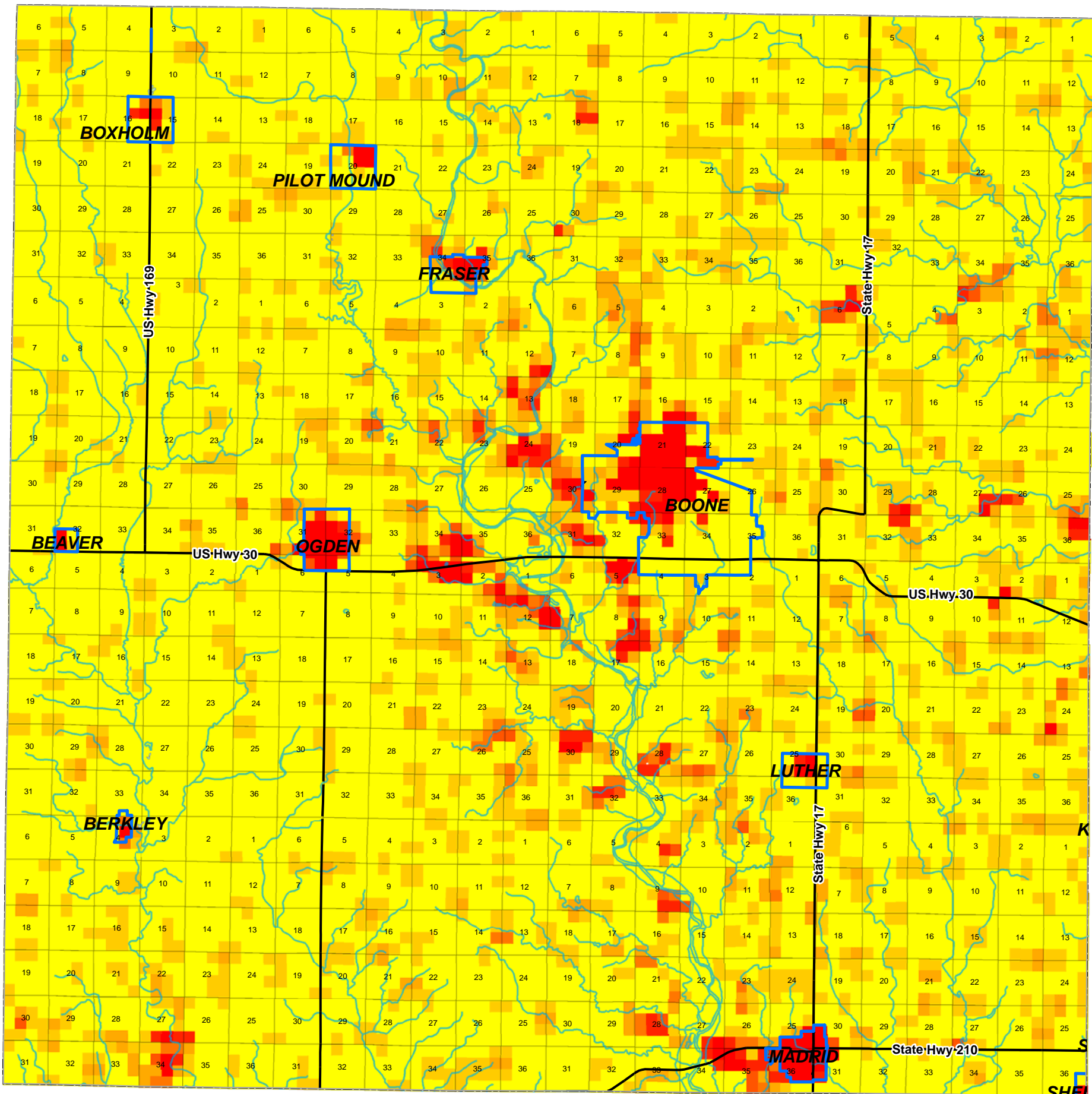
Total Residential Density



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Source: 2002 Color Infra-Red Aerial Photo, GISU (Iowa State)
GIS Process: ArcView 9.0

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REVISED BY:



EXISTING LAND USE SUMMARY

The existing land use pattern in the rural portions of the county should have implications with the development of land use in the future. There should be a place for each type of development (i.e., farming, non-farm residents and confined feeding operations) within the rural portions of Boone County, but locating these uses should be extensively evaluated. If Boone County is to encourage development within the rural areas of the county, it will be imperative to formulate Future Land Use Plan and Zoning Regulations, which effectively balance development and minimize conflicting land uses.

Overall, the existing land use pattern in Boone County consists of agricultural activity with an increasing amount of rural residential development in the central and south central portions of the county near the Des Moines River Valley. The county also has seen new development in the eastern portion of the county as Ames continues to expand to the west of Story County.

Major issues that have been, or are currently, impacting existing uses include:

- Des Moines River Greenbelt
- Confined Animal Feeding Operations
- Growth pressures from the east, specifically the city of Ames and Story County
- Increasing numbers of acreage development

ENVISION BOONE COUNTY

GOALS AND POLICIES

Introduction

Planning for future land uses of the county is an ongoing process of goal setting and problem-solving aimed at encouraging and enhancing better communities and a higher quality of life. Planning focuses upon ways of solving existing problems within the county, and providing a management tool enabling Boone County citizens to achieve their vision for the future.

Visioning is a process of evaluating present conditions, identifying problem areas, and bringing about consensus on how to overcome existing problems and manage change. By determining Boone County's strengths and weaknesses, the community can decide what it wants to be, and then develop a "roadmap" guiding decisions and ultimately fulfilling the vision of the county.

Change is continuous, therefore Boone County must decide specific criteria that will be used to judge and manage change. Instead of reacting to development pressures after the fact, the county, along with its strategic vision, can better reinforce the desired changes, and discourage negative impacts that may undermine the vision. A shared vision permits Boone County to focus its diverse energies and minimize conflicts in the present and in the future.

Key components of a Comprehensive Plan are its goals and policies. The issues and concerns of the citizens are developed into a vision. The vision statement can then be further delineated and translated into action statements, used to guide, direct, and base decisions for future growth, development, and change within Boone County. Consensus on "what is good land use?" and "how to manage change in order to provide the greatest benefit to the county and its residents?" is formed. Boone County's goals and policies attempt to address various issues, regarding the questions of "how" to plan Boone County for the future.

Goals are desires, necessities, and issues to be attained in the future. A goal should be established in a manner that allows it to be accomplished. Goals are the end-state of a desired outcome. Goals also play a factor in the establishment of policies within a county. In order to attain certain goals and/or policies within county government, they may need to be modified or changed from time to time.

Policies are concerned with defining and implementing the broad goals of the Comprehensive Plan. Policies are a means to achieving the goals established by the county. They are specific statements of principles or actions that imply a clear commitment that is not mandatory. Policies are part of the value system linking goals with actions. Policies have three different elements: (1) an end that needs to be achieved, (2) a means by which to achieve that end, and (3) an administrative mechanism by which the means are implemented.

These policies synthesize information from the goals, as well as the responses from the participants of the Town Hall meetings in order to develop solutions that will achieve the goals of the Comprehensive Plan. Therefore, policies play an important role in the Comprehensive Plan because they are the actions that need to be taken to meet the goals.

The goals and policies assure that the Comprehensive Plan accomplishes the desires of the residents in Boone County. This section of the Comprehensive Plan is, therefore, a compilation of local attitudes generated through public meetings and workshops. When followed, development proposals in the county will be evaluated as to their relationship with the citizens' comments. Therefore, goals and policies should be referred to as diligently as the Future Land Use Map or any other part of the Comprehensive Plan when reviewing and/or making recommendations on planning issues. Likewise, they should be current, in order to reflect the attitudes and desires of the county and its residents.

It is important for counties to establish their goals and policies in a manner that allows for both long-term and short-term accomplishments. The short-term goals and policies serve several functions:

- Allow for immediate feedback and success, which fuels the desire to achieve additional goals and better policies.
- Allow for the distribution of resources over time, thus assuring a balanced use of public investment.
- Establish certain policies that need to be followed before the long-term goals can be accomplished.

Boone County Town Hall Meetings

During January 2006, a total of six town hall meetings were held to gather input on issues (both positive and negative) facing the residents of Boone County. At each meeting the group in attendance was asked to identify negative and positive aspects of the county. The residents were also asked to identify issues that were affecting the county and needed action. Finally, the citizens in attendance were asked to identify specific projects they desired to see completed in the next 5, 10, or 20 years. The attendees then ranked their three top priorities for each question. The following information summarizes the results of each question and the corresponding number and percentage of Boone County residents who voted for each response.

Note, the number of points for each question may differ, due to the fact that not all residents prioritized three concerns for each question or they used all of their points to indicate one major problem that needed action. In addition, not every resident of Boone County will agree with the order of these issues or these were all the aspects of the county that should have been listed, but this was taken from the participants at the town hall meetings. Another detail to note is that not all issues indicated have goals and policies identified, since they do not have bearing on the land use of the county. The county, through the appropriate governing bodies, should attend to the issues not addressed by the goals and policies, due to their specific nature.

As stated before, during the town hall meetings the participants were asked four questions, which included the following:

Positives

1) "WHAT ARE THE POSITIVE ASPECTS OR STRENGTHS OF BOONE COUNTY?"

This question was presented to the participants as a brainstorming exercise. Through brainstorming and listing every response, the participants are more likely to engage in a discussion that can lead to more responses. The reasoning behind this question is to identify topics in the county that are positives, and through comprehensive planning, these positives can be built upon through the planning period.

Items Needing Improvement**2) “WHAT ARE THINGS IN BOONE COUNTY THAT NEED TO BE IMPROVED?”**

Participants in the town hall meetings were asked to respond to this question as honestly as possible. They were told there were no wrong or bad responses. The reasoning behind this question is to identify what in the county required improvement so that through comprehensive planning, these negatives can be turned into positives.

Community Vision**3) “WHAT IS YOUR VISION FOR BOONE COUNTY IN 20 YEARS?”**

In order to respond to this question, participants were asked to describe what an ideal community (i.e., Boone County) would be like in the next 10 to 20 years. This is intended to generate common goals and offer something that the population as a whole could move towards.

Achieving the Vision**4) “WHAT IS NEEDED TO HELP ACHIEVE BOONE COUNTY’S VISION?”**

This question is intended to get participants to think of projects or resources necessary to achieve the vision for Boone County, raised in the previous question. This gave the participants an opportunity to dream a little and express their desires for the county.

TOWN HALL MEETINGS**Town Hall Meeting #1, January 5, 2006 (Ogden Senior Center)****TABLE 43: POSITIVE ASPECTS OF BOONE COUNTY, OGDEN SENIOR CENTER**

Rank	Positives	Total Points	% of Total Points
1	Zoning and Land Use Regulations	6	13.3%
2	Rural Water	5	11.1%
3	Productive Soils	5	11.1%
4	County Transportation System	4	8.9%
5	4-Lane Highway	4	8.9%
6	Schools	3	6.7%
7	River	3	6.7%
8	Great Place to Live	3	6.7%
9	Good Rural Area	3	6.7%
10	County Road System	2	4.4%
11	Proximity To Des Moines and Ames	1	2.2%
12	Low Tax Rates	1	2.2%
13	Low Crime Rate	1	2.2%
14	Jobs	1	2.2%
15	Hunting and Fishing Opportunities	1	2.2%
16	Great Parks	1	2.2%
17	Adequate Labor Force	1	2.2%
18	Work Ethic	0	0.0%
19	Volunteerism	0	0.0%
20	Tourist Attractions - B.V.S.R.R./Others	0	0.0%
21	People	0	0.0%
22	Good Run County Government	0	0.0%
23	Clean Air	0	0.0%
24	Churches	0	0.0%
25	3 Golf Courses	0	0.0%
Total		45	100.0%

Source: Town Hall Meeting, Ogden Senior Center – January 5, 2006, at 3:00 p.m.

TABLE 44: ITEMS NEEDING IMPROVEMENT IN BOONE COUNTY, OGDEN SENIOR CENTER

Rank	Things Needed to be Improved	Total Points	% of Total Points
1	Better Paying Jobs	7	16.7%
2	Railroad Overpasses/Grade Separations	5	11.9%
3	Recreation/Bike Trails	5	11.9%
4	High Speed Communications	5	11.9%
5	Increase Retail Businesses	4	9.5%
6	Improving Highway 17	3	7.1%
7	Contain Urban Sprawl	3	7.1%
8	Consolidate Schools	3	7.1%
9	Railroad Crossing Maintenance	2	4.8%
10	Impaired Waterways - Waste & Treatment	2	4.8%
11	Better Marketing - Value Added Agriculture	2	4.8%
12	High Property Taxes	1	2.4%
13	Stormwater Runoff Control	0	0.0%
14	Rural Health Care	0	0.0%
15	River Access	0	0.0%
16	Programming & Communication - County Cons. BD	0	0.0%
17	Mass Transit	0	0.0%
18	Call Hospital to Countywide Focus	0	0.0%
19	Better Gravel on Roads	0	0.0%
Total		42	100.0%

Source: Town Hall Meeting, Ogden Senior Center – January 5, 2006, at 3:00 p.m.

TABLE 45: VISION FOR BOONE COUNTY, OGDEN SENIOR CENTER

Rank	Vision	Total Points	% of Total Points
1	Preserve Rural Character and Beauty	9	17.6%
2	Growth Compatible with Agriculture	8	15.7%
3	Enhanced Job Opportunities	6	11.8%
4	U.S. 30 Business Corridor	4	7.8%
5	Strong Ag Community	3	5.9%
6	Increased Recreational Opportunities	3	5.9%
7	Improved Senior Services	3	5.9%
8	Horse Friendly	3	5.9%
9	Healthy Growth Rate	3	5.9%
10	Quality Housing - Variety, Well Maintained	2	3.9%
11	Lowest Property Taxes in Iowa	2	3.9%
12	Small Town Feel	1	2.0%
13	Maintain Hunting & Fishing Opportunities	1	2.0%
14	Large Enough to Support 3 School Districts	1	2.0%
15	Intensive Use of Parks	1	2.0%
16	Be 1 of 35 Iowa Counties	1	2.0%
17	Preserve Wildlife	0	0.0%
18	Just Be Here	0	0.0%
Total		51	100.0%

Source: Town Hall Meeting, Ogden Senior Center – January 5, 2006, at 3:00 p.m.

TABLE 46: ACHIEVING BOONE COUNTY’S VISION, OGDEN SENIOR CENTER

Rank	Action Steps	Total Points	% of Total Points
1	Zoning to Control Growth	7	15.6%
2	Industrial Development - Well Located	7	15.6%
3	Good Comprehensive Plan and Planning	7	15.6%
4	Good Government - Responsive and Visionary	5	11.1%
5	Various Recreation Trails with Area Connections	3	6.7%
6	Outside Funding Sources	3	6.7%
7	Grow Tax Base Through Expansion	3	6.7%
8	Increased Recreation Facilities	2	4.4%
9	Building Codes	2	4.4%
10	Balance Various Funding Sources - Matching Funds	2	4.4%
11	Public Education (Stakeholders)	1	2.2%
12	Marketing - Housing, Economic Choices, Etc.	1	2.2%
13	Good Agriculture Development	1	2.2%
14	Better Ties to ISU Research Facilities	1	2.2%
15	Capitol Improvement Plan	0	0.0%
16	Accommodations in Area	0	0.0%
Total		45	100.0%

Source: Town Hall Meeting, Ogden Senior Center – January 5, 2006, at 3:00 p.m.

Town Hall Meeting #2, January 5, 2006 (Boone – United Elementary Library)**TABLE 47: POSITIVE ASPECTS OF BOONE COUNTY, UNITED ELEMENTARY LIBRARY**

Rank	Positives	Total Points	% of Total Points
1	Rural Character	7	14.3%
2	Low Crime Rate	5	10.2%
3	High Quality Farmground	4	8.2%
4	Des Moines River Valley	4	8.2%
5	Able to See Stars at Night	4	8.2%
6	Proximity to Ames/Des Moines	3	6.1%
7	Parks & Public Land	3	6.1%
8	Cost of Living	3	6.1%
9	Sparse Population	2	4.1%
10	Service Organizations	2	4.1%
11	Low County Tax Rates	2	4.1%
12	Highway System - 4 Lanes	2	4.1%
13	County Road System	2	4.1%
14	Rural Water System	1	2.0%
15	Planning and Land Use Regulations	1	2.0%
16	Large Woodland Areas	1	2.0%
17	Lack of Traffic	1	2.0%
18	Friendly Atmosphere	1	2.0%
19	Dedicated County Officials	1	2.0%
20	Schools	0	0.0%
21	Railroad History	0	0.0%
22	Natural Environment - Clean Air	0	0.0%
23	Christian Community	0	0.0%
24	Access to Clean Water	0	0.0%
Total		49	100.0%

Source: Town Hall Meeting, United Elementary Library – January 5, 2006, at 7:00 p.m.

TABLE 48: ITEMS NEEDING IMPROVEMENT IN BOONE COUNTY, UNITED ELEMENTARY LIBRARY

Rank	Things Needed to be Improved	Total Points	% of Total Points
1	Size and Placement of Subdivisions	9	16.1%
2	More Employment Opportunities	6	10.7%
3	Water Quality for Recreation and Other Uses	5	8.9%
4	More Youth Recreation	4	7.1%
5	Encourage Small Businesses	4	7.1%
6	Support Small Towns	3	5.4%
7	Pride in Cleanliness	3	5.4%
8	Light Pollution	3	5.4%
9	Farm Ground Preservation	3	5.4%
10	Wireless Communications	2	3.6%
11	Recreation Opportunities - Trails, Water Sports	2	3.6%
12	Litter Control	2	3.6%
13	Increase Tax Base	2	3.6%
14	Highway 17	2	3.6%
15	Housing that is Environmental Friendly	2	3.6%
16	More Variety of Businesses - Restaurants, Etc.	1	1.8%
17	More Public Involvement	1	1.8%
18	Mass Transit Opportunities	1	1.8%
19	Access To Local Food - Farmers Market, Etc.	1	1.8%
20	Secondary Road Maintenance	0	0.0%
21	More Public Input on Projects	0	0.0%
22	Health Care - Hospitals, Clinics	0	0.0%
Total		56	100.0%

Source: Town Hall Meeting United Elementary Library – January 5, 2006, at 7:00 p.m.

TABLE 49: VISION FOR BOONE COUNTY, UNITED ELEMENTARY LIBRARY

Rank	Vision	Total Points	% of Total Points
1	Planned Growth	9	17.0%
2	Watershed Protection	8	15.1%
3	Hwy 30 Business Corridor	6	11.3%
4	Subdivisions Near Cities	5	9.4%
5	Restored Wetlands & Prairies	4	7.5%
6	Locally Developed Food System	4	7.5%
7	Balance Growth w/Enc.	4	7.5%
8	Good Place to Work	3	5.7%
9	Ecotourism Opportunities	3	5.7%
10	Infill Development in Cities	2	3.8%
11	Forest Protection	2	3.8%
12	Continue as a Farming Community	2	3.8%
13	No New Dev. In DSM Greenbelt Aside from COE Areas	1	1.9%
14	Smaller More Diverse Farms	0	0.0%
15	Heritage Tourism Opportunities	0	0.0%
Total		53	100.0%

Source: Town Hall Meeting, United Elementary Library – January 5, 2006, at 7:00 p.m.

TABLE 50: ACHIEVING BOONE COUNTY’S VISION, UNITED ELEMENTARY LIBRARY

Rank	Action Steps	Total Points	% of Total Points
1	Watershed Improvement Program	8	13.8%
2	Look More than 20 Years Ahead	6	10.3%
3	Controlled Smart Growth	6	10.3%
4	Things to Draw and Keep People Here	5	8.6%
5	System to Reward Conservation In Development	5	8.6%
6	Zoning Based on Sound Planning	4	6.9%
7	Industrial/Community Development	4	6.9%
8	More Jobs	3	5.2%
9	Less Political Deviation	3	5.2%
10	Erase Negative Perceptions	3	5.2%
11	Recreation Advisory Board	2	3.4%
12	Light Pollution Ordinance	2	3.4%
13	Keep Local Money Circulating in Area	2	3.4%
14	Zoning Board to Reflect County	1	1.7%
15	Public Education of Planning	1	1.7%
16	Outside Funding Sources	1	1.7%
17	Flexible Zoning Codes	1	1.7%
18	Economic Tax Incentives	1	1.7%
19	Regional Farmers Market	0	0.0%
20	Political Will to Implement Plans	0	0.0%
21	Make People Feel Listened To	0	0.0%
22	Develop Leadership Capacity	0	0.0%
Total		58	100.0%

Source: Town Hall Meeting, United Elementary Library – January 5, 2006, at 7:00 p.m.

Town Hall Meeting #3, January 6, 2006 (Boone County Historical Society)

TABLE 51: POSITIVE ASPECTS OF BOONE COUNTY, BOONE COUNTY HISTORICAL SOCIETY

Rank	Positives	Total Points	% of Total Points
1	Beautiful Area - River Valley	9	21.4%
2	Strong Schools	5	11.9%
3	Wildlife	4	9.5%
4	Livestock Production - Horses, Etc.	4	9.5%
5	Hospital (Boone County) and Medical Clinics	4	9.5%
6	Low Crime Rate	3	7.1%
7	Tourism Opportunities	2	4.8%
8	People	2	4.8%
9	Good Major Roads - County and State	2	4.8%
10	Development Regulations - Zoning/Subdivisions	2	4.8%
11	Close to ISU	2	4.8%
12	Williams Lake	1	2.4%
13	Quality of Life	1	2.4%
14	Few Environmental Problems	1	2.4%
15	SMACC	0	0.0%
16	Rural Water	0	0.0%
17	Rescue and Fire	0	0.0%
18	Recreation Areas - Parks, Etc.	0	0.0%
19	Hunting and Fishing	0	0.0%
20	Habitat for Humanity	0	0.0%
21	Good Ag Community	0	0.0%
22	Des Moines River	0	0.0%
23	Churches	0	0.0%
24	Camps	0	0.0%
25	Bike Trails	0	0.0%
26	Access to Metro Areas	0	0.0%
27	4-Lane Highway	0	0.0%
Total		42	100.0%

Source: Town Hall Meeting, Boone County Historical Society – January 9, 2006, at 3:00 p.m.

TABLE 52: ITEMS NEEDING IMPROVEMENT IN BOONE COUNTY, BOONE COUNTY HISTORICAL SOCIETY

Rank	Things Needed to be Improved	Total Points	% of Total Points
1	Railroad Overpass in Boone	9	20.9%
2	Job Opportunities	7	16.3%
3	Increase Tax Base	7	16.3%
4	Fill Downtown Buildings in Cities	7	16.3%
5	Wireless Communications	4	9.3%
6	Lower Drug Abuse	4	9.3%
7	More Parking - Schools/Downtown	2	4.7%
8	Tighter Controls on Cell Tower Construction	1	2.3%
9	Long Distance/Telephone Communications	1	2.3%
10	"X" Avenue & E57 Traffic Flow	1	2.3%
11	Youth Recreation Opportunities	0	0.0%
12	US 169 North of US 30	0	0.0%
13	Mass Transit	0	0.0%
14	Lower Teen Pregnancy Rates	0	0.0%
15	Highway 17 Traffic Flow	0	0.0%
16	E57 Signage	0	0.0%
17	E26 to be Safer	0	0.0%
Total		43	100.0%

Source: Town Hall Meeting, Boone County Historical Society – January 9, 2006, at 3:00 p.m.

TABLE 53: VISION FOR BOONE COUNTY, BOONE COUNTY HISTORICAL SOCIETY

Rank	Vision	Total Points	% of Total Points
1	Rural Areas Maintained	9	20.9%
2	Small Town Atmosphere Maintained	8	18.6%
3	Good Jobs	7	16.3%
4	Small Business Opportunities	5	11.6%
5	Developed US 30 Business Corridor	3	7.0%
6	Balance Growth & the Environment	3	7.0%
7	Things for Youth to Do Jobs School Rec Activities	2	4.7%
8	Planned Growth	2	4.7%
9	Contained Urban & Rural Sprawl	2	4.7%
10	Subdivision Close to Cities	1	2.3%
11	Keep Hospital Named Boone County Hospital	1	2.3%
12	A Good Place to Live	0	0.0%
Total		43	100.0%

Source: Town Hall Meeting, Boone County Historical Society – January 9, 2006, at 3:00 p.m.

TABLE 54: ACHIEVING BOONE COUNTY’S VISION, BOONE COUNTY HISTORICAL SOCIETY

Rank	Action Steps	Total Points	% of Total Points
1	Protect Natural Resources - Air, Water and Soil	7	20.0%
2	Good Leadership - Public and Elected Officials	6	17.1%
3	Large Tax Base Along US 30	5	14.3%
4	Protect Wildlife and Wooded Areas	3	8.6%
5	Comprehensive Plan	3	8.6%
6	Protect Private Property Rights	2	5.7%
7	Promote Ecotourism	2	5.7%
8	Clean Up Junk Areas	2	5.7%
9	Strong Economic Development Efforts	1	2.9%
10	Keep Land Owned Locally/Nationally	1	2.9%
11	Controlled Growth - Zoning, Etc.	1	2.9%
12	Better Marketing	1	2.9%
13	Better Connections with ISU	1	2.9%
14	Public Education	0	0.0%
15	Outside Funding Sources	0	0.0%
16	Maintain Good Schools	0	0.0%
17	Maintain Good Law Enforcement	0	0.0%
Total		35	100.0%

Source: Town Hall Meeting, Boone County Historical Society – January 9, 2006, at 3:00 p.m.

Town Hall Meeting #4, March 21, 2001 (Des Moines Area Community College – Boone Campus)

TABLE 55: POSITIVE ASPECTS OF BOONE COUNTY, DES MOINES AREA COMMUNITY COLLEGE

Rank	Positives	Total Points	% of Total Points
1	Excellent Schools	6	10.9%
2	Recreational Opportunities	5	9.1%
3	Proximity to Urban Centers	4	7.3%
4	Uncrowded	3	5.5%
5	Productive Soils	3	5.5%
6	Low Taxes	3	5.5%
7	Chances to Buy Local Produce	3	5.5%
8	Agriculture	3	5.5%
9	4 Lane US 30	3	5.5%
10	Rural	2	3.6%
11	Labor Force	2	3.6%
12	Hospital/Health Care	2	3.6%
13	Historical Train Depot	2	3.6%
14	DSM River Valley	2	3.6%
15	Architectural Preservation	2	3.6%
16	Strong Family Values/History	1	1.8%
17	Rural Water	1	1.8%
18	Recycling Center	1	1.8%
19	Low Light Pollution	1	1.8%
20	Local Festivals	1	1.8%
21	Hunting & Fishing	1	1.8%
22	Historic Resources	1	1.8%
23	Family Oriented	1	1.8%
24	County Government	1	1.8%
25	Churches	1	1.8%
26	Wildlife	0	0.0%
27	Service Organizations	0	0.0%
28	Senior Living Options	0	0.0%
29	Secondary/Higher Ed	0	0.0%
30	Safe	0	0.0%
31	People	0	0.0%
32	Ledges SP	0	0.0%
33	Landfill	0	0.0%
34	Family Resource Center	0	0.0%
35	Diverse Employment Base - Many Companies	0	0.0%
36	County Roads	0	0.0%
37	Clean Air	0	0.0%
38	Banks	0	0.0%
Total		55	100.0%

Source: Town Hall Meeting, Des Moines Area Community College (Boone Campus) – January 9, 2006, at 7:00 p.m.

TABLE 56: ITEMS NEEDING IMPROVEMENT IN BOONE COUNTY, DES MOINES AREA COMMUNITY COLLEGE

Rank	Things Needed to be Improved	Total Points	% of Total Points
1	US 30 Business Corridor	6	13.6%
2	Expand Tax Base	6	13.6%
3	Wireless Communications - Hi-Speed	5	11.4%
4	Better Paying Jobs	5	11.4%
5	Recreation Trails/Bike Lanes	4	9.1%
6	More Natural Areas - Increased Conservation	3	6.8%
7	Water Quality	2	4.5%
8	Urban Sprawl Contained	2	4.5%
9	More Natural Grasses	2	4.5%
10	Highway 17	2	4.5%
11	Cooperation with Other Counties	2	4.5%
12	City/County Cooperation Regarding ETJ	2	4.5%
13	Building Codes and Planning Regulations	2	4.5%
14	More Jobs	1	2.3%
15	Quality Affordable Housing	0	0.0%
16	Impediments to Transportation - Des Moines River/Union Pacific	0	0.0%
17	Expand Retail Base	0	0.0%
18	Better Communication with Citizens Regarding Planning and Zoning	0	0.0%
Total		44	100.0%

Source: Town Hall Meeting, Des Moines Area Community College (Boone Campus) – January 9, 2006, at 7 :00 p.m.

TABLE 57: VISION FOR BOONE COUNTY, DES MOINES AREA COMMUNITY COLLEGE

Rank	Vision	Total Points	% of Total Points
1	Well Planned Growth	10	21.7%
2	Growth & Diversity of Agriculture	6	13.0%
3	Support Small Businesses	5	10.9%
4	Preserve Ag Ground	5	10.9%
5	Growth Compatible w/Ag	4	8.7%
6	DSM River Greenbelt - Trails/Amenities	4	8.7%
7	Built Up US 30 Corridor	4	8.7%
8	More Paved County Roads	3	6.5%
9	Viable Small Cities	2	4.3%
10	Local Grade Schools	2	4.3%
11	Alternative Energy Used	1	2.2%
12	Small Town Atmosphere	0	0.0%
13	Mass Transit - DSM/AMES/Boone	0	0.0%
14	Historic Preservation	0	0.0%
15	Diverse Housing Supported	0	0.0%
16	3 Local High Schools	0	0.0%
Total		46	100.0%

Source: Town Hall Meeting, Des Moines Area Community College (Boone Campus) – January 9, 2006, at 7:00 p.m.

TABLE 58: ACHIEVING BOONE COUNTY'S VISION, DES MOINES AREA COMMUNITY COLLEGE

Rank	Action Steps	Total Points	% of Total Points
1	Sound Land Use Policies	6	16.2%
2	Preserve Assets - Land, People, Etc.	6	16.2%
3	Invest in Infrastructure	5	13.5%
4	High Quality, Good Paying Jobs	5	13.5%
5	Niche Business Development/Marketing	3	8.1%
6	Community and Industry Development	3	8.1%
7	Willing to Cooperate - Agencies, Government, Etc.	2	5.4%
8	Maintain Public and Private Leadership	2	5.4%
9	Good Government	2	5.4%
10	Expanded Tax Base	2	5.4%
11	Well-Funded Schools	1	2.7%
12	Responsive State Government	0	0.0%
13	Public Education Regarding Planning and Zoning	0	0.0%
14	Outside Funding Sources	0	0.0%
15	Openness to a Diverse Population	0	0.0%
16	Better Marketing	0	0.0%
17	Asset Based Development	0	0.0%
Total		37	100.0%

Source: Town Hall Meeting, Des Moines Area Community College (Boone Campus) – January 9, 2006, at 7:00 p.m.

Town Hall Meeting #5, January 10, 2006 (Pilot Mound Community Center)

TABLE 59: POSITIVE ASPECTS OF BOONE COUNTY, PILOT MOUND COMMUNITY CENTER

Rank	Positives	Total Points	% of Total Points
1	Productive Soils	4	19.0%
2	Des Moines River Valley	4	19.0%
3	Active Agriculture	3	14.3%
4	Small Businesses	2	9.5%
5	Good Roads	2	9.5%
6	Schools Are Good	1	4.8%
7	Rural Water	1	4.8%
8	Proximity to Des Moines/DMACC and Ames/ISU	1	4.8%
9	Low Taxes	1	4.8%
10	Diverse Economy	1	4.8%
11	4-Lane Highway	1	4.8%
12	Tourism Opportunities	0	0.0%
13	Service/Volunteer Organizations	0	0.0%
14	Rural Feel	0	0.0%
15	Railroad	0	0.0%
16	Outdoor Recreation Opportunities	0	0.0%
17	Low Crime Rate	0	0.0%
18	Historic Resources	0	0.0%
19	Family Values/Orientation	0	0.0%
20	Diverse Tax Base	0	0.0%
21	County Government	0	0.0%
22	Community Pride	0	0.0%
23	Clean Air	0	0.0%
24	Churches	0	0.0%
Total		21	100.0%

Source: Town Hall Meeting, Pilot Mound Community Center – January 10, 2006, at 3:00 p.m.

TABLE 60: ITEMS NEEDING IMPROVEMENT IN BOONE COUNTY, PILOT MOUND COMMUNITY CENTER

Rank	Things Needed to be Improved	Total Points	% of Total Points
1	More Job Opportunities	4	17.4%
2	Contain Sprawl	4	17.4%
3	Small Business Support	3	13.0%
4	Mass Transit	3	13.0%
5	Expand Retail Base	3	13.0%
6	Hi-Speed Wireless Communications	2	8.7%
7	Appropriate Zoning Codes	2	8.7%
8	Snow Removal	1	4.3%
9	Highway 17 Improvements	1	4.3%
Total		23	100.0%

Source: Town Hall Meeting, Pilot Mound Community Center – January 10, 2006, at 3:00 p.m.

TABLE 61: VISION FOR BOONE COUNTY, PILOT MOUND COMMUNITY CENTER

Rank	Vision	Total Points	% of Total Points
1	Viable Small Cities	4	18.2%
2	Rural Character	4	18.2%
3	Balance Between Different Types of Development	4	18.2%
4	US 30 Business Corridor	3	13.6%
5	Ethanol Plant	3	13.6%
6	Balance of Residential, Agricultural and Recreation Areas	3	13.6%
7	More Paved Roads	1	4.5%
8	Value-Added Agriculture	0	0.0%
9	Additional Recreational Opportunities	0	0.0%
Total		22	100.0%

Source: Town Hall Meeting, Pilot Mound Community Center – January 10, 2006, at 3:00 p.m.

TABLE 62: ACHIEVING BOONE COUNTY'S VISION, PILOT MOUND COMMUNITY CENTER

Rank	Action Steps	Total Points	% of Total Points
1	Sound Land Use Planning	6	27.3%
2	Good Leadership - Training, Etc.	4	18.2%
3	Realistic Expectations in Rural Areas	2	9.1%
4	Enhance Employment and Recreational Opportunities	2	9.1%
5	Communication Across Jurisdictions	2	9.1%
6	Youth Involvement	1	4.5%
7	Public Education Regarding Planning	1	4.5%
8	Marketing	1	4.5%
9	Increase Tax Base	1	4.5%
10	Comprehensive Plan Compatible with Cities	1	4.5%
11	A Good Comprehensive Plan	1	4.5%
12	Renovate Existing Housing Stock	0	0.0%
13	Renovate Existing Community Areas	0	0.0%
14	Outside Funding Sources	0	0.0%
15	Match Residential Needs to Other Growth	0	0.0%
16	Infrastructure Investment	0	0.0%
17	Environmental Preservation - Light, Air and Water	0	0.0%
18	Asset Based Management	0	0.0%
19	Good Nursing Home	0	0.0%
Total		22	100.0%

Source: Town Hall Meeting, Pilot Mound Community Center – January 10, 2006, at 3:00 p.m.

Town Hall Meeting #6, January 10, 2006 (Madrid Public Library)

TABLE 63: POSITIVE ASPECTS OF BOONE COUNTY, MADRID PUBLIC LIBRARY

Rank	Positives	Total Points	% of Total Points
1	Natural Resources	11	20.4%
2	Rural	8	14.8%
3	DSM River Valley	5	9.3%
4	Small Town Atmosphere	4	7.4%
5	Prime Ag Areas	4	7.4%
6	Infrastructure	3	5.6%
7	Central Location	3	5.6%
8	Public Hunting	2	3.7%
9	Health Care Access	2	3.7%
10	Clean Air	2	3.7%
11	Beautiful/Scenic	2	3.7%
12	Wildlife	1	1.9%
13	Rural Water	1	1.9%
14	Rec Opportunities	1	1.9%
15	Low Taxes	1	1.9%
16	Low Crime Rate	1	1.9%
17	History	1	1.9%
18	Educational Opportunities	1	1.9%
19	4-Lane Roads	1	1.9%
20	Senior Transit	0	0.0%
21	Railroads	0	0.0%
22	People - Caring/AARD Working	0	0.0%
23	Features - 4-H Camp, ARB, Etc.	0	0.0%
24	Easy Commute	0	0.0%
Total		54	100.0%

Source: Town Hall Meeting, Madrid Public Library – January 10, 2006, at 7:00 p.m.

TABLE 64: ITEMS NEEDING IMPROVEMENT IN BOONE COUNTY, MADRID PUBLIC LIBRARY

Rank	Things Needed to be Improved	Total Points	% of Total Points
1	Contain Urban Sprawl	10	16.4%
2	Regulations to Protect Environmental Quality - Soil, Air and Water	8	13.1%
3	Protection of Ag Economy	6	9.8%
4	Retail in Small Towns	5	8.2%
5	Job Opportunities	4	6.6%
6	Increased Fines - Litter, Etc.	3	4.9%
7	Expand/Improve Recreational Opportunities/Balance with Environment	3	4.9%
8	Consistent Rules	3	4.9%
9	Youth Opportunities	2	3.3%
10	Increased Local Value Added Ag Opportunities	2	3.3%
11	Improve Highway 17 - Width, Safety, Etc.	2	3.3%
12	Hi-Speed Communications	2	3.3%
13	Help Downtowns	2	3.3%
14	Develop a Greenbelt along the Des Moines River	2	3.3%
15	Preserve Historic Sites	1	1.6%
16	More Public Lands	1	1.6%
17	More Guided Leadership	1	1.6%
18	More Growth in Small Towns	1	1.6%
19	Cooperation Across Government Jurisdictions	1	1.6%
20	Communication between Government and Citizens	1	1.6%
21	Bike Paths/Lanes Along Roads and Des Moines River	1	1.6%
22	Wildflowers in Ditches	0	0.0%
23	User Fees	0	0.0%
24	Tourist Amenities	0	0.0%
25	Reasonable Taxes to Provide Services/Programs	0	0.0%
26	Planned Development That Doesn't Take Green Spaces Away	0	0.0%
27	Nature/Conservation Programs	0	0.0%
28	More Turnout at Public Meetings/Hearings	0	0.0%
29	More Participatory Democracy	0	0.0%
30	More Money	0	0.0%
31	Mass Transit to Des Moines, Ames, and Other Cities	0	0.0%
32	Longer Planning Efforts Beyond 20 Years	0	0.0%
33	Less Isolation Between Neighbors	0	0.0%
34	Enforce Existing Codes	0	0.0%
35	Deer Population	0	0.0%
36	Control Invasive Plants	0	0.0%
Total		61	100.0%

Source: Town Hall Meeting, Madrid Public Library – January 10, 2006, at 7:00 p.m.

TABLE 65: VISION FOR BOONE COUNTY, MADRID PUBLIC LIBRARY

Rank	Vision	Total Points	% of Total Points
1	Healthy Natural Environment - Air, Water, Etc.	10	20.0%
2	Clear Regulations/Codes for Zoning, Planning and Building	7	14.0%
3	Preserve Ag Land	6	12.0%
4	Preserve Nature	5	10.0%
5	Develop Economic Niches	5	10.0%
6	Value Added Ag Opportunities	3	6.0%
7	Small Towns with Sustained Growth	3	6.0%
8	Good Enforcement of Codes	3	6.0%
9	Des Moines River Greenbelt/Recreation	3	6.0%
10	Preserve Schools - Local, Small with Opportunities	2	4.0%
11	Youth Involvement in Agriculture	1	2.0%
12	Year Round Local Food Sources	1	2.0%
13	Balance of Taxes vs. Wants and Needs	1	2.0%
14	Improved Internet Communications	0	0.0%
15	Connected Recreation Trails	0	0.0%
Total		50	100.0%

Source: Town Hall Meeting, Madrid Public Library – January 10, 2006, at 7:00 p.m.

TABLE 66: ACHIEVING BOONE COUNTY’S VISION, MADRID PUBLIC LIBRARY

Rank	Action Steps	Total Points	% of Total Points
1	Regulations to Protect Air and Water	7	13.7%
2	Keep Local Money Circulating Locally	6	11.8%
3	Encourage Sustainable Ag	6	11.8%
4	Preserve Property Rights	5	9.8%
5	User Fees	4	7.8%
6	Develop/Support Local Businesses	4	7.8%
7	Clear Codes - Planning, Zoning and Building	4	7.8%
8	Strengthen Tax and Economic Base	3	5.9%
9	Historic Preservation - Buildings, Archeological Sites (ID Sites/Rehab/Protect)	3	5.9%
10	Larger Developments On Public Utilities and By Cities	2	3.9%
11	Balance Ag Protection with Natural Environment	2	3.9%
12	Outside Dollars Coming In - Grants, Etc.	1	2.0%
13	Leadership Development and Training - Staff/Officials/Public	1	2.0%
14	Incentives to Do Infill Development and Rehabilitation	1	2.0%
15	Develop Regional Viewpoint	1	2.0%
16	Better Connections with ISU	1	2.0%
17	US 30 Business/Industry Corridor	0	0.0%
18	Promote Conservation Easements/Transfer of Development Rights	0	0.0%
19	Methods to Assist with Rehabilitation	0	0.0%
20	Increased Inspections	0	0.0%
21	Help Identify Areas to Preserve - Ask Outside Groups to Help	0	0.0%
22	Due Benchmarks/Notifications Diligence - Regarding Planning and Zoning Matters	0	0.0%
23	Designate Bike Paths/Lanes	0	0.0%
24	Better Cooperation with Government Agencies	0	0.0%
25	Award Projects/People	0	0.0%
Total		51	100.0%

Source: Town Hall Meeting, Madrid Public Library – January 10, 2006, at 7:00 p.m.

Overall Town Hall Meetings, Boone County

The four tables below summarize the results of all town hall meetings. Similar responses were grouped when found.

TABLE 67: POSITIVE ASPECTS OF BOONE COUNTY, OVERALL

What are the positive aspects of Boone County?	POINTS	% of TOTAL
High Quality Farm ground	27	9.2%
Schools	24	8.2%
Rural Character	20	6.8%
Des Moines River Valley	18	6.1%
Hwy System - 4 Lanes	12	4.1%
Good Major Roads - County & State	12	4.1%
Natural Resources	11	3.7%
Low Crime Rate	10	3.4%
Rural Water System	10	3.4%
Proximity to Ames/DSM	9	3.1%
Planning and Land Use Regulations	9	3.1%
Parks & Public Land	9	3.1%
Agriculture	9	3.1%
Hospital (Boone Co.) & Medical Clinics	8	2.7%
Low Taxes	7	2.4%
Recreational Opportunities	6	2.0%
Wildlife	5	1.7%
Sparse Population	5	1.7%
Great Parks	5	1.7%
Able to See Stars at Night	5	1.7%
Small Town Atmosphere	4	1.4%
Livestock Production - Horses, Etc.	4	1.4%
Hunting & Fishing Opportunities	4	1.4%
Architectural Preservation	4	1.4%
Labor Force	3	1.0%
Infrastructure	3	1.0%
Great Place to Live	3	1.0%
Cost of Living	3	1.0%
Close to ISU	3	1.0%
Chances to Buy Local Produce	3	1.0%
Central Location	3	1.0%
Tourism Opportunities	2	0.7%
Small Businesses	2	0.7%
Service Organizations	2	0.7%
People	2	0.7%
Historical Train Depot	2	0.7%
Health Care Access	2	0.7%
Friendly Atmosphere	2	0.7%
Dedicated County Officials	2	0.7%
Clean Air	2	0.7%
Beautiful/Scenic	2	0.7%
DMACC/Educational Opportunities	2	0.7%
History/Historic Resources	2	0.7%
Strong Family Values/History	1	0.3%
Recycling Center	1	0.3%
Quality of Life	1	0.3%
Local Festivals	1	0.3%
Large Woodland Areas	1	0.3%
Lack of Traffic	1	0.3%
Jobs	1	0.3%
Diverse Employment Base - Many Companies	1	0.3%
Diverse Economy	1	0.3%
County Government	1	0.3%
Churches	1	0.3%
Work ethic	0	0.0%
Volunteerism	0	0.0%
Tourist Opportunities	0	0.0%
Service/Volunteer Org's	0	0.0%
Senior Transit	0	0.0%
Senior Living Options	0	0.0%
Rescue & Fire	0	0.0%
Railroad History	0	0.0%
Railroad	0	0.0%
Ledges State Park	0	0.0%
Landfill	0	0.0%

Historic Resources	0	0.0%
Habitat for Humanity	0	0.0%
Good Ag Community	0	0.0%
Features - 4-H Camp, Etc.	0	0.0%
Family Resource Center	0	0.0%
Easy Commute	0	0.0%
Diverse Tax Base	0	0.0%
Community Pride	0	0.0%
Christian Community	0	0.0%
Camps	0	0.0%
Bike Trails	0	0.0%
Banks	0	0.0%
3 Golf Courses	0	0.0%
TOTAL	293	100.0%

Source: Town Hall Meetings

After combining all of the results from the town hall meetings attendees voted the 'high quality farm' ground as the most positive aspect of Boone County. High quality farm ground received a total of 27 votes, or 9.2% of the total 293 votes. Other noted positives include the schools with 24 votes, rural character with 20 votes, and the Des Moines River Valley with 18 votes. Overall, quality of life, transpiration, and agricultural issues were mentioned as common positive aspects of Boone County.

TABLE 68: IMPROVEMENTS OF BOONE COUNTY, OVERALL

What needs to be improved in Boone County?	POINTS	% of TOTAL
High Property Taxes	20	7.2%
River Access	19	6.9%
Impaired Waterways - Wastes & Treatment	19	6.9%
Consolidate Schools	12	4.3%
Stormwater Runoff Control	9	3.2%
RR Overpasses/Grade Sep's	9	3.2%
RR Crossing Maintenance	9	3.2%
Better Marketing - Value Added Ag	9	3.2%
Call Hospital to Countywide Focus	8	2.9%
Water Quality - for Rec & Other Uses	7	2.5%
Programming & Communication - County Cons. BD	7	2.5%
More Public Involvement	7	2.5%
Better Gravel on Roads	7	2.5%
Size & Placement of Subdivisions	6	2.2%
Rec. Opportunities - Trails, Water Sports	6	2.2%
Pride in Cleanliness	6	2.2%
More Employment Opportunities	6	2.2%
Litter Control	6	2.2%
Housing that is Environmental Friendly	6	2.2%
Support Small Towns	5	1.8%
Secondary Road Maintenance	5	1.8%
Light Pollution	5	1.8%
Increase Tax Base	5	1.8%
Farm Ground Preservation	5	1.8%
Wireless Communications	4	1.4%
US 169 North of US 30	3	1.1%
Tighter Controls on Cell Tower Construction	3	1.1%
RR Overpass in Boone	3	1.1%
More Variety of Businesses - Restaurants, Etc.	3	1.1%
More Parking - Schools/Downtown	3	1.1%
Lower Drug Abuse	3	1.1%
Long Distance/Telephone Communications	3	1.1%
Encourage Small Businesses	3	1.1%
Building Codes & Planning Regulations	3	1.1%
Access To Local Food - Farmers Market, Etc.	3	1.1%
Recreation Trails/Bike Lanes	2	0.7%
Quality Affordable Housing	2	0.7%
More Natural Grasses	2	0.7%
More Natural Areas-Increased Conservation	2	0.7%
More Jobs	2	0.7%
Lower Teen Pregnancy Rates	2	0.7%
Hwy 17	2	0.7%

Expand Retail Base	2	0.7%
E57 Signage	2	0.7%
E26 to be Safer	2	0.7%
City/County Cooperation Regarding ETJ	2	0.7%
Better Paying Jobs	2	0.7%
Better Communication w/Citizens Regarding P & Z	2	0.7%
"X" Avenue & E57 Traffic Flow	2	0.7%
Water Quality	1	0.4%
US 30 Business Corridor	1	0.4%
Snow Removal	1	0.4%
Regulations to Protect Environmental. Quality - Soil/Air/Water	1	0.4%
Preserve Historic Sites	1	0.4%
More Guided Leadership	1	0.4%
Job Opportunities	1	0.4%
Hi Speed Communications	1	0.4%
Expand/Improve Rec Opportunities Balance w/Env.	1	0.4%
Develop a Greenbelt along the SDM River	1	0.4%
Cooperation Across Gov't Jurisdictions	1	0.4%
Consistent Rules	1	0.4%
Youth Opportunities	0	0.0%
Wildflowers in Ditches	0	0.0%
User Fees	0	0.0%
Tourist Amenities	0	0.0%
Retail in Small Towns	0	0.0%
Reasonable Taxes to Provide Services/Programs	0	0.0%
Protection of Ag Economy	0	0.0%
Planned Dev. That Doesn't Take Green Spaces Away	0	0.0%
Nature/Conservation Programs	0	0.0%
More Turnout at Public Meetings/Hearings	0	0.0%
More Public Lands	0	0.0%
More Money	0	0.0%
More Growth in Small Towns	0	0.0%
Mass Transit to DSM/Ames/Other Cities	0	0.0%
Longer Planning Efforts Beyond 20 Years	0	0.0%
Less Isolation Between Neighbors	0	0.0%
Increased Local Value Added Ag Opportunities	0	0.0%
Improve Hwy 17 - Width/Safety/Etc	0	0.0%
Help Downtowns	0	0.0%
Deer Population	0	0.0%
Control Invasive Plants	0	0.0%
Contain Urban Sprawl	0	0.0%
Communication w/Gov't & Citizens	0	0.0%
Bike Paths/Lanes - Along Roads & DSM River	0	0.0%
TOTAL	277	100.0%

Source: Town Hall Meetings

When asked what needed improved in Boone County attendees voted for lowering the 'high property taxes' as the priority. High property taxes received 20 votes out of the 277 total, or 7.2%. Improving river access and improving impaired waterways received 19 votes each, and consolidating schools received 12 votes total. Overall, improving recreation opportunities and environmental quality were mentioned most often.

TABLE 69: VISION OF BOONE COUNTY, OVERALL

What is your vision for Boone County?	POINTS	% of TOTAL
Well Planned Growth	21	7.8%
Built Up US 30 Corridor	20	7.4%
Preserve Nature - Watersheds, Forests, etc.	15	5.6%
Rural Character	13	4.8%
Growth Compatible w/Ag	12	4.5%
Preserve Ag Ground	11	4.1%
Healthy Natural Environment - Air/Water/Etc.	10	3.7%
Viable Small Cities	9	3.3%
Small Town Atmosphere	9	3.3%
Rural Areas Maintained	9	3.3%
Growth & Diversity of Agriculture	9	3.3%
Good Jobs	7	2.6%
DSM River Greenbelt - Trails/Amenities	7	2.6%
Clear Regulations/Codes - Zoning/Planning/Building	7	2.6%

Balance Growth with the Environment	7	2.6%
Enhanced Job Opportunities	6	2.2%
Year Round Local Food Sources	5	1.9%
Support Small Businesses	5	1.9%
Subdivisions Near Cities	5	1.9%
Small Business Opportunities	5	1.9%
Local Grade Schools	5	1.9%
Develop Economic Niches	5	1.9%
Restored Wetlands & Prairies	4	1.5%
More Paved County Roads	4	1.5%
Balance Between Different Types of Development	4	1.5%
Value Added Ag Opportunities	3	1.1%
Improved Senior Services	3	1.1%
Horse Friendly	3	1.1%
Healthy Growth Rate	3	1.1%
Good Place to Work	3	1.1%
Good Enforcement of Codes	3	1.1%
Ethanol Plant	3	1.1%
Ecotourism Opportunities	3	1.1%
Balance of Res/Ag/Recreation Areas	3	1.1%
Additional Rec Opportunities	3	1.1%
3 Local High Schools	3	1.1%
Things for Youth to Do Jobs/School/Recreation Activities	2	0.7%
Quality Housing - Variety, Well Maintained	2	0.7%
Lowest Property Taxes in Iowa	2	0.7%
Infill Development in Cities	2	0.7%
Continue as a Farming Community	2	0.7%
Contained Urban & Rural Sprawl	2	0.7%
Youth Involvement in Agriculture	1	0.4%
Subdivision Close to Cities	1	0.4%
No New Dev. In DSM Greenbelt Aside from COE Areas	1	0.4%
Maintain Hunting & Fishing Opportunities	1	0.4%
Large Enough to Support 3 School Districts	1	0.4%
Keep Hospital Named Boone County Hospital	1	0.4%
Intensive Use of Parks	1	0.4%
Be 1 of 35 Iowa Counties	1	0.4%
Balance of Taxes vs. Wants/Needs	1	0.4%
Alternative Energy Used	1	0.4%
Smaller More Diverse Farms	0	0.0%
Mass Transit - DSM/AMES/Boone	0	0.0%
Just be Here	0	0.0%
Improved Internet Communications	0	0.0%
Historic Preservation	0	0.0%
Heritage Tourism Opportunities	0	0.0%
Diverse Housing Supported	0	0.0%
Connected Recreation Trails	0	0.0%
A Good Place to Live	0	0.0%
TOTAL	269	100.0%

Source: Town Hall Meetings, Recap

Town hall meeting attendees view ‘well planned growth’ as the priority for a vision for Boone County over the next twenty years with 21 votes of the total 269 votes, or 7.8%. Building up the US Highway 30 corridor received 20 votes, or 7.4% of the total votes. Preservation of nature and agriculture, rural character and growth compatible with agriculture all were voted as priorities. Overall, the attendees feel that sustainable growth and maintaining the rural atmosphere will be the vision for Boone County.

TABLE 70: ACHIEVE THE VISION OF BOONE COUNTY, OVERALL

What needs to be done to Achieve this Vision?	POINTS	% of TOTAL
Sound Land Use Policies	19	7.5%
Good Comp Plan and Planning	12	4.8%
Zoning to Control Growth	11	4.4%
Good Leadership - Public & Elected Officials	11	4.4%
Industrial Development - Well Located	10	4.0%
Expanded Tax Base	9	3.6%
Watershed Improvement Program	8	3.2%
High Quality/Good Paying Jobs	8	3.2%

Regulations to Protect Air/Water	7	2.8%
Protect Natural Resources - Air, H2O, Soil	7	2.8%
Outside Funding Sources	7	2.8%
Encourage Sustainable Ag	7	2.8%
Preserve Assets - Land/People/Etc.	6	2.4%
Look More Than 20 Years Ahead	6	2.4%
Controlled Smart Growth	6	2.4%
Building Codes	6	2.4%
US 30 Business/Industry Corridor	5	2.0%
Things to Draw & Keep People	5	2.0%
System to Reward Cons. In Development	5	2.0%
Preserve Property Rights	5	2.0%
Invest in Infrastructure	5	2.0%
Zoning Based on Sound Planning	4	1.6%
User Fees	4	1.6%
Industrial/Community Development	4	1.6%
Good Leadership - Training/Etc.	4	1.6%
Develop/Support Local Businesses	4	1.6%
Enhance Employment & Recreation Opportunities	4	1.6%
Various Recreation Trails - w/Area Connections	3	1.2%
Public Education Regarding P & Z	3	1.2%
Protect Wildlife & Wooded Areas	3	1.2%
Niche Business Development/Marketing	3	1.2%
Maintain Public & Private Leadership	3	1.2%
Less Political Deviation	3	1.2%
Historic Preservation - Buildings/Arch Sites/ID Sites/Rehab/Protect	3	1.2%
Erase Negative Perceptions	3	1.2%
Better Connections with ISU	3	1.2%
Willing to Cooperate - Agencies/Gov't/Etc	2	0.8%
Recreation Advisory Board	2	0.8%
Realistic Expectations in Rural Areas	2	0.8%
Protect Private Property Rights	2	0.8%
Promote Ecotourism	2	0.8%
Marketing	2	0.8%
Light Pollution Ordinance	2	0.8%
Larger Dev. On Public Utilities & By Cities	2	0.8%
Keep Local Money Circulating in Area	2	0.8%
Good Government	2	0.8%
Communication Across Jurisdictions	2	0.8%
Clean Up Junk Areas	2	0.8%
Balance Ag Protection with Natural Environment	2	0.8%
Zoning Board to Reflect County	1	0.4%
Youth Involvement	1	0.4%
Well Funded Schools	1	0.4%
Strong Econ. Development Efforts	1	0.4%
Marketing - Housing, Ec. Choices, ETC	1	0.4%
Keep Land Owned Locally/Nationally	1	0.4%
Incentives to do Infill Dev/Rehab	1	0.4%
Flexible Zoning Codes	1	0.4%
Economic Tax Incentives	1	0.4%
Develop Regional Viewpoint	1	0.4%
Responsive State Gov't	0	0.0%
Renovate Existing Housing Stock	0	0.0%
Renovate Existing Community Areas	0	0.0%
Regional Farmers Market	0	0.0%
Promote Conservation Easements/TDR	0	0.0%
Political Will to Implement Plans	0	0.0%
Openness to a Diverse Population	0	0.0%
Methods to Assist with Rehab	0	0.0%
Match Residential Needs to Other Growth	0	0.0%
Make People Feel Listened	0	0.0%
Maintain Good Schools	0	0.0%
Maintain Good Law Enforcement	0	0.0%
Increased Inspections	0	0.0%
Help Identify Areas to Preserve - Ask Outside Groups to Help	0	0.0%
Environmental Preservation - Light/Air/Water	0	0.0%
Due Benchmarks/Notifications Diligence - Regarding P & Z Matters	0	0.0%
Designate Bike Paths/Lanes	0	0.0%
Capitol Improvement Plan	0	0.0%
Better Cooperation with Gov't Agencies	0	0.0%
Award Projects/People	0	0.0%
Asset Based Management	0	0.0%
Asset Based Development	0	0.0%

Accommodations in Area	0	0.0%
A good nursing home	0	0.0%
TOTAL	252	100.0%

Source: Town Hall Meetings

When asked how best to achieve the vision for Boone County town hall participants voted ‘sound land use policies’ as the top priority with 19 votes out of the 252 total, or 7.5%. Zoning to control growth, good public leadership, and comprehensive planning all received 11 votes each. Overall, participants discussed land use planning and zoning regulations to promote smart growth to achieve the vision.

GOALS AND POLICIES FOR BOONE COUNTY

The goals and policies that have been generated for Boone County are organized into general categories. The categories are broad enough to allow many issues to fall within them, but narrow enough to allow a fairly clear distinction and separation. These categories are used for a logical organization of goals and policies.

Each response from the town hall meetings were categorized into one of these general categories. The vote totals from each response are summarized below with a listing of reoccurring comments and suggestions. Comments that did not receive a vote were not included in the vote total summary.

General Land Use – 72 votes

- Preserve the rural character
- Balance between development and the natural environment
- Infill development should occur in cities

Agricultural Land Use – 94 votes

- High quality farmland
- Preserve agricultural ground
- Balance agricultural development with natural environment

Commercial Land Use – 23 votes

- Chance to buy local produce
- Small business opportunities
- Need more variety of business

Industrial Land Use – 22 votes

- Ethanol Plant
- Industrial development to be well located
- US Highway 30 business/industrial corridor

Residential Land Use – 25 votes

- Improve placement of subdivisions
- Incentives to do infill for development and rehabilitation

Environment – 131 votes

- Des Moines River Valley
- Better litter control
- Limit development within the Des Moines River greenbelt
- Alternative energy use

Water Resources – 47 votes

- Impaired water resources
- Good accessibility to river

Economic Development – 113 votes

- Need better marketing
- Strong economic development efforts
- Develop a regional viewpoint

Public Facilities and Taxes – 107 votes

- Education opportunities are available
- Property taxes are high
- Need to expand the tax base
- Improve recreational facilities

Public Works – 36 votes

- Rural water system
- Invest in infrastructure
- Access to clean water

Transportation – 97 votes

- More paved county roadways
- Four-lane highway systems
- Lack of traffic

Health and Safety – 71 votes

- Low crime rate
- Good hospital and medical clinic
- Small town atmosphere

Parks and Recreation – 63 votes

- Improve recreational activities/trails/bike lanes/water activities
- Creation of a recreation advisory board
- Hunting/fishing opportunity

Implementation, Evaluation, and Review – 170 votes

- Establish strong planning, land use regulations and policies
- More public involvement
- Well planned growth
- Zoning to control growth

Based upon total votes from each town hall meeting, attendees believe implementation, evaluation, and review is one of the most important goals. Environment was second, economic development was third, followed by public facilities and taxes, transportation, and agricultural land use as top vote receivers.

When considering the following goals and policies, it may become evident that they may conflict with one another. In such cases, these conflicts should be discussed and the relative importance of one policy be weighed against another to determine the best course of action.

Land Use**Goal 1**

Boone County should manage the land in a cost-effective and efficient manner, while protecting the environment and natural resources, as well as maintaining and increasing land values. Guiding future growth and development in Boone County towards a compact pattern of land uses, based upon the efficient and economical expansion of public infrastructure will continue to maintain and improve the quality of life for Boone County residents.

General Policies

- 1.1.1 Require review and comment process prior to zoning commission and county board public hearings for any proposed activity that should occur within county zoning jurisdiction.
- 1.1.2 Cost required improvements, both on-site and off-site, to a subdivision that are to exclusively serve the property owners of the subdivision to the developer or those property owners within said subdivision.
- 1.1.3 Require coordination and review of all planning and zoning activities as they relate to extraterritorial jurisdictions.
- 1.1.4 Designate areas in the Land Use Plan that address the anticipated future growth needs of the county.
- 1.1.5 Develop zoning and subdivision regulations that promote efficient land usage and long-term adequacy, while avoiding land use conflicts and inefficient provision of public infrastructure.
- 1.1.6 Encourage development of vacant lands located near cities, by providing regulatory incentives that promote appropriate land uses.
- 1.1.7 Discourage and minimize leap-frog development outside of cities.
- 1.1.8 Allow agricultural production in all areas in which agricultural uses are appropriate, and non-agricultural development in agricultural areas should be allowed in specifically designated areas which do not negatively impact agricultural uses.

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- 1.1.9 Regulations should be established and implemented that create setback and buffer requirements to prevent residential development near agriculture or to prevent development near CAFOs.

Agricultural Policies

- 1.2.1 Develop criteria to designate areas of Boone County identified as “Prime Farmland”.
- 1.2.2 Promote the diversification of agricultural production by generating additional value to existing products should be encouraged to locate or expand within Boone County.
- 1.2.3 Encourage low to zero non-farm densities in prime farmland areas and other agricultural districts by providing residential lot size requirements and proper separation distances between residential and agricultural uses.
- 1.2.4 Protect prime agricultural land and maintain the quality of groundwater.
- 1.2.5 Support livestock production and related agricultural businesses designed, operated and located consistent with maintaining the health, safety, welfare and natural resources of the county and its residents.
- 1.2.6 Work with livestock producers on a continual basis in evaluating regulations.

Commercial Policies

- 1.3.1 Encourage the location of neighborhood commercial land uses at the intersections of major transportation networks that already have or can be efficiently supplied with public infrastructure.
- 1.3.2 Utilize frontage roads when locating along major roads/highways.
- 1.3.3 Require landscaping and architectural standards for all new commercial construction and expansion to existing operations.

Industrial Development Policies

Industrial development is important to the economic vitality of Boone County. The provision of adequate urban services is a major concern in an industry's location and operation. Industrial parks serve to consolidate industrial activities into a designated area in order to reduce incompatibility with surrounding land uses.

- 1.4.1 Heavy industrial uses with seasonal or high nuisance characteristics are encouraged to locate or relocate only in areas where all required services are available, well removed and shielded from existing or projected residential development.
- 1.4.2 Those industrial areas located outside community's extraterritorial jurisdiction need to be compatible with the industrial development goal and will be located where they can be adequately served by necessary major utility lines, including electric power substations and transmission lines, trunk sewer lines, trunk water lines, and where appropriate, trunk gas lines.
- 1.4.3 Industrial uses which are incompatible with surrounding residential or commercial development and cannot bear the cost of abating their incompatible characteristics, whether related to performance or appearance, will be encouraged to locate or relocate to areas with similar industrial developments, and where all required services are immediately available.
- 1.4.4 Industrial uses will be located so that adequate buffer space is provided between incompatible land uses.
- 1.4.5 Develop appropriate performance, design, and specification standards, and requirements for all existing and possible future industrial uses to guide their location or relocation in the county and within existing industrial areas of the county.

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- 1.4.6 Discourage industrial development not utilizing rail transport from locating next to a railroad right-of-way.
 - 1.4.7 The county will encourage industrial development that is energy efficient. Energy conservation measures that will be promoted include, but are not limited to, the following:
 - 1) Efficient building, manufacturing, and heating practices;
 - 2) Co-generation systems including the burning of wastes; and
 - 3) Utilization of new and alternative systems.
 - 1.4.8 Encourage industrial development which bases its products on renewable and indigenous raw materials.
 - 1.4.9 The county will recognize and encourage small scale industries as viable alternatives to larger, conventional enterprises.
 - 1.4.10 Performance standards should be implemented as a means of regulating industrial activity so as to moderate or abate objectionable features in their operation

Residential Land Use Policies

- 1.5.1 Residential development should be separated from more intensive uses, such as agriculture, industrial, and commercial development, by the use of setbacks, buffer zones, or impact easements.
- 1.5.2 Work with community officials and developers on a continual basis to monitor and evaluate the effectiveness of existing regulations, and to identify proper areas to locate new development.
- 1.5.3 Encourage low to zero non-farm densities in prime farmland areas and other agricultural districts by providing residential lot size requirements and proper separation distances between residential and agricultural uses.
- 1.5.4 Utilize information tools such as slopes, soil types, floodplain, road and bridge development and maintenance plans, when identifying areas for residential development.
- 1.5.5 Develop subdivision regulations that provide for a quality living environment, while avoiding inefficient and expensive public infrastructure expansions.
- 1.5.6 The right of Boone County property and landowners to the exclusive, uninterrupted use of their land should be protected through regulations sensitive to the effects of activities that are nuisance in nature.
- 1.5.7 Support housing options for all incomes and physical capabilities of Boone County's residents.
- 1.5.8 New residential developments should be accompanied by a subdivision agreement, which provides for the maintenance of common areas, easements, and drainage.
- 1.5.9 Encourage the establishment of a rehabilitation program to maintain and improve the existing housing stock.
- 1.5.10 Develop relationships and partnerships with housing professions in the public and private sector to establish a range of affordable housing options, ranging from a First Time Homebuyer program to rental assistance.
- 1.5.11 Encourage new higher residential development to locate near towns and cities or areas identified to accommodate higher density growth, especially when direct access to existing, hard-surfaced roads or highways can be accomplished.
- 1.5.12 Establish zoning and subdivision design standards that require buffers, and screening standards and functional usable green space, for new developments.
- 1.5.13 Revise existing regulations to improve the review process for small-scale preliminary and final plats and site plans.
- 1.5.14 All proposed rural area developments shall be based on a reasonable expectation of supply and demand for said use or facilities and no large-scale development shall be approved without:

- 1) The submission and approval of a layout and design concept, with provision for the staging and servicing of all phases of the development;
- 2) The approval of all federal and state agencies relative in any applicable health, safety and environmental controls; and
- 3) An adequate demonstration of the financial capacity (escrows, performance bonds, etc.) and responsibility of the applicants to complete the development and provide for operation and maintenance services.

1.5.15 All proposed rural area development and facilities:

- 1) Shall be appropriately, if not uniquely, suited to the area or site proposed for development;
- 2) Shall not be located in any natural hazard area, such as a floodplain or area of geologic hazard, steep slope, severe drainage problems or soil limitations for building or sub-surface sewage disposal, if relevant;
- 3) Shall be furnished with adequate access – when possible a minimum of two entrances.
- 4) Shall be furnished with adequate individual or community water supply, if required;
- 5) Shall not be justified solely or even primarily on the argument that the land is less costly than better alternative sites.

1.5.16 No proposed rural area development shall require or substantially influence the extension of costly services and facilities normally associated with urban centers, such as municipal water supply and sanitary sewer, power, and gas, nor shall it impose inordinate additional net costs on mobile, centralized public services, such as police and fire protection, school busing or refuse collection.

1.5.17 Accommodate demand for very low density rural residential development provided such areas are suited to the uses intended and exhibit high amenity value and such developments do not preempt farm or forest lands, or generate inordinate service demands of their own.

1.5.18 Boone County will recognize that the appropriate location of very low density residential development is in designated areas where commitments to such uses have already been made through existing subdivision or development.

1.5.19 Boone County will review and accommodate, wherever possible, any new or alternative development concepts or proposals, provided such concepts or proposals are consistent with and do not compromise in any way the established disposition of land uses on the Land Use Map or the goals and policies of the Comprehensive Plan.

Education

Goal 2

Quality education is a vital component of positive growth. Although the county's role is limited, policies will be followed in locating development to insure cost effective use of existing facilities. Also, the county will coordinate with all school districts to insure adequate areas for future educational needs. Above all, the main goal is to encourage excellence in the public school curriculum and facilities.

Policies

- 2.1 Set development standards that coordinate reservation of land for future educational needs.
- 2.2 Cooperate with school systems in expanding public uses of educational facilities.

Environment**Goal 3**

Boone County retains a high-quality natural environment, yet impact of human demand upon the environment impacted the natural ecological balances and high aesthetic quality of the county in the past, and poses the threat of future deterioration. The natural resources (soils, groundwater, surface water and air) and environment of Boone County shall be protected and managed to insure long-term quality, availability and sustainability for the current and future residents and industries of Boone County. The goal of Boone County is to guide development in a manner that conserves and protects the natural resources, minimizes potential conflicts between rural/urban residents, promotes compatible land uses, and encourages compact development and an efficient provision of services.

Policies

- 3.1 Zoning regulations and design standards should be created to protect the environmental and natural resources of Boone County through the encouragement of preservation and conservation practices.
- 3.2 A Surface Water Protection Area should be established to protect the unique character and environmental quality of the area surrounding the Des Moines.
- 3.3 General land use regulations should require all development in the jurisdiction of Boone County to demonstrate a positive, or at least neutral, impact upon the soil, groundwater, surface water, and air.
- 3.4 Protect all water supplies and aquifers from development activities that may affect the quality and/or quantity of water. Developments shall demonstrate a positive or, at least, a neutral impact on ground water supplies.
- 3.5 Identify with Iowa Department of Natural Resources, NRCS, United States Department of Agriculture, and Soil Conservation District, possible sediment control regulations to minimize potential soil loss and/or contamination problems in specific areas of Boone County.
- 3.6 Establish zoning and subdivision standards that support conservation of natural resources. This can be accomplished through the use of conservation easements and other tools.
- 3.7 Discourage conversion of designated prime agricultural land and soils to non-agricultural uses by targeting less productive agricultural soils (crops) for urban or non-farm uses. Establish a hierarchy of minimum lot sizes to encourage non-farm growth in the appropriate locations.
- 3.8 Encourage conservation of hillsides by establishing criteria and limiting development along specific slopes in the county.
- 3.9 Promote quality land management through the development of erosion control design standards for rural subdivisions and larger commercial and industrial developments.
- 3.10 Encourage the preservation of environmentally sensitive areas such as wetlands, wooded areas, waterways (streams, ponds, lakes, rivers, etc.), and other amenities. Preservation should occur through no development, incorporation of these areas into conservation areas, and/or erosion control measures when these amenities are downstream from a proposed development.
- 3.11 Boone County should preserve those areas for farm use which exhibit Class I through IV soils as identified in the Capability Classification System of the U.S. Soil Conservation Service.

- 3.12 Boone County may establish an ordinance to control erosion and sedimentation in both public and private roadway construction.

Water Resources

Goal 4

Efficient use of county water resources is a benefit to all citizens, as water is an essential part of the livability of an area. Conserve and manage water resources efficiently to sustain and enhance the quantity and quality for human consumption use and to abate flood, erosion, and sedimentation problems.

Policies

- 4.1 Boone County will cooperate with federal and state agencies, the cities of the county, and the local soil and water conservation district to identify, conserve, and develop water resources on a long-range, multiple-use basis in response to need, with full consideration given to the benefits, costs, potential uses, and the carrying capacity of the resource.
- 4.2 Boone County will participate in the FEMA National Flood Insurance Program to prevent flood-caused loss of life and property, by identifying and mapping the floodplains and floodways of the county, restricting land uses within the floodplains to those which are open and undeveloped, including forestry, agriculture, wildlife habitat, and recreational areas, and encouraging improved watershed management practices and constructing watershed storage projects for flood control.
- 4.3 Boone County will support soil and water conservation efforts to aid in erosion, sediment, and run-off control.
- 4.4 Boone County will coordinate with and support city, regional, state and federal water-quality plans and programs so that high water quality will be achieved in the cities of the county, that sound watershed management practices will take place, and that improved treatment of point and non-point sources of water pollution will be achieved.
- 4.5 Boone County will encourage the prudent use of all county resources and support the development of water conservation techniques and practices.
- 4.6 It is the policy of Boone County to protect riparian vegetation from damage that may result from land use applications for development that is otherwise permitted outright or conditional under county zoning regulations. To achieve this goal, Boone County will review land use applications for development in riparian areas in an effort to mitigate or prevent damage to riparian vegetation that might result from the development.
- 4.7 Land use management practices and nonstructural solutions to problems of erosion and flooding are preferred to structural solutions. Water erosion control structures, including riprap and fill, should be reviewed by the appropriate authorities to insure they are necessary, are designed to incorporate vegetation where possible, and designed to minimize adverse impacts on water currents, erosion, and accretion patterns.
- 4.8 Boone County will cooperate with the U.S. Fish and Wildlife Department, the cities in the county, and the U.S.D.A. to identify, conserve, and protect fish and wildlife habitat; determine areas of critical imbalance

and threats to particular species; and formulate and implement measures for the improvement of existing habitat and the creation of new habitat where needed.

- 4.9 Boone County recognizes the need to conserve and protect fish and wildlife habitat in its plan implementation measures; and the following will be considered in any public or private land use determination subject to county review: the impact of filling or drainage of swamps or marshes; the damming of rivers and streams; the location and construction of highways and utility transmission lines; and any other land development activities which significantly interfere with the vegetation or soil cover or drainage patterns in critical habitat areas.
- 4.10 All identified sensitive wildlife areas will be classified as exclusively agricultural areas or open space. No major land use change, including, but not limited to road construction and recreational developments will be permitted without approval of measures to limit undesirable impacts on sensitive wildlife areas.

Economic Development

Goal 5

Boone County should promote and encourage economic development necessary to support the needs of present and future Boone County residents such that the Boone County economy is stable and diverse. Boone County should also maintain a rate and pattern of economic growth sufficient to prevent recurring high levels of unemployment and under-employment in the county, balance the real property tax base of the various cities, and strengthen local economic bases.

Policies

- 5.1 Agriculture and agricultural employment, including value-added agricultural businesses, should be promoted throughout Boone County.
- 5.2 The recreational assets of Boone County should be expanded and improved such that they may be promoted through tourism-based endeavors, including hunting, fishing, and camping.
- 5.3 The youth of Boone County should be encouraged to remain in Boone County or return to Boone County after completion of their post-secondary education. Economic development projects should be established to provide such encouragement. The youth of Boone County should be involved in the identification and development of these projects.
- 5.4 Encourage, promote, and develop economic development partnerships between local entities and private companies to assist existing and expanding business enterprises.
- 5.5 Support area historical, cultural, and recreational activities. Boone County should continue to build upon the historical structures, cultural heritage, and recreational assets located throughout the county and within the incorporated and unincorporated settlements to encourage a sense of community through tourism based endeavors.
- 5.6 Encourage and promote the development of home-based businesses and telecommuting based upon high technology communication infrastructure.
- 5.7 Boone County will encourage economic development projects which do not conflict with the agricultural character of the county.
- 5.8 Boone County will encourage development along the U.S. 30 Highway corridor.

Public Facilities and Taxes

Goal 6

The county sees a need to integrate public facilities and services in an effort to eliminate costs and conserve energy. Coordination with all jurisdictions and affected agencies is essential in the development and maintenance of adequate public facility systems. The expansion of public facilities is a major factor in directing development.

Policies

- 6.1 Public facilities should be strategically located within Boone County so as to provide cost-effective, efficient, and timely service to all residents.
- 6.2 Encourage the location of public and semi-public facilities in a manner consistent with the sector of the county they are intended to serve.
- 6.3 Public facilities such as schools or churches should be located near populated areas.
- 6.4 Public facilities such as county yards and maintenance buildings shall be located in key areas of the county, which efficiently serve the public.
- 6.5 Support area historical and cultural activities.
- 6.6 Continually evaluate the staffing needs of the Sheriff's Department. As the population continues to grow, the county needs to hire additional deputies and jailers to meet the level of protection desired by the public.
- 6.7 The county should work with the Xenia Rural Water District to expand rural water across the entire county, although the County Board of Supervisors shall not be the primary player in this activity.
- 6.8 Boone County will coordinate with the cities within its jurisdiction to provide an orderly phasing of water, sanitary sewerage, storm drainage, and other public services and facilities within the urban growth boundaries.
- 6.9 Public facilities and services for rural areas will be provided and maintained at levels appropriate for rural use only.
- 6.10 Boone County will coordinate with the cities, and appropriate local, state, and federal agencies in providing for the health and service needs of the public, particularly the needs of the disadvantaged, including the young, the elderly, and the handicapped.
- 6.11 Boone County will encourage the consolidation of city, county, and state administrative offices, public health, safety and welfare buildings, and community cultural facilities as opportunities that will promote energy conservation, provide convenient, centralized services, attractive building, and open space groupings.
- 6.12 Boone County will encourage, where practicable, the consolidation of city, county, school district, utility and state works yards, shops, bus barns, and equipment and storage yards, in order to realize economies of scale in land acquisition, development, and operation and maintenance costs, and eliminate present facilities which are incompatible with sensitive residential and commercial areas throughout the county.
- 6.13 Close cooperation will be encouraged among the cities, the school districts, and the county in respectful matters of school site selection, acquisition, planning, servicing, and joint use in keeping with the anticipated direction and pattern of county growth.
- 6.14 Boone County will cooperate with other interested agencies to identify, acquire and/or reserve in advance through appropriate open space zoning designations suitable watershed areas and reservoir sites to serve the domestic water needs of the emerging urban and rural development areas of the county.
- 6.15 Boone County will encourage the dedication of major drainage-ways such as wetlands, swales, intermittent creek basins and roadside depressions for the purpose of storm water collection.
- 6.16 The establishment of domestic water supply systems will be supported where such systems conform to all applicable water quality and engineering design criteria.

- 6.17 Groundwater supplies will be protected from critical draw-downs or disrupted flows where municipal watersheds exist; surface water supplies will be protected from unusual increases in turbidity and sedimentation caused by farming, excavation or grading; and both ground water and surface water supplies will be protected from contamination by subsurface sewage disposal systems, sewage lagoons, and other sources of pollution.
- 6.18 Boone County will assist in the organization of special purpose districts such as sanitary districts, sanitary authorities, and county service districts which would be able to utilize federal and state funds to build collection and treatment facilities and provide the necessary services to their respective communities or clientele.
- 6.19 The development of sanitary sewer systems will be supported where such systems conform to all applicable federal and state standards pertinent to the collection, treatment, and final disposal of effluent.
- 6.20 Boone County will support any consolidation of water and sewer facilities to secure the potential economies of scale and organization, provided their potential environmental impacts are consistent with existing land-use plans, related urban growth goals and policies, established water quality standards, and where separate local facilities are shown to be more expensive.

Public Works

Goal 7

Boone County shall pursue programs and facilities to insure adequate utilities will be considered and will be compatible with the county's land use policies. Goals include protecting current and future water well fields and aquifers, promote development that utilizes existing facilities and capacities, and develop new utility system facilities and capacities that support development goals.

Policies

- 7.1 Implement development / design standards that protect the area around municipal well fields located in the county.
- 7.2 Utilize soil suitability data from this plan and the Boone County soils survey when evaluating development proposals proposing septic system or lagoons for sewage treatment. Ultimately, decisions should be made based upon actual soil data collected by a professional engineer and certifying laboratory.

Transportation

Goal 8

Boone County should provide a transportation system that improves access and circulation for vehicular traffic within Boone County. Development in Boone County shall be guided to safely utilize existing public investment in roads, and programs to reduce road development or maintenance. The transportation goal of Boone County is to develop and support an efficient road system to serve current and future circulation and access needs. Provide and encourage an efficient, safe, convenient transportation and communication system, including road, rail, waterways, public transit and air, to serve the needs of existing and projected urban and rural development within the county. The county will also accommodate the regional movement of people and goods, recognizing the economic, social, and energy impacts of the various modes of transportation.

Policies

- 8.1 The interaction of existing transportation routes and drainage ways should be studied to determine the need for bridge and road improvements.

- 8.2 When new development is contemplated, due consideration must be given to the carrying capacity of the existing road system in the area, and development should be discouraged from occurring in areas where the road system is insufficient to handle any additional traffic load.
- 8.3 Improve, develop, and maintain well-traveled roads with hard surfacing.
- 8.4 Right-of-way and pavements shall be sufficiently wide and of sufficient strength to accommodate anticipated future traffic loads.
- 8.5 Commercial signing should be limited to major arterials, shall be kept to a minimum, and shall be a low profile.
- 8.6 Encourage the on-going replacement of older, dilapidated bridges throughout the county.
- 8.7 Develop a plan of education/action to prevent and cleanup roadside dumping in the rural areas of the county.
- 8.8 Continue working with the Iowa Department of Transportation and public input to upgrade highways in and through the county by either resurfacing or widening of existing state and county highways.
- 8.9 Develop land use policies that work strongly with existing and proposed transportation systems and upgrades, especially the completion of Iowa Highway 17's expansion to four lanes.
- 8.10 The regional transportation needs must be addressed primarily in respect to the utilization of the county's arterials as state thoroughfares.
- 8.11 Due primarily to the increasing traffic load and traffic hazards on all county roads, there is a need to control access points for future development.
- 8.12 All transportation-related decisions will be made in consideration of land use impacts, including, but not limited to, adjacent land use patterns, both existing and planned, and their designated uses and densities.
- 8.13 Boone County will cooperate and establish close liaison with the Iowa Department of Transportation, the communities within the county, the Union Pacific Railroad, Federal Highway Administration, and private utility companies operating in the county, in respect to matters relating to the location, design and programming of roads, railroads, public transit facilities, airports, transmission lines, pipelines, waterways, energy corridors, and communications facilities to guide and accommodate the emerging development patterns of the county.
- 8.14 Boone County will encourage bicycle and pedestrian traffic as an element of the transportation system by coordinating with the cities within the county to develop an integrated system of safe and convenient bicycle and pedestrian ways to complement other modes of transportation.
- 8.15 Boone County will require new development to:
 - 1) Limit access points on highways designated as arterials when alternative access points are feasible.
 - 2) Minimize direct access points onto arterial right-of-ways by encouraging the utilization of common driveways.
- 8.16 Transportation needs for the disadvantaged, such as the low income, the handicapped, and the elderly, will be considered in the development of a county transportation system.
- 8.17 All transportation-related decisions will be made in support of the efficient and economic movement of people, goods, and services throughout the region, and will be based on the location and adequacy of facilities for such goods and services.

Health and Safety

Goal 9

Boone County's goal is to continue to support health care, fire protection, and law enforcement programs by exploring programs and alternative services to insure optimum service levels and public costs.

Policies

- 9.1 Regulation of land use developments affecting the health, safety, and general welfare of the public.
- 9.2 Clean and regulate nuisances and poorly maintained properties. This includes the continued efforts to regulate abandoned house sites, junk cars, junkyards, and dilapidated/deteriorated residences/farm yards throughout the county.
- 9.3 Establish regulations that protect county residents from the secondary effects of adult entertainment.

Parks and Recreation**Goal 10**

Boone County should provide adequate, park and recreation opportunities for the residents of Boone County and the State of Iowa. These facilities should be a combination of expanding of existing facilities and the establishment of newer facilities.

Policies

- 10.1 Park and recreation facilities should be designed to accommodate the particular needs and interests of area residents while protecting, preserving, and conserving the environmental character and quality of the area.
- 10.2 Provide parks and recreational facilities that are reasonably accessible to residents of Boone County.
- 10.3 The parks and recreation section of the Comprehensive Development Plan shall be referred to when reviewing new, expansion, or redevelopment plans.
- 10.4 Promote recreation as a continuing means of economic development for Boone County.
- 10.5 Set standards that require or promote dedication of parks and open space.
- 10.6 Encourage recreational amenities offering year round enjoyment.
- 10.7 Work with developers of future rural subdivisions to create conservation areas through cluster subdivisions and conservation easements. These conservation areas should be connected between subdivisions when possible.
- 10.8 Boone County will cooperate with all governmental and recreation agencies within the region to identify open space and scenic resources, to determine resident and non-resident recreation needs, and to formulate and implement measures for open space preservation and use.
- 10.9 Boone County will seek to offer greater opportunities for water-based recreation on the Des Moines River and its tributaries.
- 10.10 Boone County will encourage an appropriate amount of park and recreation development designed to meet the needs of the transient and regional population.
- 10.11 Boone County will recognize the development of an integrated bicycle and pedestrian trail system to provide recreational opportunities and to link open space, Boone County communities, and park areas.
- 10.12 For the purpose of implementing recreation programs and development, Boone County will investigate funding alternatives such as tax levies, bonding grants in aid, user fees, and subdivision ordinance stipulation.

Implementation, Evaluation, and Review**Goal 11**

Changing needs and conditions will necessitate future review, evaluation, and updating of the Comprehensive Development Plan and its supporting documents. Intergovernmental coordination of all planning activities affecting land uses within the county is necessary to assure an integrated comprehensive plan for Boone County.

Policies

- 11.1 Boone County will continue to implement an ongoing citizen involvement program that provides county residents an opportunity to be involved in the planning process.
- 11.2 Boone County will review any development concepts or proposals which conflict with the Land Use Map, goals or policies in light of changing needs and conditions, and in keeping with established procedures of Plan evaluation, amendment, and update.
- 11.3 Boone County will undertake a major update of the Comprehensive Development Plan and review of all supporting documents every five to ten years to ensure that an adequate factual basis for planning decisions is maintained.
- 11.4 Boone County will encourage federal, state, and regional agencies, and special districts to coordinate their planning efforts with those of the county.

ACHIEVE BOONE COUNTY

DEVELOPMENT CHAPTER

Within any planning jurisdiction, whether a large growing urban area or a small declining rural county, there will be changes in land uses throughout the planning period. The purpose of the Development Chapter is to provide a general guide to direct changes in land use and transportation over time. The resulting changes in land uses and transportation networks should be capable of coexisting with a minimum number of conflicts. This chapter must reflect the existing conditions and be flexible in order to meet the needs of its citizens as well as their vision for the county's future.

The Development Chapter provides the basis for the formulation of land use (zoning) regulations and the application of zoning districts. For this reason, it is imperative to formulate a plan tailored to the needs, desires and environmental limitations of the planning area. The Development Chapter should promote improvements in all components of the local economy with particular emphasis on agricultural growth, as the predominant component of the local economy. The following common principles and land use concepts for agricultural areas have been formed to guide the development of Boone County's Development Chapter.

LAND USE ELEMENTS

The elements of the Boone County Development Chapter include Existing Land Use, Future Land Use, Transportation, and the County Land Use Management Plan (CLUMP). All of these elements are integrated in some form or another. To effectively evaluate development decisions a substantial amount of information must be utilized.

- **Existing Land Use**
- **Existing Transportation**
- **County Land Use Management Plan**
- **Future Land Use and Transportation**

Principles and Concepts of the Boone County Development Chapter

- Private ownership of land is essential to the freedom of individuals, families, and communities, and to the economic interest of the citizens of the county.
- Existing agricultural uses, methods of agricultural production, property values and the quality of life of the county residents should be protected and preserved.
- Land use regulations, which are to be implemented in the Future Land Use Plan, should be minimized to preserve the freedoms and the property rights enjoyed by the county residents. This plan should effectively address the basic protection of the existing land uses, property values, the local environment and quality of life. Development of future land uses that are inconsistent with these basic protections should be discouraged.
- Decisions about land use affect transportation systems and vice versa.

COUNTY LAND USE MANAGEMENT POLICY (CLUMP)

Purpose of CLUMP

The purpose of the CLUMP system is to develop a broad policy that acknowledges existing land use patterns, existing and future market demands, and manages these factors in relation to one another. CLUMP establishes a long-range management policy that provides guidance for future development.

CLUMP Process

CLUMP was devised to identify and examine existing development trends within Boone County. The CLUMP process includes a review of two critical elements of the existing land use fabric within the county; which are:

- Existing land use patterns and locations, and
- The density of residential development within the unincorporated areas of the county.

These elements can be seen in Figures 22-24 of this document.

CLUMP balances the demand for urban and non-urban development with the preservation and conservation of agriculture and the fiscal responsibilities to provide services either at the county or the municipal level. CLUMP utilizes principals found within the “Smart Growth” movement. According to the Urban Land Institute’s (ULI) publication *Smart Growth: Myth or Fact*, a *major myth* is that “*Smart growth is a code word for no growth.*” However, as the ULI points out, a *major fact* is that “*Smart growth recognizes that growth and development are both inevitable and beneficial.*”

“The goal of smart growth is not “no growth” or even slow growth. Rather, the goal is sensible growth that balances our need for jobs and economic development with our desire to save our natural environment”

-Parris Glendening, Governor, State of Maryland

The development of CLUMP was premised on the belief that development pressures and demands exist and that the best approach is to acknowledge and accommodate these pressures through diligent planning. However, these pressures must be managed and channeled to areas in the process of developing, or areas that can accommodate this development over the long term.

CLUMP Concept

The CLUMP concept centers on three policy areas. These areas are:

- Urban Transition
- Transitional Development Zone
- Agricultural

These policy areas are indicated on the County Land Use Management Policy map as seen in Figure 25. These areas generally identify different levels of development, based upon proximity to existing urban centers or smaller developments; proximity to major transportation routes; existing land use densities; and potential land uses to be allowed

in the future. The intent is to concentrate each of the different policy considerations into areas based upon these factors. In addition, intense development (major commercial centers, densely populated subdivisions, etc.) should be encouraged to locate within or adjacent to the existing communities of Boone County. Ultimately, the CLUMP concept is to encourage growth and development within the unincorporated areas of Boone County using a well-considered management approach.

Policy Areas

Urban Transition Policy Area

The Urban Transition Policy Area is intended to accommodate the following policies:

- Higher density development generally near urbanized areas /communities,
- Located along major transportation routes within the county, including US Highways 30, 169, as well as IA Highway 17
- Location of higher intensity uses, and
- Potential growth areas adjacent to smaller communities.

The Urban Transition Policy Areas are generally located throughout Boone County. The locations are as follows:

- The existing community of Berkley,
- The existing community of Boone,
- The existing community of Fraser,
- The existing community of Ogden,
- The existing community of Pilot Mound,
- The existing communities of Boxholm and Beaver,
- The existing community of Luther,
- The existing community of Madrid,
- The existing communities of Slater and Sheldahl.

The proposed land uses for the Urban Transition Policy Areas are:

- Industrial,
- Commercial,
- Urban Residential, including single family residential
- Rural Residential,
- Village Residential,
- Public/Quasi-Public, and
- Parks / Recreation

When making future land use and zoning decisions, the policy requires any of these use types to be located within an Urban Transition policy area. All future development of this type should be located in the designated areas in order to minimize future sprawl and haphazard development.

Transitional Development Zone Policy Area

The Transitional Development Zone policy area is intended to accommodate the following policies:

- Less dense types of developments generally within or near rural areas of the county that have already developed,
- Near the smaller communities of the county and,
- Near major roadways.

The Transitional Development Zone policy areas are basically located from the Boone-Story County Line just north of the US Highway 30 corridor as well as in the central sections of the county. The locations can be seen on Figure 25.

The proposed land uses for the Transitional Development Zone Policy Areas are:

- Rural residential
- Transitional agriculture
- Some small commercial uses
- Village residential
- Mixture of agriculture and agri-businesses
- Public/quasi-public
- Parks / recreation

When making future land use and zoning decisions, the policy requires any of these use types to be located within a Transitional Development Zone Policy Area unless overlap uses are allowed in another policy area. Future development, especially the smaller commercial uses and rural residential, should be designed in ways to minimize impact on surrounding uses (i.e., cluster development, development away from environmentally sensitive conditions). Key factors determining the Transitional Development Zone locations are the existing environmental factors, and the density of existing residential development. Due to the environmental factors in these areas, any land use and zoning changes to the maps must consider the availability of groundwater on the site(s) and the impact on adjacent properties. All future development of this type should be located in the designated areas in order to minimize future sprawl and haphazard development.

Agriculture Policy Area

The Agriculture Policy Area is intended to accommodate the following policies:

- The preservation of agricultural uses
- Low density residential development, primarily farmsteads and residences connected to an existing farming operation

The Agriculture Policy Area is the remaining portions of Boone County not included in the Urban Transition or Transitional Development Zone areas.

The proposed land uses for the Agriculture Policy Areas are:

- Agriculture
- Transitional agriculture
- Mixture of agriculture and agri-businesses
- Public
- Parks / recreation
- Conservation

When making future land use and zoning decisions, the policy would allow only these use types to be located within an Agriculture Policy Area. These areas have been identified, based upon their lack of development and the ability to preserve the agricultural base of Boone County. All future development of this type should be located in the designated areas in order to minimize future sprawl and haphazard development.

BOONE COUNTY, IOWA



Figure 25: COUNTY LAND USE MANAGEMENT PLAN (CLUMP)

- URBAN TRANSITION
 - Higher/Highest Density Development
 - Generally Near Urban Areas
 - Along Major Highways

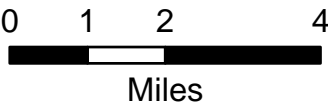
- Acceptable Land Uses:
- Urban Density Residential
 - Village Residential
 - Rural Residential
 - Public/Quasi-Public
 - Park/Recreation
 - Industrial
 - Commercial

- TRANSITIONAL DEVELOPMENT ZONE
 - Less Dense Development
 - Near Major Roadways
 - Near Present Acreage Developments

- Acceptable Land Uses:
- Village Residential
 - Rural Residential
 - Transitional Agriculture
 - Mixed Uses and Agriculture
 - Commercial
 - Public/Quasi-Public
 - Park/Recreation
 - Conservation

- AGRICULTURAL
 - Reserved for Agriculture
 - Low/Lower Densities of Development

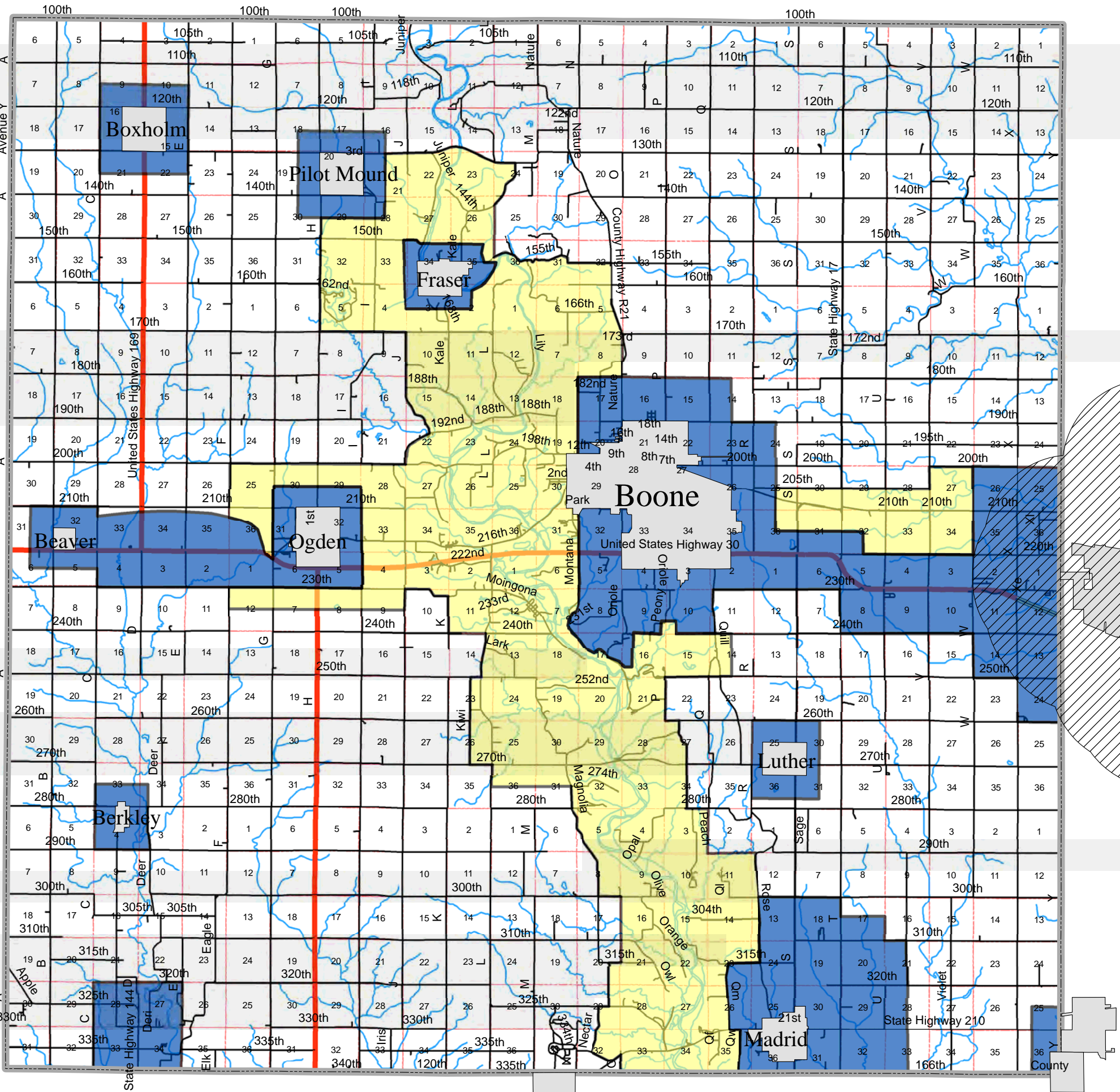
- Acceptable Land Uses:
- Agriculture
 - Transitional Agriculture
 - Public/Quasi-Public
 - Park/Recreation
 - Conservation



Prepared By: JEO Consulting Group, Inc.
Source: IDNR
GIS Process: ArcView 9.2

THIS MAP PREPARED USING INFORMATION FROM RECORD DRAWINGS SUPPLIED BY JEO AND/OR OTHER APPLICABLE CITY, COUNTY, STATE, FEDERAL OR PUBLIC OR PRIVATE ENTITIES. JEO DOES NOT GUARANTEE THE ACCURACY OF THIS MAP OR THE INFORMATION USED TO PREPARE THIS MAP.

CREATED BY: S.E.H., NOVEMBER 2005
REVISED BY: J. MOHR MAY 21, 2007



FUTURE LAND USE

Based upon the land use concepts, the Future Land Use Plan for Boone County, Iowa envisions land use categories to accommodate the expansion of existing and future development uses of the land. As described below, these land use areas are:

- **Agricultural**
- **Transitional Agricultural**
- **Residential/Residential Estates**
- **Commercial**
- **Industrial**
- **Public**
- **Village Development**
- **Watershed Overlay**
- **Conservation**

The basic guiding principle for this Plan is the preservation and protection of existing land uses and the environment in the county. This includes the protection of the residentially developed areas, while encouraging economic expansion in both the agricultural and non-agricultural sectors of the local economy. This expansion would occur through development of new and/or expanded land uses compatible with the existing uses, environmentally acceptable, and respects and supports the quality of life desired by the residents of Boone County. The Future Land Use Map is graphically displayed in Figure 26.

Agricultural Uses

In order to abide by the principles and general land use concepts previously presented, the future land use lying in the rural portions of Boone County should continue to be predominately agricultural production. The use of land for crop production should be encouraged as a means of strengthening the local economy. Crop production is going to be greatly influenced by the county's topography. Where there are steep slopes, crop production should be minimized; except where the topography has been terraced to accommodate production activity.

Residential uses associated with agricultural production should continue to be supported; however they should be subordinate to agricultural production. These residential uses shall require a means of access through the continuation of paved county roads, public facilities and services.

River and wetland protection and maintenance are critical to protecting and preserving the wildlife and water quality in the county.

Transitional Agricultural District

Transitional Agricultural areas typically designate a buffer between the Agricultural, Rural Residential, major transportation corridors, and the extraterritorial jurisdictions of the communities within Boone County. However, as areas are rezoned, both the Transitional Agriculture and the Rural Residential districts may be considered appropriate designations for this land use category; depending upon how the County Land Use Management Policy (CLUMP) has been adopted. It also recognizes an area that may be next in line to be developed within the rural areas of the county.

Transitional Agricultural areas are intended to protect existing crop production in the county; while providing an incentive area for more dense residential uses, as opposed to the Agricultural Use areas. Incentives for denser residential development are critical, especially along major transportation corridors that have paved roadways. Along these paved transportation corridors should be the highest priority areas for residential uses within an agriculturally-related district.

Non-Farm Residential Development within Agricultural Districts

Development of non-farm residences should be encouraged as an approach to economic and population growth. In addition, these uses provide additional residential choices for existing and future citizens. However, such development should avoid encroachment upon prime agricultural lands. These uses should be located in areas where proper access is available and where waste disposal systems can function properly without environmental degradation. In addition, non-farm residential development in most portions of Boone County must address the impact of development on roads, services, and other infrastructure. This type of development should also be in close proximity to existing communities to alleviate county costs on infrastructure and services.

Non-farm rural residential uses should be developed either as individual housing sites or as residential subdivisions. Such development should be evaluated in terms of environmental limitations of the land, availability of groundwater, impact on adjacent landowners, impact on prime farmland, marketability, and land use compatibility, as well as the impact on county services. Such uses, whether they occur as individual housing sites or as residential subdivisions in the rural areas of the county, should generally be limited to locations on or near improved county roads and/or major highways within Boone County. Non-farm rural residential development should also be located along the county's road corridors in close proximity to the urban areas within the county (development in such areas, in most cases, would not be under the jurisdiction of the county). Policies regarding non-farm rural development will allow the county to avoid the need for unnecessary improvements and expansion of the county road system, as well as, certain services impacted by said development.

The following are the minimum lot standards for farm dwellings and non-farm dwellings within the Agricultural and Transitional Agricultural Districts.

Once a quarter section of ground has reached its maximum density, that quarter will not be allowed any additional dwelling units unless the Future Land Use Plan and/or Map are amended, as well as the zoning text and/or map. The basis for a policy controlling the maximum density of dwelling units within the Agricultural and Transitional Agricultural District is to provide protection to the existing land use, agriculture. In order for agriculture to survive as a viable economic base for Boone County, there need to be land use controls in place to accomplish this goal.

Rural Residential District

The Rural Residential District is designed to be more densely populated than other residential areas of the county, outside of the communities.

The Rural Residential category, as policy, will require a number of design standards. These data and design standards include the following:

- Clustering of lots is recommended.

Commercial and Industrial Uses

Future commercial and industrial uses, not desiring to locate within or near the urban areas of Boone County, may be allowed to locate in the rural portions of the county. However, the location of these uses should be reviewed carefully. Uses that generate or attract substantial amounts of vehicular traffic, particularly heavy truck traffic, should locate along the major highway corridors in the county, including the interchanges along US Highway 30.

In addition, uses producing potentially hazardous materials or otherwise undesirable materials should be monitored. It is critical to properly locate such uses in the county. When and if they are proposed, limits on the potential risks to the environment, as well as adjoining or nearby property owners, should be considered in order to minimize the impacts now and in the future.

Public including Recreational Development

The Public Use areas on the Future Land Use Plan are identified as the existing park and recreation area, existing wildlife areas, and other existing public uses located within Boone County. It is assumed that other public uses associated with the cities, county, state, or federal entities will either be in the communities or within their extraterritorial jurisdictions.

Future recreational use throughout the county should be actively pursued. It is important to add to the existing inventory of recreational uses. Furthermore, the creation of additional recreational areas should only increase the overall “image” of the county. These policies will aid in the enhancement of the quality of life for the citizens of Boone County and in developing tourism opportunities within Boone County.

Development of, as well as, improvements upon the recreational areas within the county should be an active land use goal throughout the planning period. It is important, however, to acknowledge the need to attract people, both local citizens and citizens from outside the county, to such recreational areas. Development of recreational uses should take into consideration the need for proper access to these areas, as well as proper advertisement to ensure proper utilization.

Village Residential

The Village Development Land Use District is intended for areas of Boone County that were once an incorporated community or had a strong settlement pattern without being an incorporated community such as Logansport, Centerville, Napier, Jordan, and Ridgeport. In each of these areas, a pattern of urban scale development has taken place, and should be recognized through land use and zoning policies that take their characteristics into account.

Des Moines River Conservation Overlay

It is the intent of the Des Moines River Conservation Overlay to ensure the natural features present within the Des Moines River area within Boone County are protected to ensure future abilities to develop recreation, stream bank stabilization, and environmental enhancements. The Des Moines River is an asset to the county and the State of Iowa. The conservation overlay has been established based upon geographical areas of topography (25% slope and greater) and in proximity to the floodplain of the Des Moines River.

Conservation Areas Overlay

The purpose of this Conservation Area Overlay is to provide additional development criteria in identified areas of Boone County in order to build; no matter if one residence or entire subdivision is proposed. The specified criteria will affect the policies of the underlying land use districts by requiring more restrictive and protective actions to maintain the ability to enhance environmental features within the Conservation Overlay area.

These criteria include at a minimum:

- Review of proposed projects
- Stricter density requirements
- Maintain visual protection from Des Moines River users
- Developments designed as a cluster
- Other requirements deemed appropriate and similar to those stated above

Implementation of this area should be through a Conservation Overlay Zoning District. The overlay district would create a special set of regulations to be enforced on any underlying zoning district.

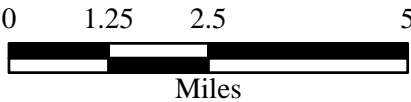
BOONE COUNTY, IOWA



Figure 26: FUTURE LAND USE MAP

Legend

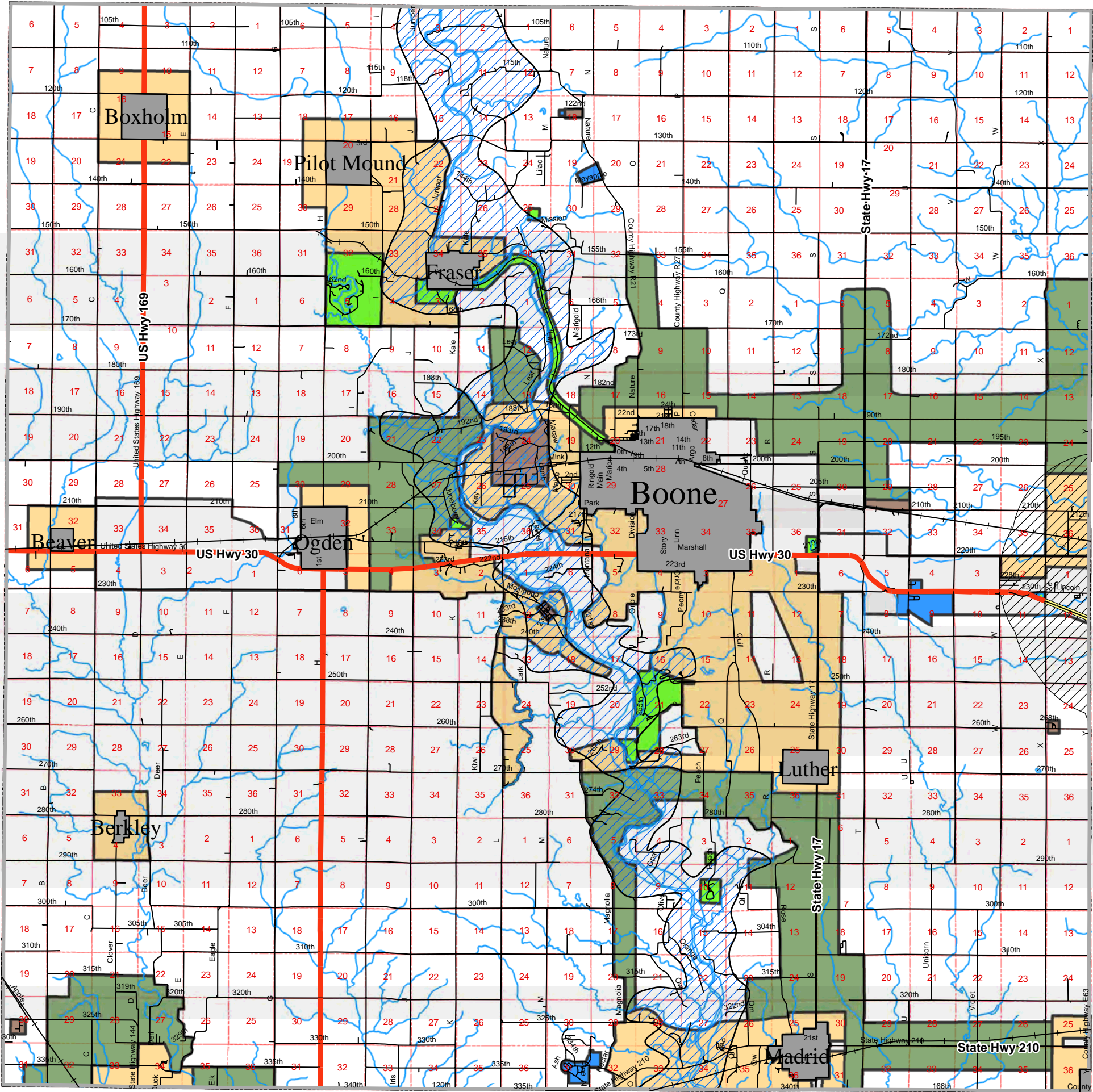
- Agriculture
- Transitional Agriculture
- Rural Residential
- Village Residential
- Commercial/Industrial
- Conservation
- Park/Recreation
- Public/Quasi-Public
- Corporate Limits



Prepared By: JEO Consulting Group, Inc.
Source: IDNR
GIS Process: ArcView 9.0

THIS MAP PREPARED USING INFORMATION FROM RECORD DRAWINGS SUPPLIED BY JEO AND/OR OTHER APPLICABLE CITY, COUNTY, STATE, FEDERAL OR PUBLIC OR PRIVATE ENTITIES. JEO DOES NOT GUARANTEE THE ACCURACY OF THIS MAP OR THE INFORMATION USED TO PREPARE THIS MAP.

CREATED BY: S.E.H., NOVEMBER 2005
REVISED BY: J.D.M., SEPTEMBER 19, 2006



LAND USE SUMMARY

Utilization of the Future Land Use Plan as a guide for future land development within Boone County will result in the protection of existing land uses throughout the county's jurisdiction, as well as protection of the citizens residing in or near the communities of the county. Adherence to the land use policies outlined will assist the county in avoiding conflicts between incompatible land uses. The concept of lessening the future impact upon the public infrastructure (roads) and tax base in the county will assist in preserving vital tax dollars and allowing for fiscally responsible developments in the county for years to come.

The Future Land Use Plan represents a generalized "county-wide" view of where future development should be. It is important to utilize the graphic data provided in the Environmental Section of this Plan (Figures 5 through Figure 21) and the CLUMP policies and map in conjunction with the Future Land Use Plan Map, in order to properly locate future uses. Furthermore, the need for on-site investigation will be necessary, especially when larger land use developments are scheduled for the rural areas of the county.

The information provided within this Comprehensive Plan, including the Future Land Use Plan Map, is meant to be a guide for the future development of the county, not a static document that serves to hinder development within the County. It is important, however, that references be made to the information provided within this document prior to making decisions about future land uses in Boone County, Iowa.

FUTURE LAND USE

Agricultural Uses

In order to abide by the principles and general land use concepts presented above, the future land use lying in the rural portions of Boone County should be left predominately in agricultural production, which is the primary existing land use. The use of land for crop production should be encouraged as a means of strengthening the local economy. Crop production will be greatly influenced by the county's topography. Where there are steep slopes, crop production will be minimized; except, where the topography has been terraced to accommodate production activity.

Residential uses associated with agricultural production should continue to be supported as necessary and subordinate to agricultural production. These residential uses shall require a means of access through the continuation of roadway systems, public facilities, and services. River and wetland protection and maintenance are critical to protecting and preserving the wildlife and water quality in the county.

Non-Farm Residential Development

Development of non-farm residences should provide additional residential choices for existing and future citizens. However, such development should avoid encroachment upon prime agricultural lands. These uses should be located in areas where proper access is available and where waste disposal systems can function properly without environmental degradation. This type of development should also be in close proximity to existing communities to alleviate county costs on infrastructure and services.

Non-farm rural residential uses should be developed either as individual housing sites or as residential subdivisions. Such development should be evaluated in terms of environmental limitations of the land, impact on prime farmland, marketability, and land use compatibility, as well as the impact on county services. Such uses, whether they occur as individual housing sites or as residential subdivisions in the rural areas of the county, should generally be limited to locations on or near improved county roads and/or major highways within the county. Non-farm rural residential development should also be located along the county road corridors, which are in close proximity to the urban areas within the county.

Policies regarding non-farm rural development will allow the county to avoid the need for unnecessary improvement and expansion of the county road system, as well as, certain services impacted by the development. An exception to this limitation would be the development of non-agricultural housing around scenic areas in the county, where major roadway access already exists.

Commercial and Industrial Uses

Future commercial and industrial uses, not desiring to locate within or near the urban areas of the county, may locate in the rural portions of the county. However, the location of these uses should be reviewed carefully. Uses that generate or attract substantial amounts of vehicular traffic, particularly heavy truck traffic, should locate along the major highway corridors in the county.

In addition, uses producing potentially hazardous materials or otherwise undesirable materials should be monitored. It is critical to properly locate such uses in the county. When and if they are proposed, limits on the potential risks to the environment, as well as, adjoining or nearby property owners should be considered in order to minimize the impacts now and in the future.

Recreational Development

Future recreational use throughout the county should be actively pursued. It is important to add to the existing inventory of recreational uses. Furthermore, the creation of additional recreational areas should increase the overall “image” of the county. These policies will aid in the enhancement of the quality of life for the citizens of Boone County. The policies will aid in developing tourism opportunities within the county.

Development of, as well as, improvements upon the recreational areas within the county should be an active land use goal throughout the planning period. It is important, however, to acknowledge the need to attract people, both local citizens and citizens from outside the county, to such recreational areas. Development of recreational uses should take into consideration the need for proper access to these areas, as well as, proper advertisement to ensure proper utilization.

TRANSPORTATION SYSTEM PLAN

Introduction

A transportation network ties communities together as well as provides a link to the outside world. Adequate circulation systems are essential for the safe and efficient flow of vehicles and pedestrians, and accessibility to all parts of the county. The Transportation System Plan will identify future improvements planned and those necessary to provide safe and efficient circulation of vehicles within Boone County, including major projects that ensure implementation of the Land Use Plan.

Transportation Planning and Land Use

Land use and transportation create the pattern for future development. An improved or new transportation route generates a greater level of accessibility and determines how adjacent land may be utilized in the future. In the short term, land use shapes the demand for transportation. However, new or improved roads, as well as, county and state highways may change land values, thus altering the intensity land is utilized.

In general, the greater the transportation needs of a particular land use, the greater its preference for a site near major transportation facilities. Commercial activities are most sensitive to accessibility, since their survival often depends upon the ease potential buyers can travel to this location. Thus, commercial land uses are generally located near the center of their market area along highways or at the intersection of arterial streets.

Industrial uses are also highly dependent on transportation access, but in a different way. For example, visibility is not as critical for an industry as it is for a retail store. Industrial uses often need access to more specialized transportation facilities, which is why industrial sites tend to be located near railroad lines or highways to suit individual industrial uses.

Transportation Financing Issues

The Iowa Department of Transportation (IDOT) annually establishes a Five-Year Transportation Improvement Program. The Iowa Transportation Commission most recently approved the 2006-2010 plan on November 1, 2005. The Five-Year plan is developed to inform Iowa citizens of the planned investments in aviation, railroad, trails, and highway improvements. Regular meetings held around the state annually provide citizen input to the transportation planning process. The Five-Year Transportation Improvement Program is established, based on existing federal and state programs, on estimates of funds expected to be available and on the estimated costs for construction, maintenance, and other work proposed to be accomplished. The five-year program is subject to modification, subject to disaster, changes in available funding, or other factors.

EXISTING TRANSPORTATION SYSTEM

Street and Road Classification System

Boone County offers many alternative methods of transportation, whether for passengers or cargo. The most obvious transportation route is the road system throughout the county. The road system includes US Highway 30, US Highway 169, and Iowa Highways 17, 210, and 144. In addition to these major highways, numerous other county roads provide Boone County residents transportation routes throughout the entire county.

The Iowa Legislature has defined several road classifications. (Iowa Code Ann. § 306.3) These classifications are used to define typical traffic patterns and jurisdictional responsibility. The classification areas follow:

1. **“Area service” or “area service system”** means those secondary roads that are not part of the farm-to-market road system.
2. **“County conservation parkways” or “county conservation parkway system”** means those parkways located wholly within the boundaries of county lands operated as parks, forests, or public access areas.
3. **“Farm-to-market roads” or “farm-to –market road system”** means those county jurisdiction roads which serve principal traffic generating areas and connect such areas to other farm-to-market roads and primary roads. The farm-to-market road system includes those county jurisdiction roads providing service for short-distance intracounty and intercounty traffic or providing connections between farm-to-market roads and area service roads, and includes those secondary roads which are federal aid eligible. The farm-to-market road system shall not exceed thirty-five thousand miles.
4. **“Interstate roads” or “interstate road system”** means those roads and streets of the primary road system that are designated by the Secretary of the United States Department of Transportation as the national system of interstate and defense highways in Iowa.
5. **“Municipal street system”** means those streets within municipalities that are not primary roads.
6. **“Primary roads” or “primary road system”** means those roads and streets both inside and outside the boundaries or municipalities which are under department jurisdiction.
7. **“Public road right-of-way”** means an area of land, the right to possession of which is secured or reserved by the state or a governmental subdivision for roadway purposes. The right-of-way for all secondary roads is sixty-six feet in width, unless otherwise specified by the county board of supervisors of the respective counties.
8. **“Road” or “street”** means the entire width between property lines through private property or the designated width through public property of every way or place of whatever nature if any part of such way or place is open to the use of the public, as a matter or right, for purposes of vehicular traffic.
9. **“Secondary roads” or “secondary road system”** means those roads under county jurisdiction.
10. **“State park, state institution, and other state land road system”** consists of those roads and streets wholly within the boundaries of state lands operated as parks, or on which institutions or other state governmental agencies are located.

Jurisdictional Responsibility

Depending on the classification of a particular road, various government agencies may have jurisdiction and control over that road. (Iowa Code Ann. §306.4) The Iowa Code provides these guidelines to establish the responsibilities of the counties over their roadways:

1. Secondary roadways fall under the jurisdiction of the County Board of Supervisors.
2. Roads and streets within any state land, including parks, are within the jurisdiction of the government agency that exercises control over such state land. However, any roadway that is an extension of a primary or secondary road, which both enters and exits the state land at separate points, will come within the concurrent jurisdiction of the controlling agency and agency that exercises jurisdiction over the primary or secondary road.
3. Roads and streets within any county park or conservation area are within the jurisdiction of the County Conservation Board. However, any roadway that is an extension of a primary or secondary road, which both enters and exits the county park or county conservation area at separate points, will come within the concurrent

jurisdiction of the County Conservation Board and the agency that exercises jurisdiction over the primary or secondary road.

TABLE 71: IMPROVEMENTS SCHEDULED FOR BOONE COUNTY IN THE 2006-2010 FIVE-YEAR PLAN

	Railroad	Trails	Traffic Safety	Highway
Location	Union Pacific at E Ave	Des Moines and Boone Rivers Water Trail	Story Street at Hawkeye Drive	West of Boone
Improvement	Signals w/gate arms 'Silent' horns		Site Funds	Bridge Deck Overlay
Cost	\$118,400	\$18,150	\$250,000	\$679,000
Year	2007	2006-2007		2010

Source: Iowa Department of Transportation 2006-2010 Five-Year Plan

Boone County's Proposed Improvements

General Highway Development

Proposed improvements to the county roadway system are graphically displayed on the existing and future transportation map, Figure 27. Also, a summary of scheduled improvements are listed in Table 71. Noted improvements include signalization – turn lanes, road widening to four lanes, geometric improvements such as realignments and turn lanes, interchange improvements and developments, and bridge replacements. Figure 27 also identifies a number of roads which have been proposed to be improved to either arterial or collector type. These roads were selected by the consultant after discussions with the steering committee and Boone County staff. These roadways were selected for numerous reasons, including current utilization patterns, anticipated developmental influence, and safety issues.

Corridor Development

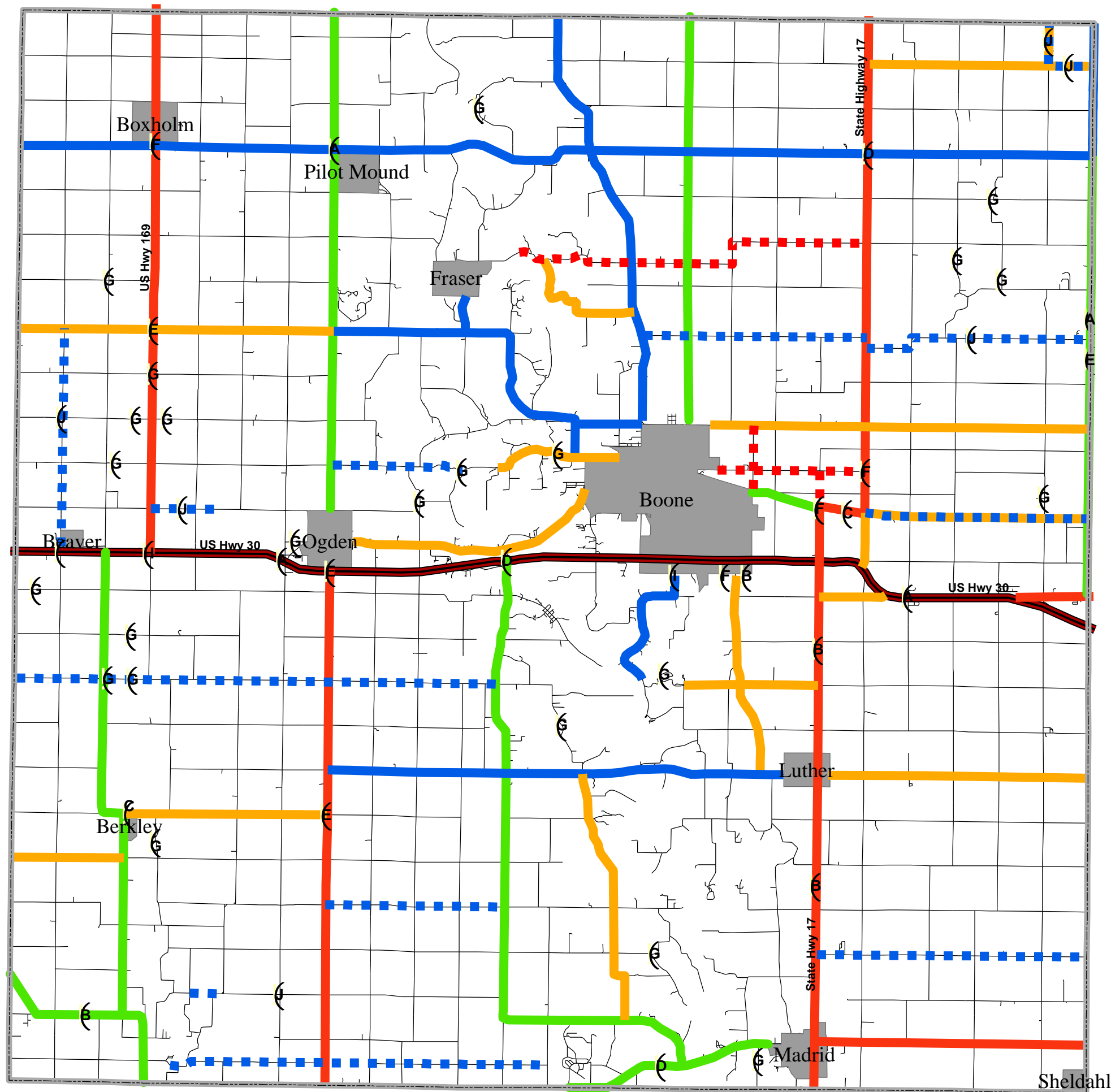
Future corridor development within the county will include the upgrade of a 12-mile stretch of Iowa State Highway 17 from Madrid north through Luther and north to US Highway 30, approximately two miles east of Boone. In addition, a small stretch of Iowa Highway 144 in the southwest corner of the county is included in the future transportation plan to be upgraded to four lanes.

Trail Development

Trails are becoming a larger part of people's lives. Trails are increasingly used for a way to connect to the outdoors, means of relaxation, and physical fitness. The development of a trails system in Boone County will be a key to future transportation demands. A trails system is not meant for the communities within a county, but now act as a means of connecting these communities. Boone County's efforts will need to be a coordinated effort between the communities, the Iowa Department of Transportation, the Iowa Department of Natural Resources, and local conservation districts.

IDOT currently list two proposed trails in Boone County on their Iowa Trails 2000 statewide inventory map. Proposed trails were submitted by Regional Planning Affiliations, Metropolitan Planning Organizations, and numerous local units of governments, trail user groups, and non-profit organizations. One four-mile segment runs along Iowa Highway 144 through the extreme southwest corner of the county. The other segment is proposed for along Iowa Highway 210 in the southeast corner of the county. This 12-mile segment travels through Madrid. These segments are graphically displayed

with the Boone County proposed trail network in Figure 28. In addition to the proposed trails, IDOT has established a map displaying canoe access points, displayed in Figure 29.



BOONE COUNTY, IOWA

Figure 27: Existing and Future Transportation Plan

POTENTIAL IMPROVEMENTS

- (A) Signalization-Turn lanes
- (B) Four Lanes
- (C) Geometric Improvement - Realignment
- (D) Geometric Improvement - Turn Lanes
- (E) Interchange Improvements
- (F) Interchange Development
- (G) Bridge Replacement
- (H) New Bridge
- (I) Interchange Overpass
- (J) Pavement

FUTURE ROAD TYPE

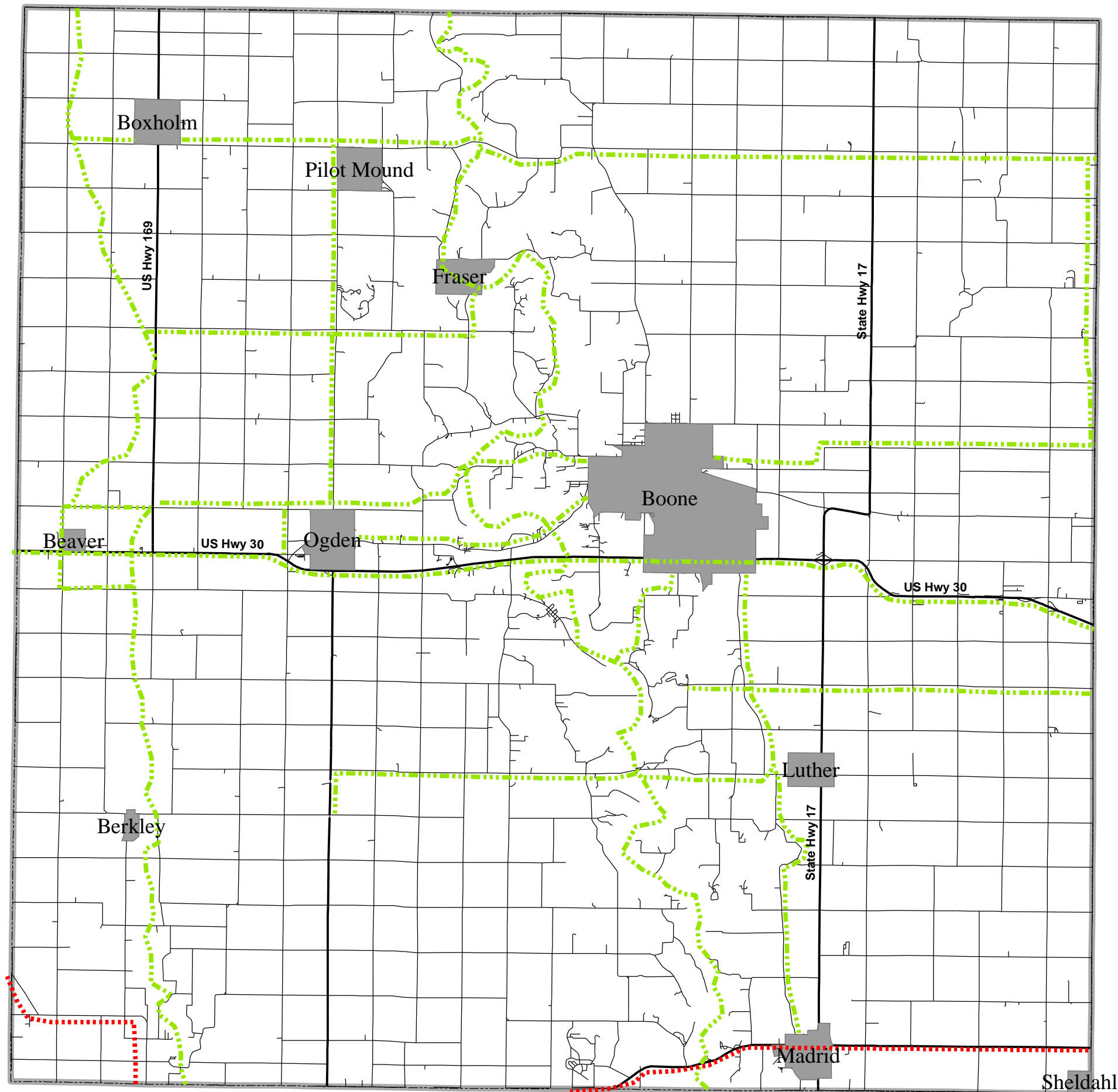
- Arterial
 - Collector
- ## EXISTING ROAD TYPE
- Expressway
 - Major Arterial
 - Major Collector
 - Minor Collector
 - Other Arterial



BOONE COUNTY, IOWA [®]

Figure 28: Future Trails Plan

- IDOT Proposed Trails
- Boone County Proposed Trails



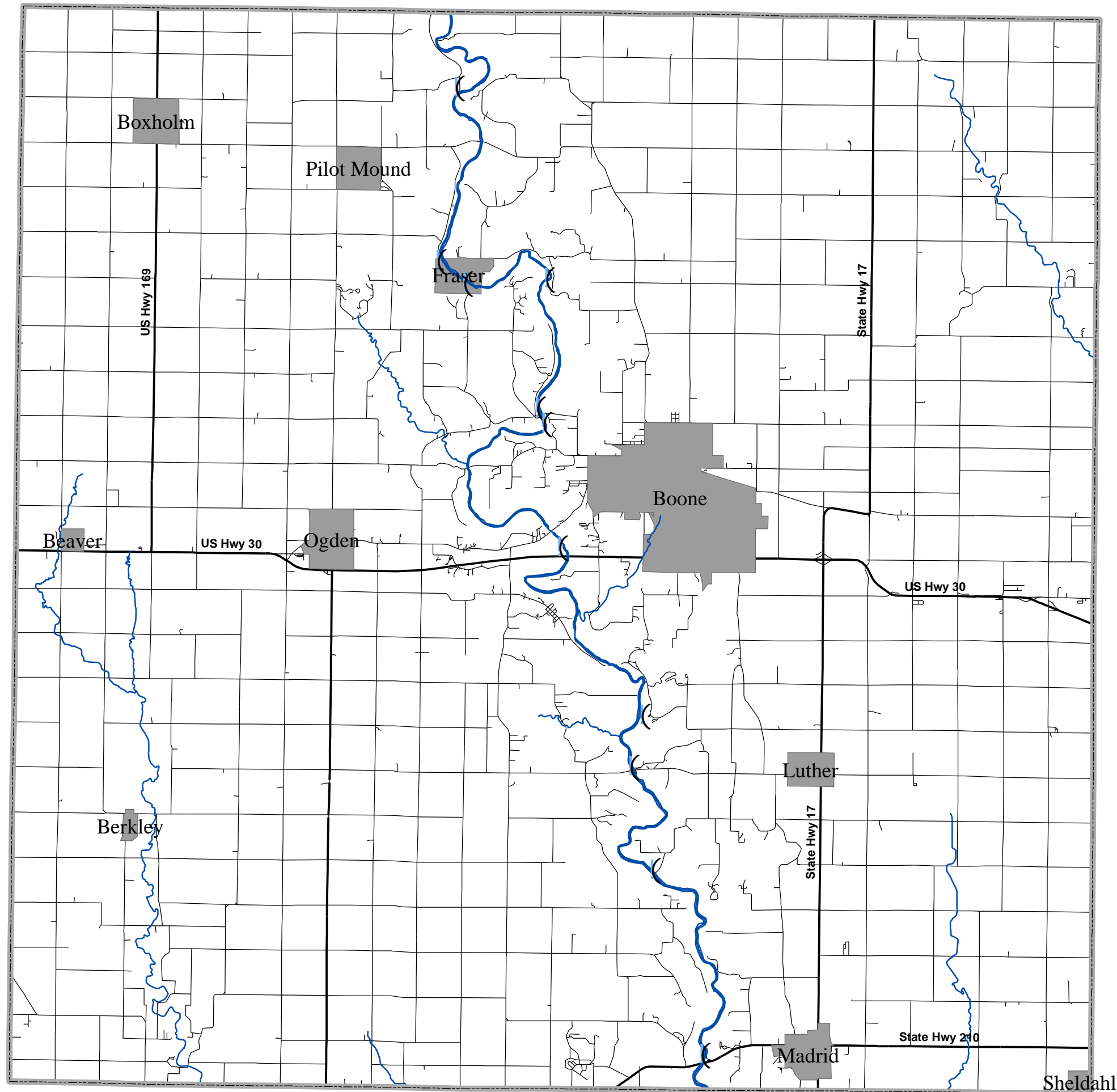
BOONE COUNTY, IOWA



Figure 29: IDOT Canoe Access Points

- (Water Access
- Rivers
- County Boundary
- Corporate Limits

0 1 2 4 6 8 Miles



BOONE COUNTY PLAN IMPLEMENTATION

IMPLEMENT BOONE COUNTY'S FUTURE

This section of the plan contains the inspiration of the many county officials and residents who have participated in the planning process. However, the ultimate success of this plan remains in the dedication offered by each and every resident. Also, the time and effort put forth by the zoning commission is vital to the success of not just the comprehensive planning process, but also daily planning process which occurs throughout Boone County everyday.

There are numerous goals and objectives in this plan which should be reviewed during planning and budget setting sessions. However, it is also recommended the county select three elements of the plan for immediate action; the goals of highest priority. This is the Action Plan.

Action agenda

The Action Agenda is a combination of the following:

- Goals and Objectives
- Growth Policies
- Land Use Policies
- Support programs for the above items

It will be critical to earmark specific funds to be used and the individuals primarily responsible for implementing the goals and policies in Boone County.

Support Programs for the Action Agenda

Four programs will play a vital role in the success of Boone County's plan. These programs are:

- 1. Zoning Regulations**--updated land use districts can allow the community to provide direction for future growth.
- 2. Subdivision Regulations**--establish criteria for dividing land into building areas, utility easements, and streets. Implementing the Transportation Plan is a primary function of subdivision regulations.
- 3. Plan Maintenance**--an annual and five-year review program will allow the community flexibility in responding to growth and a continuous program of maintaining the plan's viability.
- 4. Capital Improvement Plan**--an annual transportation improvement plan listing prioritized projects county wide over a five-year period.

PUBLIC EDUCATION

Finally, broad public support and involvement are necessary to the development and use of practically any implementation policy or program. If adequate support is to be developed, a permanent program educating residents is necessary. People who understand the needs and ways of meeting these needs of the community must take the initiative to stimulate the interest and the understanding required to assure action is taken. The governing body of Boone County should strive to implement an active public participation process by creating an educational process on land use issues annually.

Some of the objectives of the Comprehensive Plan cannot be achieved unless the actions of two or more public agencies or private organizations can be coordinated. Frequently, constraints prevent organizations from working with one another (i.e., financial resources, legal authority, restriction of joint uses of facilities, etc.) Efforts should be made to bridge this gap with open communication, cooperation and the realization that the issue at hand could benefit the health, safety, and general welfare of the residents of Boone County.

COMPREHENSIVE PLAN MAINTENANCE

Annual Review of the Plan

A relevant, up-to-date plan is critical to the on-going planning success. To maintain both public and private sector confidence; evaluate the effectiveness of planning activities, and, most importantly, make mid-plan corrections on the use of community resources, the plan must be current. The annual review should occur during the month of January.

After adoption of the comprehensive plan, opportunities should be provided to identify any changes in conditions that would impact elements or policies of the plan. At the beginning of each year a report should be prepared by the Zoning Commission, which provides information and recommendations on:

1. whether the plan is current in respect to population and economic changes, and
2. the recommended policies are still valid for the county and its long-term growth.

The Zoning Commission should hold a public hearing on this report in order to:

1. Provide citizens or developers with an opportunity to present possible changes to the plan,
2. Identify any changes in the status of projects called for in the plan, and
3. Bring forth any issues, or identify any changes in conditions, which may impact the validity of the plan.

If the Zoning Commission finds major policy issues or major changes in basic assumptions or conditions have arisen which could necessitate revisions to the Comprehensive Plan, they should recommend changes or further study of those changes. This process may lead to identification of amendments to the Comprehensive Plan and would be processed as per the procedures in the next section.

Plan Amendment Procedures

It is anticipated that each year individuals and groups may come forward with proposals to amend the Comprehensive Plan. It is recommended that those proposals be compiled and reviewed once a year at the annual review. By reviewing all proposed amendments at one time, the effects of each proposal can be evaluated for impacts on other proposals and all proposals can be reviewed for their net impact on the Comprehensive Plan.

Unanticipated Opportunities

If major new and innovative development opportunities arise which impact several elements of the plan and which are determined to be of importance, a plan amendment may be proposed and considered separate from the Annual Review and other proposed Comprehensive Plan amendments. The County Planner will compile a list of the proposed amendments received during the previous year, prepare a report providing applicable information for each proposal, and recommend action on the proposed amendments. The Comprehensive Plan amendment process should adhere to the adoption process specified by Iowa Code and provide for the organized participation and involvement of citizens.

Methods for Evaluating Development Proposals

The interpretation of the Comprehensive Plan should be composed of a continuous and related series of analyses, with references to the goals and policies, the Land Use Plan, and specific land use policies. Moreover, when considering specific proposed developments, interpretation of the Comprehensive Plan should include a thorough review of all sections of the Comprehensive Plan.

If a development proposal is not in conformance or consistent with the policies developed in the Comprehensive Plan, serious consideration should be given to making modifications to the proposal or the following criteria should be used to determine if a Comprehensive Plan amendment would be justified:

- the character of the adjacent neighborhood
- the zoning and uses on nearby properties
- the suitability of the property for the uses allowed under the current zoning designation
- the type and extent of positive or detrimental impact that may affect adjacent properties, or the community at large, if the request is approved
- the impact of the proposal on public utilities and facilities
- the length of time that the subject and adjacent properties have been utilized for their current uses
- the benefits of the proposal to the public health, safety, and welfare compared to the hardship imposed on the applicant if the request is not approved
- comparison between the existing land use plan and the proposed change regarding the relative conformance to the goals and policies
- consideration of County staff recommendations