



Snapshot

KEARNEY COMPREHENSIVE PLAN

Foundation of Facts - Part One and Two

October 20, 2015

your town. your future.





INTRODUCTION

PURPOSE

This Snapshot Summary is the first component of the Kearney Comprehensive Plan. It will also serve as a starting point for discussions about the future of Kearney.

As the name implies, this report is a “snapshot” of the City, intended to establish a foundation of facts about the City of Kearney, documenting important trends, and issues that impact the City’s overall quality of life and ability to serve its residents.

This Summary uses nine broad categories to summarize a range of topics that affect life in Kearney.

Part One: PAC Meeting #2

- Demographics
- Land Use & Zoning
- Susceptibility to Change
- Community Facilities
- Opportunities and Constraints

Part Two: PAC Meeting #3

- Development Influences
- Parks & Open Space
- Transportation
- Infrastructure

Each section “tells the story” of Kearney. The format is intended to be accessible; it concisely summarizes critical information in an easily readable format. The topic headings help focus the Snapshot in a way that matters to the average citizen.

In addition to the topic-based summaries, the Snapshot contains a series of maps that document the physical conditions in the City and surrounding context, based on available data. The inventory maps will help inform upcoming stages of the Comprehensive Plan process, including analysis of opportunities for future development, scenarios, and drafting of the final Plan.

This Snapshot Summary is not meant to be an exhaustive inventory; rather, it focuses on data that will help inform the overall Comprehensive Plan, and highlights important trends, key issues, and opportunities that may need to be considered to make good decisions for the future.

The next phases of work on the Comprehensive Plan, “*Community Visioning*,” “*Forecast the Future*,” and “*Formulate a Fit*,” will build upon the findings of this Snapshot to start a dialogue with residents and about choices that the City can make.



Source: City of Kearney



DEMOGRAPHICS (People, Housing & Employment)

WHY IT MATTERS

The composition of a community's population determines the amount and type of housing it needs, the buying power of the population determines the amount of retail development the community can support, and the education levels of a community's population will influence the types of businesses that may be attracted to the area. Also, if the economy of an area is changing, then understanding how those changes may affect the local community will enable it to plan for, and benefit from, those changes.

People

Population

Table: Population

Kearney is the fastest growing city in metropolitan Kansas City, according to a recent study published by the Kansas City Business Journal. The 2015 list of fastest-growing cities ranked communities by the population growth projected from 2014 to 2019. Kearney, with a current population estimated at 9,261, is expected to see growth of 8.97 percent and reach nearly 10,000 by 2019. Southwest Johnson County communities such as De Soto, Gardner and Wyandotte County's Tonganoxie dominate the next several positions. Smithville, with 8,700 residents and projected growth of 5.93 percent was 11th. Pleasant Valley, with 3,000 and 5.39 percent, was 16th and Claycomo with 1,400 and 4.82 percent rounded out the top 20.

	2000	2010	2014	% Change 2000 - 2010	% Change 2010 - 2014
KEARNEY					
Population	5,641	8,454	9,261	50%	10%
KANSAS CITY MSA					
Population	1,776,635	2,035,334	2,071,133	15%	2%
MISSOURI					
Population	5,596,564	5,988,927	6,063,589	7%	1%

Source: US Census Bureau, Population Estimates Program (PEP)

Age Groups

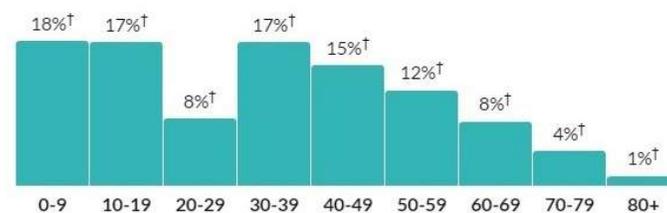
33.3

Median age

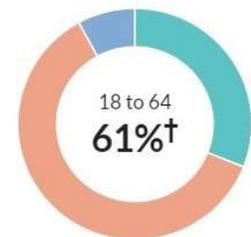
about 90 percent of the figure in the Kansas City, MO-KS Metro Area: 36.6

about 90 percent of the figure in Missouri: 38

Population by age range



Population by age category



Under 18 18 to 64 65 and over

Population tends to be younger than metro area, comprised of young families nearing 60% total population > than 39 yrs.

Population by age category

Column	Kearney	Kansas City, MO-KS Metro Area	Missouri
Under 18	31%† 2,679	25.4% 514,169	23.5% 1,413,044
18 to 64	61.1%† 5,273	62.3% 1,261,759	62.1% 3,732,100
65 and over	7.9%† 685	12.3% 249,369	14.4% 862,038

Education Attainment

97.7%

High school grad or higher

about 10 percent higher than the rate in the Kansas City, MO-KS Metro Area: 90.6%

about 10 percent higher than the rate in Missouri: 87.6%

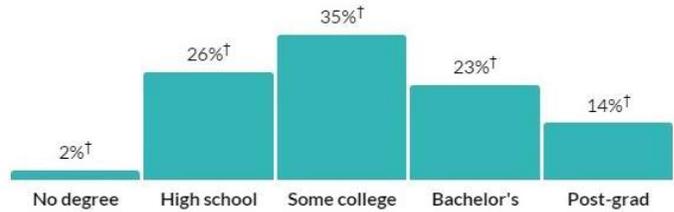
36.6%

Bachelor's degree or higher

about 10 percent higher than the rate in the Kansas City, MO-KS Metro Area: 33.3%

about 1.4 times the rate in Missouri: 26.2%

Population by minimum level of education



* Universe: Population 25 years and over

Population by minimum level of education

Column	Kearney		Kansas City, MO-KS Metro Area		Missouri	
No degree	2.3%†	121	9.4%	126,762	12.4%	496,187
High school	26%†	1,382	26.6%	357,633	31.6%	1,264,139
Some college	35.1%†	1,865	30.7%	412,384	29.9%	1,195,223
Bachelor's	23%†	1,221	21.3%	285,609	16.4%	655,633
Post-grad	13.7%†	727	12%	161,123	9.8%	391,426

Kearney's level of educational attainment is slightly ahead of the KC MSA and 1.4 times the rate of Missouri.

Households by Type

3,134

Number of households

the Kansas City, MO-KS Metro Area: 789,604

Missouri: 2,360,131

2.8

Persons per household

about 10 percent higher than the figure in the Kansas City, MO-KS Metro Area: 2.5

about 10 percent higher than the figure in Missouri: 2.5

Population by household type



Reflecting the younger population, the majority of all Households are families with children.

Population by household type

Column	Kearney		Kansas City, MO-KS Metro Area		Missouri	
Married couples	68.7%†	5,916	61.5%	1,226,766	61.1%	3,566,187
Male householder	7.5%†	643	5.7%	112,714	5.5%	317,716
Female householder	15.9%†	1,371	16.1%	322,003	16.1%	938,261
Non-family	8%†	687	16.7%	333,337	17.3%	1,010,941

what is a household?

A person or group of people living together in one housing unit.

what is a housing unit?

A house, apartment, mobile home, group of rooms or single room, which are intended as separate living quarters

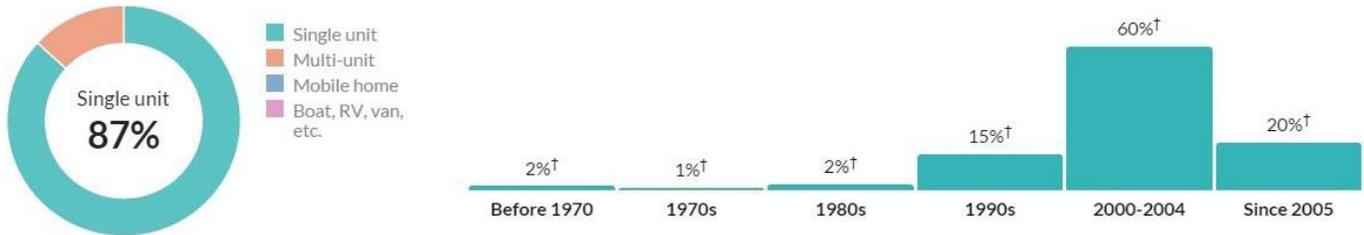
what is a family household?

A group of two or more people living together in a housing unit who are related by birth, marriage, adoption, etc.

Housing

Types of Housing Structures

Year moved in, by percentage of population



At 87% single-family units, Kearney is about 10% higher than the KC MSA.

Types of structure

Column	Kearney		Kansas City, MO-KS Metro Area		Missouri	
Single unit	86.8%	2,933	76.3%	666,640	73.6%	1,996,654
Multi-unit	13.2%†	446	21.6%	188,386	19.7%	535,212
Mobile home	0%	0	2.1%	18,028	6.7%	180,429
Boat, RV, van, etc.	0%	0	0%†	196	0.1%†	1,534

Home Ownership

3,379

Number of housing units

the Kansas City, MO-KS Metro Area:
873,250

Missouri: 2,713,829

Occupied vs. Vacant



Ownership of occupied units



Kearney housing units are slightly more likely to be owner occupied than the KC MSA.

Occupied vs. Vacant

Column	Kearney		Kansas City, MO-KS Metro Area		Missouri	
Occupied	92.8%	3,134	90.4%	789,604	87%	2,360,131
Vacant	7.3%†	245	9.6%	83,646	13%	353,698

Ownership of occupied units

Column	Kearney		Kansas City, MO-KS Metro Area		Missouri	
Owner occupied	72.9%	2,285	66.8%	527,581	68.4%	1,613,941
Renter occupied	27.1%†	849	33.2%	262,023	31.6%	746,190

Housing Value

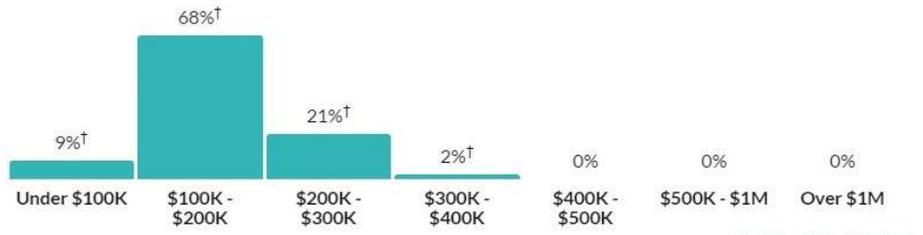
\$157,900

Median value of owner-occupied housing units

about the same as the amount in the Kansas City, MO-KS Metro Area: \$158,300

about 20 percent higher than the amount in Missouri: \$137,000

Value of owner-occupied housing units



Value of owner-occupied housing units

Column	Kearney		Kansas City, MO-KS Metro Area		Missouri	
Under \$100K	8.7%†	199	24.1%	127,002	33.4%	539,683
\$100K - \$200K	67.9%†					
\$200K - \$300K	21.2%†	485	19.9%	104,925	15.9%	256,495
\$300K - \$400K	2.1%†	49	6.9%	36,544	5.6%	90,801
\$400K - \$500K	0%	0	2.9%	15,229	2.2%	36,005
\$500K - \$1M	0%	0	2.9%	15,409	2.6%	42,545
Over \$1M	0%	0	0.7%	3,564	0.7%	10,959

Kearney tends to have proportionately more middle income housing units. It has fewer units at either end of the scale.



Source: A. Lubinski

Employment

Income

\$28,093

Per capita income

a little less than the amount in the Kansas City, MO-KS Metro Area: \$29,785

about 10 percent higher than the amount in Missouri: \$25,649

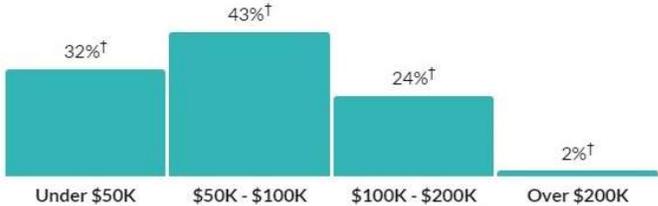
\$75,243

Median household income

about 1.3 times the amount in the Kansas City, MO-KS Metro Area: \$56,815

about 1.5 times the amount in Missouri: \$47,380

Household income



Incomes tend to be higher relative to the KC MSA. There are fewer households at incomes over \$200,000.

Household income

Column	Kearney		Kansas City, MO-KS Metro Area		Missouri	
Under \$50K	31.8%†	995	44.1%	348,234	52.3%	1,233,293
\$50K - \$100K	42.9%†	1,344	32.3%	255,223	30.5%	720,275
\$100K - \$200K	23.8%†	747	19.4%	153,135	14.3%	337,888
Over \$200K	1.5%†	48	4.2%	33,012	2.9%	68,675

what is per capita income?

Per capita income is the mean income computed for every man, woman, and child in a particular group. It is derived by dividing the total income of a particular group by the total population..

Transportation to Work

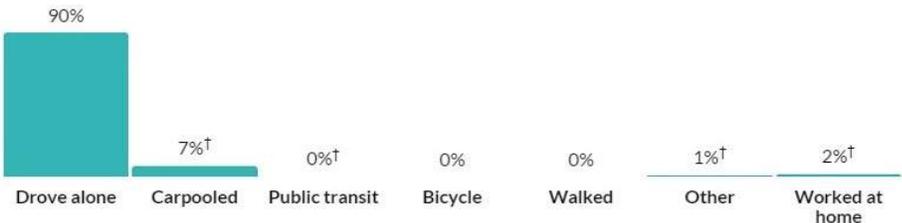
24.6 minutes

Mean travel time to work

about 10 percent higher than the figure in the Kansas City, MO-KS Metro Area: 22.8

a little higher than the figure in Missouri: 23.1

Means of transportation to work



* Universe: Workers 16 years and over

Commuting patterns show more workers commute out of Kearney to work, than commute in.

t - All sources are statistical estimates based on surveys. The accuracy is affected by the sample size. The actual numbers have plus/minus margin of error that varies depending on sample size. However, by using the same sources over time and across geographies, one can rely on the general trends and the comparison of magnitudes from one geography to another.



LAND USE & ZONING

WHY IT MATTERS

Land use planning is a central component of the comprehensive planning process and helps establish and clarify the community's vision for future development. Land use serves as a framework to guide future development decisions made by elected officials. An understanding of how planned uses compare with how the land is being used, conditions on the ground, helps to determine the development pattern within the community. Often, the actual uses vary from existing zoning and plan recommendations.

Existing Land Use

Slow physical expansion following the 1990's and 2000's. Over two square miles of land were added since 2003. There are approximately 12 square miles, or 7,608 acres of land within the City.

Kearney's growth is the result of additions and annexations to the original town. More opportunities from growth will come from increased metropolitan expansion.

- 1990's = 1,238 acres
- 2000's = 3,796 acres

Agricultural Land Use

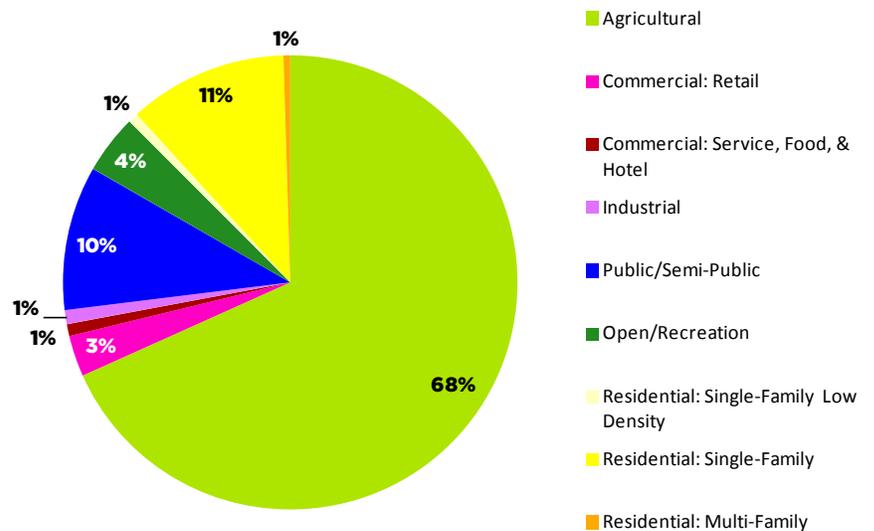
Agricultural land is the "predominate" land use. Representing 68% of the total land area, it has increased from 3,206 acres in 2003 to 5,194 acres in 2015. The total acreages of agricultural land will decrease over time as the city continues to develop.

Residential Land Use

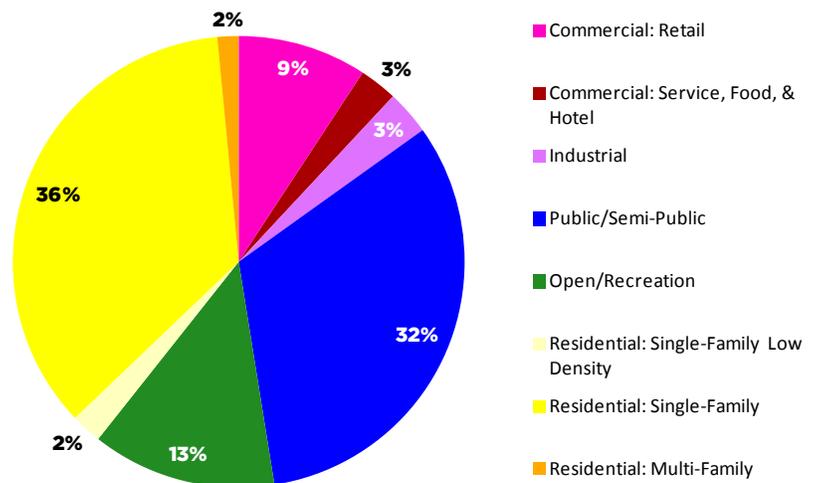
As shown in Chart 1, when looking at the City as a whole, residential lands have decreased overall. Comprising 13% of the total land in Kearney, total acres devoted to residential uses have decreased from 1,648 acres in 2003 to 949 acres in 2015, a decrease of 699 acres. This decrease is in part a reflection of past annexations.

Growth has occurred in new subdivisions located along the edges of Kearney. New multi-family complexes have been built throughout the community, with an increase of 11 acres. Multi-family has and will continue to become an increasing segment of the residential land use, a posi-

**Chart 1
CITY OF KEARNEY EXISTING LAND USE**



**Chart 2
CITY OF KEARNEY DEVELOPED LAND EXISTING LAND USE**



Source: MARC GIS & Vireo

tive trend toward retaining seniors and young people.

Public/Semi-Public Land Use

10% of the land is devoted to public facilities. Public/Semi-public uses include city facilities, institutions, and public schools. They have risen from 206 acres in 2003 to 782 acres in 2015, an increase of 576 acres.

Commercial Land Use

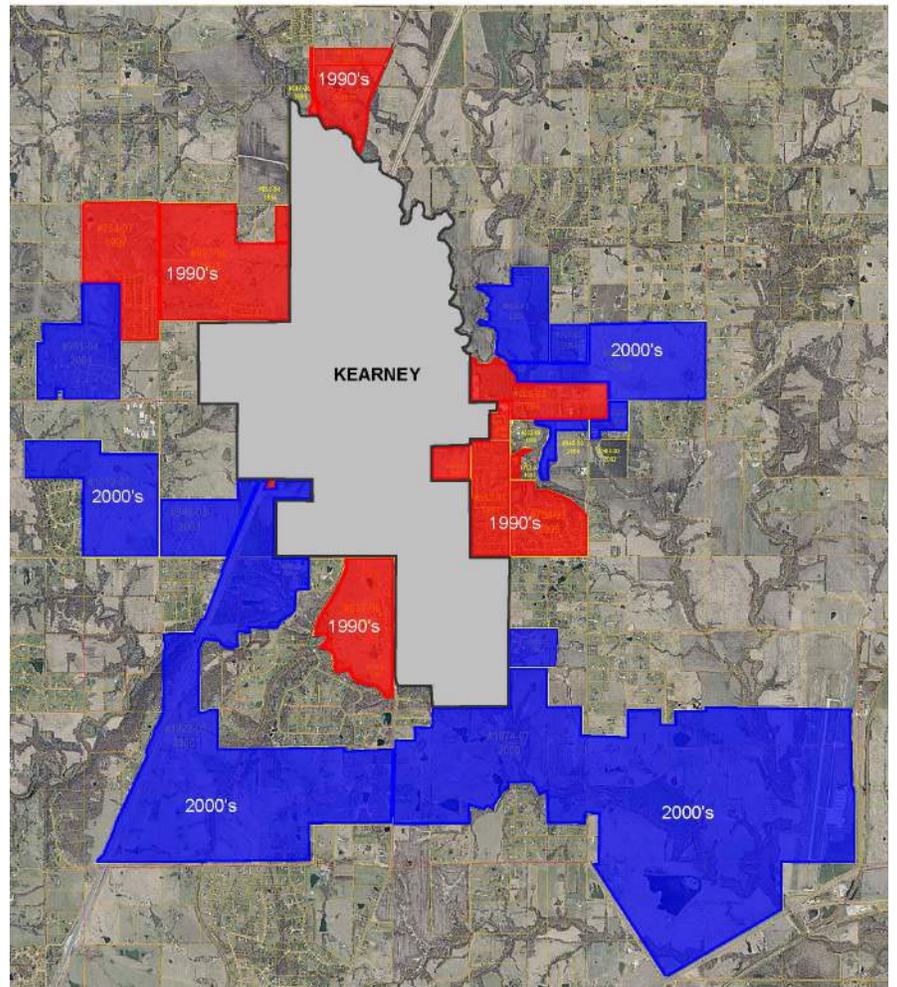
I-35 will continue to be a major determinant of commercial development. As shown in Chart 1, when looking at the City as a whole, commercial land decreased from 459 acres in 2003 to 288 acres in 2015, representing 4% of the total land area. Generally, these uses are targeted along corridors with the greatest “mix” of uses occurring in the Downtown. Downtown dominate uses are commercial/retail, with public/semi public uses, smaller offices, and housing at the edges making this area one of the more diverse areas of the city.

Recreational Land Use

Parks are a source of pride. They are located generally throughout the community, representing 4% of the total land area, or 319 acres.

Industrial Land Use

In 2003, **industrial** land uses included 76 acres and in 2015, 73 acres, or 1% of the total land area.

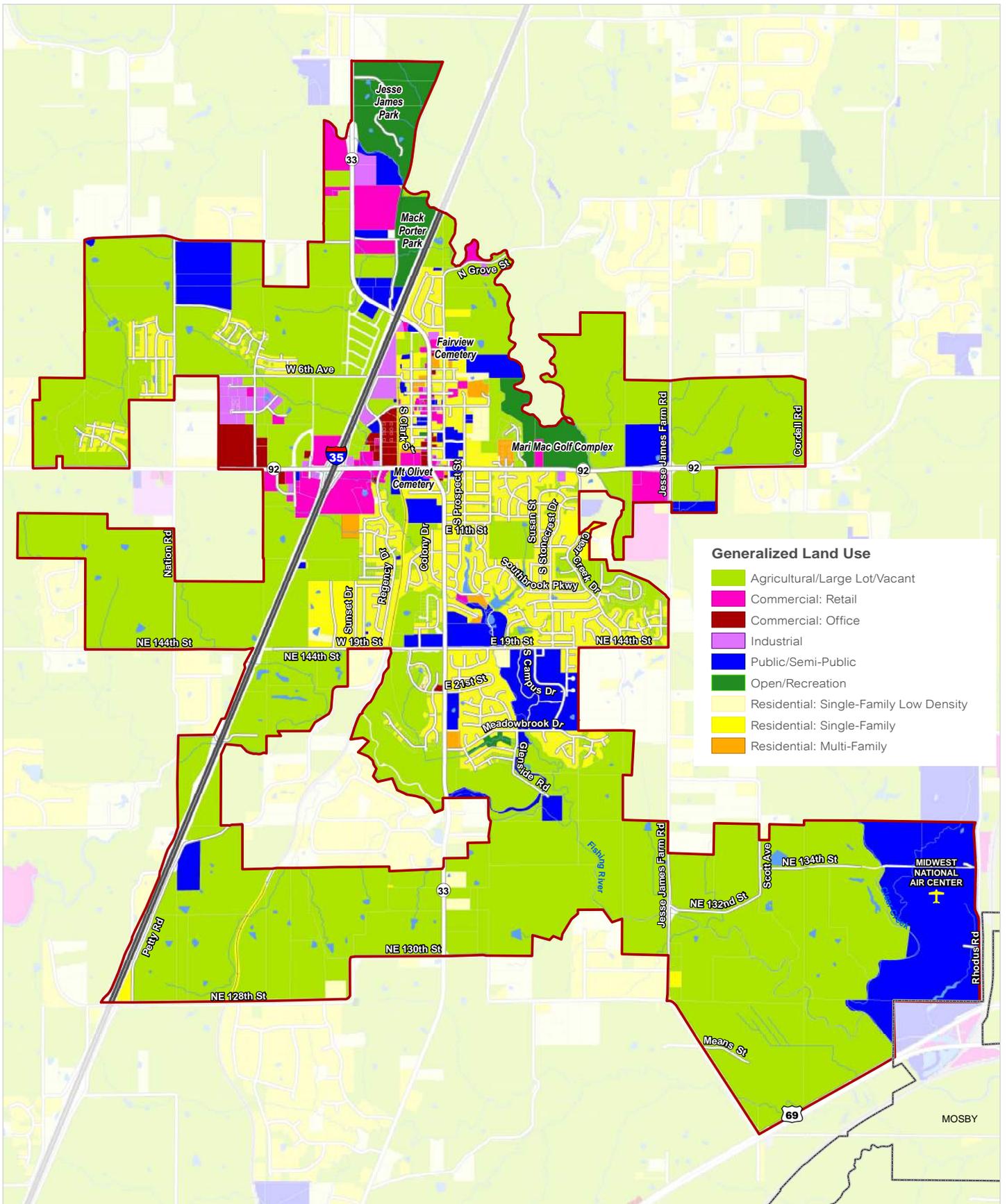


Annexation History by Decade

Source: City of Kearney and Vireo

City of Kearney Total Land Area - Comparative Land Use Acreages 2003 - 2015					
Category	2003		2015		Change Acres
	Acres	Percent	Acres	Percent	
Agricultural/Vacant	3,206	52.6%	5,194	68.26%	+1,988
Low Density Res.	26	.4%	53	.70%	+27
Single-Family Res.	1,597	26.2%	860	11.31%	-737
Multi-Family Res.	25	.41%	36	.48%	+11
Commercial	459	7.52%	288	3.79%	-171
Industrial	73	1.2%	76	1%	+3
Public/Institutional	206	3.4%	782	10.27%	+576
Park & Recreational	508	8.30%	319	4.19%	-189
Total Acres	6,100	100%	7,608	100%	+1,508

Source: Kearney Comprehensive Plan and Vireo



Existing Land Use Map

Source: MARC GIS & Vireo



ACRES





Source: City of Kearney



Source: City of Kearney



Source: Vireo

Zoning

What is Zoning?

Zoning helps implement land use plans by regulating exactly where uses are allowed on specific parcels of land and how they can be developed in terms of placement on the lot, height, density, access, parking, signage, setbacks and other design requirements.

Existing Zoning

42% of the area is zoned County.

39% of the area is zoned for residential uses, including single-family and multi-family uses.

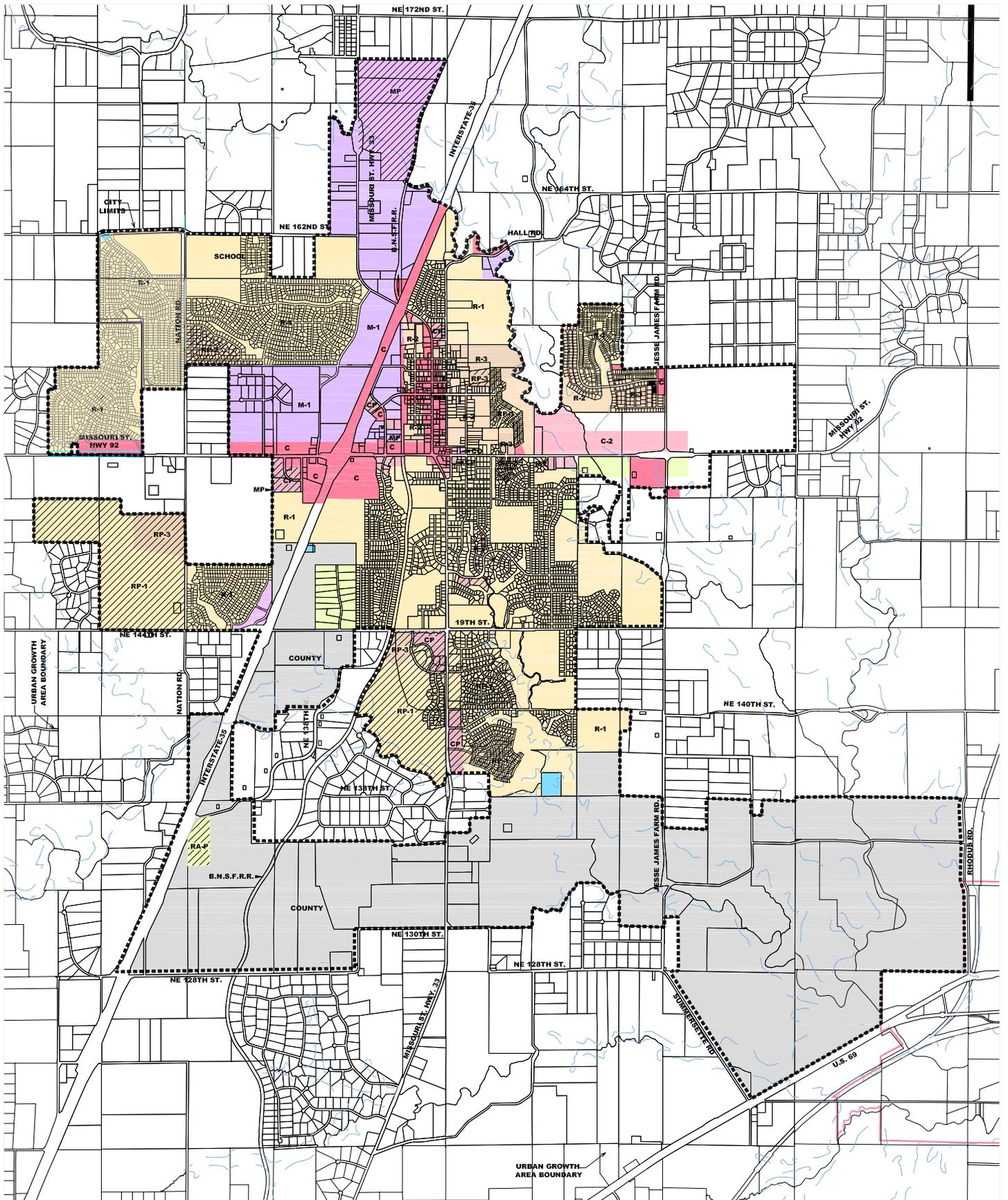
Only 5% of the City is zoned commercial/business district.

Existing zoning in the City is not always consistent with existing land uses.

Table: Estimated Generalized Zoning Acres - 2015

Zoning Category	2015	
	Acres	% of Total
County	2,989	42%
SU	10	1%
R-1/RP1	2,824	39%
R-2/RP2	201	2%
R-3/RP3	173	1%
RAP	105	1%
Commercial	395	5%
Industrial	670	9%
Total	7,367	100

Source: Vireo



Existing Zoning Map

Source: City of Kearney 2008

LEGEND

-----	CITY LIMITS	SU	RP-1
=====	RIGHTS-OF-WAY	M	RP-2
=====	C	MP	RP-3
=====	C-2	R-1	RA-P
=====	CP	R-2	COUNTY
=====	CO	R-3	
=====	CBD	RA	
=====	PLANNED DISTRICT OVERLAY		

PER CITY CODES: "ALL TERRITORY WHICH MAY HEREINAFTER BE ANNEXED TO THE CITY OF KEARNEY SHALL RETAIN THE ZONING IT HAD PRIOR TO THE ANNEXATION UNLESS LAWFULLY CHANGED BY MUNICIPAL ORDINANCE."

North
Scale 1"=1000'
MAY 2008



SUSCEPTIBILITY TO CHANGE

WHY IT MATTERS

Many existing uses in the City of Kearney are sound and viable. However, there are opportunities for new development and redevelopment along the major corridors. As opportunities arise and resources become available, improvements and redevelopment will occur over a period of years. While redevelopment might take place over a period of years, it should not occur as a series of isolated and unrelated projects. The Plan will identify strategies for various opportunity sites.

Change Assessment

A Hard/Soft Analysis is an informal first step determination about which lands will be the most “susceptible to change”. The purpose is to identify the magnitude and location of change that might occur in the city in the coming years. For the hard/soft assessment, the first step is to examine the hard land uses that are likely to remain over the next decade. Examples of “hard uses” would be a church, a viable residential neighborhood, or a brand new office building. “Soft uses”, which are likely to be replaced by new development, are identified. Examples of very soft uses would be a large parking lot, vacant land (without environmental constraints), and an abandoned building.

The following quantitative and qualitative criteria were used to evaluate the soft uses in Kearney that are most “susceptible to change”. The susceptible to change areas on this map are generally agricultural, vacant or commercial lands, with some residential, located within the City limits. Susceptibility to change is broken down into two categories with associated criteria, as follows:

High Susceptibility to Change

Areas most susceptible to change generally have adequate public services available and few constraints for future development. They are the first priority for new development.

High Susceptibility to Change areas have one or more of the following characteristics:

- Undeveloped vacant land
- Dedicated surface parking lot
- Pending/current projects
- Approved-Unbuilt projects

Moderate Susceptibility to Change

Areas moderately susceptible to change generally have adequate public services available. They are the second priority for redevelopment. Moderate Susceptibility to Change area have one or more of the following characteristics:

- Partially vacant or have deteriorated obsolete buildings
- Underutilized buildings ineffective in maintaining full occupancy
- Zoning allows for greater intensity

Preliminary Results

Hard Uses

Blue - There are **2,483 acres** of “hard uses” which are not likely to change, including public/semi public lands, viable residential neighborhoods, or new or existing viable development.

High Susceptibility to Change

Red - There are **1,947 acres** of agricultural, large lot or vacant lands within the city that could be developed.

Orange - Just over **1,305 acres** have an approved plan waiting to be initiated or completed.

Moderate Susceptibility to Change

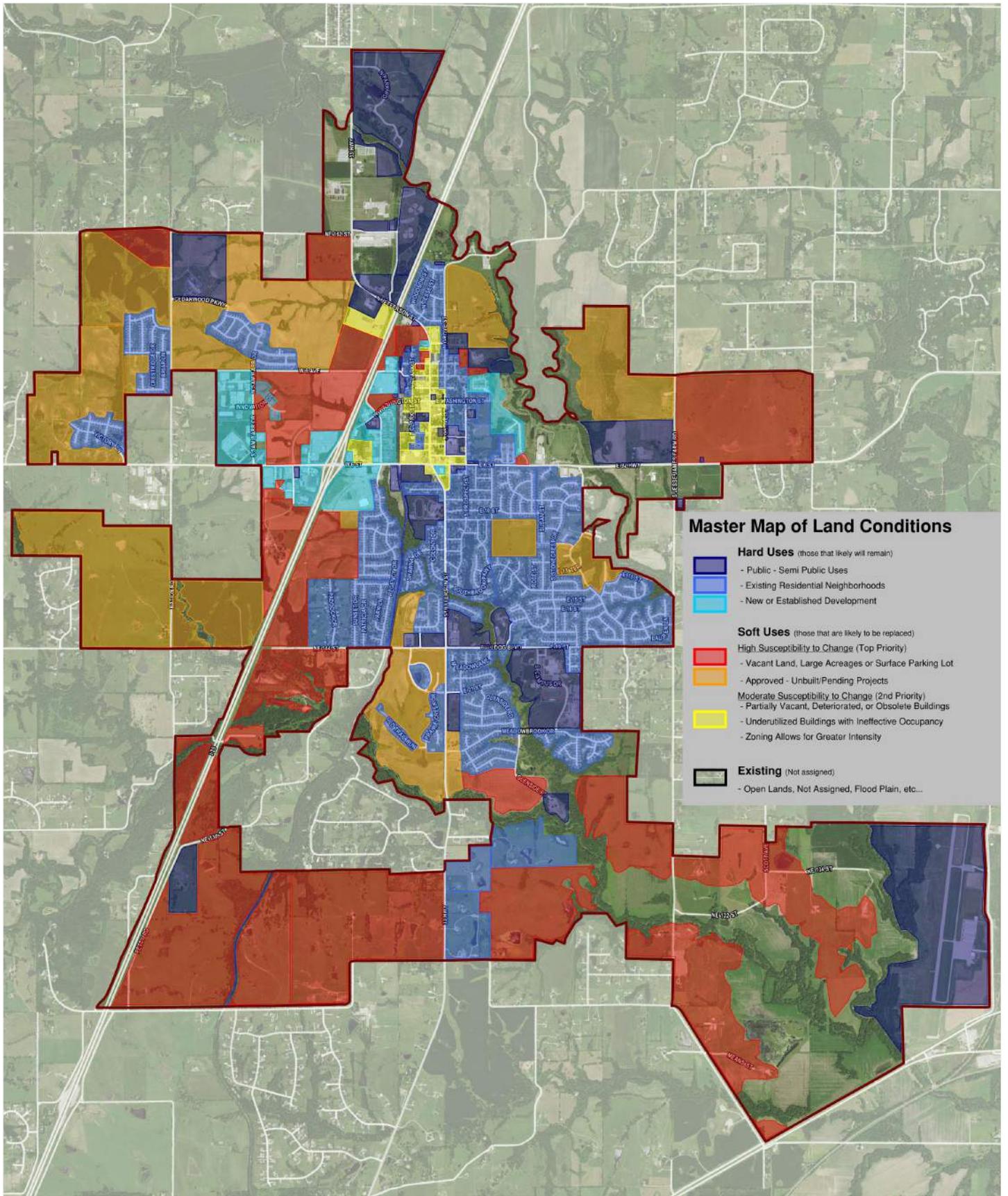
Yellow - There are **90 acres** of land within the city where conditions could present opportunities for redeveloped.

Development Potential of Land

Based on the presence of susceptible properties, key opportunity sites will be identified for potential new commercial, office, residential, and mixed-use development. Additional qualitative factors, including anecdotal information about development interest of the property, etc... will be introduced by the community.

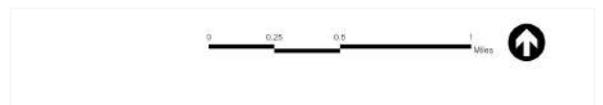
While development or redevelopment could conceivably occur anywhere within the City, several properties appear to be more “susceptible” to change than others and could present future redevelopment opportunities.

The Susceptibility to Change analysis will serve as the foundation for scenario development and the identification of opportunity sites for future development in the Plan.



Susceptibility to Change Map

Source: Vireo and City of Kearney





COMMUNITY FACILITIES

WHY IT MATTERS

The resources local governments provide and the facilities they maintain contribute greatly to the quality of life and economic prosperity of a community. The goal of mapping public facilities, as part of comprehensive planning, is not to create an exhaustive list of sites. Instead, its value is in the identification of critical systems that have the following characteristics: 1) The facility serves a community interest, 2) Each unit is part of a larger system of service delivery, and 3) It represents a substantial capital investment.

Community Facilities

Although the provision of each public service is reflected in the strategic location of buildings, location is also determined by the historic development pattern, the community served, and the income stream that is expected to support the facility. Well-designed facilities and a high level of urban services strengthen the community and represent an asset to neighborhood life. The following categories of public facilities were identified: Libraries, Police Services, Fire Services, Emergency Medical Services, Municipal Buildings, Schools (public/private), Health and Human Services, Churches, Cemeteries, and Parks & Recreation Facilities.

City Services

The City provides a variety of essential community services through its departments:

- Police
- Municipal Court
- Animal Control
- City Clerk
- Administration
- Finance
- Area Development Council
- Community Development
- Water Department
- Public Works
- Parks and Recreation

County Services

The City relies on several County services including:

- Assessor and Collector
- Senior Services
- Circuit Court
- Sheriff
- Medical Examiner
- Facilities Management
- Highway & Transportation
- Parks & Recreation
- Historic Sites
- Planning and Zoning



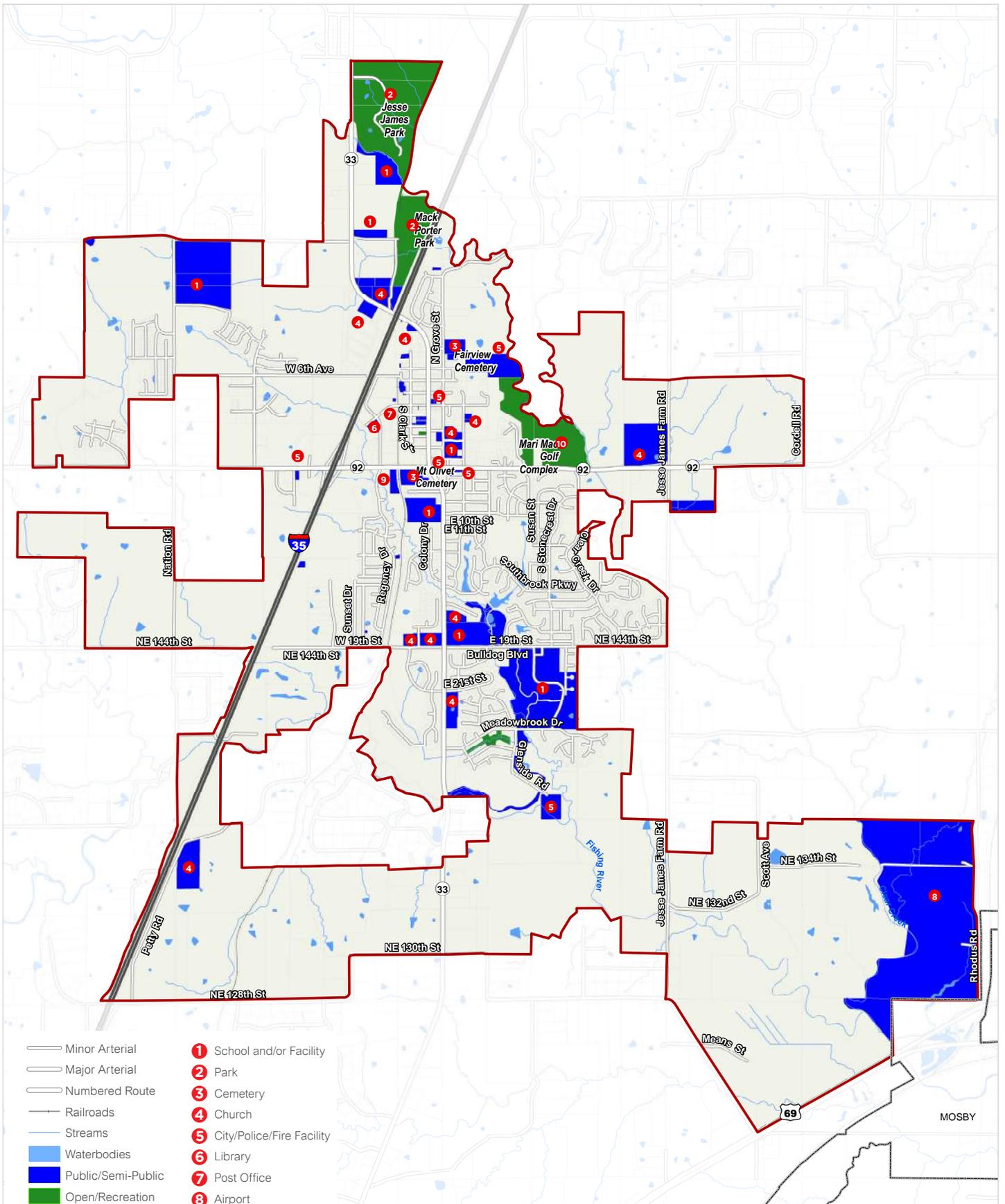
Districts

These Districts also provide services to the City:

- Kearney Fire and Rescue Protection District
- Kearney R-1 School District
- Mid-Continent Public Library

Kearney's residents and businesses benefit from a system of facilities and services. The planning process will identify assets and issues related to these organizations and City departments. The capacity, quality, and reliability of these facilities and services influence the identity of the city and supports opportunities for future business and residential growth. As many of the service providers are not under the purview of the City, they are not topics for a Comprehensive Plan. The Plan will stress collaboration and intergovernmental coordination in order to achieve mutually beneficial goals that will ensure citizens continue to be well served as demand for public services evolves.





Community Facilities Map

Source: Vireo



ACRES

vireo





OPPORTUNITIES & CONSTRAINTS

WHY IT MATTERS

A first step with any planning process is determining “where are we now?,” the subject of this Snapshot Summary report. The second step in the process, *forecasting the future*, is where the community answers the question “Where do we want to go?” This Snapshot bridges both, and summarizes initial community input through an opportunity and constraints analysis towards establishing a framework for answering both of these questions. The third and final step, *formulating a fit*, is where the community answers the question “Where can we go?” A question of feasibility and often produces a more limited range of options. The challenge is to identify a desirable yet feasible future.

Methodology

The analysis of “Where are we now?” and “Where do we want to go?” was accomplished using a combination of three techniques: opportunities and constraints analysis, strengths and weaknesses analysis, and issue identification. The method used for this analysis is qualitative in nature and is as much a matter of understanding community perception as a matter of fact.

This analysis involved the use of citizen Stakeholder Groups to determine public perceptions as the first round of input collection. The stakeholder group members consisted of citizens and civic leaders with diverse backgrounds and perspectives, who have a big picture attitude about Kearney – its strengths, assets, and weaknesses - to identify key issues to inform all aspects of the Plan update. These groups included:

1. Builders/Developers
2. Committees/Civic Organizations
3. Retail Business/Large Employers
4. Senior Citizens
5. Youth/Recreation

This Snapshot summarizes the feedback gathered by the Vireo team during the stakeholder group process through the identification of broad themes of interest and concern. A detailed summary for each Stakeholder Group can be found on the City website.

Analysis

The Stakeholder Group results were collected and analyzed by creating a series of common themes that indicate participant’s preferences for “where are we now?” and “where do we want to go?” The results can be seen throughout this section in “word clouds.” By visualizing community input in word clouds, it is easy to see which themes and priorities rise to the top of participants concerns. The larger the word or phrase appears; the more often it was mentioned.

Summary of “Big Themes”

The following “big themes” represent integrated recurring ideas and key topics that were discussed among the Stakeholder Groups. These “big themes” are for summary purposes only. The detailed notes for each group can be viewed on the City website.

Group Demographics

HOW LONG have you been [living-working] in or near Kearney?



Downtown Stakeholder Group -- Source: Vireo



DEVELOPMENT INFLUENCES

WHY IT MATTERS

The City of Kearney and surrounding environs has a variety of environmental and natural resources. The goal for evaluation of those resources is to identify those places that are most important to retain, develop protection strategies to maintain a balance between preservation and promotion of quality growth and development, define opportunity corridors, and define high quality open space set-asides. These natural and environmental features form the basis for the Development Influences Framework. These systems were mapped and overlaid to understand their relationship and their impact to development.

Unincorporated Area Environmental Constraints

Not all lands surrounding the City of Kearney in the unincorporated area are suitable for development due to environmental constraints and valuable natural resources. This framework identified factors that affect development potential of land.

A weighted overlay analysis of environmental factors are overlaid to create a gradient of sensitivity from least to most sensitive (McHarg, 1969). This analysis is used to help a city understand where they can grow and where they should preserve resources and protect ecosystem services and landscape functions such as water quality, groundwater recharge, biodiversity, and productive habitat.

The resource systems that were evaluated include:

- **Hydrology:** Streams, stream buffers, wetlands, location of alluvium (where water is underneath the surface), and floodplains.
- **Existing Vegetation:** Forest, scrub, and agriculture.
- **Slopes:** Slopes greater than 15% were considered as a sensitive resource.
- **Land Use:** Including parks and public open spaces.
- **Soils:** Using the soils information from Missouri Department of Natural Resources (MDNR) & (NRCS-USDA). (soils classified by how well they drain).

Developable Land Map

The **Developable Land map** serves as the initial development envelope for the unincorporated area surrounding Kearney. The protection of the natural drainageways and forested land will:

- Help protect water quality and reduce flooding,
- Allow maximum area for Best Management Practices (BMP) retrofit of the urban drainage system,
- Provide visual buffers and slope stabilization consistent with the current visual character of the City,
- Provide connections for trails, animal and plant species that will help assure that the unique, irreplaceable qualities of the area remain,
- Provide for quality recreational areas near urban areas,
- Provide high quality natural settings for new residential development, and
- Provide more than ample developable land for future development.

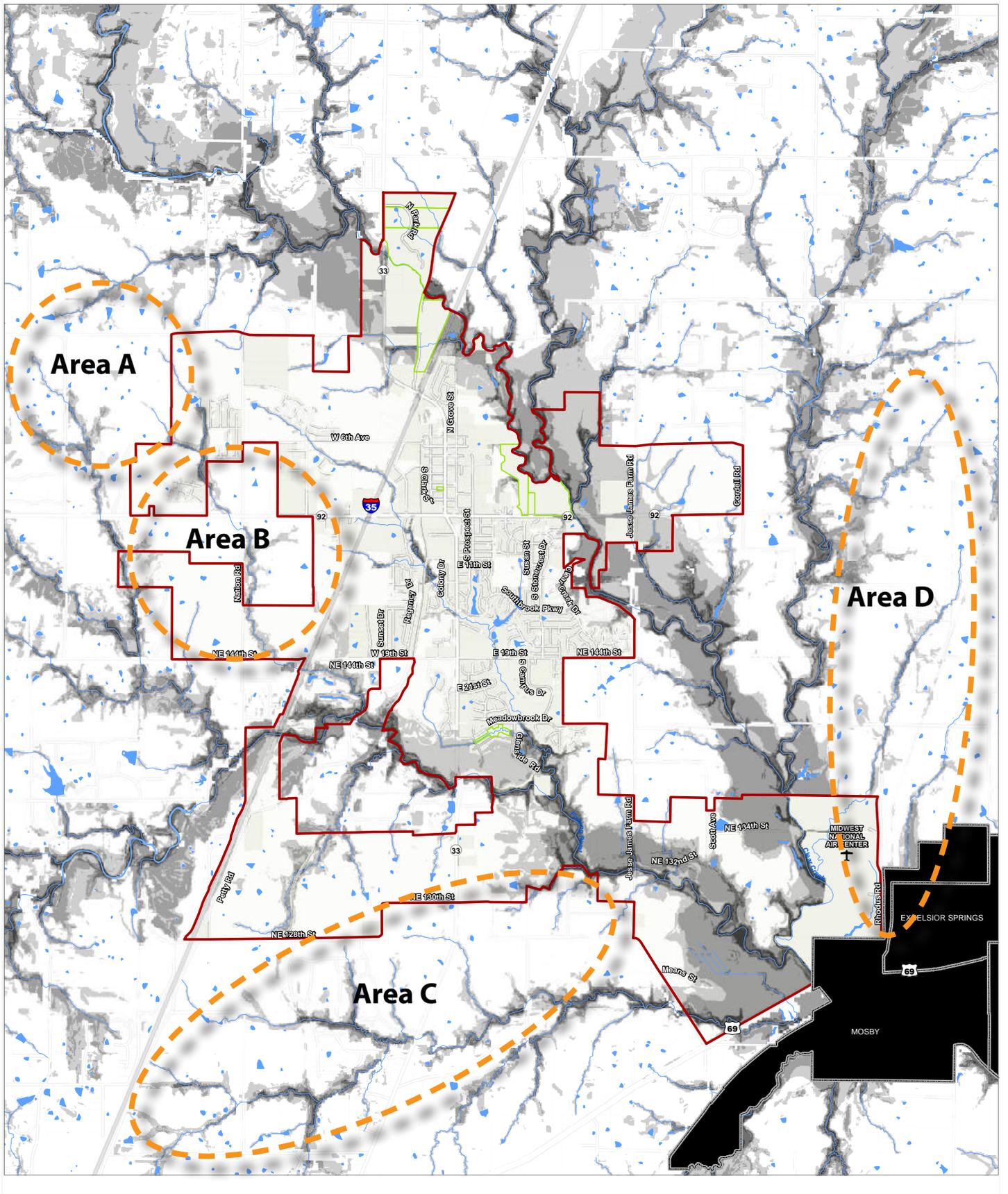
Unincorporated Area Findings

In the unincorporated areas surrounding Kearney, the percentage of sensitive areas is 29%, or 28,435 acres. This area captures a considerable amount of agricultural and forest land located within Clay County. The primary areas of sensitivity are the Fishing River and Clear Creek corridors (gray area on the map) as well as Smithville Lake in the northwestern part of the area, and Watkins Mill State Park in the northeastern part of the area.

Development Potential of Land

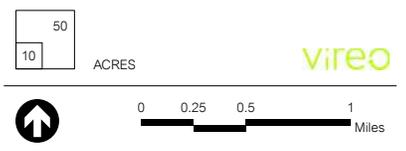
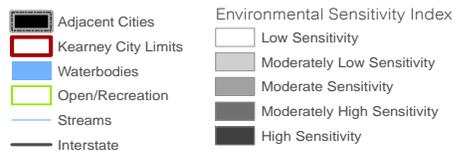
Conversely, approximately 51% of the surrounding unincorporated land area is developable. There are more than 97,425 acres of land that surrounds the city of Kearney. After removing the highly sensitive areas from development consideration, this leaves approximately 49,463 acres that are potentially suitable for future development. This is land that may not have access to utilities. Development should focus on the areas west or south of the city along the I-35 corridor where impacts already exist and open land is available.

- Most of **Area A** has relatively low environmental sensitivity. However, Low Impact Development (LID) strategies and Best Management Practices (BMPs) could be implemented to retain the forest habitat patches present within this development area.
- Protection of the stream would be the primary constraint for development within **Area B**.
- Development in the southern portion of the City from I-35 east along the Holmes Creek tributary to the Fishing River (**Area C**) should integrate the stream corridor into development patterns to take advantage of existing green infrastructure systems and opportunities for parks and greenways.
- **Area D** is similar to Area A in being relatively unconstrained for development. Development to the east, northeast and north of the city across Clear Creek or the Muddy Fork of Clear Creek is not recommended.



Unincorporated Area Developable Land Map

Source: Vireo GIS



Kearney Environmental Constraints

Not all lands within the City of Kearney are suitable for development due to environmental constraints and valuable natural resources. This framework identified factors that affect development potential of land.

A weighted overlay analysis of environmental factors are overlaid to create a gradient of sensitivity from least to most sensitive (McHarg, 1969). This analysis is used to help the City evaluate “where” they can grow and “where” opportunities exist for the preserve and integration of natural resources to protect ecosystem services and landscape functions such as water quality, groundwater recharge, biodiversity, and productive habitat. The resource systems that were evaluated include:

- **Hydrology:** Streams, stream buffers, wetlands, location of alluvium (where water is underneath the surface), and floodplains.
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Developable Land Map

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- Provide visual buffers and slope stabilization consistent with the current visual character of the City,
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- Provide for quality recreational areas near urban areas,
- Provide high quality natural settings for new residential development, and
- Provide more than ample developable land for future development.

Kearney Findings

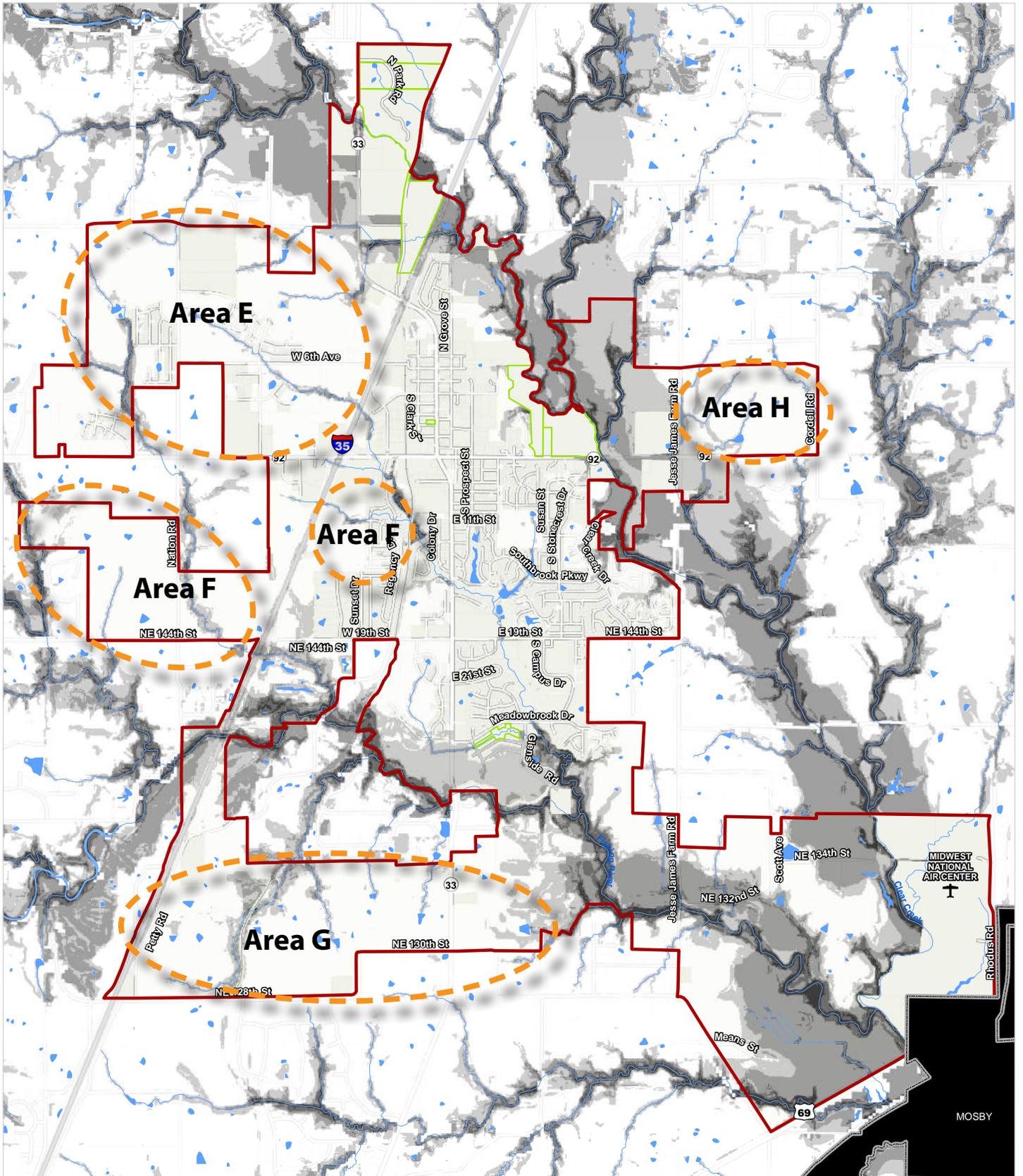
Approximately 28% or 2,130 acres, of the Kearney area is in potentially sensitive areas that are primarily located along the Fishing River and Clear Creek corridors (gray area on Developable Land Area map). These corridors represent sensitive areas that contain a number of overlapping landscape functions which contribute to the high sensitivity noted in these areas. Vegetation and wetlands within narrow valleys are sensitive areas identified outside of these stream corridors. An additional 4% of land within the City is protected through parks and open space.

Ideally, if development should encroach into sensitive areas, this provides an opportunity for protection through conservation development or LID strategies which are intended to manage stormwater utilizing the green infrastructure and BMPs.

Development Potential of Land

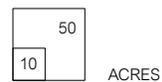
Conversely, 44% of the City’s land area is developable. Of the total 7,608 acres within City limits, 2,130 acres is highly sensitive/development constrained leaving, 3,347 acres available for future development.

- Development in **Area E** on the north-west side of the City is already in progress and should continue in this area which has relatively low sensitivity.
- **Area F** represents two small areas for infill development within existing City limits with little environment sensitivity. These areas could also provide linkages to adjoining areas outside City limits that have future development potential.
- **Area G** located on the southern side of the City represents a large swath of land with very little environmental sensitivity other than along the one stream corridor that is a tributary to the Fishing River. Provided that the stream corridor is protected through conservation development or LID strategies, this area provides good potential for future development.
- **Area H** while relatively unlimited for future development is somewhat isolated from the rest of the City by Clear Creek.



Kearney Developable Land Map

Source: Vireo GIS



vireo





PARKS and OPEN SPACE

WHY IT MATTERS

Parks and open space are key to Kearney’s character and quality-of-life. These elements provide economic benefits by enhancing the value of individual properties, developments, and the community as a whole. A well-planned parks and open space system enriches people’s lives and helps to attract new residents and businesses by positively impacting community character, real estate values and land development patterns.

Parks

The City of Kearney maintains 5 parks and one golf course comprising close to 300 acres of land available to the public. The parks range in size from 1 acre to 134 acres. In addition to parks, the City maintains close to 7 miles of paved walking trails.

Neighborhood Parks:

Neighborhood Parks are intended to serve residential areas. Access is mostly by walking or bicycling.

- **Lions Park** is a 3-acre park located in the heart of Kearney directly behind the Old Firehouse building which is now serving as a community center building. The park is themed for toddlers with play structures and features appropriate for small children. The park includes playground equipment, shelters, barbecue equipment, and picnic tables. The park is also used for the City’s Farmer’s Market.
- **Hall Park** is a 1 acre park located at the corner of S. Prospect Street and E. 92 Highway. The park is currently undeveloped.

Community Parks:

Community facilities serve groups of neighborhoods. Development typically includes picnic shelters, playgrounds, ball fields, trails, and restrooms.

- **Mack Porter Park** is a 49 acre park located between I-35 and N. Jefferson St. The park is bordered to the north by Clear Creek. Amenities within the park include 5 lighted baseball/softball fields, 1 day use baseball field, conces-

sions, restrooms, picnic tables, and a 1-mile loop trail. Plans include a future trail connection across Clear Creek to Jesse James Park.

- **Glenside Greenspace** is a 25 acre park located adjacent to Meadowbrook in the southeastern part of the city. The Fishing River Trail runs along the west side of the park. Due to its location in the floodplain of the Fishing River, the park is likely to remain more natural with passive uses like trails.

District Parks:

District Facilities supplement neighborhood and community parks, serving broader based recreation needs.

- **Jesse James Park** is a 134 acre park located on the north-west side of Kearney between I-35 and N. Jefferson St. Clear Creek is the southern boundary of the park and is the proposed future connection to Mack Porter Park. The park has served as the City’s festival grounds for several years and is now home to the Kearney Amphitheater which is used for concerts, movies, festivals, and theater events. Amenities within the park include a lake, 18-hole disc golf course, 4 baseball/softball fields, 11 soccer fields, a multipurpose building, playground equipment, and a 1.5-mile loop walking trail.
- **MariMac Golf Course** is a 68 acre golf course located north of 92 Hwy along the western side of Clear



Lion Park



Jesse James Park

Creek. The golf course is privately owned but, in the interest of this plan is being included as park land.

Regional Parks:

The City of Kearney is located within close proximity to two Clay County parks, one State of Missouri Park, and a federal reservoir.

- **Watkins Mill** is a 560 acre park located approximately 10 miles northeast of the City. The park is owned and managed by the Missouri Department of Natural Resources in conjunction

with Watkins Woolen Mill State Historic Site. The park includes a 100-acre lake, paved walking/bicycle trail, equestrian trail, and numerous shelters and picnic areas.

- **Jesse James Farm and Museum** is a 43 acre historic site owned and managed by Clay County Parks and Historic Sites. The site is located due east of the City off of Jesse James Farm Road.
- **Tryst Falls** is an 18 acre park owned and managed by Clay County Parks and Historic Sites. The park is one of the only natural waterfalls in the area.
- **Smithville Lake** is a 7,200 acre lake located approximately 12 miles northwest of Kearney. The lake provides a wide variety of recreational opportunities including boating, fishing, camping, hiking, trails, and golf, and is a destination for people throughout the Kansas City region. The lake is owned and managed by the US Army Corps of Engineers. It also serves as the public water source for the City of Smithville.

Preliminary Opportunities

- Jesse James and Mack Porter Parks serve a large portion of the City given their relatively central location and available amenities. The Kearney Amphitheater and use of Jesse James Park for festivals makes it a destination for residents both within and outside of the City.
- There is a need for neighborhood parks as noted in the Existing Level of Service Table. Opportunities should be explored to add neighborhood or community parks and open space within all new developments. Parks should be strategically located throughout the City, especially south of 92 Hwy and west of I-35. Park land acquired through the City's parkland dedication should only be accepted if the property meets established criteria, including the ability to program the park.
- Potential park land identified within the previous Comp Plan should be re-evaluated to determine if size and

location are still valid and if opportunities may exist for future acquisition.

- Clear Creek and the Fishing River both have large floodplains which provide constraints for development while at the same time providing opportunities for open space and connectivity. Streamway corridors should be used whenever possible to protect these valuable water resources and natural infrastructure while also providing greenway trails that can be used to connect neighborhoods.
- Opportunities should be explored toward developing an interconnected network of trails to connect existing and future parks. If available, greenways can be used to form interconnected park systems, tying park system components together with green corridors.
- Connectivity between neighborhoods is generally lacking city-wide. Some newer residential subdivisions have sidewalks that assist in making the neighborhoods more walkable.

Identifying Parks & Open Space Needs

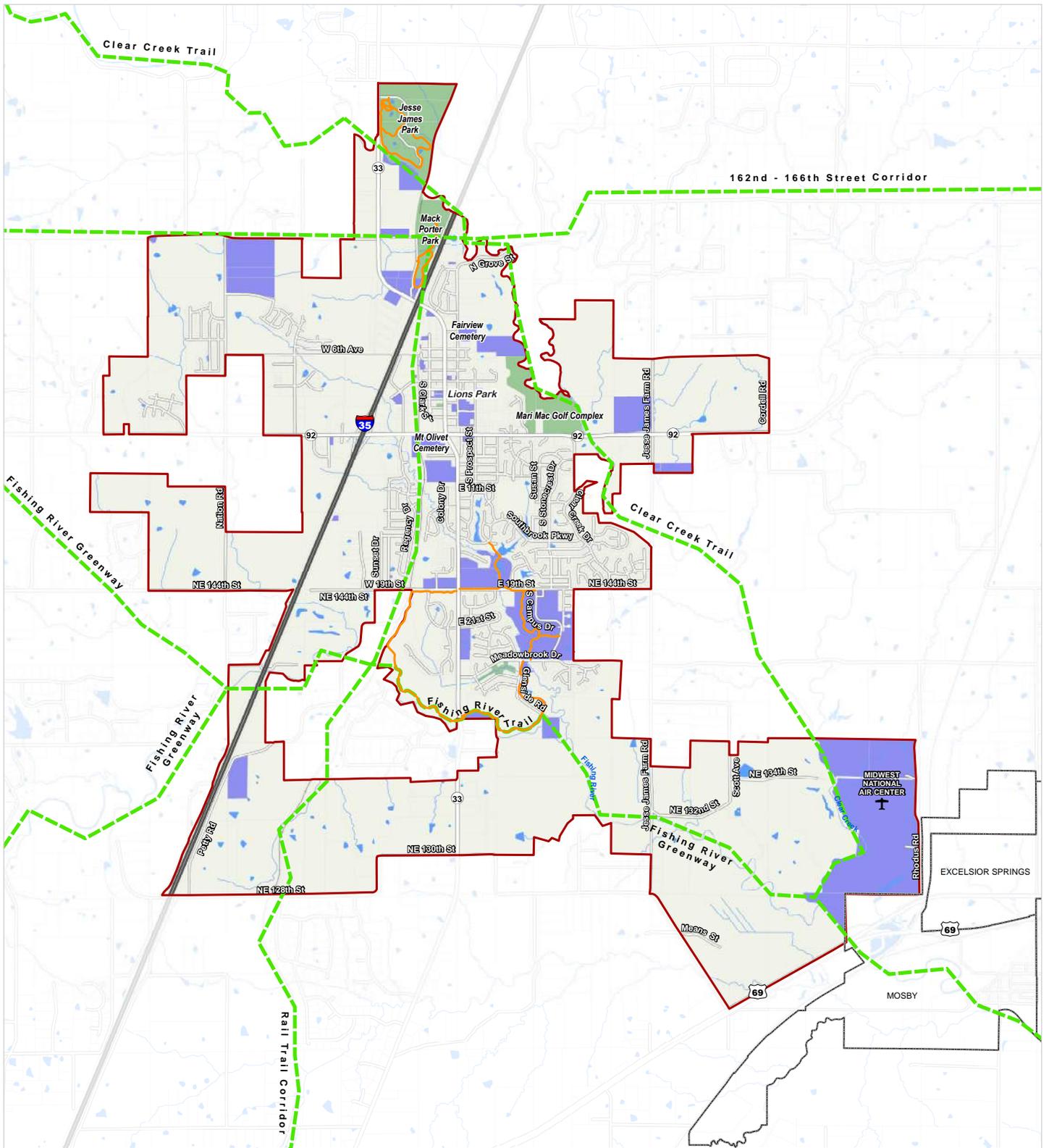
The National Recreation and Parks Association (NRPA) classification system serves as a recreational guideline for parkland relative to population. The previous table shows the NRPA four park classifications in the national standards that pertain to Kearney.

Level-of-service (LOS) analysis is one way that communities measure parkland needs and supply. Based on the 2014 City population of 9,261, the current LOS is approximately 33 people per acre of parkland.

LOS and other factors will be used during the planning process to identify and evaluate existing and future parks and recreation needs.

Existing Level of Service				
Park Type	NRPA Service Radius	NRPA Rec'd Acreages	Existing Parks Acreages	Park Needs
Regional 5-10 ac/1000 people 75-200 ac. In size Serves several communities (Not city owned) (Does not include golf courses)	3 - 5-mile	45 - 90 acres	134	0 acres
Community 5-8 ac/1000 people 10-50 ac. In size Services several neighborhoods	1 - 3 mile	45- 72 acres	65	7 acres
Neighborhood 1-2 ac/1000 people 1-10 ac. In size Serves adjacent neighborhoods	¼ mile radius	9-18 acres	4	14 acres

Source: National Recreation and Park Association Guidelines



Existing Parks & Trails System Map

Source: MARC & Vireo GIS



ACRES





TRANSPORTATION

WHY IT MATTERS

Effective transportation systems are central to maintenance of the health, productivity, and safety of communities. The adequacy of a community's major street system has a tremendous impact on mobility, accessibility, safety, and quality-of-life needs. Safe and efficient facilities are vital to most daily activities and require regular maintenance and upgrading both to meet the demands of a growing population and to be sensitive to environmental resources. The quality and availability of transportation services influence the type, timing, and density of development in the future.

ROADWAY/HIGHWAY NETWORK

Major Routes

Kearney's major automobile transportation routes include an interstate, two Missouri highways, and one city arterial. Each is discussed below.

Interstate 35 provides the primary regional connection to Kearney. In the vicinity of Kearney, it is a four-lane north-south (slightly diagonal) facility. South of Kearney, I-35 carries 34,000 vehicles per day (vpd); north of Kearney, it carries 26,000 vpd. The city's sole direct access to I-35 occurs via a diamond interchange at Route 92. The nearest adjacent interchanges are Lightburne Street, approximately 6.5 miles to the south, and Route PP, approximately 7 miles to the north. In 2014, FHWA and MoDOT approved a new interchange on I-35 at 19th Street, but no funding has been identified for this interchange. One stakeholder has commented that "I-35 is the key to the future"; this comment emphasizes the regional lifeline that I-35 represents to the city of Kearney.

Route 92 is the major east-west connection through Kearney. As mentioned above, it currently provides Kearney's sole connection to I-35. It is also Kearney's primary commercial corridor. Route 92 carries 18,500 to 20,500 vpd east of I-35 within Kearney, but volumes are much lower west of I-35 – tapering from 7,800 vehicles per day near I-35 to 4,000 vpd outside the western city limits. A roughly one-mile stretch of Route 92 between Platte-Clay Way and Nation Road was recently improved by the

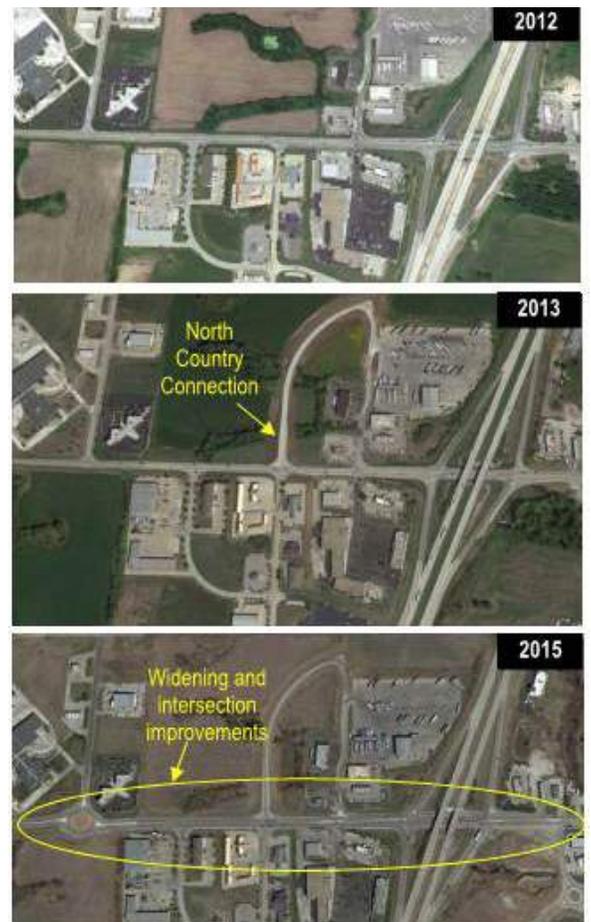
City and MoDOT (**See Figure 1**), including widening to four lanes east of Sam Barr Road, additional capacity improvements at the I-35/Route 92 interchange, and roundabouts at both Sam Barr Road and Nation Road. However, as the only Kearney roadway connecting to I-35, Route 92 will continue to have increased traffic pressure into the future. The proposed 19th Street interchange, mentioned above, was shown in a recent Access Justification Report to provide long-term relief to the existing interchange and the Route 92 corridor.

Even though recent capacity improvements have been made to the Route 92 corridor, some stakeholders still perceive congestion near the truck stop just west of I-35, and others see traffic congestion as a wider issue in the city. Congestion is a relative concept; what is acceptable in a dense urban area might be less desirable in a smaller city such as Kearney. Most of the intersections along Route 92 operate at typically acceptable levels of service today, but are expected to degrade to unacceptable operations by 2040. These issues could be largely relieved by the proposed interchange at I-35 and 19th Street, although further "spot" improvements could be needed along Route 92 in the long term. Most of the previous traffic analyses that have been conducted over the years in Kearney have focused on the Route 92 corridor; and there are

no other known major congestion issues in other parts of the city.

Another stakeholder-mentioned issue is access management along Route 92. Especially on the east side of I-35, there are several full-access driveways (including six within one 550-foot stretch). Many cities have policies regarding access management to help preserve traffic flow while providing reasonable business access; Mo-

Figure 1: Recent Improvement to Route 92



DOT has such a plan as well. Kearney may want to explore the need for such a policy or guidelines.

Route 33 provides the primary continuous north-south connectivity within Kearney, and is also a secondary regional link, ultimately connecting to US-69 and further south into Liberty. Locally, Route 33 is one of very few streets that cross Route 92. Daily traffic volumes range from 4,300 vpd near Kearney’s northern city limits, to 8,100 just south of 92, to 4,400 further south (roughly midway between Route 92 and the southern city limits).

19th Street, one mile south of Route 92, provides east-west connectivity in a growing part of Kearney. In addition to serving many of the City’s residential subdivisions, it also provides direct access to Kearney High School, Southview Elementary School, and Hawthorne Elementary School. Its regional utility is currently limited by the fact that it dead-ends at I-35 (continuing as 144th Street on the west side of the interstate), but as mentioned previously, the City has (currently unfunded) plans to construct an interchange with I-35. Such an improvement will increase the importance of 19th Street/144th Street; therefore, planning along the remainder of the 19th Street corridor must account for its future status and use. Currently, 19th Street carries approximately 4,100 vpd east of Route 33, and 2,000 vpd west of Route 33.

Nation Road is a north-south road in the less developed portion of Kearney west of I-35. Although this narrow rural road carries less than 2,000 vpd, it will ultimately be an important connection if Kearney is to grow on the west side of the interstate (as has been contemplated).

Neighborhood Traffic Intrusion

Due to Kearney’s relatively small size, it is no surprise that some of its more connective streets also happen to be residential streets. Cost constraints often mean that infrastructure must be as efficient as possible, often providing “through” connectivity even as it directly serves residential frontage. However, a consequence of such connections is that they often are viewed as sources of traffic intrusion by residences. One of the more notable examples of this is Regency Drive, a one-mile long suburban-type residential street that provides fairly direct connectivity between Route 92 and 19th Street. The northern and southern sections were connected in 2002/2003, and it is a source of “cut-through” traffic complaints by local residents. Stonecrest Drive/Porter Ridge Road is another example of suburban-style residential streets creating a “shortcut” between Route 92 and 19th Street. As the City grows, these examples underscore the need for careful collector and subdivision planning, as well as the potential need for a citywide traffic calming policy. Emergency vehicle access is also a consideration in planning these types of streets.

Maintenance

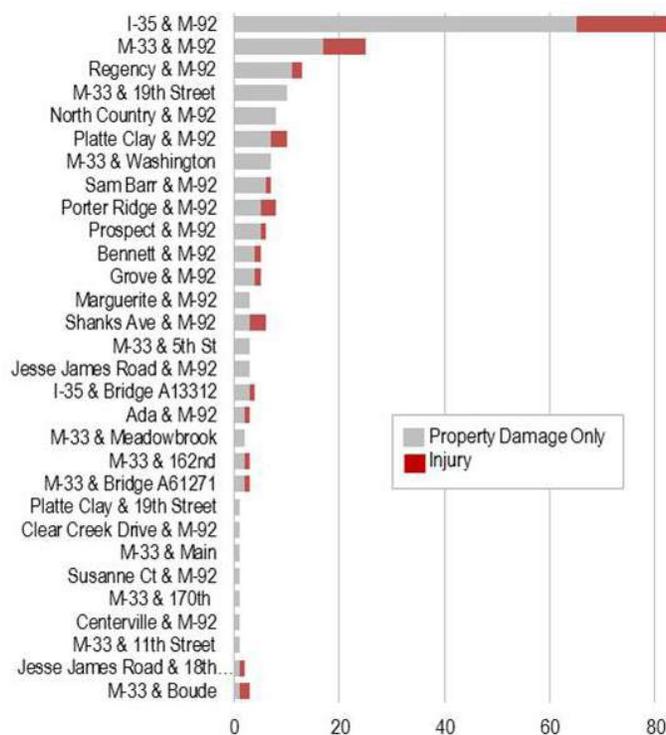
According to the City’s approved 2016 budget, about \$350,000 (out of a total budget of approximately \$15 million) is allocated for street maintenance, largely funded from the city’s transportation sales tax, gas and vehicle sales taxes, and Clay County’s Kearney Road District. Although the City does not have a formal CIP, a list of needed road improvements is developed by the Streets and Utilities Director annually, and citizen requests for road repairs are also worked into the maintenance program.

As the city grows, the need for a more formalized CIP, as well as additional funds for maintenance, will increase. These needs should be accounted for as the Comprehensive Plan develops.

Safety

A comprehensive safety analysis has not been performed for Kearney, but the City provided a summary of crashes at major intersections for 2012-2013. This data set is not robust enough to allow for statistically

Figure 2: Crash Totals for Key Intersections, 2012-2013



valid conclusions (crashes are usually evaluated for at least a five-year period, and analysis usually factors in traffic volume to allow a more apples-to-apples comparison), but it does give an indication of trends. **Figure 2** arranges the intersections by decreasing number of crashes, and a few items are worth noting:

- Intersections on Route 92 constitute 8 of the top 10 entries in the chart, and 12 of the top 15. It should be noted that these crashes were recorded before the recent improvements to Route 92, and it would be expected that safety at the redesigned intersections has likely improved in more recent years. It is also not surprising that the highest-volume road in the City would have the most crashes.
- The Route 92 / Route 33 intersection had the largest total crashes of any single intersection (the I-35 / Route 92 interchange includes two ramp intersections), and a fairly high proportion of injuries. The skew angle of the intersection, the sweeping right-turn lanes, and the tightness of some of the receiving lanes, may be contributing to these totals. A focused analysis could better uncover patterns.

Barriers to Connectivity

There are several natural and man-made barriers within Kearney that impede the ability to create future transportation connectivity. They do not necessarily prevent transportation connectivity, but they could add to the expense of constructing future connections. These barriers include:

- I-35
- Route 92
- Kaw River Railroad
- Fishing River
- Existing development

In contemplating future connections, these barriers must be taken into account. One stakeholder comment indicated the desire to “connect both sides of town”. Overcoming these barriers can create a more cohesive community.

Future Plans/Initiatives

Stakeholders have indicated the importance of being ahead of growth with infrastructure, a goal that dovetails perfectly with the update of the Comprehensive Plan. Kearney is actively seeking to improve its transportation infrastructure. Key examples include:

- The City continues to aggressively advocate for a new interchange (approved in concept by FHWA and MoDOT) on I-35 at 19th Street/144th Street. This interchange would greatly improve regional access to/from the city, would radically shift traffic patterns throughout the city, and would facilitate desired future growth in the southern portion of the City. Stakeholders have indicated a desire to proactively plan for future interchanges, connections to them, and potential outer roads; more broadly, they have indicated the importance of proactively planning for future development patterns in order to complement a safe and efficient transportation network.

If for some reason the interchange is not built, Route 92 will remain the primary gateway into Kearney, and will require additional capacity improvements in the future to ensure acceptable operations.

- One of the Mayor’s Top Ten priorities includes the Watson Drive/19th Street connection, providing access to the Shoppes of Kearney and the southern portion of the City, and a new north-south connection within the City. A \$5.2 million bond program supports this connection, currently under construction. A related Top Ten priority is the development of improvements to 19th Street from its current terminus (near I-35) to Route 33. One stated goal of the 19th Street improvement is to reduce cut-through traffic on Regency Drive.

- The 2008 Clay County Comprehensive Plan includes a recommendation to “study and identify a corridor to provide an east-west major roadway connection between I-435 and I-35, generally in the vicinity of NE 120th Street, to accommodate future development.” While this connection would be outside the current City limits of Kearney, it could cause traffic shifts that the City should be aware of – and could ultimately provide an opportunity to provide additional interstate access at the south end of Kearney. Thus, the City should actively participate in planning discussions regarding this future connector.

Pedestrian and Bicycle Network

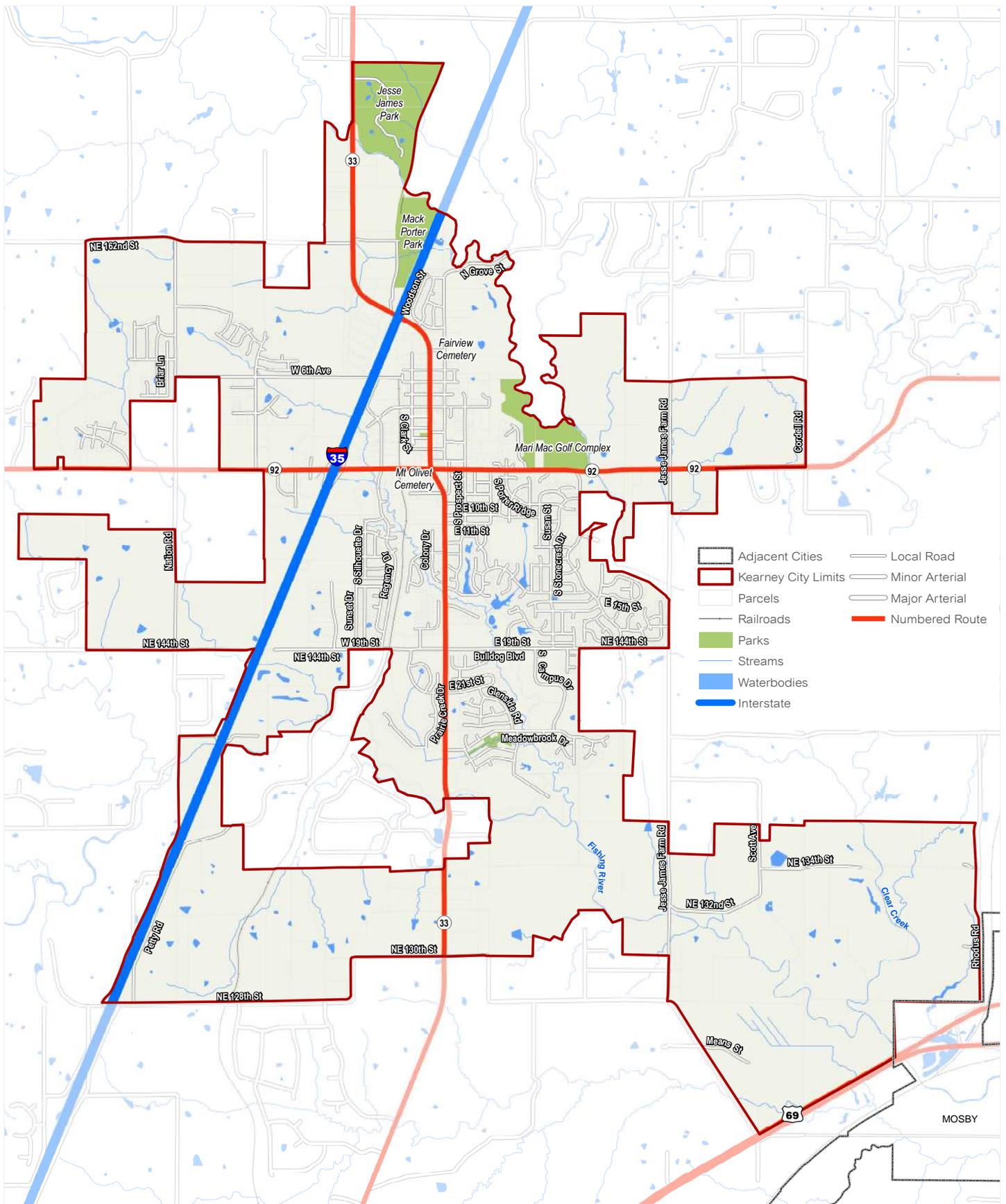
Pedestrian and bicycle travel is often described using the term “Active Transportation”. Stakeholders have indicated a desire for more robust Active Transportation options in Kearney. “Walkability” is a term that has been touted by stakeholders, and some stakeholders have asserted that such options enhance the quality, desirability, and health of a community.

Conversely, some stakeholders are concerned about overemphasizing Active Transportation when financial resources are limited. As the plan evolves, these priorities must continue to be explored.

Sidewalks

The fundamental facility for pedestrian travel is the sidewalk. Kearney’s Subdivision Regulations state that:

[A subdivision] builder shall install sidewalks adjacent to and on both sides of all public streets. Such sidewalks shall be not less than four (4) feet in width The developer/subdivider is responsible for installation of sidewalks along open space tracts at the time of installation of public improvements.



Existing Transportation System Map

Source: MARC & Vireo GIS



ACRES

vireo



Thus, the City’s current policies support sidewalks on both sides of all public streets. **Figure 3** illustrates the status of sidewalks for most of the streets in Kearney east of I-35. Some of the older subdivisions, and even a few of the arterials (in less-developed areas) have no sidewalks. Most of the newer subdivisions do have sidewalks on both sides of the street. The east-west arterials, Route 92 and 19th Street, present a mixture but have almost no segments with sidewalks on both sides. Stakeholder comments have pointed to a need for sidewalks on Route 92, and more broadly, the need for sidewalks “everywhere”. Thus, there is a gap between the ideals represented by both the City’s regulations and citizen desires, and the current state of sidewalk connectivity in Kearney.

Note that while a four-foot sidewalk width meets minimum accessibility requirements, widths of five feet or greater are much more conducive to pedestrian comfort and usage.

The Mayor’s Top Ten priorities for 2015-2019 included new sidewalks on Route 92 from Route 33 to Porter Ridge Road. The fact that such a priority is featured among items such as a new interchange and downtown revitalization underscores the importance of pedestrian safety and connectivity to the city.

Trails

Trails can be used by both pedestrians and cyclists, and are often thought of in purely recreational terms – but they can also fulfill a transportation role if they provide adequate connectivity. The City has three major trails, illustrated in the Parks and Open Space Map and in **Figure 4**:

- In the northern part of the City, the Jesse James Trail is a nine-foot wide paved asphalt path contained within Jesse James Park, just east of Route 33 and generally south of 170th Street. It

roughly forms a bisected loop, and is 1.5 miles long.

- The Mack Porter Trail, south of the Jesse James Trail and separated from that trail by 1,400 feet at its closest point, is a 10-foot wide paved asphalt path contained within Mack Porter Park, located adjacent to the west side of I-35 approximately 1,800 feet north of the Route 33 overpass. It is a generally linear one-mile-long trail with a loop at its south end.
- At the south end of the City, the Fishing River Trail forms a four-mile loop bounded roughly by the railroad tracks on the west, 19th Street on the north, Kearney High School on the east, and the Fishing River itself on the south. Portions of the trail are concrete, and portions are asphalt; the trail is generally nine feet wide.

Figure 3: Sidewalks in Eastern Kearney



Figure 4: Trails in Kearney



These trails are important elements of Kearney's current infrastructure, but they are isolated: the city lacks a connected trail system. One of the Mayor's Top Ten priorities for 2015-2019 is the creation of a bridge joining Mack Porter Park and Jesse James Park, allowing completion of a trail connection. Stakeholders have expressed a desire to see a more connected, City-wide system, and initiatives such as the Mayor's are important first steps.

At the broader scale, **Mid America Regional Council's (MARC's) MetroGreen plan** shows several future trails that would connect to and/or through Kearney, and could become integral to a more connected bicycle and pedestrian network in Kearney. **Figure 5** illustrates and describes these future trails. Note that these trails mostly fall in MARC's Priority Category 3, with one segment being Priority 3. The MetroGreen Plan describes these priorities in the following way (note that the plan was published in 2002):

- Priority 2 - segments are not yet funded. However, completing these segments has been determined to be a high priority based on public comment and input from government officials. It is expected that Priority 2 segments will be constructed over the next five-to-15 years.
- Priority 3 - segments are needed to complete the system. They represent the long-term strategy. It is expected that Priority 3 segments will be constructed over the next 15-25 years.

Figure 5: MARC MetroGreen Planned Trail Segments in/Near Kearney



Figure 5: MARC MetroGreen Planned Trail Segments in/Near Kearney

Trail	Priority	Length (miles)	Description
CI02 (2 segs)	2 3	7.43 12.21	Will extend eastward from the Platte County Line to Watkins Mill State Park. Passes near the Jesse James Farm and the Claybrook House off of Highway 164.
CI07	3	5.88	Alternative to CI02. Will extend from the west end of Smitville Lake to Kearney via Clear Creek.
CI05	3	9.72	Will travel along Shoal Creek from Hodge Park to Kearney.
CI08	3	10.11	Will pass through the middle of Clay County from north-to-south along an old railroad corridor. Will connect Liberty and Kearney.

Other Bicycle Facility Types

A suite of other types of bicycle facilities are available for communities interested in improving their bicycle-friendliness, and can be generally grouped in two categories:

- On-Street facilities include bike lanes (striped and designated for bikes) and shared roads (roads designated by signs and or "sharrow" markings to be shared with cyclists).
- Off-Street facilities include sidepaths (wide sidewalks adjacent to the street), and separated bike lanes (physically separated from the roadway; sometimes known as "cycle tracks").

At this time, Kearney does not have such facilities, but they should be explored as part of the Comprehensive plan. Many stakeholders are in support of additional bicycle options, but there have also been comments along the lines of "bikes and cars don't mix". Some of the additional options mentioned above maintain a separation of these two modes, while enhancing connections for bicycles within the street right-of-way. This can also be explored as part of the plan.

High Bicycle Demand Corridors

Strava Labs has developed a “global heat map” that gives an indication of bicycle usage around the world. It is not exhaustive, or necessarily statistically representative, because it only is able to report data by riders who use the Strava app while riding. However, it can be a very useful source of tendency or demand data in absence of other bicycle count data. **Figure 6** shows the Strava heat map in the Kearney area, and yields the following observations:

- The Fishing River Trail appears to be fairly heavily used, while the Mack Porter and Jesse James Trails are less so.
- Jesse James Road is one popular North-South connection on the east side of town.
- An interesting north-south route through town is Platte-Clay Way, to Regency Drive, to Petty Road – ultimately connecting to 128th Street.
- 128th Street represents an important route for bicyclists to cross I-35 south of town, and Route 33 serves a similar function north of town.

Public Transportation

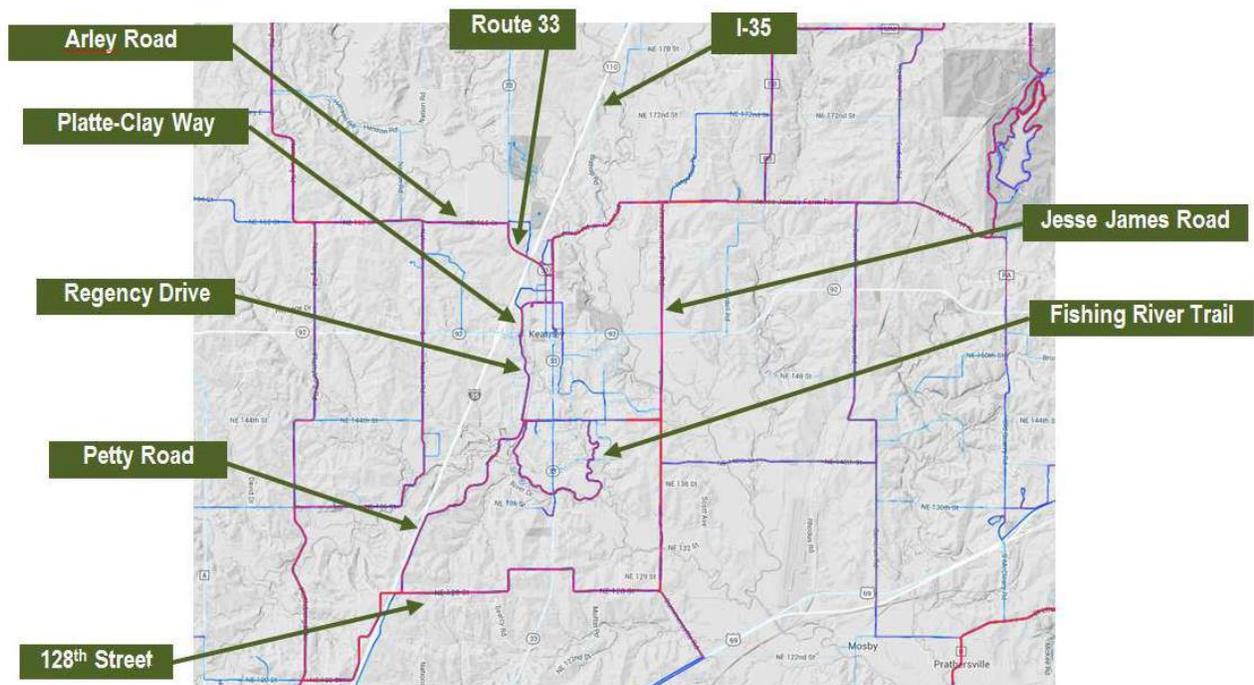
Currently, the City of Kearney is not served by scheduled fixed-route transit. The nearest bus route, Kansas City Transportation Authority’s (KCATA’s) 34X (the “Shoal Creek / Liberty Express” with service to Downtown Kansas City), comes only as far north as Liberty. There are two Park-and-Ride lots with access to this route in Liberty, at Connistor Road/Stewart Road and Mississippi Street/Prairie Street. The 34X service runs twice in each direction during each weekday peak hour. MARC’s Smart Moves plan (currently being updated) shows a future park-and-ride lot in Kearney and commute service down I-35. It is important that Kearney participate in Smart Moves and other regional long-range transit planning efforts, to ensure that needed transportation options are available for the citizens of Kearney – transportation-dependent individuals as well as those who might choose transit options for other reasons.

Kearney residents do have access to OATS Transportation, whose mission is to provide reliable transportation for transportation disadvantaged Missourians so they can live

independently in their own communities. OATS provides rides for rural residents, senior citizens, people with disabilities, and people on Medicaid who need transportation for non-emergency medical appointments. Within Kearney, transportation to medical appointments is available on Mondays, Wednesdays, and Fridays. Transportation for essential shopping is available on the first, second, and third Tuesday of each month. Reservations must be made at least 24 hours in advance. OATS served 643 riders for essential shopping trips (one-way trips) and 36 riders for medical trips (also one-way trips) in 2014. The shopping trips occurred on 36 different days, so the average ridership on those days was 17.8. Ridership in 2015 has been on a fairly similar pace in the first three quarters.

Although OATS is available, a stakeholder comment mentioned the need for taxi services for seniors. This highlights that there is currently not a full demand-responsive system in Kearney for the transportation disadvantaged; something that should perhaps be further investigated in the plan.

Figure 6: Strava Heat Map - Bicycle Travel



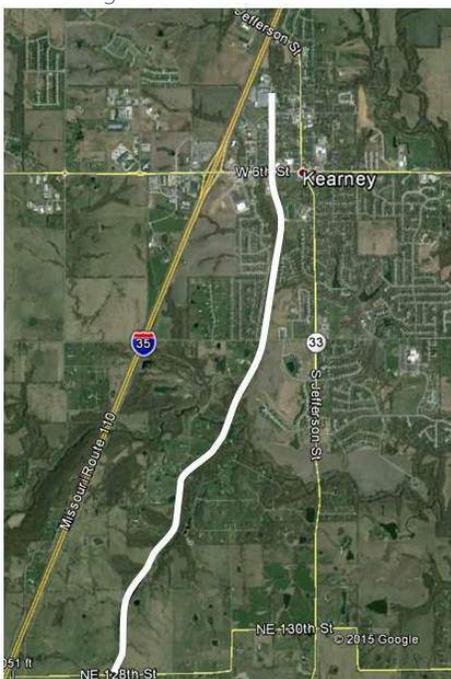
Intercity bus service (Greyhound and Jefferson Lines) runs along I-35 near Kearney, connecting destinations between the upper Midwest and Texas, but the nearest stops to Kearney are in downtown Kansas City (MO) to the south, and Cameron to the north.

Freight Rail

The KAW River Railroad runs a short rail line north-south between I-35 and Route 33 (See **Figure 7**). It currently has three at-grade crossings in the vicinity of Kearney: at 19th Street, Route 92, and Washington Street. The line originates south of Kearney and terminates at the Ply Gem facility, located between Washington Street and Major Street. The line typically carries only one train per week, with no more than two per week. According to a representative at Ply Gem (the line's only shipper), there are no current plans to increase production at the facility such that it would increase the number of trains per week on the spur line.

According to the Federal Railroad Administration (FRA) Office of Safety Analysis website, the average train speed along this line,

Figure 7: KAW River Railroad



in the vicinity of the three existing at-grade crossings, is less than 10 mph. Additionally, the FRA has no record of any accidents occurring at any of the three existing crossings.

The rail line offers a potential development opportunity: With a low train volume (1-2 per week), there is certainly capacity for additional trains to serve industrial development from an operational standpoint. From a land-use standpoint, vacant parcels exist along the line within City limits that could be developed as rail-served industrial uses, if that were determined by the City to be desirable. The City may want to investigate this possibility as the Comprehensive Plan moves forward.

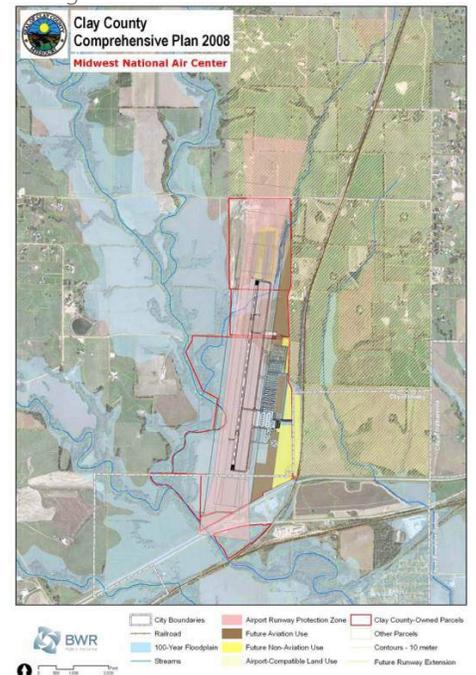
Aviation

The Midwest National Air Center (MNAC), located near the intersection of Rhodus Road and US-69, was mostly annexed into the City of Kearney in 2008. The airport, operated by Clay County, has a single asphalt runway (5,504 feet long and 100 feet wide). The airport has 58 aircraft based on the field (45 single-engine, nine multi-engine, and four jets), and had 33 aircraft operations per day in 2012 (66% local general aviation, 25% transient general aviation, 8% air taxi, and less than 1% military). Access to the airport from the rest of the city is fairly remote, via Route 33, N 128th Street, and Jesse James Road, ultimately connecting to US-69.

The 2008 Clay County Comprehensive Plan envisions MNAC as an airport business park, citing the potential to absorb approximately 300,000 feet of commercial and industrial buildings over the next 20 years. The plan recommends coordinating with nearby municipalities to extend essential services to support industrial development around the airport. Given that the airport has been annexed into Kearney, this could involve transportation infrastructure improvements near and connecting to the airport by the City. Kearney's Comprehen-

sive Plan should explore the significance of this airport to Kearney, if any, from a transportation (And economic development) perspective.

Figure 8: Midwest National Air Center





INFRASTRUCTURE

WHY IT MATTERS

Public infrastructure is an important foundation of quality of life in Kearney, though largely taken for granted. Efficient facilities are vital to most daily activities and require regular maintenance and upgrading both to meet the demands of a growing population and to be sensitive to environmental resources. The quality and availability of infrastructure services influence the type, timing, and density of development in the future.

WASTEWATER TREATMENT AND COLLECTION SYSTEM

The City of Kearney currently provides wastewater collection and treatment for its citizens through City owned and maintained infrastructure. The existing wastewater collections system serves approximately 2,500 acres of watershed area through a combination of gravity pipe, pump stations and force mains. Through conversations with City staff most of the existing pipe is functioning properly and not in need of major rehabilitation. The City does have a desire to minimize the necessity for pump stations which have ongoing operation and maintenance expenses above and beyond gravity sewer systems.

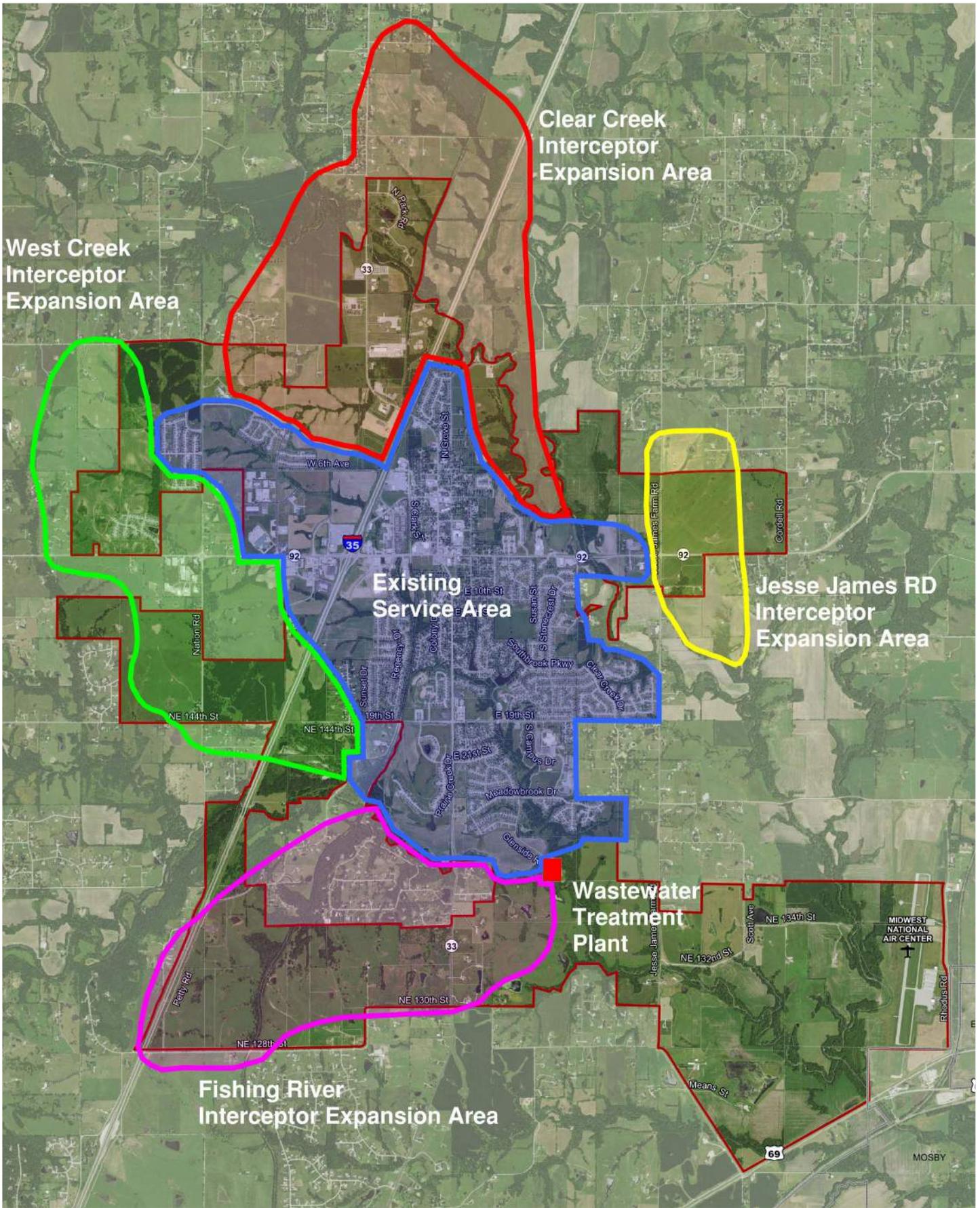
The City's wastewater treatment plant is located south of Meadowbrook Drive, east of Missouri Highway 33, near the southern edge of town. A major expansion of the plant's treatment capacity was completed in 2014 through the construction of two clarifiers as well as other improvements. The plant's capacity was increased from 1.51 million gallons per day (mgd) to 9 mgd. In 2013 the plant's average daily flow processed was about 700,000 mgd. The additional treatment capacity provided will allow growth within the City's service area for at least the next 20 years. The only additional improvements anticipated at the treatment plant in the near future is the construction of a new Headworks structure with new bar screens and pumps to provide pretreatment. These improvements will improve operations and decrease maintenance within the treatment plant.

The City's wastewater collection and conveyance system consists of gravity sewers and four individual lift stations and force mains, according to the Collection System Master Plan, prepared by Larkin Group in November, 2002. The report recommended extensive gravity sewer expansion to the west including the Fishing River interceptor, West Creek interceptor, and West Sewer extension. It detailed the extension of approximately 73,000 linear feet of gravity sewer. Discussions with City staff indicate that the Fishing River and West Creek interceptor has been constructed from the existing treatment plant to just west of I-35, north of NE 143rd Street. These constructed portions provides an interceptor sewer to serve subwatershed branch sewers for approximately 2,000 acres of property east of I-35 on the south side of Kearney in the Fishing River watershed. The West Creek Interceptor stub out to the west side of I-35 can be extended in the future to serve an additional 1,285 acres within the West Creek watershed which includes an area from E 143rd Street north to NE 162nd Street. The extension of this sewer would allow for additional development on the west side of I-35 along the M-92 corridor.

The 2002 report also detailed sewer expansion in the north portion of Kearney, including the Clear Creek, Jesse James Road, Gilmore Branch, and Muddy Fork interceptors. These gravity sewer extensions totaled approximately 65,000 linear feet of gravity sewer. None of these sewer extensions have been completed to date.

All of the new sewer systems constructed and proposed are designed for ultimate development using criteria of ten (10) persons per acre. Ten percent of each watershed area assumes the land cannot be

developed because of parks, floodplains, railroad right-of-way, and road right-of-way. The Urban Growth Area consists of approximately 18,644 acres. The proposed sanitary sewer collection system would cover approximately 80 percent of the Urban Growth Area. The existing coverage area is approximately 2,500 acres and the proposed improvement coverage is five times larger than the existing coverage area. The completed treatment plant expansion increased the capacity by six times and will provide the necessary capacity as these sewer extensions are constructed. The interceptors constructed within the Fishing River and West Creek watersheds make this area ready for development and future growth through additional sewer extensions.



Wastewater System Map

Source: HDR and Vireo

WATER

The City of Kearney owns and operates a water treatment plant and distribution system that serves its citizens.

The City's water treatment plant produces an average daily rate of 0.80 mgd and a maximum daily rate of 1.0 mgd. The City also purchases a maximum 0.25 mgd of water from the City of Kansas City. The connection to Kansas City also serves as an emergency connection to the water system. According to the Water Treatment Plant and Distribution Engineering Study, prepared by Larkin Group in November 2012 the City's treatment facility capacity combined with the supplemental purchased water are adequate to serve existing customers and allows for future growth within the City's limits. In 2012, the City's average daily water usage was approximately 0.625 mgd. Of this approximately 0.075 mgd or 12%, is purchased from Kansas City.

Connection to the Kansas City water system is through an 18-inch main on Jesse James Farm Road that connects to a master meter near 128th Street south of the City limits. Kearney has the ability to purchase additional water from Kansas City as needed. The Water Purchase Agreement allows Kearney to purchase a maximum of 2.9 million gallons of water on any given day. This additional capacity allows for growth of nearly 5 times from the City's current water usage. This additional capacity will provide the necessary water supply to support growth within the City of Kearney for at least the next 20 years.

If the City of Kearney would prefer to eliminate reliance on Kansas City for additional water capacity, significant upgrades to the treatment plant, an additional raw water well, and a new raw water line would be required. But, according to the study completed in 2012, it is unlikely that much additional water capacity can be obtained from the City's raw water source, an underground aquifer on the northeast side of town. The aquifer is jointly utilized by Kearney and Clay County Water District

(CCWD) #3. A Potential Aquifer Sustained Yield Analysis, completed in 1998, concluded the combined long term aquifer yield for Kearney and CCWD #3 was between 1.0 mgd and 1.4 mgd. In 2012, CCWD #3's water demand was 0.24 mgd. As a result, Kearney could expect to gain, at most, 0.25 mgd of additional capacity by completing upgrades to the existing water treatment plant. This amount of additional capacity will not sustain significant growth for the City without supplementing with water from Kansas City. Therefore it is not recommended to invest in expansion to the capacity of Kearney's raw water supply or treatment plant.

Beyond capacity upgrades, other improvements to the treatment plant are recommended within the study. These improvements include modifications to the plants filter wash water discharge to meet the City's National Pollutant Discharge Elimination System (NPDES) permit requirements. At present, the discharge exceeds chlorine residual limits. Other improvements at the plant recommended include: backup power, additional chemical storage, repairing the lime feeder, covering the treatment basins, and changes to how chlorine disinfection is achieved.

According to the 2012 study, the City's water distribution system performs well and does not have any major deficiencies. There are two above ground water storage tanks, a 1.5 million gallon (MG) tank located on 162nd Street at the eastern city limits, and a 0.25 MG tank located east of Interstate 35 north of 144th Street. The smaller of the two tanks is in need of repainting and the City has plans to recondition the interior. Several water distribution pipe improvement projects are recommended including:

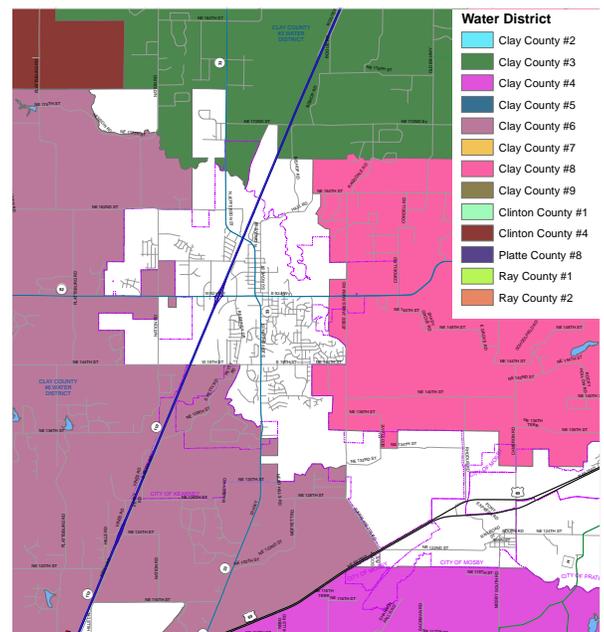
- A new 8-inch main on Lawrence Street from Clark Street to Grove Street to provide improved fire flow and operational flexibility in the downtown area
- Replacement and upsizing of older waterlines downtown to 8-inch mains, including Clark Street and Prospect Street from Hwy 92 to Washington Street

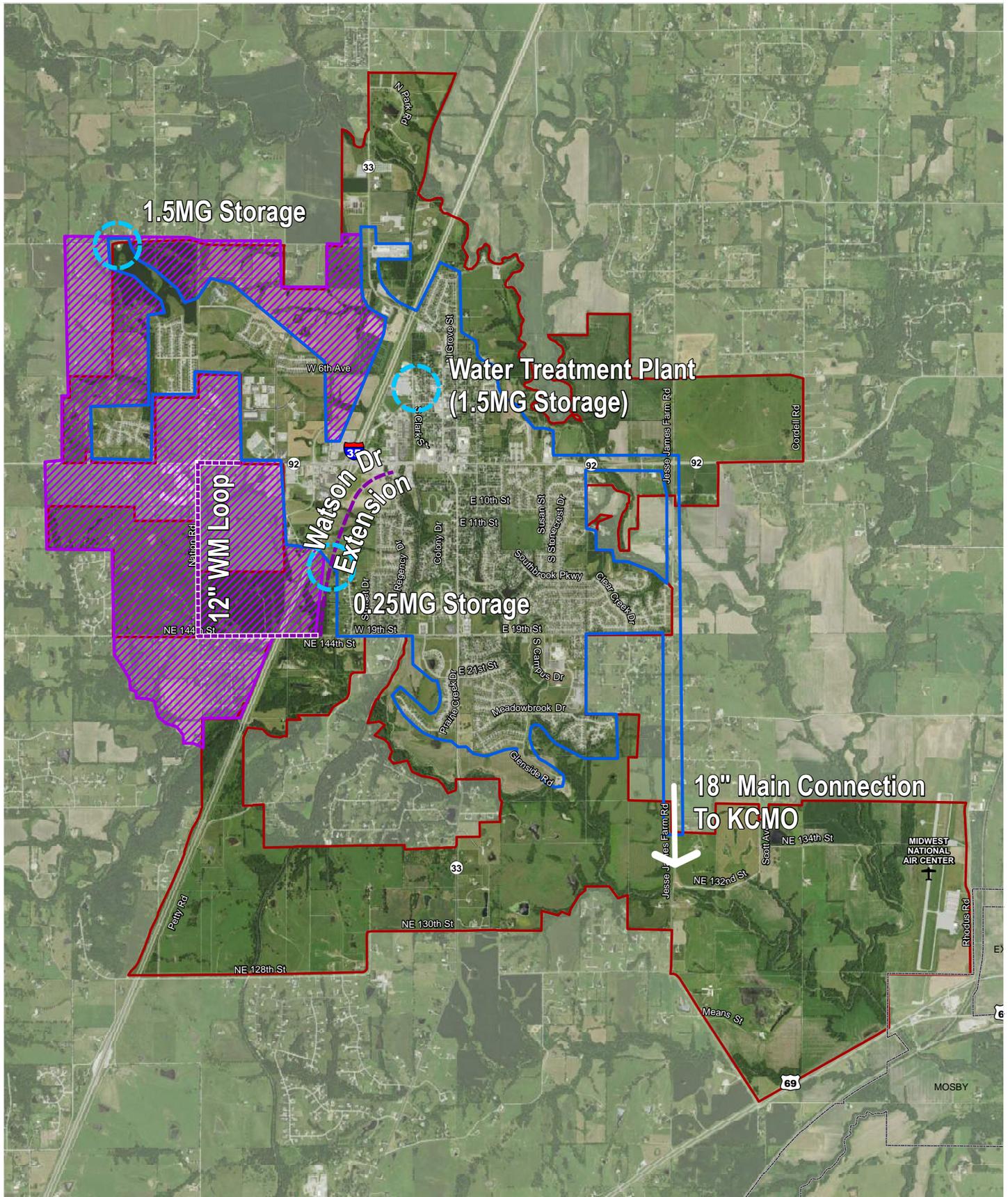
These projects have all been completed in the last three years.

The limits of the existing water distribution system for the City of Kearney are:

- North end of City: 8-inch main terminating just south of Clear Creek on Highway 33
- East end of City: 18-inch main along Jesse James Farm Road
- South end of City: 8-inch mains terminating south of 23rd Street (140th Street)
- West end of City: 12-inch main terminating at the 1.5 MGD water tower on N.E. 162nd Street

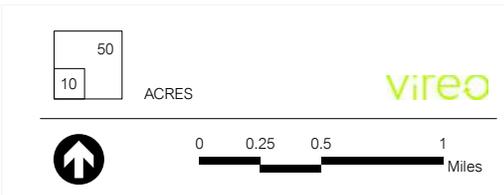
Clay County Water District Map





Water System Map

Source: Kearney GIS



A 12-inch main extension is currently being installed as part of the Watson Drive extension to West 19th Street. A future project will connect to this main and extend west across I-35 along NE 144th Street. From NE 144th Street it will extend north along Nation Road and east at Highway 92 until it connects to an existing 12-inch main near Sam Bar Drive. This 12-inch main loop will provide water service to future development south of Highway 92, west of I-35.

Areas adjacent to Kearney receive water service from various rural water districts including CCWD #6 to the west and south, CCWD #8 to the north and east, and CCWD #3 to the north. The City proposes that water services in annexation areas, which are currently provided by rural Water District #6, will be continued through use of inter-jurisdictional agreements with the City. Any new, private development within annexed area will be required to extend the necessary public water mains to service their development, consistent with the City's water distribution plan, and existing water supply policies.

STORMWATER

Kearney sits within two watersheds, Fishing River and Clear Creek. The majority of the currently developed city sits south of Clear Creek and north of Fishing River. The topography generally drains from the northwest towards the south-east. As additional development occurs, especially in the upstream regions of the City west of I-35, management of stormwater runoff will be necessary to minimize adverse impacts downstream. Section 405.700 of the City's zoning regulations states: All development shall control any stormwater drainage which occurs off the property according to adopted City standards which are currently "Storm Drainage Systems and Facilities of Division V, Design Criteria of the Kansas City Metropolitan Article of the American Public Works Association (APWA)". This policy, which requires reduction in post development runoff rates

during larger storm events, decreases the chance for downstream flooding. In addition, it requires release rates to be decreased during smaller more frequent rain events, which promotes removal of pollutants and improves water quality within the watershed.

The City has also considered the use of regional detention basins which can accommodate storm runoff from multiple properties/developments. An area on the west side of I-35, upstream of downtown Kearney should be investigated for possible locations. If a feasible location could be found and constructed, its cost could be recouped by future developments within the watershed. Rather than building smaller on-site detention, each development would pay a prorated cost for the regional basin based on their impervious area versus total drainage area within the watershed.

In addition to these design requirements the City of Kearney has implemented a zoning ordinance (Section 405.675) with guidelines for site design that considers the natural features of the property. One of the guidelines recommends the use of stream buffer setbacks to preserve and protect riparian corridors. The implementation of these guidelines contributes to maintaining and improving stormwater quality within the City.

The City of Kearney is fast approaching the 10,000 population threshold. Federal and state stormwater regulations now require small communities reaching that population milestone to obtain a National Pollutant Discharge Elimination System (NPDES) permit. The permit regulates Municipal Separate Storm Sewer Systems (MS4s) and requires them to have a stormwater management program in place within five years from the date of initial permit issuance. The program must address the following six minimum control measures.

1. Public Education and Outreach
2. Public Involvement and Participation

3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management
6. Pollution Prevention/Good Housekeeping for Municipal Operations

The purpose of the stormwater management program is to improve area water quality by preventing harmful pollutants from being carried by stormwater runoff into local water bodies. Best Management Practices (BMPs) are methods to prevent or reduce the pollutants in stormwater runoff. The City of Kearney needs to continue to implement BMP requirements into their Ordinances in preparation of being regulated by a NPDES permit

The following recommendations are proposed:

1. Investigate opportunities for construction of a regional detention basin to reduce flows and lower relative stream velocities and water surface elevations in areas downstream of I-35.
2. Continue to require local detention for new development.
3. Update the development requirements to site the latest version of APWA 5600. This will update detention and water quality requirements, including multi-stage release and stream setbacks.
4. Further investigate the culverts under 92 Highway (MoDOT) and Brittany Avenue to determine if they have proper hydraulic capacity.
5. Develop a Stormwater Management Plan for the City's Municipal Separate Storm Sewer Systems in preparation for their approaching NPDES permit.

