CITY OF MURRAY KENTUCKY
2020 COMPREHENSIVE PLAN

MURRAY

Amended Oct. 2019
Adopted July 2020

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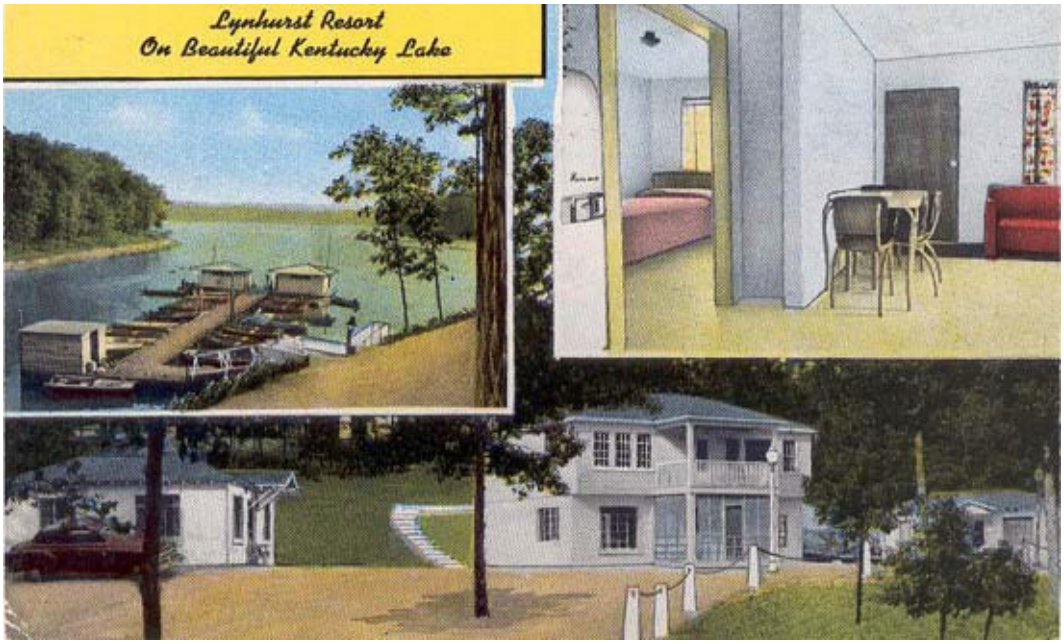
INTRODUCTION

Staff recognizes that some portions of this 2020 Comprehensive Plan need updates and edits as those portions relied on old data from previous plans. These updates and edits will be made as new data becomes available and any errors are identified for correction.

This Comprehensive Plan for the City of Murray serves as its guide to the planning of land use as the city continues to grow and develop. Planning for use of the lands within its jurisdiction allows the Murray Planning Commission to make decisions that encourage the proper types of development in suitable areas. Development in accordance with a plan also allows a balanced set of land uses and minimizes the conflicts that can occur between land uses. Development in accordance with a plan also allows growth to occur in areas that can accommodate the growth without placing a strain on the infrastructure designed for growth.



Calloway County Penny Post Card

History

Calloway County became Kentucky's seventy-second county in 1822. It was named in honor of Col. Richard Callaway who had a long history in Kentucky. He was part of the group of Col. Boone's in 1775 that began the First Road of Trace from Long Island on the Holston River to Boonesborough on the Kentucky River. His name appeared for Boonesborough in 1775 as a representative of the Colony of Transylvania.

Wadesboro was established as the county seat and served in that capacity until 1842. This community flourished with over 300 citizens. It became a center for land speculation. Many emigrants as well as the speculators came in search of vacant lands when the public lands were offered for sale by the legislature. It was indeed a thriving town with much accompanying excitement and activity. It quickly lost its prominence when the lands were parceled and sold. It

fell into ruins with many of the citizens moving away.

Marshall County separated from Calloway County in 1842 and a new county seat for Calloway County was needed. The county seat was moved in 1844 to Murray, a site located near the center of the county. The city was named for John L. Murray, a Kentuckian who served in the U.S. Congress.

The City of Murray experienced early development in the vicinity of the present Calloway County Courthouse. This development was supported by the Courthouse activities and local streets in the vicinity were laid out in a typical grid pattern around the Court Square. Growth has tended to occur in a westerly and southwesterly direction from the initial location of the settlement, avoiding the flood hazard in the lower elevations along Clarks River east and south of the city.

Murray Normal School was established in 1922 in the northwest quadrant of the city, growing from an initial enrollment of 202 students to more than 10,000 in 2009 during its evolution to Murray State University. The growth of Murray State University over the years has had a significant impact on overall development patterns in the city. The effect of the university's expansion and subsequent surrounding growth has been the acceleration of development in a westerly and northwesterly direction, increasing the distance between the original downtown center and the current distribution of population.

Another significant historical development influence has been the location of industrial and related commercial uses north and south along the railroad between the downtown area and the river. Low density residential uses have developed more recently in the southwestern portion of the city. The commercial focus of the city shifted from downtown and South 12th Street as new, highway-oriented retailers and restaurants located along North 12th Street near the university.

Planning Area

The area covered by the plan is the City of Murray Urban Services Area (USA). The USA includes all of the area within the Murray city limits and portions of Calloway County adjacent to the city limits that are served by city water and wastewater utilities. Murray has an agreement with Calloway County that allows it to exercise extraterritorial jurisdiction under *KRS 100.131* for land development activities within a four-mile radius from the intersection of 12th Street and Main Street.

Statutory Requirements

The Planning Commission of a planning unit constituted under KRS Chapter 100 is required to develop a comprehensive plan to serve as a guide for public and private actions and decisions to assure the development of public and private property in the most appropriate relationships.

The minimum statutory requirements for a comprehensive plan for the Murray Comprehensive Plan area include:

(1) A statement of goals and objectives that serves as a guide for the physical development and economic and social well-being of the planning unit;

(2) A land use plan element showing proposals for the most appropriate, economic, desirable,

and feasible patterns for the general location, character, extent, and interrelationship of the manner in which the community should use its public and private land at specified times as far into the future as is reasonable to foresee. Such land uses may cover, without being limited to, public and private, residential, commercial, industrial, agricultural, and recreational land uses;

(3) A transportation plan element that shows proposals for the most desirable, appropriate, economic, and feasible pattern for the general location, character, and extent of the channels, routes, and terminals for transportation facilities for the circulation of persons and goods for specified times as far into the future as is reasonable to foresee. The channels, routes, and terminals may include, without being limited to, all classes of highways or streets, railways, airways, waterways; routings for mass transit trucks, etc.; and terminals for people, goods, or vehicles related to highways, airways, waterways, and railways;

(4) A community facilities plan element showing proposals for the most desirable, appropriate, economic, and feasible pattern for the general location, character, and the extent of public and semipublic buildings, land, and facilities for specified times as far into the future as is reasonable to foresee. The facilities may include, without being limited to, parks and recreation, schools and other educational or cultural facilities, libraries, churches, hospitals, social welfare and medical facilities, utilities, fire stations, police stations, jails, or other public office or administrative facilities;

(5) Any additional elements such as, without being limited to, community renewal, housing, flood control, pollution, conservation, natural resources, regional impact, historic preservation, and other programs which in the judgment of the planning commission will further serve the purposes of the comprehensive plan.

The statute further requires that the comprehensive plan elements, and their research basis, be reviewed at least once every five years in light of social, economic, technical, and physical advancements or changes. The planning commission is also required, at least once every five (5) years, to amend or readopt the plan elements.

Last Plan Update

The City of Murray hired Florence & Hutcheson, Consulting Engineers based regionally in Paducah, KY to assist City Staff with a major update to the Comprehensive Plan for 2009, which was completed and approved. That plan was reviewed by Staff and the Planning Commission in 2014 as required and updates were made to the various goals and objectives. The 2009 plan was readopted for the 2014-2019 time period. In 2019, Staff was assisted by a citizen subcommittee consisting of volunteers from the Planning Commission, Board of Zoning Adjustments and other community citizens to review and update the 2009 Comprehensive Plan. That work was completed for review and adoption in January 2020 but due to COVID19 restrictions, final edits were delayed until 2021. This final 2020 Comprehensive Plan has been approved and posted to the City website.

Additional updates will be made as new data becomes available during the five-year life span of this 2020 plan. In addition, some edits to correct errors will be made as they are identified.

Content of the Plan

The Murray Comprehensive Plan contains four elements; the Base Study Element the Land Use Element, the Transportation Element, and the Community Facilities Element. A summary of the type of information in each element follows.

The Base Study Element contains the research that applies to the other three elements. The research includes information on population and demographics. Since economic development is a focus for the City of Murray, the Base Study Element also contains information related to economic development in Murray.

The Land Use Element contains the results of an inventory of land uses conducted during the summer of 2008. The inventory was used to prepare maps of the current uses of land in the planning area. The various land areas in 2008 are compared with the land areas determined from an inventory in 2002, giving an idea of the changing land use patterns. The Land Use Element also contains maps showing the planned future land uses in Murray that will serve as the Planning Commission's guide when making land use decisions.

The Transportation Element provides information and maps on the existing transportation infrastructure in Murray. The element also identifies improvements to the existing infrastructure to support the future land uses desired for the planning area.

The Community Facilities Element is divided into two sections Utilities and Other Community Facilities. Utilities are discussed separately because they not only have a need for land, but also provide the infrastructure to accommodate development. The Other Community Facilities section describes the organizations that support the community and require land in providing these essential community services. Both sections describe future land needs for each of the indicated organizations.

Goals and Objectives

Goals and objectives were developed by a citizen's advisory group to be used as the basis for the Murray Comprehensive Plan. The major areas of goals are summarized below. The full text of the adopted goals and objectives are found in Appendix A. Goals and Objectives that are directed toward one of the four elements of the plan are integrated into that specific plan element. This facilitates the tailoring of the plan to address the goals and objectives.

Future Land Use Goal: To achieve a balanced pattern of land use that meets the needs of the population, stimulates physical, social and economic development, and protects the environmental well being of the community.

Community Relations Goal: To improve, both locally and regionally, the interrelationships among citizens, government, community, education, and business.

Economy Goal: To improve the local economy through a planning process that stresses retention, expansion, attraction, local initiatives, diversification, and quality of businesses and manufacturers.

Transportation Goal: To plan for the development and management of a transportation system

that accommodates the various means of moving people and goods from place to place in a safe and efficient manner.

Public Facilities and Services Goal: To improve the quality of life for all citizens by providing a wide range of services and facilities to include education, recreation, health/social, protective (fire, police, and emergency), infrastructure (water, sewer, streets, drainage), waste disposal, planning/code enforcement, and administration.

Housing Goal: To support a diversity of housing opportunities that provides adequate, safe, and affordable housing units for the citizens of Murray and to upgrade the quality and character of residential areas.

Commercial, Industrial, and Agricultural Areas Goal: To recognize the need for a variety of commercial, industrial, and agricultural areas in the community that will provide the necessary goods and services while minimizing adverse effects on all other nearby uses.

Historic Preservation Goal: To protect and preserve Murray's historic sites and structures while promoting a better understanding of the significance of the city's historic places, people, and events.

Environment Goal: To protect the natural environment from further deterioration and to improve existing environmental quality.

BASE STUDY ELEMENT

INTRODUCTION

This Base Study Element contains the information from the basic research and studies undertaken as part of the Murray Comprehensive Plan. The information in this element was used in developing the information in the Land Use Element, the Transportation Element, and the Community Facilities Element. The two segments of information in this element are the Murray Population/Demographics and Economy. The current population and demographics are presented. In addition, population projections are given that form the basis for land use and infrastructure needs. Information on the economic activity and the individuals and entities involved in that activity are also presented.

POPULATION/DEMOGRAPHICS

Population

The projection of population involved examining the population growth from past years and projecting future population. The period between 2010 and 2020 was selected as the time period of interest. Current population estimates and population projections were made by the Kentucky State Data Center in conjunction with the U.S. Census Bureau. Planning for future land use dictated using population estimates coincident with the planning period. The Census Bureau also collected information during the 2010 census on the demographics of the population in Murray. Changes in demographics are not generally projected unless there is information to indicate significant changes. Since no evidence was available to indicate changes in demographics coincident with population changes for Murray, the demographic information presented here is from the 2010 census. The study area of the Murray Comprehensive Plan is the Murray Urban Services Area. Since the study area includes a portion of Calloway County outside the Murray city limits, the population and demographic information for both the City of Murray and Calloway County are shown. No attempt was made to calculate the 2010 population in the portion of the planning area outside the city limits using census tract information. It is believed that the majority of population growth in Murray will be in the planning area. Projected populations for the City of Murray and all of Calloway County are sufficient for the purposes of this Comprehensive Plan.

The 2020 estimated population for Murray and Calloway County are shown in Table BS-1. Calloway County included the City of Murray in all calculations from here on out.

Table BS-1 Population Totals

	City of Murray	Calloway County
1980 Population	14,248	30,031
1990 Population	14,439	30,735
2000 Population	14,950	34,117
2010 Population	17,741	37,191
Projected Growth Rate	9.1%	5.2%
2020 Projection	19,348	39,135

The major segment of the County's population is located in Murray. Population statistics are shown in Figure BS-1. In general, the population characteristics are similar for both the city and county. Figure BS-2 shows the population distribution.

Table BS-2 Population Demographics						
	Gender	**Under 18 years old**	**Between 18-65 years old**	**Over 65 years old**	**Median Age**	**Total Population**
Murray	**M**:46.4% **F:**53.6%	2,641 14.9%	12,786 72.1%	2,314 13.0%	25	17,741
Calloway County	**M**:48% **F**:52%	6,732 18.1%	24,545 65.9%	5,914 15.9%	34.5	37,191
United States	**M**:49.2% **F**:50.8%	74,098,930 23.2%	194,509,688 61.0%	40,136,920 12.6%	37.2	308,745,538

The 2010 population estimate for Calloway County was 37,191. Approximately 47.7 percent of this population was within the City of Murray and 52.3 percent being outside the city limits. Approximately 8 percent of the County's resident population and 22 percent of the City's resident population were Murray State University students. There were approximately 7,000 additional Murray State students that are commuters and not considered part of the resident population. Data from the 2010 census (Table BS-2) indicate that the population characteristics of Murray and Calloway County are very similar in terms of age, as shown in Figures BS-3 and BS-4. The non-white population is significantly higher in the City than in the County. The median age of the Calloway County population closely approximates the median age of the United States. The median age of the City is considerably younger, reflecting the impact of the resident Murray State University student population. The past and projected 2020 population of Murray and Calloway County are shown in Figure BS-1. Growth within the city limits of Murray was approximately 15 percent for the last 25 years. The growth rate for the next 10-15 years is projected to be approximately 9.1% percent. The projected 2020 population for Murray is 19,348; the projected 2020 population for Calloway County outside Murray is 19,787. These growth rates and projections are based on the information from the 2010 Census data http://quickfacts.census.gov/. The first age group as shown in Table BS-2 are individuals under 18 years old. The second group is 18 to 65. The third group is age 65 or older and represents adults of retirement age. Within the city limits of Murray, the largest segment of population is in the 20-24-year-old segment, indicative of the resident student population. The age distribution of population in Murray from the 2010 census is shown in Table BS-2. The population data is divided into three age groups. The first group is less than 18 years and represents children from birth through secondary school. The second group is 18 to 65 years and represents the bulk of the population. The third group is over 65 years old and represents adults who are retired.

The population by age and gender within Murray is shown in Table BS-2. Figure BS-5 shows the gender distribution for Murray, Calloway County, and the nation as a whole. The female population in Murray is greater than the male population in all age ranges except for the 25-44 year range. The female population 65 years and older is almost double the male population.

The under 18-year-old population and the over 65-year-old population have similar percentages for both Murray and Calloway County. The population percentages of residents in the age range of 25-44 are greater outside the City. The population by age and gender in Calloway County is shown in Table BS-2. Male and female populations are essentially the same in all age groups through age 44. In the 45-64 age range, the female population begins to slightly dominate the male population. The dominance of the female population becomes more evident in the 65 years and older segment.

Table BS-3 Racial Composition		
	Number	**Percent**
Total population	17,741	100.0
One Race	17,396	98.1
White	15,370	86.6
Black or African American	1,204	6.8
American Indian and Alaska Native	37	0.2
Asian	587	3.3
Asian Indian	97	0.5
Chinese	269	1.5
Filipino	8	0.0
Japanese	20	0.1
Korean	107	0.6
Vietnamese	24	0.1
Other Asian [1]	62	0.3
Native Hawaiian and Other Pacific Islander	6	0.0
Native Hawaiian	1	0.0
Guamanian or Chamorro	2	0.0
Samoan	0	0.0
Other Pacific Islander [2]	3	0.0
Some Other Race	192	1.1
Two or More Races	345	1.9
White; American Indian and Alaska Native [3]	51	0.3
White; Asian [3]	64	0.4
White; Black or African American [3]	157	0.9
White; Some Other Race [3]	25	0.1

[1] Other Asian alone, or two or more Asian categories.
[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] One of the four most commonly reported multiple-race combinations nationwide in Census 2010.

Table BS-4 Age Groups for Murray		
	Number	Percent
Under 5 years	881	5.0
5 to 9 years	689	3.9
10 to 14 years	658	3.7
15 to 19 years	2,163	12.2
20 to 24 years	4,494	25.3
25 to 29 years	1,427	8.0
30 to 34 years	901	5.1
35 to 39 years	717	4.0
40 to 44 years	673	3.8
45 to 49 years	722	4.1
50 to 54 years	728	4.1
55 to 59 years	715	4.0
60 to 64 years	659	3.7
65 to 69 years	601	3.4
70 to 74 years	496	2.8
75 to 79 years	408	2.3
80 to 84 years	361	2.0
85 years and over	448	2.5

Figure BS-1 Population Growth Trend of Murray and Calloway County

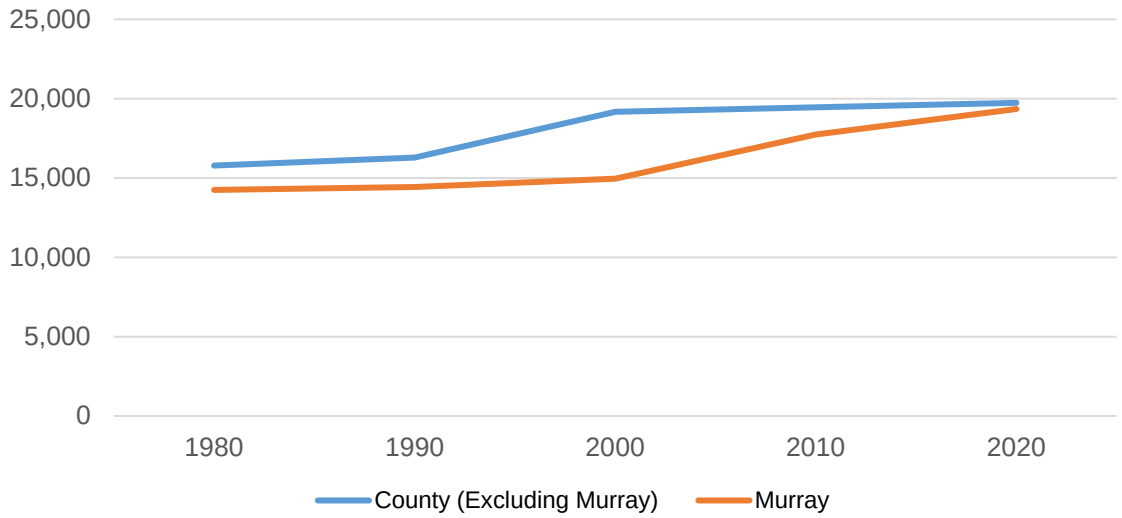
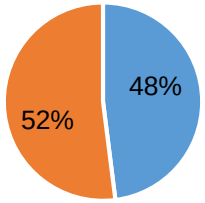
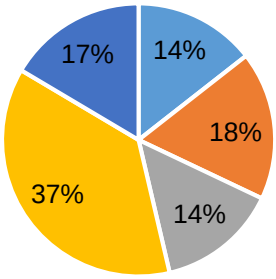


Figure BS-2 Population Distribution Calloway County 2010



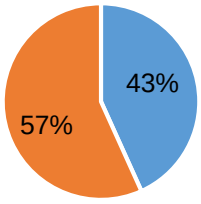
Murray Calloway County

Figure BS-3 Population by Age City of Murray 2010



65+ years
45-64 years
30-45 years
19-30 years
<18 years

Figure BS-4 Population by Households Calloway County 2010



Family Households Non-Family Households

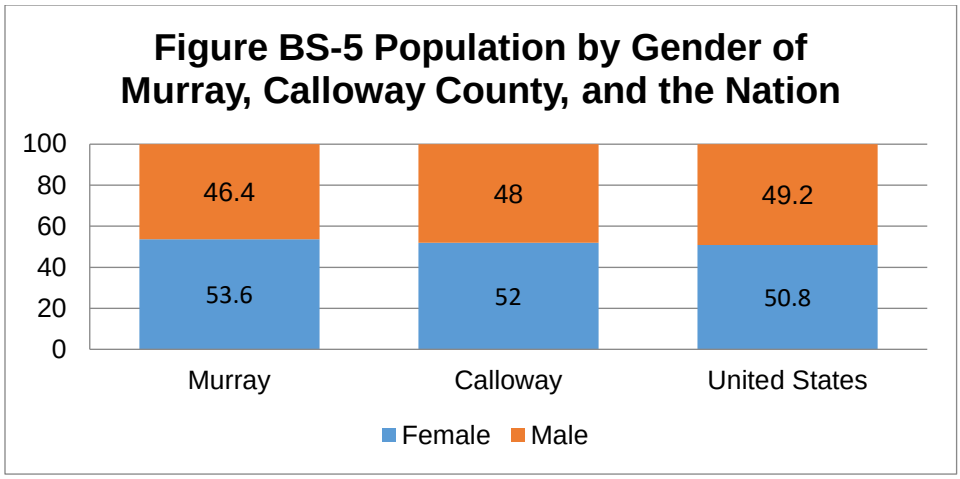
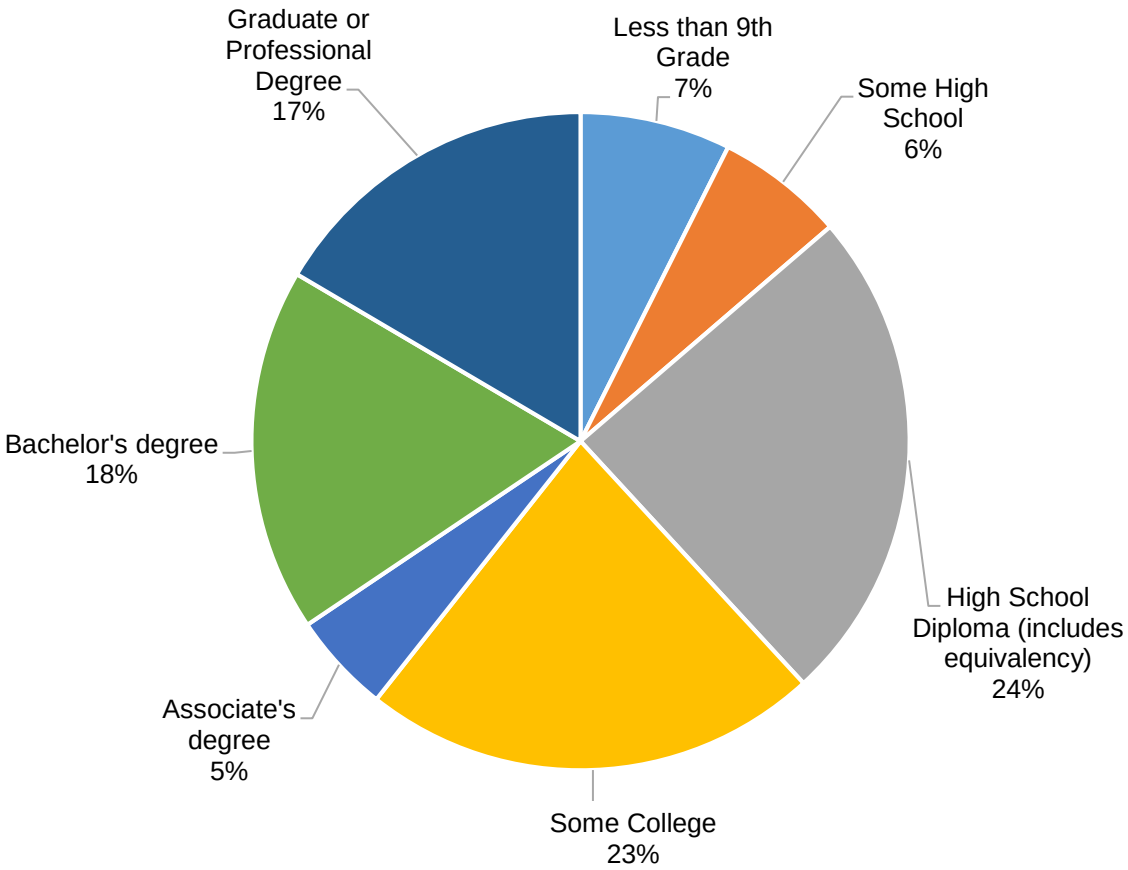


Figure BS-5 Population by Gender of Murray, Calloway County, and the Nation
100
80
60
40
20
0
46.4
48
49.2
53.6
52
50.8
Murray
Calloway
United States
Female
Male

Education

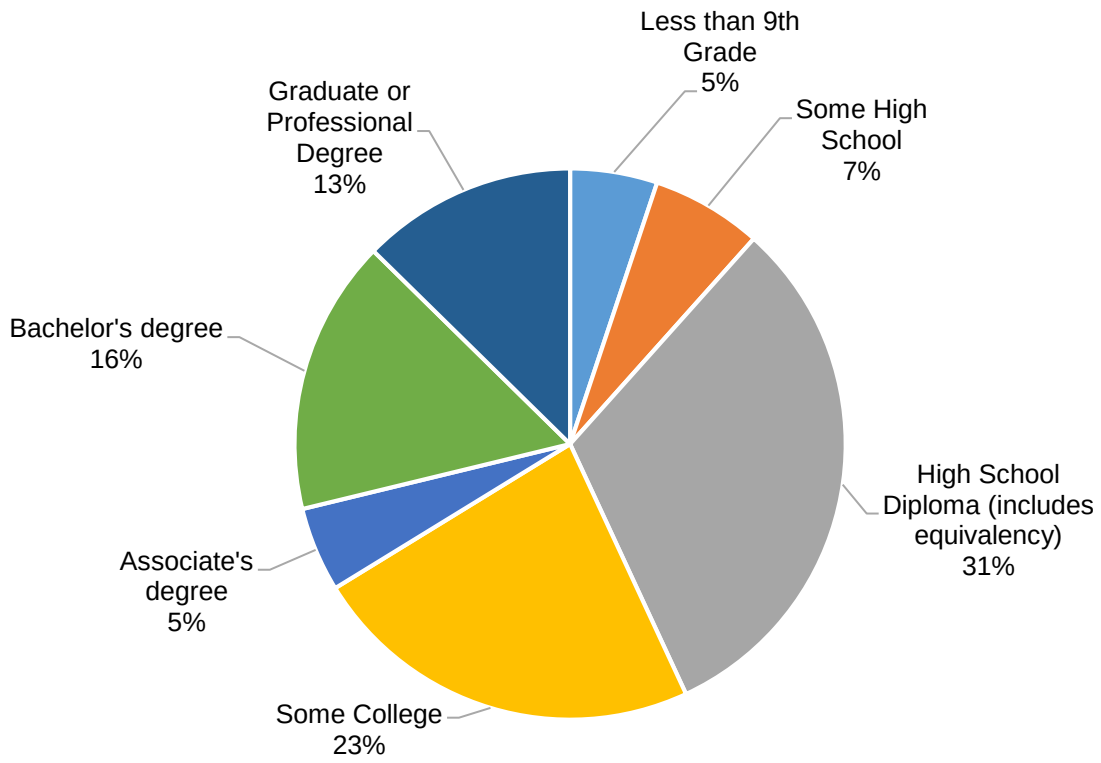
The educational achievement of the residents of Murray age 25 and older is shown in Figure BS-6. Residents with bachelors or higher college degrees total 35 percent of the population. Residents without a high school diploma total 13 percent of the population. Residents with some college but no degree total 23 percent, while residents with Associate's Degrees total 5 percent.

Figure BS-6 Education City of Murray 2013-2017 (Population 25 Years and Older)



The educational achievement of the residents of Calloway County age 25 and older is shown in Figure BS-7. Residents with bachelor's or higher college degrees total 29 percent of the population. Residents without a high school diploma total 12 percent of the population. Residents with some college but no degree total 23 percent, while residents with Associate's Degrees total 5 percent.

Figure BS-7 Education Calloway County 2013-2017 (Population 25 Years and Older)



Households

The U.S. Census Bureau defines households in two categories, family and non-family. Family households are those with 2 or more people related to each other by birth, marriage, or adoption. Non-family households include a person living alone or two or more unrelated persons living together. Figure BS-8 shows the distribution of the 6,976 Murray households in the 2013-2017 American Community Survey 5-Year estimates. Non-family households slightly outnumbered family households. Even though close in percentage non-family households slightly outnumbered family households 53% to 47%.

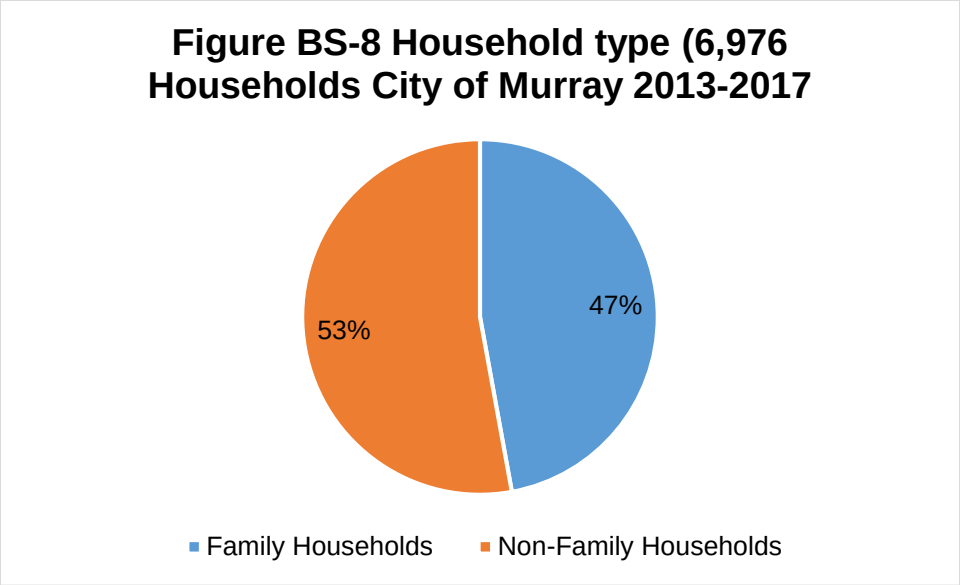


Figure BS-9 shows types of households in Calloway County based on the 2013-2017 American Community Survey. 59% of 14,757 households are considered to be Family households which means that all members are related to each other by birth, marriage, or adoption. Only 41% are considered non-family households. The family households greatly outnumber the non-family households.

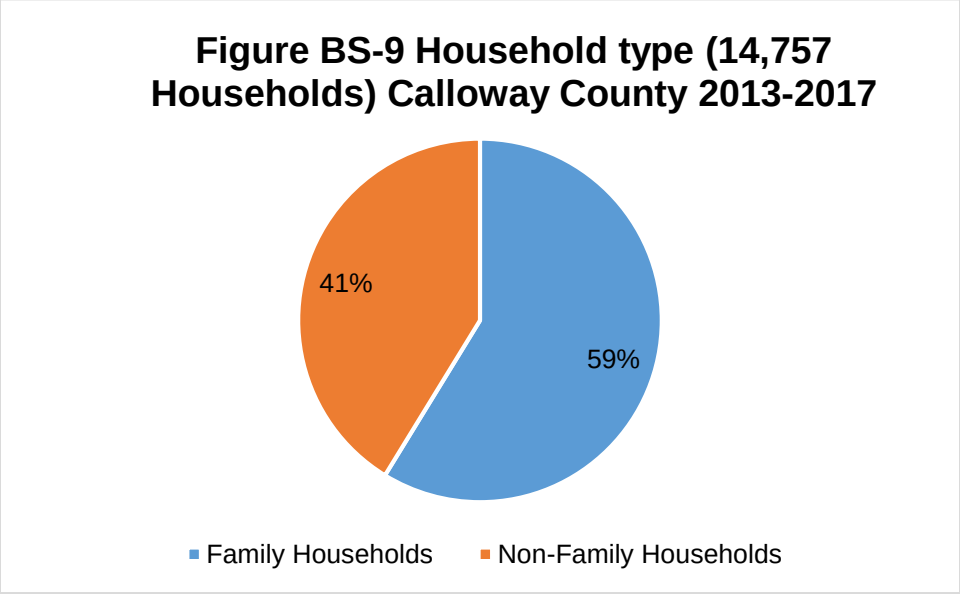


Figure BS-10 shows the distribution of family members in a total of 3,211 family households in the City of Murray in 2010. Most of the family households (52%) consists of 2 people, followed by 3 people (23.4%). Only 1.1% of the family households consist of 7 or more people.

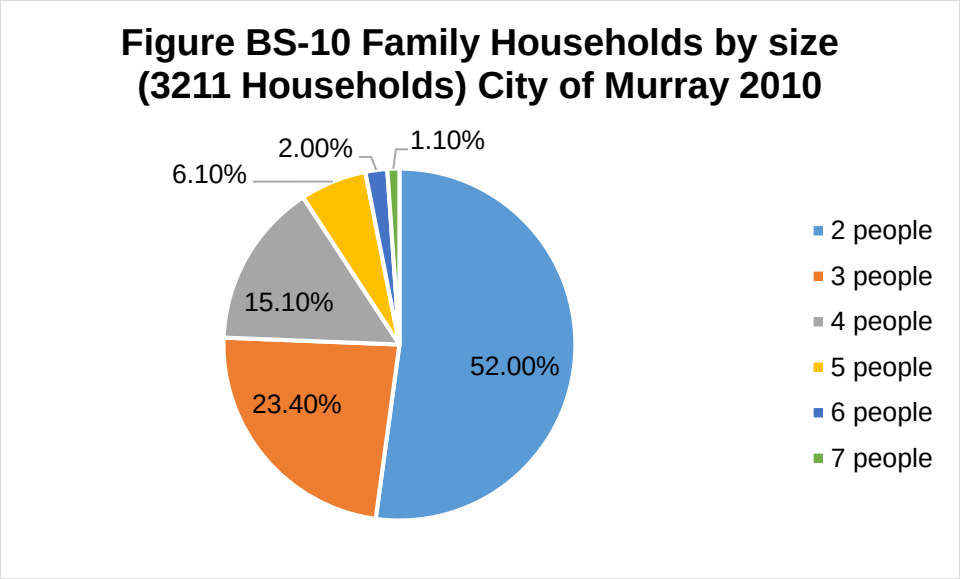


Figure BS-11 shows the number of members in a non-family household in the City of Murray in 2010. 77.7% of 4,214 households consists of only one person, 15.8% consist of 2 people, 3.4% consists of 3 people, 2.8% consist of 4 people, and 0.3% consist of 5 people. There are no households with 6 or more people.

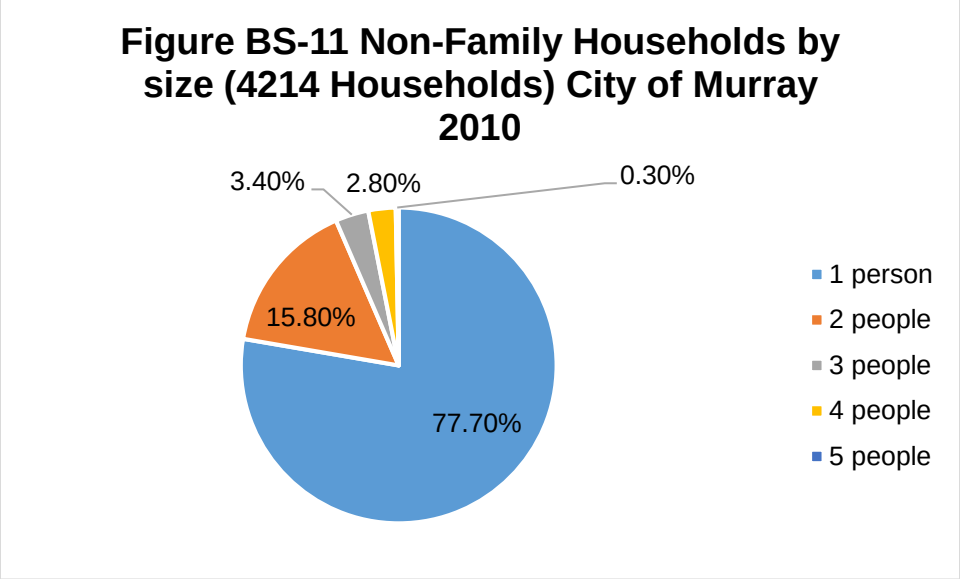
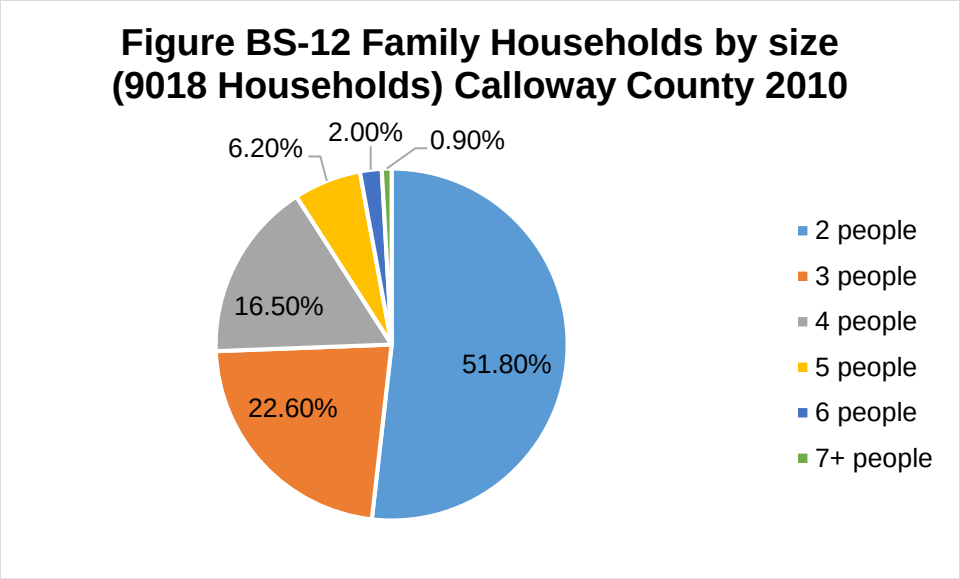


Figure BS-12 shows the distribution of family household sizes in Calloway County in 2010. 51.8% of 9,018 households consist of 2 people, 22.6% consist of 3 people, 16.5% consist of 4 people, 6.2% consist of 5 people, 2% consist of 6 people and 0.9% consist of 7 or more people.

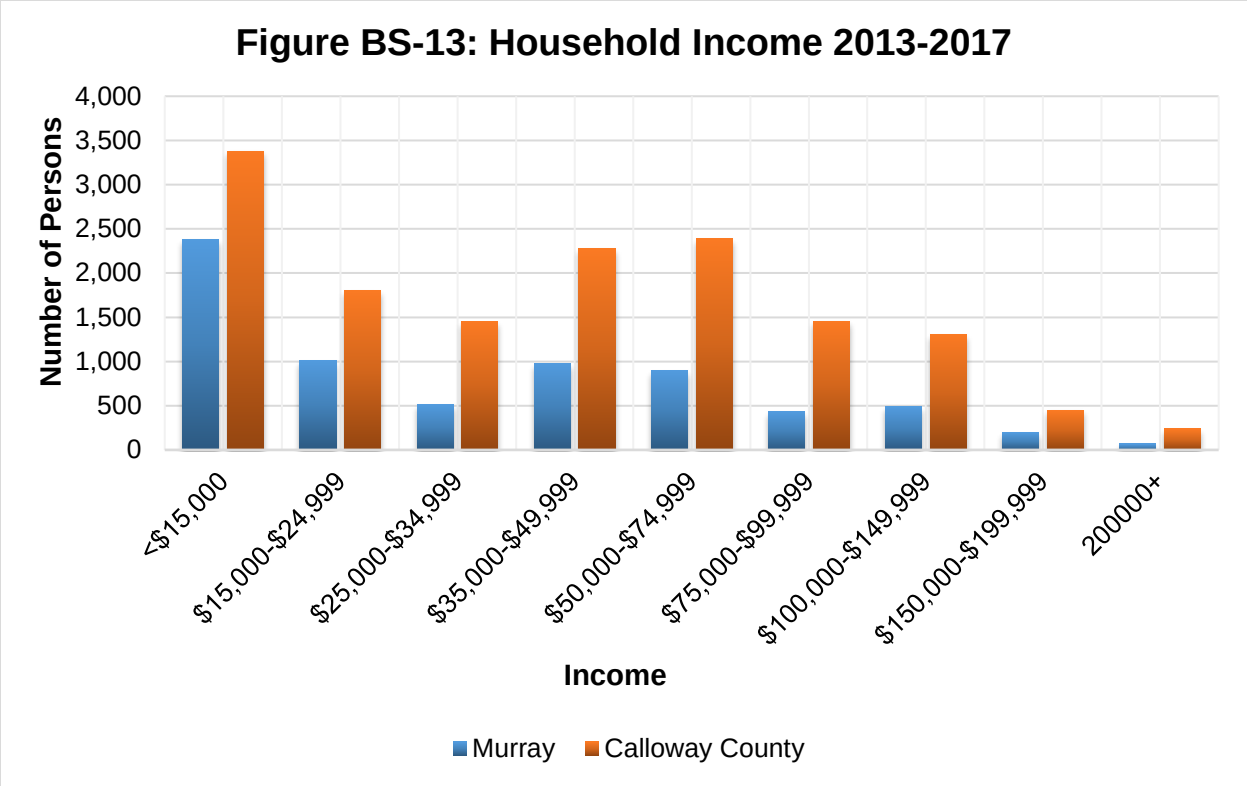


ECONOMY

The economic health of an area can be measured by several parameters. These parameters collected by the U.S. Bureau of Census include: household income, home values and rents, and employment and business income.

Household Income

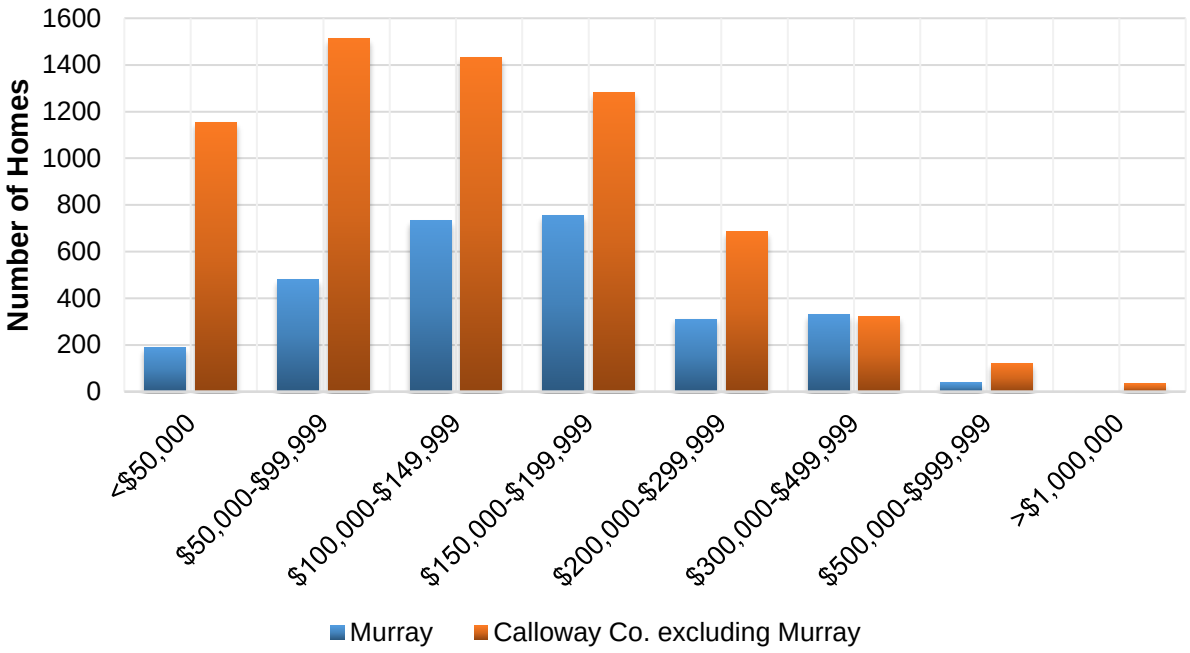
Figure BS-13 depicts 2013-2017 American Community Survey data illustrating the number of persons within nine income ranges including benefits and adjusted for inflation in the City of Murray and Calloway County (including Murray). The households in Murray with yearly incomes less than $15,000 were 34.1%, while households with incomes of $15,000 to $24,999 were 14.5%. Households in Murray with incomes of $25,000 to $34,999 were 7.4%, while households with yearly incomes from $35,000-$49,999 were 14.4%. Households with income from $50,000-$74,999 were 12.9% and those in the $75,000-$99,999 range were 6.2%. The final income ranges of $100,000-$149,999, $150,000-$199,999, and $200,000 and over were 7%, 2.9%, and 1% respectively. The median household income determined in the American Community Survey for Murray was $27,282 and the median household income for Calloway County was $39,677. The Kentucky median household income was $39,269. For households in Calloway County as a whole, the percentage with yearly incomes of less than $15,000 was 22.9 %.



Home Values

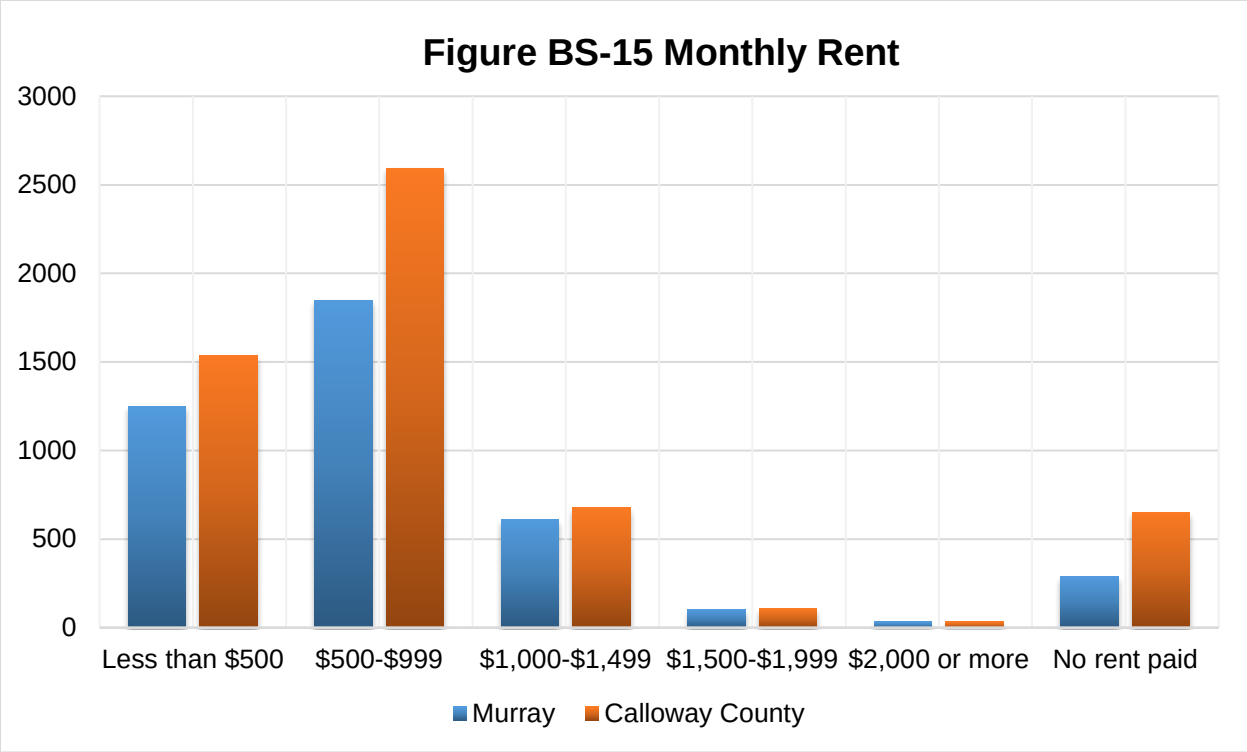
Home values within the City of Murray and Calloway County (including Murray), as determined by 2013-2017 estimates based on the American Community Survey, are shown in Figure BS-14. Homes with values less than $50,000 constituted 6.7% of the homes in Murray. Homes with values of $50,000 to $100,000 constituted 16.9%, homes with values of $100,000 to $150,000 constituted 25.8 %, and homes with a value greater than $150,000 constituted 50.6% of the homes in Murray. In Calloway County as a whole, home values showed a similar but more even distribution. Approximately 14.3% had values less than $50,000, while 21.2 % had values between $50,000 and $100,000. Homes with values between $100,000 and $150,000 made up 23.1%, while homes with values greater than $150,000 made up 41.4% of the homes in Calloway County.

Figure BS-14: Home Values 2013-2017



Rents

The monthly rents in Murray and Calloway County (including Murray) are shown in Figure BS-15, by number of housing units. Rent data show that rents are generally similar in Murray and Calloway County. The largest segment of renters pay between $500 and $999 per month, while approximately 63.9 percent of renters pay between $500 and $1499 per month.



Employment and Business Income

Table BS-5 represents the Environmental Systems Research Institute's (ERSI) forecast for 2014 for the civilian workforce over 16 years of age in Murray, Calloway County, and Kentucky by occupation and for selected industries. The estimates were derived from 2010 census data. Murray, Calloway County, and Kentucky have the highest percentage of occupations classified as management, business, financial, and professional followed by sales and administrative support with approximately 25%. Murray residents in service occupations exceed Calloway County and Kentucky residents on a percentage basis. In contrast, Calloway County and Kentucky have higher percentages of workers classified as production, transportation, material movers, construction, maintenance, mining, repair, farming, fishing, and forestry. Surprisingly, Kentucky has a higher percentage of workers in the finance, insurance, real estate, information, and public administration industries than both Calloway County and Murray. The service industries significantly dominate the industries in Murray, Calloway County, and Kentucky concerning the percentage of workers in that field compared to the other industries. Some of the services represented in this category include: educational institutions, libraries, legal services, health services, motion pictures and amusements, hotels and lodging, and automotive services. The largest increase of employees by occupation occurred in services, while there was a slight decrease in farming, fishing, and forestry in Murray, Calloway County, and Kentucky from 2000 to 2010. There was an increase of 645 employees in Murray, 304 in Calloway County, and a decrease of 167,247 in Kentucky during the same time span.

Table BS-5 Civilian Workforce 16+ Years of Age for Murray, Calloway County, and Kentucky			
	Murray 7,604	**Calloway County 16,311**	**Kentucky 1,864,223**
By Occupation			
Management / Professional	33.2%	31.7%	32.4%
Sales / Office	25.1%	24.5%	24.0%
Production / Transportation of Goods	13.5%	14.9%	16.4%
Service	21.5%	19.4%	17.0%
Construction / Maintenance / Mining	6.2%	8.9%	9.4%
Farming / Fishing / Forestry	0.4%	0.6%	0.7%
For Selected Industries			
Transportation/Utilities	2.7%	3.2%	5.9%
Construction/Manufacturing	17.9%	20.0%	20.1%
Retail Trade	13.3%	13.1%	14.3%
Services	58.8%	53.2%	45.4%
Agriculture	1.3%	2.1%	2.9%
Public Administration	1.6%	3.4%	4.3%
Source: U.S. Bureau of Census, 2010			

Economic Impact Analysis Report

In 2008, the Murray State University Bureau of Business and Economic Research published the “Economic Impact Analysis Report for Calloway County” for the Murray Calloway County Economic Development Corporation. The direct employment and income results from that report are shown in Table BS-6. The 2008 information highlights the number of jobs created in Calloway County since the 2000 census. According to the report, a total of 21,127 direct employment jobs existed in Calloway County in 2008. The largest job segment was labeled Public Administration and included all public sector employment and income including the local school systems, Murray State University, government offices, and the Murray Calloway County Hospital. The total direct income was about $611 million, or $29,000 per employee.

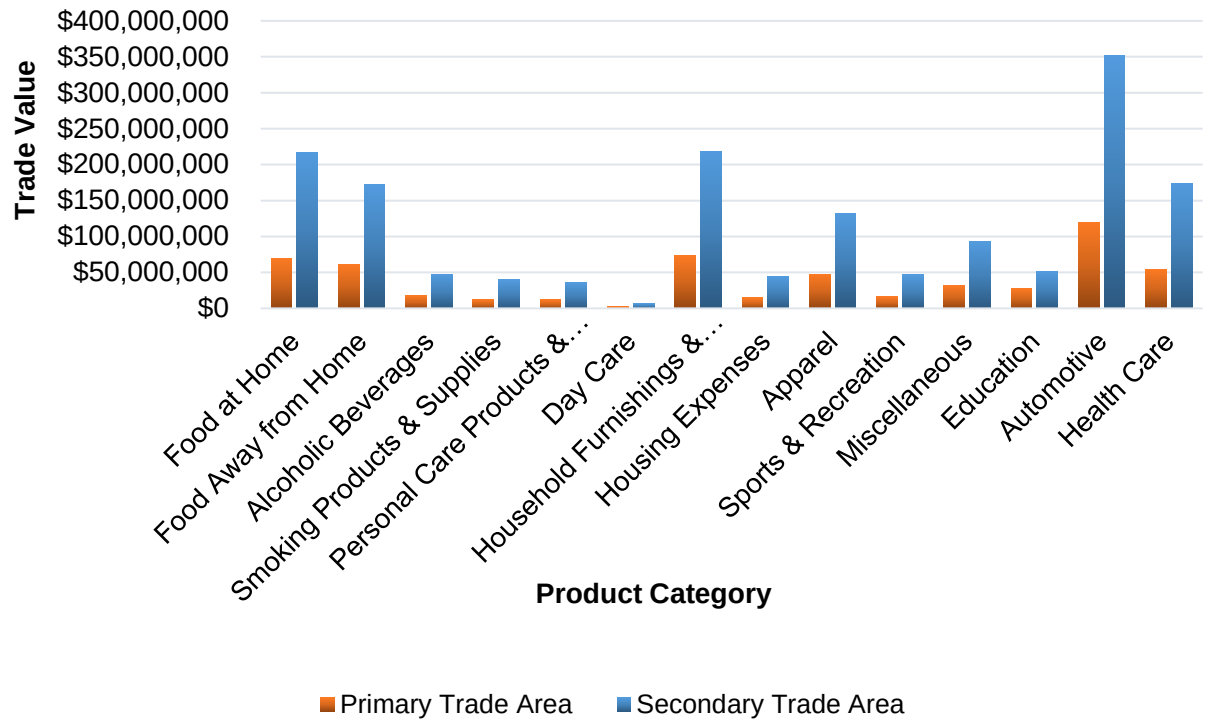
Table BS-6: Direct Employment and Income by Industry			
Industry Title	**Direct employment**	**Direct Income**	**Income per Employee**
Public Administration	5,295	$173,090,416	$32,689
Manufacturing	2,792	$126,987,728	$45,486
Retail Trade	2,554	$56,079,568	$21,961
Accommodations and Food Services	1,635	$18,633,690	$11,400
Transportation and Warehousing	1,501	$55,981,856	$37,309
Other Services (except Public Admin.	1,382	$16,771,097	$12,135
Construction	1,258	$35,387,832	$28,126
Agriculture, Forestry, Fishing and Hunting	1,244	$19,371,190	$15,573
Health Care and Social Assistance	1,044	$40,771,092	$39,057
Wholesale Trade	561	$21,991,204	$39,186
Professional, Scientific, and Technical Services	442	$15,905,590	$35,994
Finance and Insurance	340	$11,291,498	$33,220
Administrative and Support and Waste Management and Remediation Services	328	$4,500,727	$13,722
Real Estate and Rental and Leasing	282	$5,907,437	$20,919
Information	172	$4,903,646	$28,526
Arts, Entertainment, and Recreation	171	$1,985,902	$11,600
Educational Services	120	$910,450	$7,593
Mining	3	$135,919	$50,340
Management of Companies and Enterprises	3	$190,713	$76,285
Utilities	1	$88,985	$63,561
Total	21,127	$610,886,540	$28,916
Source: “Economic Impact Analysis Report for Calloway County,” Murray State University, 2008			

Retail Site Assessment

Figure BS-16 shows the results of the Murray 2008 Retail Site Assessment conducted by Buxton Community*ID*. The purpose of this assessment was to identify major categories of retail that are candidates for location in Murray. The primary trade area was established as the residential areas within a 13 minute drive from the centroid of Murray; the secondary trade area included residential areas within an approximate 15-20 mile radius

of Murray. Various retail product categories are listed with an estimated dollar potential available in these major retail areas in the Murray primary and secondary trade areas. The retail assessment shows the total estimated dollar potential in the primary trade area was $559 million and the total estimated dollar potential in the secondary trade area was $1.63 billion.

Figure BS-16: Murray Retail Site Assessment



Summary of Jobs and Income by Sector

Table BS-7 shows the results of a 2008 summary prepared by the Murray Calloway County Economic Development Corporation of both direct and total jobs by sector in Calloway County for the sectors that employed more than 500 persons. Total jobs are the direct jobs in the sector plus other indirect and induced jobs created by that sector in other sectors. Indirect jobs are jobs at firms where the sector would purchase some of their inputs in the region, thereby causing the supplier firms to purchase resources and hire workers to meet this demand. Induced jobs are the jobs created by household spending from the direct and indirect jobs. Total jobs and the income from these jobs measure the economic impact from the sector. The ratio in the table shows the relative contribution of each sector's direct and total jobs.

Table BS-7: Calloway County 2008 Summary of Jobs by Sector					
Sector	**Direct Jobs**	**%**	**Total Jobs**	**%**	**Ratio**
Public Administration	5,295	25	8,610	20	1.6
Manufacturing	2,792	13	11,577	27	4.1
Retail	2,554	12	4,213	10	1.6
Food/Hotel	1,635	8	2,318	5	1.4
Transportation and Warehouse	1,501	7	3,343	8	2.2
Other Services	1,382	7	1,846	4	1.3
Construction	1,258	6	2,507	6	2.0
Agriculture, Forest and Fish	1,244	6	2,203	5	1.8
Health and Social	1,044	5	1,887	4	1.8
Wholesale	561	3	1,239	3	2.2

Table BS-8 shows both direct and total income by sector in Calloway County for the sectors that employed more than 500 persons. Total income is the direct income from the sector plus other indirect and induced income created by that sector in other sectors. Indirect income is income at firms where the sector would purchase some of their inputs in the region. Induced income is the income created by household spending. The ratio in the table shows the relative contribution of each sector's direct and total income. All monetary values are 2008 USD.

Table BS-8: 2008 Summary of Income by Sector					
Sector	**Direct Income (Million $)**	**%**	**Total Income (Million $)**	**%**	**Ratio**
Public Administration	173	28	270	21	1.6
Manufacturing	127	20	383	31	3.0
Retail	56	9	102	8	1.8
Food/Hotel	19	3	38	3	2.0
Transportation and Warehouse	56	9	107	9	1.9
Other Services	17	3	29	2	1.7
Construction	35	6	70	6	2.0
Agriculture, Forest and Fish	19	3	45	4	2.4
Health and Social	41	7	64	5	1.6
Wholesale	22	4	41	3	1.9

Summary of Economic Impact Study

Conclusions drawn by the Murray Calloway County Economic Development Corporation from the 2008 Calloway County Economic Impact Study include:

• Public Administration data clearly confirms the importance of MSU, local Government and Murray Calloway County Hospital to the local economy employing 25 percent of all direct jobs in the County and 28% of direct income. The fact that the percentage of income

is higher than the percentage of employment says that these jobs contribute a disproportionate share of income to the economy. However, the spin-off effect from these jobs is relatively low compared to some of the other sectors.

• Manufacturing directly employs 2,792 which is 13 percent of all local employment. The income from these jobs represents over 20 percent of all direct income which is a clear indicator that the quality of manufacturing jobs in Calloway County is quite good and that those jobs are creating a very disproportionately large share of income to the local economy. The most interesting thing about manufacturing is that it shows a huge spin-off effect with total related jobs at 11,577 and 31 percent of all income in the County.

• Retail employs a significant number of people in the County at 2,554 or 10% of direct employment. Retail does not necessarily have a great spin-off effect in terms of additional jobs and income from related activities, but clearly is important to the overall quality of life.

• Food and hotel is also a significant employer, but has limited spin-off effects. Without this sector, the general business climate would be severely impacted in a negative way.

• Transportation & warehousing are strong in Calloway County with a very high spin-off impact. To at least some degree, this sector and manufacturing could be combined.

• The Calloway County economy is quite diverse and one of the reasons for a growing economy and unusually strong quality of life for what is essentially a rural community. Along with the major drivers of manufacturing, transportation & warehousing, the local school systems, Murray State University, Murray-Calloway County Hospital, and government services, there are numerous other sectors that play an important role in maintaining the positive economic climate. Agriculture continues to provide diversity in the economy and is crucial to the well-being of the community. The strong construction sector is a direct reflection of the economic health of all other facets of the economy. The contributions of Professional and Medical services are inestimable to the high quality of life in Calloway County.

Workforce Travel and Commuting

Table BS-9 below describes the workforce travel and commuting in Murray, Calloway County, and Kentucky for the period of 2009 to 2013. Overall, Murray and Calloway County residents carpool less than the state average while the percent that walked is much higher than the state average. The average commute time for Murray and Calloway County is less than the state average.

Table BS-9 Means of Transportation to Work			
Means of Transportation	**Murray**	**Calloway County**	**Kentucky**
Percent in Carpools	6.0%	6.9%	10%
Percent Using Public Transportation	0.1%	0.2%	1.1%
Percent Walked	10.2%	5.1%	2.2%
Percent Driving Alone	78.3%	83.6%	82.5%
Percent Bicycling	0.9%	0.4%	0.2%
Travel Time to Work	14.7 min.	18.5 min.	22.8 min.
Source: 2009-2013 American Community Survey			

Table BS-10 below depicts commuting patterns of the workforce in Calloway County for 2010 and 2015. According to the Labor Bureau, 64.2% of residents work inside the county while 35.8% of Calloway County residents work outside of the county.

Table BS-10 Commuting Patterns					
Residents of Calloway County	**2010**	**Percent**	**2015**	**Percent**	**Change in population**
Working and Residing in County	8,459	66.3%	8,476	64.2%	17
Commuting Out of County	4,295	33.7%	4,729	35.8%	434
Total Residents	12,754	100.0%	13,205	100%	451
Employees in Calloway County					
Working and Residing in County	8,459	56.7%	8,476	55.7%	17
Commuting into County	6,454	43.3%	6,733	44.3%	279
Total Employees	14,913	100.0%	15,209	100%	296
Source: U.S. Department of Labor, Bureau of Labor Statistics.					

Industry

Table BS-11 below lists some of the major industries within the City of Murray as well as within Calloway County. These businesses employ many county/city residents which contribute to the overall welfare of Murray.

Table BS-11 Major Business & Industry *(Manufacturing & Supportive Service Firms Only)*			
Firm	**Product(s)/Service(s)**	**Employees**	**Year Established**
Associated Warehousing Inc	Warehousing and distribution	10	1999
Boone's Inc	Industrial laundry services, dry-cleaning, coin laundry	18	1931
Drywall Systems Plus Inc	Headquarters	50	1920
Hutson Inc	Farm and garden machinery and equipment merchant wholesalers. Headquarters location.	37	1996
IWIS Motorsysteme	Automotive supplier	63	2015
Kenlake Foods	Powdered beverages, hot cereal & salted nut products	340	1982
Murray Ledger & Times	Newspaper publishing & printing	20	1879
Murray Mold & Die Co	Plastic injection & die cast molds & metal stampings; wire EDM & precision CNC machining	15	1985
Numeritex Displays Inc	Electronic message boards; electronic LED fuel price changers; electronic Portable LED Safety Signs, scoreboards, time and temperature displays; contract manufacturing.	25	2004
Paschall Truck Lines	Trucking, long haul dry van, US and Mexico. Headquarters.	1675	1937
Pella Corporation	Window and door manufacturer	1066	2002
Rudolph's Inc	Wholesale tire distributor	28	1981
Saputo Dairy Foods USA	Single serve-flavored milk in plastic bottles, private packaging, nondairy flavored creamers	325	1924
Schwarz Supply Source	Distribution center	150	2008
Shane Lee Inc	Women’s and children’s clothing	15	1982
Sleep Central	Distribute pharmaceuticals	300	1999
Sportable Scoreboards Inc	Scoreboards; electronic display products; marquees	60	1986
TapLogic LLC	Software and technology to provide the agricultural market with an information technology tracking and reporting system	15	2005
Vanderbilt Chemicals LLC	Industrial chemical additives & petroleum product accelerators	99	1969
Source: Kentucky Cabinet for Economic Development 2019.			

LAND USE ELEMENT

INTRODUCTION

Kentucky Revised Statutes (KRS) 100.187 specifies the content of a comprehensive plan in Kentucky. KRS 100.187 (2) states that a comprehensive plan shall include a land use plan element, which shall show proposals for the most appropriate, economic, desirable, and feasible patterns for the general location, character, extent, and interrelationship of the manner in which the community should use its public and private land at specified times as far into the future as is reasonable to foresee. Such land uses may cover, without being limited to, public and private, residential, commercial, industrial, agricultural, and recreational land uses

KRS 100.187 (6) states that the comprehensive plan may include any additional elements such as, without being limited to, community renewal, housing, flood control, pollution, conservation, natural resources, regional impact, historic preservation, and other programs which in the judgment of the planning commission will further serve the purposes of the comprehensive plan.

This Land Use Element has been prepared as part of the City of Murray Comprehensive Plan. The Land Use Element is divided into two sections; Existing Land Use and Future Land Use. The ultimate purpose of the Land Use Element is to develop a future land use plan that guides the Murray Planning Commission in its decisions related to the use of land in its area of jurisdiction. The Community Facilities and Transportation Elements of the Comprehensive Plan provide input related to the needs for lands and facilities to support the growth resulting from land use changes. A guiding principal was for the final land use plan to be in accordance with the goals and objectives established for the Comprehensive Plan.

The Murray Comprehensive Plan and this Land Use Element were developed for the Murray Urban Services Area. This area is sometimes referred to as the Murray Planning Area or the Murray Comprehensive Plan Area.

LAND USE GOALS AND OBJECTIVES

The general Future Land Use Goal for Murray is to achieve a balanced pattern of land use that meets the needs of the population, stimulates physical, social and economic development, and protects the environmental well-being of the community. The desire is for the City of Murray to be seen as a place where people can:

- Provide shelter and meet the basic needs for themselves and their families.
- Provide equal opportunity to all people.
- Enjoy the beauty, safety, and security of the community,
- Become responsible citizens.
- Promote a community which is aesthetically attractive for residents, visitors, and potential investors.
- Create happier, healthier, and smarter children by promoting community wide efforts that improve the well-being of the youth.

More specific land use goals and objectives adopted by Murray for the Comprehensive Plan are:

(1) Economy – in accordance with the zoning ordinance and boundaries, establish more neighborhood businesses along the periphery of residential zoning districts (within buffer zones) that are of a lower impact and limited to neighborhood convenience needs such as groceries, barber and beauty shops, and similar uses that contribute limited traffic into the area, while minimizing resident trips out of the neighborhood for purchases.

(2) Economy – consider incentives and other programs that would promote infill, redevelopment, and community improvement.

(3) Public Facilities and Services – identify land in the Future Land Use Element of the Comprehensive Plan for expansion of the City Park System and designate land as either public or semi-public.

(4) Housing – protect natural resources that enhance the quality and character of development.

(5) Housing – upgrade the city's landscaping requirements for buffer areas between residential and commercial uses.

(6) Housing – inventory older homes and neighborhoods that need revitalization. Seek TIF, CDBG grants, or other funding mechanisms for neighborhood revitalization.

(7) Housing – encourage renovation of older neighborhoods.

(8) Housing – support stricter enforcement of the Property Maintenance Code to help preserve neighborhood aesthetics.

(9) Housing – encourage a greater sense of community within the City's residential neighborhoods through the organization of neighbor associations or similar groups, with emphasis on safety, beauty, and overall pride.

(10) Housing – allow for a wide range of residential types and densities throughout the city while continuing to support programs that provide more affordable housing opportunities for single and multi-family homes,

(11) Commercial, Industrial, and Agricultural Areas – improve the landscaping standards for site development.

(12) Commercial, Industrial, and Agricultural Areas – adopt minimum standards for building design that will sustain and enhance community character.

(13) Commercial, Industrial, and Agricultural Areas – avoid conditions and patterns that would create hazards in vehicular circulation.

(14) Commercial, Industrial, and Agricultural Areas – as urban expansion continues, secure additional agricultural lands and increase production accordingly, to offset the growing demands of food, raw materials, and other necessities of life.

(15) Historic Preservation – sites and structures shall adhere to Historic Preservation Design Guidelines as administered by the architectural review board.

(16) Historic Preservation – support the Murray Main Street Master Plan by encouraging revitalization through rehabilitation of substandard buildings, removal of unattractive poles, wires, and signs that will make buildings, sidewalks, and other facilities in the downtown area more

attractive, efficient, and convenient.

(17) Historic Preservation – continue to seek state and federal funding for historical preservation.

(18) Environment – encourage the use of green space for both residential and non-residential developments.

(19) Environment - continuously review stormwater management practices so that site developments are designed to minimize the volume of runoff by requiring the use of porous pavement, detention facilities, and other dissipating mechanisms.

These land use goals and objectives are further discussed in the Future Land Use section. Appendix A contains the Statement of Goals and Objectives adopted for the Comprehensive Plan.

EXISTING LAND USE

The existing land use section describes the history of land use classification in Murray. It also describes the methodology used to conduct a land use inventory in October 2008. In addition, this section describes and analyzes the land use in the Murray Planning Area as it existed in October 2008.

Land Use Classification

The classification of land use is an important aspect of the Land Use Element of the Murray Comprehensive Plan. The land use classes were changed in the 2002 Land Use Element from those used in the 1990 Comprehensive Plan. The land use classes in the 1990 plan were the same as those used for land use inventories in 1961, 1972, 1976, and 1978. Table LU-1 shows the changes in the land use classes made in the 2002 plan and also used in the land use inventory conducted in 2008.

As shown in Table LU-1, the 2002 plan divided the residential class into 5 separate classes, single family, two-family, multi-family, congregate living, and manufactured housing. The commercial category stayed the same. The industrial class was divided into two classes, warehousing and manufacturing. The public, semi-public class was divided into four classes, public use, semi-public use, education, and utilities. The agriculture and streets classes stayed the same, except streets was renamed to transportation.

Table LU-1. Murray Land Use Classification Changes	
2020	**1990 and prior**
Single Family Residential Two-Family Residential Multi-Family Residential Group Quarters Manufactured Housing	Residential
Commercial (Office/Retail/Business/Medical/Lodging)	Commercial
Warehousing Industrial	Industrial
Public Use Semi Public Use (Institutional) Education Utilities	Public, Semi-Public
Agriculture	Agriculture
Transportation	Streets
Source: City of Murray Planning Department	

The Murray 2002 Land Use Element was based on an inventory of existing land uses within the city limits based on the 2002 land use classes shown in Table LU-1. The same land use categories were used for developing the existing land use for this Land Use Element. Using the same land use classes and a similar inventory procedure allowed a direct comparison of the changes that have occurred over the 6-year period within the Murray city limits.

Inventory Methodology

The first step in developing the land use plan was to conduct an inventory of the existing land uses in the planning area. The inventory was used to compare the amount of land in each land use category with the last inventory conducted in 2002. Comparison of the two inventories gave an indication of the major trends of land use change in the six year period. From these trends, areas were designated as appropriate for various land uses in the Future Land Use section.

The land use map that resulted from the 2002 inventory, provided by the Murray planning staff, was used as the base map for the 2008 inventory. Windshield surveys were conducted by driving the Murray streets and noting changes that had occurred within the city limits since 2002. In an area bounded on the north and south by Olive and Maple Streets and on the east and west by First and Eighth Streets, sidewalk surveys were conducted. Sidewalk surveys were also conducted along Main Street from Twelfth Street to Fourth Street. In addition, to documenting obvious changes in the land use since the last inventory, the sidewalk surveys were designed to detect the conversion of single-family residences to two family and multi-family residences that might not be detected from windshield surveys.

Areas outside the Murray city limits but within the Comprehensive Plan area were windshield surveyed by driving the county roads and were included in the 2008 inventory. These areas were not surveyed in the 2002 inventory.

Summary of Existing Land Use

The summary of existing land uses within the Murray city limits and the Urban Services Area, as determined from the land use inventory, are shown in Table LU-2. Map LU-1 shows a summary of the land uses in the Murray Comprehensive Plan area.

For the developed land use within the Murray city limits, residential uses comprised 2,179 acres or 43 percent of the total. Commercial uses comprised 556 acres or 11 percent of the total developed land, while industrial and warehousing comprised 306 acres or 4 percent of the total developed land. Public and semi-public uses including roads, education, and utilities comprised 2,013 acres or 40 percent of the total developed land. Agricultural land comprised 1,421 acres or 20 percent of the total land within the Murray city limits. For the developed land use within the Urban Services Area, residential uses comprised 2,971 acres or 43 percent of the total developed land. Commercial uses comprised 713 acres or 10 percent of the total developed land, while industrial and warehousing comprised 624 acres or 9 percent of the total developed land. Public and semi-public uses including roads, education, and utilities comprised 2,567 acres or 37 percent of the total developed land. Agricultural lands comprised 6,579 acres or 46 percent of the total land within the planning area.

Table LU-2. Existing Land Use Summary – 2008 Inventory

City Limits	Acres	% of Total Land	Urban Services Area	Acres	% of Total Land
Single Family Residential	1,744	24	Single Family Residential	2,461	17
Two Family Residential	134	2	Two Family Residential	167	1
Multi-Family Residential	202	3	Multi-Family Residential	212	1
Manufactured Housing	63	1	Manufactured Housing	87	<1
Congregate Living Facilities	36	1	Congregate Living Facilities	44	<1
Commercial	556	8	Commercial	713	5
Warehousing	66	1	Warehousing	157	1
Industrial	240	3	Industrial	467	3
Public	428	6	Public	447	3
Semi-Public (Institutional)	238	3	Semi-Public (Institutional)	295	2
Education	633	9	Education	789	5
Utilities	48	1	Utilities	60	<1
Roads, Rights-of-Way	666	9	Roads, Rights-of-Way	976	7
Total Developed Land	**5,054**	**70**	**Total Developed Land**	**6,875**	**47**
Agriculture	1,421	20	Agriculture	6,579	46
Vacant	715	10	Vacant	977	7
Total Land	**7,190**	**100**	**Total Land**	**14,431**	**100**

Source: Florence & Hutcheson, 2009

Table LU-3 shows the existing land uses within the Murray city limits in 2002 and 2008. Because the area outside the Murray city limits, but inside the Urban Services Area, was not inventoried in 2002, direct comparisons between 2002 and 2008 for this area could not be made.

Between 2002 and 2008, the total area within the Murray city limits increased by 727 acres or 11 percent. Residential lands increased by 137 acres or 7 percent while commercial and industrial/warehousing land increased by 98 acres (21%) and 33 acres (12%), respectively.

Table LU-3. Comparison of Existing Land Uses within the Murray City Limits 2002 - 2008

	2002			2008			
Land Use	Acres	% of Total Land	% of Developed Land	Acres	% of Total Land	% of Developed Land	CHANGE Acres, 2002-2008
Single Family Residential	1,658	26	39	1,744	24	35	86
Two-Family Residential	116	2	3	134	2	3	18
Multi-Family Residential	162	3	4	202	3	4	40
Manufactured	73	1	2	63	1	1	-10
Congregate Living	33	1	1	36	1	1	3
Commercial	458	7	11	556	8	11	98
Warehousing	53	1	1	66	1	1	13
Industrial	220	3	5	240	3	5	20
Public	431	7	10	428	6	8	-3
Semi-Public	215	3	5	238	3	5	23
Educational	277	4	6	633	9	13	356
Utilities	50	1	1	48	1	1	-2
Roads, Right Of Way	541	8	13	666	9	13	125
Developed Land	**4,287**	**66**	**100**	**5,054**	**70**	**100**	**767**
Agriculture	1,438	22	-	1,421	20	-	-17
Vacant	738	11	-	715	10	-	-23
Total	**6,463**	**100**	**-**	**7,190**	**100**	**-**	**727**

Source: Florence & Hutcheson, 2009

Public and semi-public lands, including streets, increased by 499 acres or 32 percent. Developed land increased by 767 acres or 18 percent.

The following sections discuss each of the existing land use categories. Each section includes a description of the uses included in the category and the amount of land existing in that category within the Murray Planning Area and the Murray city limits. Each section also includes a generalized projection of future land use based on this existing information.

Existing Residential Land Use

Five residential land use categories were recorded during the land use inventory. These five categories are Single Family Residential (detached unit), Two Family Residential (duplex), Multi-Family Residential (three or more units in structure), Manufactured Housing (unit manufactured off-site on chassis, or mobile home), and Congregate Living Facilities (Group Quarters). Map LU-2 shows the lands in the planning area currently used for residential purposes.

There are 2,971 acres or 20 percent of the land within the planning area used for residential purposes. The 2,179 acres of residential lands within the Murray city limits represents 30 percent of the total land. Residential land within the Murray city limits increased by 137 acres or 7 percent from 2002-2008. Residential lands comprise the largest percentage of land within the planning area. Residential uses are likely to continue to be the largest user of land in Murray as

the city supports the housing needs for the faculty and staff at Murray State University and the local industries.

The southwestern portion of the planning area should continue to experience the development of single-family residential housing. A majority of the vacant residential land lies in this area. The majority of the development will most likely be building on the large number of existing lots in this area. However, as these lots are used, new subdivisions may be developed. Based on past trends approximately 50-60 new single family residential units would be anticipated in the planning area each year.

Multi-family housing units have been developed in the northeast and northwest portions of the planning area. These units are located in close proximity to Murray State University and primarily serve the student population there. A considerable number of new multi-family units have been added in recent years and it is anticipated that because the growth of Murray State University has stabilized, fewer new units will be built in the near future.

The presence of the Clarks River and industrial areas on the east side of the planning area will most likely continue to limit an expansion of the urban services area and the planning area. The proximity to Murray State University and the other primary and secondary educational facilities should continue to direct residential development in the foreseeable future to the western portion of the planning area.

Existing Commercial Land Use

The commercial land use designates all land used for professional offices; wholesale and retail trade; personal and business services; repair services; contract construction services; recreation and amusement services, other than public parks; parking; commercial transportation services; and motels and transient lodgings. Commercial areas are used for retail and service purposes, and for both professional business and medical office space. Commercial businesses may be on a single lot or in various types of shopping centers. Map LU-3 shows the lands in the planning area currently used for commercial activities.

Commercial activity in the planning area is primarily directed along the major thoroughfares and in downtown Murray. Some limited neighborhood commercial areas exist off the major roadways. Commercial lands in the planning area constitute 713 acres or 5 percent of the planning area. Commercial land within the Murray city limits increased 98 acres or 21 percent from 2002-2008. A small amount of commercial land lies outside the Murray city limits.

Commercial development in the planning area has typically been strip centers along both sides of the major arterial roadways. These strip centers, with individual entrances and parking lots for each business or center, promote congestion and tend to degrade the character of the neighborhoods where they are located. The development of small business centers scattered in the various neighborhoods should be encouraged.

The Central Business District (CBD) is a 9-block area in Murray centered on the Calloway County Courthouse. Recent improvements have been made to enhance the visual appeal and the viability of the CBD as a commercial center. These efforts to promote commercial activities in the CBD should be continued.

Existing Industrial and Warehousing/Distribution Land Uses

The Industrial and Warehousing land use categories denote development such as manufacturing, warehousing, distribution, service, and research-oriented enterprises. Map LU-4 shows the lands in the planning area currently used for industrial and warehousing/distribution activities.

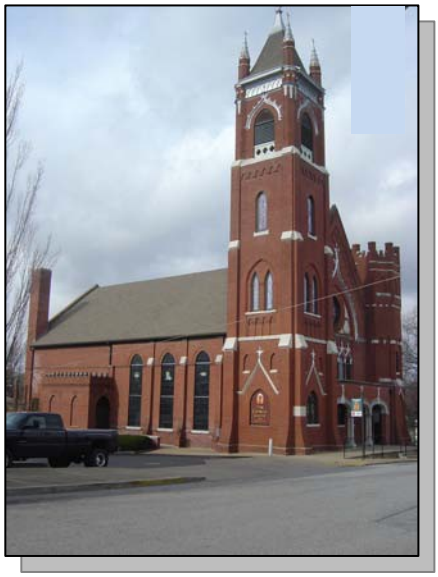
The Murray Planning Area consists of 624 acres of land used for industrial and warehousing activities. This acreage is 4 percent of the total acreage in the planning area. The amount of industrial/warehouse land in the Murray city limits increased by 33 acres or 12 percent from 2002-2008. Industrial land is generally concentrated on the north and east portions of the planning area. A new industrial park along US HWY 641 North at Robert Young Blvd has been developed with several new buildings, two are occupied. The remaining land has been readied for future development.

Existing Public, Semi-Public, Education and Utilities Land Use

Public land use includes lands used for governmental services such as police and fire stations, community centers, libraries, parks, cemeteries, public parking facilities, and government administration offices and related facilities. Semi-public land use supports institutional and organizational facilities, including hospitals, religious institutions and nonprofit organizations. Education land use includes Murray State University, and the city and county school system facilities. Utilities land use includes facilities used for providing water, wastewater, stormwater, electric, natural gas, and telecommunication services.

Map LU-5 shows the lands in the planning area currently used for public, semi-public, education, and utilities purposes without consideration of land ownership or zoning. For this inventory, the Murray State University farms located within the planning area were classified as educational; in the 2002 inventory they were classified as agriculture.

Existing Public, Semi-Public, Educational and Utility land uses are grouped for this discussion because they all relate in some form to the use of property by the general public. These land uses comprise 1,591 acres or 11 percent of the total land in the planning area. Lands used for these four purposes within the Murray city limits increased by 374 acres (38%) between the 2002 and 2008 inventories. These land uses are discussed in more detail in the Community Facilities Element of this Comprehensive Plan.



Education is the largest segment of these four land uses, constituting 789 acres or 5 percent of the planning area. Educational land uses increased by 356 acres from the 2002 to the 2008 inventories resulting from the reclassification of the Murray State University Farms. Public and Semi-Public land are about the same as the educational lands. Lands used for Utilities constitute a relatively small fraction of these combined land uses.

The City of Murray and Calloway County government offices are generally located in the downtown area, including the Police Department. The Judicial Center is located on the downtown fringe. The Fire Department currently located in downtown Murray, plans to move to a new Fire Department located at the site of the Fire Station on 16th Street.

Existing Transportation Land Use

Transportation land use includes roadways and road right-of-ways; railroads; public walkways; and bikeways. The lands in the planning area currently used for transportation and related activities are shown on each of the land use maps. Transportation makes up 976 acres or 7 percent of the Murray Planning Area. The area of land consumed by roads and road right-of-ways in the Murray city limits increased by 125 acres or 23 percent for 2002-2008. The Transportation Element of this Comprehensive Plan discusses the transportation land use in more detail.

Existing Agriculture Land Use

Agricultural land use includes land in an agricultural zoning district and land in zoning districts other than agricultural that is presently in crops or pastures and supporting farming activities.

Map LU-6 shows the agricultural lands in the planning area.

Agriculture lands constitute 6,579 acres or 46 percent of the Murray Planning Area. In the Murray city limits, the amount of agricultural land decreased from 2002-2008, primarily because of the reclassification of the Murray State University farms from agricultural to educational. A large portion of the other agricultural land may have been rezoned for other uses, but it was not developed and remained in agricultural production.

Existing Vacant Land

Vacant Land is a subcategory of each of the other land uses. The procedure for determining the existing land use category assigned to a vacant parcel of land was generally as follows:

Vacant Single Family Residential – land parcels without residential structures in areas zoned for single family residential use and the portion of larger agricultural parcels along major thoroughfares that have full urban services, single family zoning, and no residential structures.

Vacant Two Family Residential – land parcels without residential structures in single family zoned areas where the predominant buildings are two family structures or the development plan showed predominantly two-family structures.

Vacant Multi-Family Residential – land parcels without residential structures in areas zoned for a multi-family land use.

Vacant Commercial – land parcels without a building that could be used for providing a commercial service in areas with commercial zoning and the portion of a larger agricultural parcel that contains a commercial use, like a radio station tower.

Vacant Industrial/Warehousing – land parcels in industrial zones that are not being actively used for agricultural production.

Table LU-4 shows a summary of the existing vacant land in the City of Murray and in the Urban Services Area. Map LU-7 shows the vacant land in the planning area by its parent land use. Vacant land within the Murray city limits comprised 715 acres or 14 percent of the developable (vacant plus developed) area and 10 percent of the total area. Vacant land within the planning area comprised 977 acres or 13 percent of the developable (vacant plus developed) area and 7 percent of the total area. Vacant land within the city limits decreased by 20 acres or 3 percent from 2002-2008.

Table LU-4 Existing Land Use Summary – 2008 Vacant Land

City Limits	Acres	% of Vacant Land	Urban Services Area	Acres	% of Vacant Land
Single Family Residential	436	61	Single Family Residential	558	57
Two Family Residential	4	1	Two Family Residential	4	<1
Multi-Family Residential	48	7	Multi-Family Residential	48	5
Commercial	170	24	Commercial	178	19
Industrial/Warehousing	57	8	Industrial/Warehousing	189	19
Vacant Land Area	**715**	**101***	**Vacant Land Area**	**977**	**100**

Source: Florence & Hutcheson, 2009, *Percentage greater than 100 due to rounding

For the vacant lands within the Murray city limits, residential uses comprised 488 acres or 69 percent of the total. Commercial uses comprised 170 acres or 24 percent of the total, while industrial and warehousing comprised 57 acres or 8 percent of the total. For the vacant land within the Urban Services Area, residential uses comprised 610 acres or 62 percent of the total. Commercial uses comprised 178 acres or 19 percent of the total, while industrial and warehousing comprised 189 acres or 19 percent of the total.

Table LU-5 shows the changes in vacant land between 2002 and 2008 within the Murray city

limits. The most significant change was the net addition of 164 acres of vacant single-family residential land. Another significant change was the reduction of vacant industrial land by 120 acres. Considering these additions and reductions, the total amount of vacant land stayed relatively constant. The amount of vacant industrial land reported in the inventory is not a direct reflection of the amount of industrial land available in the Murray Planning Area. Because the 2008 inventory classified land as it was being used, there were several parcels with industrial zoning that were being farmed and were classified as agriculture rather than industrial. When considering future land use, these vacant parcels will be classified as industrial land.

Table LU-5 Comparison of Existing Vacant Land Uses Within the Murray City Limits

	2002			2008			
Vacant Land Use	Acres	% of Total Land	% of Vacant Land	Acres	% of Total Land	% of Vacant Land	CHANGE Acres, 2002-2008
SF Residential	272	4	37	436	6	61	164
2F Residential	17	<1	2	4	<1	1	-13
MF Residential	84	1	11	48	1	7	-36
Commercial	188	3	25	170	2	24	-18
Industrial	177	3	24	57	1	8	-120
Total Vacant Land	**738**	**11**	**100**	**723**	**10**	**100**	**-23**

Source: Florence & Hutcheson, 2009

Annexation

The annexations of property into the City of Murray are listed in Table LU-6. The table shows the date and ordinance number of the annexation, a description of the property, and the number of acres included in the annexation. The same ordinance number for two separate entries indicates that there were two pieces of property referenced separately in the ordinance. Generally, the two tracts were a tract of developable land and a tract of road right-of-way. Since the 2009 Land Use Element was prepared, a total fifteen annexations were conducted annexing approximately 266 acres into the City of Murray.

Of the fifteen annexations, one was greater than 100 acres. The largest annexation was a 132-acre tract in the Industrial Park on US HWY 641 N. Of the annexations, nine were less than 10 acres and 5 were between 10 and 30 acres.

Construction Activity

Table LU-7 gives a summary of the residential construction activity in the City of Murray for the period 2014-2020 as indicated by issued building permits. The year 2014 saw a greater amount of single-family residential building activity as compared to the previous years. The building activity in the two-family segment was considerably higher in 2016 and 2018 as compared to the previous years. Multi-Family construction, indicating three or more families per building, was considerably greater in 2016 and 2017 than in previous years.

Table LU-8 compares residential and non-residential construction activity for building permits during the years 2014-2020. The total project costs for non-residential construction for the seven years were slightly greater than for residential construction. When looking at all residential construction, Murray has had a decline after 2017.

Table LU-6 Murray Annexations 2009-2019

Ordinance	Date	Description of Property	Acres
2011-1541	7-28-11	Tract of land on US HWY 641 North, Murray Industrial Park	132.336
2012-1582	4-12-12	Tract of land at 190 Utterback Road	.460
2013-1599	2-8-13	Tract of land at 1620 Martin Chapel Road and right-of-way along Martin Chapel Road	2.634
2013-1601	2-8-13	Tract of land on north side of College Farm Road	2.648
2013-1609	7-25-13	Tract of land east of the intersection of HWY 94 West and Robertson Road North	6.83
2014-1634	5-22-14	Tract of land on the east side of Robertson Road South	14.939
2014-1639	6-26-14	Tract of land owned by City West and City of Murray on the east side or Robertson Road North	9.31
2014-1640	7-10-14	Tract of land on the east side of Bambi Lane	5.242
2014-1651	1-22-15	Tract of land located at Westside Baptist Church	14.153
2014-1654	2-12-15	Tract of land east of Falwell Estates	27.740
2015-1663	5-14-15	Tract of land at the intersection of US HWY 641 North and North 4th Street and Robert O. Miller	21.123
2015-1664	5-14-15	Tract of land located at 126 Robertson Road North	7.24
2015-1673	10-8-15	Tract of land located at 170 Utterback Road	.740
2017-1727	5-11-17	Tract of land located at 255 King Richard Drive	.485
2019-1771	3-14-19	Tract of land located on the east side of Brinn Road	20.01
Total Annexed Land			265.890

Table LU-7 Murray Construction Activity From Building Permits

	Single Family		Two-Family		Multi-Family	
Year	Units	Project Cost	Units	Project Cost	Units	Project Cost
2014	40	5,053,605	4	292,000	173	13,785,992
2015	15	2,721,101	8	599,000	74	3,729,500
2016	27	4,618,710	23	2,013,00	68	4,056,000
2017	18	3,662,755	6	415,000	68	4,089,095
2018	14	2,421,250	12	1,352,000	29	1,818,750
2019	14	3,289,792	2	184,000	24	1,021,965
2020	19	3,453,400	6	615,000	26	1,317,00

Table LU-8 Murray Residential and Non-Residential Construction				
	All Residential		Non Residential	
Year	Units	Project Cost	Units	Project Cost
2014	217	19,131,596	17	9,089,095
2015	97	7,052,601	74	23,547,257
2016	118	10,687,710	13	11,175,257
2017	92	8,166,850	12	3,692,407
2018	55	4,955,000	12	34,524,148
2019	40	4,495,757	6	1,289,777
2020	51	5,385,400	10	9,262,942

FUTURE LAND USE

The Future Land Use section describes the expected land use the planning area into the future. The future land uses were developed based on the goals and objectives established for the plan and sound planning principles. The Murray community contains a unique blend of agricultural, industrial, business, and academic life styles. The future land use portion of the plan builds on this unique blend of lifestyles with the goal of enhancing the quality of life in the Murray Planning Area through the integration of modern growth policies and environmental enhancement. The integration of the environmental enhancements will increase the visual appearance of Murray so that it complements the unique lifestyle and thereby enhances the overall quality of life in Murray.

Future Land Use Principles

The five future land use principals and resulting goals defined in this section are a restatement of the land use goals and objectives adopted by Murray for the Comprehensive Plan and listed at the beginning of this Land Use Element. Each principle is defined along with a related goal and several strategies to achieve that goal. The strategies form the basis for the development of the future land use map for the Murray Planning Area. The strategies outline actions that can be taken to work toward the attaining of the goal. The full list of goals and objectives adopted by Murray for the Comprehensive Plan is contained in Appendix A.

Principle 1. Preserve Compact Nature

A compact nature taken from a broad perspective, rather than a site by site perspective, describes the overall organization of an area in terms of the relative location of the various land uses. A compact area is one in which trip distances are minimized to the extent possible. Compactness is the opposite of sprawl where there are discontinuous residential growth and strip commercial developments. Some examples of the advantages of a compact area include more efficient water and sewer service because lines are shorter, fewer and smaller roads are required, and school bus routes are shorter.

The Murray Planning Area is bounded on the south and east by Clarks River, which creates a natural deterrent to the expansion of urban services. Even though limited residential development has already occurred east of the Clarks River and the city's natural gas system has been expanded to serve that area, large scale new development is not envisioned within the 10-year planning period. Similar geographical or topographical deterrents to development do not exist to the north and west.

A compact nature for the planning area must be achieved through sound growth management policies. Strategies generally include limiting the outward growth of the area while enhancing development activities within the planning area. New commercial developments should generally not be allowed on the periphery of the planning area, but should be directed toward existing commercially compatible properties within the core of the planning area. The farther residential development occurs from the Murray downtown area, the more the "sense of place" for Murray becomes diluted.

A compact nature does not imply static population growth; rather it means smart, efficient growth directed to those portions of the planning area most able to sustain it in the best interest of the local citizens. Within the existing urban services area, Murray could accommodate growth in residential and commercial activity within the foreseeable future. However, the challenge is to mold and direct that growth to enhance the overall quality of life of the area.

A compact nature does not imply the intrusion of undesirable land uses into other land uses or the construction of high density or high rise developments not in keeping with the character of Murray. Developing a compact nature should never be accomplished at the expense of open area, green space, or environmental protection and enhancement.

Compact Nature Goal: Create a land use development pattern that efficiently provides delivery of governmental, commercial and professional services; utilizes existing infrastructure resources; and maximizes return on infrastructure expenditures while maintaining the small town nature of Murray.

Strategy 1: Limit Expansion of the Urban Services Area

Murray is planning a small expansion of sewer service on the southwestern edge of the current Urban Services Area (USA). When this expansion is completed and the urban services boundary is revised to include this area, new expansion will be limited and the focus will be on development inside the urban services boundary. The Urban Services Area contains enough land to accommodate all the projected growth in Murray for the 10-year planning horizon. Since all other utilities are available except sewer service, limiting the expansion of sewer service will effectively limit expansion of the Urban Services Area.

Strategy 2: Keep New Residential Development in the Urban Services Area

Development within the USA must be encouraged to ease the pressure for development outside that area. To provide an incentive for development within the USA, the Planning Commission will adopt development alternatives that tend to reduce the cost of the infrastructure for residential development. One method for accomplishing this is conservation developments that maintain gross densities on a tract of land, but allow smaller lots and larger amounts of green space. Since developments are generally more compact, the costs of utilities and roadways are reduced.

Other alternatives for reducing development costs and providing development incentives will be explored by the Planning Commission. In addition, the Planning Commission will discourage multi-family housing that supports Murray State University in areas that are not near the University

Strategy 3: Encourage Neighborhood Commercial Activity

The location of commercial development has a direct impact on the traffic generated as residents travel to procure goods and services. In Murray, commercial development is generally concentrated along the major arterial roadways, resulting in significant traffic on these roadways. Some of the congestion could be relieved if goods and services could be procured closer to home. To encourage neighborhood commercial activity, the Future Land Use Map shows designated areas of commercial activity in neighborhoods. The areas will be called Neighborhood Activity Centers (NAC).

The NAC is a mixture of commercial uses that serve the needs of the neighborhood. The NAC must be designed so that it does not attract significant traffic from outside the neighborhood. The NAC must be designed and located to be easily accessible by pedestrians by walking, bicycling, or with low impact type vehicles; thereby minimizing traffic to the extent possible.

The NAC will contain small scale commercial uses that serve the neighborhood and might include commercial services like small groceries, small cafes, barber shops, beauty shops. The main focus of the NAC is commercial activity, but it might also include limited office, semi-public, and residential uses when they can be integrated with a minimum of traffic generation.

The Planning Commission will develop standards for the NAC's, including design standards. Design standards should be developed to minimize asphalt areas and enhance, rather than detract from the beauty of the surrounding neighborhood. Landscaping and green space generation will be an important part of the design standards. Where possible, integrating a neighborhood park into the NAC would be desirable.

Principle 2. Enhance Small Town Community Character

Murray is a unique town with a progressive regional university that has won numerous awards for its educational value. Murray has also been recognized as a top retirement destination. Murray is in the center of an agricultural area and has the small town feel generally associated with agriculture. This blend of economies supports services and activities not generally associated with similar sized towns in Kentucky. The blends of these different cultures and the life style they support give the residents of Murray a distinct pride in their community and its character. The character of Murray will be enhanced through land use practices and through the enhancement of the downtown area.

Community Character Goal: Enhance Murray's unique community character by protecting and enhancing core neighborhoods, the downtown, and historic areas, while providing for the efficient flow of people and goods throughout.

Strategy 1: Protect and Enhance Core Neighborhoods

A large part of the historical character of Murray is defined by its downtown area and the core residential areas that developed nearby. These neighborhoods are a resource that cannot be replaced and will be preserved to the extent possible. The Planning Commission will establish the boundaries of this core area and establish measures to maintain its integrity. In general, new developments in the core area will be of an architecture that resembles that area. Subdivision of lots into smaller residential lots will be allowed when development can maintain or improve the architectural quality of the neighborhood. The Planning Commission discourages the conversion of single-family residences in the core area to multi-family or commercial uses, except where Neighborhood Activity Centers can be developed.

In addition to the downtown core neighborhoods, the Planning Commission will prepare neighborhood plans for the neighborhoods that agree to form active neighborhood associations. The neighborhood plans will serve as guides for implementing public improvement projects and steering public and private investment in a specific neighborhood. The neighborhood association will be the vehicle for locating people in the neighborhood with leadership skills and relationships with the other neighbors. The implementation of the neighborhood plans will strengthen the neighborhood through an association with the public and private sectors.

Strategy 2: Protect and Enhance Downtown Gateways

Downtown as a destination is somewhat defined by the visual appearance of the major gateways leading there. For Murray these major gateways are Main Street and 4th Street. The Main Street gateway generally consists of older stately single-family homes, a library and a school. The

Planning Commission will maintain the nature of this area by limiting the conversion of single-family residences to multi-family and commercial uses.

The 4th Street north and south gateways consist of mixed commercial uses and the Calloway County Judicial Center. The Planning Commission desires that the appearance of these gateways be improved. Future Land Use Maps indicate that certain areas along the gateways should be converted from commercial uses to residential uses. In addition, architectural standards for new commercial activities will be developed by the Planning Commission to improve the appearance of the 4th Street gateway.

Strategy 3: Expand Downtown and Improve Downtown Vitality

Murray has completed improvements to its downtown area as a result of its Downtown Master Plan. The improvements center around the Courthouse Square, the area mostly associated with downtown Murray. The momentum needs to be continued in adjacent properties through rehabilitation and expansion of existing structures, the construction of new structures on vacant lots, and redevelopment of underutilized lots. As Murray continues to grow in the future, a downtown expansion could result from this focus. Where possible, the City of Murray will partner with the private sector to continue to enhance the downtown. Examples of partnering might include purchasing lots and buildings for redevelopment, development incentives, design assistance for innovative design, tax abatement, and the development of "spec" commercial buildings downtown. The Planning Commission will designate a downtown area and adopt development procedures and architectural and landscaping standards appropriate to downtown.

Strategy 4: Encourage Neighborhood Renovation and Revitalization

Murray has some older neighborhoods that need a focus for revitalization. In addition, several older neighborhoods not yet to the revitalization stage are candidates for some renovation efforts. Older homes and neighborhoods need to be inventoried to develop projects where grants or other funding mechanisms can be sought for renovation or revitalization. Where grant funding is not possible, incentive programs with the private sector should be developed to accomplish better housing for all citizens of Murray.

Strategy 5: Maintain Murray's Historic Character

Historic preservation is a key element in enhancing the character of Murray. Many different architectural styles exist that represent different eras in the development of Murray. Preservation efforts relate to the maintenance or expansion of a particular property. Historic preservation efforts in Murray currently are in the form of a history overlay that creates a historic district where renovation and new construction techniques apply. Continued efforts for historic preservation will be coordinated with downtown revitalization, core neighborhood preservation, and downtown gateway protection.

Strategy 6: Strengthen Murray State University-City Planning Interaction

Murray State University is a major force in the development of Murray. Decisions by MSU are primarily to advance the mission of the institution; however, in many instances they have a major impact on Murray as a community, particularly with regard to the generation of traffic and traffic patterns. MSU has recently revised its Campus Master Plan. Land use decisions by the Planning Commission impact MSU particularly through the location of housing utilized by students. A good working relationship currently exists between the City of Murray and MSU and this relationship should be enhanced where possible. The relationship will be particularly beneficial when dealing with traffic issues as defined in the Transportation Element of the Murray Area Comprehensive Plan.

Strategy 7: Develop Progressive Zoning Ordinance and Land Development Standards

Zoning procedures and the standards by which land is developed are very important in shaping the future character of the Murray area. Different sections of this Land Use Element include

items that should be considered in a new zoning ordinance and land development standards. Examples of changes to be considered by the Planning Commission include zoning land to match the planned future land use and land "set- asides" to create open space.

Principle 3. Enhance, Preserve and Protect The Environment

Murray is a very environmentally aware community. The environmental programs at Murray State University and the ever-increasing awareness of environmental impacts from human activity have fostered this environmental awareness. This principle recognizes the desire of the area's citizens that the development of land occur in an environmentally friendly manner and that the resulting developed land contain significant environmentally friendly green space. Streams, their associated floodplains, and forested areas are the most significant environmentally sensitive features in the Murray area. The common trend in environmentally friendly communities is to recognize that protection of environmentally sensitive areas and the provision of green space are important public facilities like utilities and roadways and not just desirable amenities.

Development in Murray should not compromise environmental integrity. Environmentally sensitive development recognizes that preservation is more important than mitigation of impacts. Sensitive environmental areas should be identified in advance of development and alternative uses of land planned accordingly. Conservation development and best management practices should be used as key measures to protect developing areas. Environmental standards must continually be reviewed and updated to keep pace with changing trends in environmental protection.

Environmental Goal: Maintain a natural environment by protecting, preserving, and enhancing natural resources and promoting design, development and construction practices that create green space, neighborhood connectivity, and a visually pleasing environment.

Strategy 1: Protect Trees and Create Green Space During Development

Trees provide a visual enhancement to the environment as well as provide needed shade. Many of the areas that will eventually be developed in Murray are agricultural areas that have very few trees. To provide the needed preservation of trees during development and the planting of trees after development, the Planning Commission will adopt tree preservation, tree replacement, and tree planting measures. These measures will protect high quality vegetation, protect natural corridors, and preserve and enhance community tree crown coverage.

A key element in the development and preservation of trees and green space is the identification of existing high-quality areas. The Planning Commission will inventory the developable land within the Murray Planning Area so that plans can be made to protect already existing high-quality areas.

The combination of trees and open/green space will provide an environmentally friendly enhancement to the Murray environment. The Planning Commission will adopt measures for the provision of open/green space in new developments. These measures may take the form of development techniques that create open/green space, conservation easements, dedication of land by developers, or purchase of land during the development process.

The Planning Commission will also review and revise, where appropriate, the current landscaping requirements for new developments. A primary focus should be on the creation of green space buffers between developments of differing land use and density and improving the appearance of commercial and industrial properties. In addition, the Planning Commission will adopt measures to create vegetative corridors connecting developments and neighborhoods.

A key strategy in maintaining the visual appearance of an area is the installation of underground

utilities. Murray currently requires the installation of underground utilities in new developments. This practice should be continued and opportunities taken to bury existing above ground utilities when they are presented.

Strategy 2: Protect Floodplains and Water Quality

The Murray Planning Area contains the Clarks River and several of its tributaries. The quality of water in the Clarks River is dependent on the quality of water in these tributaries, especially during rainfall events. The sediment and nutrient trapping ability needed to protect the Clarks River and its tributaries lies in the headwater drainage system in the Murray Planning Area that consists of intermittent and ephemeral streams. Another issue is the loss of water storage capacity due to landscape alteration during development. Landscape alteration can lead to downstream flooding. Often, channel erosion and instability result from actions taken to control flooding.

The Planning Commission recognizes the importance of protecting the water resources in the Planning Area and, when evaluating developments, will look toward the protection and preservation of the existing stream network, including intermittent, ephemeral, and perennial streams. The Planning Commission will also inventory all streams in the Planning Area to identify all perennial, intermittent and significant ephemeral waterways and natural drainage features.

Murray has a stormwater program that includes requirements used by the Planning Commission in the evaluation of new developments. These requirements will be reviewed by staff to incorporate the latest watershed protection measures to control the quality of runoff. Measures include watershed protection best management practices like bio-filtration; drainage buffer zones; the mitigation of channel degradation, particularly downstream of drainage structures; and prohibiting or limiting development in sensitive streamside zones.

Strategy 3: Promote Environmentally Sensitive Development

This strategy somewhat overlaps Strategies 1 and 2; however the intent is to encourage the incorporation of environmentally sensitive measures into a development's site plan throughout the site design process. Identifying and mapping sensitive areas and Integrating environmental and more conservation oriented design measures into site design can result in the creation of significant amount of valuable open/green space in the majority of new developments. The Planning Commission will incorporate into the review process the identification of sensitive areas during site design and the use of open space generation techniques, like clustering, to facilitate the goal of attaining environmentally sensitive development in the Murray Planning Area. Land development standards will also be revised to incorporate safety and visual aesthetics in the physical design of developments.

Strategy 4: Promote the Use of Green Building Standards

Buildings are some of the largest consumers of energy and thereby have a large long-term impact on the environment. Ideally, structures shall produce more energy than they consume. This is done through a host of practices such as green roofs, solar panels, use of natural light, and utilizing environmentally safe construction materials. The ideas behind the design practices are for structures to be as energy efficient and environmentally friendly as possible.

The City of Murray will develop a new initiative to look for builders, of both residential and commercial structures, to adopt U.S. Building Council LEED design practices. As a part of this strategy, the City will consider the adoption of an incentive package for anyone that can build a structure that is LEED Certified There are many state and federal funds that can possibly assist with this LEED construction initiative.

Principal 4. Develop and Enhance Quality of Life Measures

Quality of life is a key component for Murray to keep its current residents, attract new retirees, and attract new commercial and industrial investment to the community. Murray currently has a high quality of life, but there are measures that can be taken to increase its attractiveness. There are many things that contribute to a high quality of life and some of these measures have already been addressed in Principles 1-3. Additional measures are discussed in this section.

Quality of Life Goal: Develop new programs, events, and other quality of life measures while enhancing existing cultural and recreational opportunities and where possible integrate these quality of life measures into all aspects of life in Murray.

Strategy 1: Enhance and Expand the Park System

The Community Facilities Element of this Comprehensive Plan discusses in detail the Parks and Recreation System in the Murray area. The Parks and Recreation Master Plan identified a need for the development of additional parks and recreational programs. The development of new park sites can be integrated into the development process by the use of conservation easements, land dedication, and in some cases the purchase of land. In many instances the open/green space created by conservation development practices may be suitable for parks.

The addition of park land is important to the citizens of Murray. The Planning Commission will evaluate new developments with an eye toward the acquisition of land suitable for parks. This will be facilitated by the revisions to review procedures described in Principles 1-3.

Strategy 2: Develop System of Recreational Walking and Bicycle Trails

Like parks, recreational walking and bicycle trails are an important component of the quality of life. When incorporated with open/green space, they present an area that is not only visually pleasing but also contribute to a healthy life style for the citizens using them. Recreational trails can also be used to provide neighborhood connectivity. The Parks and Recreation Master Plan identified a greenway connecting many of the neighborhoods in the southern and western portion of the Planning Area. In many instances land for this greenway trail and other recreational trails can be acquired during the land development process using techniques previously described for open/green space.

The development of recreational trails has been discussed for a number of years in the Murray area. A few trails have already been developed, particularly in the Clarks River area. Bicycle use was integrated into the rights-of-way of US Highways 641 and 80 but trails do not exist within the city to access these major highway trails.

The development of new recreational trails is an important aspect of Murray's growth in the quality of life. The Planning Commission will evaluate new developments looking toward neighborhood connectivity and the acquisition of land suitable for new recreational trails. Like the acquisition of park land, the revisions to review procedures described in Principles 1-3 will facilitate the process.

Strategy 3: Enhance the Use of Sidewalks

Sidewalks are a form of recreational trail and facilitate the opportunity of residents to move within and between neighborhoods without the use of automobiles. Sidewalks on both sides of the street in residential neighborhoods also contribute to a friendly atmosphere giving residents the opportunity to interact more freely than if sidewalks were limited to only one side of the street. The existing subdivision regulations require sidewalks within the street right-of-way on each side of arterial and collector streets in all subdivisions that are developed inside the corporate city limits, those lying in whole or in part inside the city limits, and those lying one-half

mile from outside the corporate city limits. In certain instances the Planning Commission may waive the use of sidewalks.

As part of the revision of the zoning ordinance, the subdivision regulations will be reviewed and consideration will be given to extending the requirement for sidewalks to the entire Urban Services Area. In addition, the sidewalk waiver provision in the subdivision regulations will be reviewed. Changes in the subdivision regulations will also be considered to increase the width of sidewalks on one side of the street in appropriate situations to facilitate inter-neighbor and intra-neighborhood connectivity through the accommodating of alternative means of transportation.

Principal 5. Maintain Economic Opportunity

Approximately 29 percent of jobs and 32 percent of income result from jobs in the educational, health care and social assistance, giving a stable employment base. Approximately 11 percent of the jobs and 17 percent of the income come from manufacturing. Despite current challenges in the manufacturing sector due to the national downturn, future economic potential for the Murray area appears good. The completion of the industrial park on US HWY 641 North gives the area excellent future potential for attracting new industrial investment and the resulting jobs. The continued growth of the Murray Calloway County Hospital and the completion of the expansion there also bode well for the future of the Murray area. Agriculture will also continue to play an important role in Murray's economic future.

The quality of life is high in Murray and actions taken as a result of this Comprehensive Plan should ultimately make it even better. The quality of life and proximity to Kentucky Lake and the Land Between the Lakes National Recreational Area should prove to be positive and important factors for the Murray area in recruiting new businesses, new retirees, and developing income from tourism.

Economic Goal: Build upon Murray's quality of life assets and location to encourage new capital investment and the creation of quality jobs to enhance Murray's strong economic base.

Strategy 1: Designate Lands for Quality Employment Opportunities

Land use planning and zoning efforts in Murray should make sure that there is an adequate amount of appropriately planned or zoned land available for investment to create employment opportunities. Designation of lands for future economic activity will be used in this plan to avoid the conversion of agricultural land to other uses that are not compatible with economic development goals.

Strategy 2: Redevelop Appropriate Sites

An important strategy for Murray is to redevelop sites that are currently vacant or underutilized to create employment opportunities. In many cases these sites can be developed for specific uses at costs less than new sites on vacant land. There are several sites along arterial roadways as well as the area east of 4th Street in the proximity of downtown that could be redeveloped to provide employment opportunities. The City of Murray will investigate strategies that might be used to partner with the private sector in redeveloping appropriate properties. Examples of strategies include tax abatements, brownfields redevelopment, the revision of building codes, and the development of "spec" buildings.

Strategy 3: Develop New Opportunities

Cultural and sports tourism represent excellent opportunities for the Murray area to increase economic activity. Murray currently has several excellent festivals promoted by the Convention and Visitors Bureau. In addition, Murray State University facilities like the West Kentucky Livestock and Exposition Center and the Murray State CFSB Center support a number of sporting and cultural events. An opportunity currently being pursued by Murray is the

development of a sports complex to host youth baseball tournaments.

With the facilities available for hosting cultural and sports tourism in the Murray area, the area is uniquely positioned to capitalize on new economic and employment opportunities in this area. Like for other economic development activities, the City of Murray should, where necessary, use its resources and possibly incentives to the private sector to develop new events and new facilities for these events.

Strategy 4: Use Public Capital to Foster Private Investment

The marginal profitability of a private venture may sometimes prevent the realization of a job creating opportunity. Government entities generally have access to capital markets at rates not available to private entities. Often deals can be made for governments to leverage their resources and create incentives to assist private entities in job creation ventures. A limited program for this exists at the Purchase Area Development District. In conducting its capital planning each year, the City of Murray should, not only look to plan and implement public capital investment to maintain and enhance existing public facilities, but also look at capital expenditures to stimulate private investment in the community.

Future Land Use Map

General

The Future Land Use described in this section of the plan is shown on Map LU-8 and depicts the generalized land use categories that will guide development and redevelopment throughout the planning period. Each land use category shown on the map permits a range of land uses, densities, functional uses, and intensities as set forth in the zoning ordinance. The Future Land Use Map; the future land use principals, goals, and strategies in this plan; and the zoning ordinance are all key criteria in establishing the boundaries of the land use categories depicted on the Future Land Use Map and will determine the exact type of land use and the density and intensity appropriate at any one location.

In developing the land use boundaries shown on the map, areas were identified based on their primary anticipated future land use. For example, in several residential areas there was an existing mix of predominantly single family detached structures and a small number of multi-family units. Since these areas were desired as future low density residential areas, the entire area was shown as low density.

The boundaries between different land use categories depicted on the map generally follow existing or proposed geographic features such as roadways, rail and utility rights-of-ways, the edges of natural and manmade watercourses, or property lines. In some instances, the boundaries may be offsets from these features, like 100 feet off the road right-of-way. Where the location of the boundary between contiguous land uses cannot be clearly determined from the map, the Planning Commission will establish the boundary.

The boundaries shown on the map for the commercial areas specified as Neighborhood Activity Centers (NAC) are not fixed. These areas are shown in generalized locations where it was believed this use would be appropriate. The Planning Commission will establish the actual boundaries of these areas as development plans are reviewed.

Summary of Future Land Use

Table LU-9 shows the distribution of future land uses inside the Murray city limits as compared to the existing land use determined from the land use inventory. The total area within the

incorporated Murray city boundary is 7,463 acres or approximately 52 percent of the Murray Planning Area. The three largest changes from existing to future are in the residential, commercial, and industrial land uses. Residential land use is increased by 1,137 acres and is indicative of the residential expansion occurring in the southwestern portion of the city. Commercial land use is increased by 357 acres indicative of the expansion of future commercial lands, particularly along Opportunity Drive. Industrial land use increased by 684 acres. The industrial land use change was primarily due to the completion of the Industrial Park on US HWY 641 North. The City Limits Future Land Use Summary is shown in Table LU-9.

Compared to the future land use acreages in the 2009 Land Use Element; residential land uses increased by 1,021 acres, commercial land uses increased by 312 acres, and industrial land uses increased by 633 acres. The total of public, semi-public, education, utilities, and transportation land uses decreased by 624 acres.

Table LU-9 Murray City Limits Future Land Use Summary

Land Use	EXISTING (Total Acres)	FUTURE (Total Acres)	Difference (Acres)
Residential	2,948	4,085	1,137
Commercial	885	1,242	357
Industrial	795	1,479	684
Public	440	452	12
Semi-Public	247	240	-7
Education	763	785	22
Utilities	50	50	0
Transportation	-1,764	88	1,851
Agriculture	3,099	806	-2,293
Total	7463	9,227	1,764

Source: City of Murray Planning Department

Table LU-10 summarizes the future land uses in the planning (urban services) area as compared with the existing land use. There are 14,431 acres within the Murray Planning Area boundary. When considering the entire planning area, considerable changes are evident in the residential and industrial land uses. The large increase in residential land use results from the conversion of large areas of existing agriculture in the southwestern portions of the planning area, currently outside the city limits, to low density residential land use. The large increase in industrial land use results from the conversion of large areas of agricultural land use in the northern portion of the planning area, currently outside the city limits, to industrial land use. The corresponding decrease in agricultural land use is evident in the table.

Compared to the future land use acreages in the 2009 Land Use Element, residential land uses in the planning area decreased by 218 acres, commercial land uses increased by 166 acres, and industrial land uses increased by 239 acres. The total public, semi-public, education, utilities, and transportation land uses increased by 35 acres.

Table LU-10 Murray Planning Area Future Land Use Summary			
Land Use	**EXISTING (Total Acres)**	**FUTURE (Total Acres)**	**Difference (Acres)**
Residential	3,585	5,230	1,645
Commercial	984	1,449	465
Industrial	836	1,751	915
Public	451	466	15
Semi-Public	294	286	-8
Education	799	822	23
Utilities	61	61	0
Transportation	1,026	1,165	139
Agriculture	6,395	3,201	-3,194
Total	14,431	14,431	
Source: City of Murray Planning Department			

The following sections describe the Future Land Use by individual land use categories. Descriptions are provided for the Murray incorporated area and the Murray Planning Area (Urban Services Area).

Future Residential Land Use

Residential land use generally allows for the non-transient population and includes single family dwellings, multi-family dwellings, congregate living facilities, and manufactured home parks. MSU student dormitories are not included in this category, but are considered with educational land use. Residential land use is divided into three categories; Low Density Residential, Medium Density Residential, and High Density Residential and each are discussed below. These classifications are used instead of the classifications used in the land use inventory as they better reflect the development densities contained in the zoning ordinance. Mobile home parks were included in the Medium Density Residential category and congregate living facilities were included in the High Density Residential category. By making many types of housing compatible to an area, the city can accommodate a wide variety of residential preferences, responsive to changing market demands.

Some land uses other than residential living quarters are allowed in all residential areas. These other land uses support and complement the residential category by allowing essential services to be located near living quarters. Churches and related activities are generally allowed in low density residential areas. In medium and high-density residential areas, churches and other non-profit public or private facilities like schools, parks, and recreational facilities may be allowed. Also, supporting commercial activities like small animal clinics, coin laundries, barbershops, beauty shops, fraternity and sorority houses, nursing homes, rest homes, retirement homes, convalescent homes, day care nursing schools, and similar activities may be allowed in medium

density residential areas. In high density residential areas, coin laundries, barber shops, beauty shops, drug stores neighborhood groceries, restaurants, and similar activities may be allowed.

When locating other land uses in close proximity to residential uses, land compatibility must be considered to avoid the introduction of urban activities that might have a detrimental effect on residential activities. Where residential and commercial uses are allowed in close proximity, landscaping and screening standards should provide an adequate separation of the two uses.

One of the guiding principles of this plan is environmental enhancement. Site development standards for all residential developments will be revised to promote the environmental enhancement "green" initiative for Murray. This includes the planting of trees, preservation of green space, walking trails, and building construction. In addition, the Planning Commission will consider ways to monitor developments to ensure that the "green" initiatives undertaken are preserved throughout the development and post-development period.

Another guiding principle of this plan is enhanced quality of life through access to public parks. Also, in conjunction with the Transportation Element of this Comprehensive Plan, land development standards will be revised to require the connection of all existing and future residential developments through a system of non-vehicular means of transportation like sidewalks, bike lanes, walking trails, etc.

The lands designated for the three future residential categories are shown on Map LU-9. Tables LU-11 and LU-12 compare the future residential land uses inside the Murray city limits and the Murray Planning Area with the existing land use from the inventory. The inventory's categorization of residential land use as single family, two family, multi-family, manufactured housing, and congregate living was consolidated to match the future land use categorization by calling existing single family residential comparable to low density residential; existing two-family, three family, four family residential, and manufactured housing comparable to medium density residential; and existing multi-family residential and congregate living comparable to high density residential.

Table LU-11 Murray City Limits Future Residential Land Use Summary

Land Use	EXISTING (Total Acres)	FUTURE (Total Acres)	Difference (Acres)
Low Density Residential	2,287	2,943	656
Medium Density Residential	405	818	413
High Density Residential	256	324	68
Total	2,948	4,085	1,137

Source: City of Murray Planning Department

Table LU-12 Murray Planning Area Future Residential Land Use Summary			
Land Use	**EXISTING (Total Acres)**	**FUTURE (Total Acres)**	**Difference (Acres)**
Low Density Residential	3,019	4,295	1,276
Medium Density Residential	262	663	401
High Density Residential	304	272	-32
Total	3,585	5,230	1,645
Source: City of Murray Planning Department			

In general, lower density residential land use is primarily concentrated in the southern and south western portions of the planning area. Lower density residential development trends in recent years have been toward the southwestern part of the planning area. The future land use map shows the trend for residential development to continue to increase to the southwestern portion of the planning area. An expansion of the urban services area is planned in the southwestern portion of the planning area to support this development trend.

Higher density residential developments are generally located in the north western portion of the planning area. The future land use map envisions that future high-density residential developments would continue to be located primarily in this area. Medium density residential development is generally scattered throughout the planning area, providing a mix of available housing. The future land use map envisions the continuation of medium density residential development mixed with high and low density developments throughout the area.

Low Density Residential: Generally, single family detached housing will be the predominant land use in the low-density residential category, although manufactured homes, patio homes, and two-family dwellings may also be permitted in appropriate locations. Low density residential areas are for housing developments with gross densities up to 4.3 dwelling units per acre. The intent of this land use category is not to allow the maximum density to be attained throughout an entire area designated for a low-density residential land use. Rather, the intent is that in each area there be a mix of developments of various densities to achieve an average density that is less than the maximum density. In addition to the other types of uses allowed in all residential categories, home occupations may be allowed in this category where it is incidental to the principal use.

Map LU-9 shows that in the Murray Planning Area and within the Murray city limits, low density residential land use occupies the largest single land use category. The existing low-density residential land use determined from the inventory within the Murray city limits was 2,287 acres. The future land use map shows a low-density residential land use of 2,943 acres for an increase of 656 acres. This addition is primarily the conversion of agricultural lands within the southwestern portion of the city limits to low density residential land use. The existing low-density residential land use determined from the inventory for the Murray Planning Area was 3,019 acres. The future land use map shows a low-density residential land use in the planning area of 4,295 acres for an increase of 1,276 acres. This additional acreage is mostly in the southwestern and west central portions of the planning area where agricultural land use is converted to low density residential land use.

The following criteria provide guidance to the Planning Commission for the evaluation of Low-Density Residential development:

- Vacant tracts shall generally be predominantly developed for single-family residential uses.
- Residential planned development projects with mixed residential densities and varied housing types and limited non-residential uses where supported by adjacent land use patterns may be considered.
- All new developments in low density residential areas should be supported by an adequate level of street connectivity and other public services.
- Existing core single family residential neighborhoods near downtown and in the Murray State University area may be protected by discouraging the conversion of single family dwellings to multi-family or commercial uses.
- Revitalization of older, single family residential neighborhoods will be encouraged to help promote growth in surrounding neighborhood businesses, schools, and existing infrastructure.
- Small lot subdivisions with high densities may be allowed in infill and redevelopment areas in existing neighborhoods where they fit in with the character of the neighborhood.
- Office and commercial uses that serve the neighborhoods may be allowed where appropriate at the edge of these residential areas that front arterial roadways.
- Maximum allowable densities are defined in the zoning ordinance; however, any low-density residential area depicted on the Final Land Use Map should be developed so that the average density is less than the maximum density.

Medium Density Residential: The medium density residential category is intended to be used for the development of neighborhoods of one and two family detached structures or lower density developments with structures containing no more than four units per structure. Mobile home parks are generally included in specified areas in this category. Medium density residential areas are for single or small unit multiple family housing developments with gross densities up to 12.9 dwelling units per acre. The intent of this land use category is not to allow the maximum densities to be attained throughout an entire area designated for medium density residential land use. Rather, the intent is that in each area there be a mix of developments of various densities to achieve an average density that is less than the maximum density. Developments should be designed to provide a wide variety of housing types. If the design of each development is coordinated with the surrounding area, single-family homes, duplexes and larger apartment buildings could co-exist in one neighborhood.

The existing medium density residential land use determined from the inventory within the Murray city limits was 201 acres. Map LU-9 shows for the Murray city limits the medium density

residential future land use is 818 acres indicating an increase of 413 acres. This addition is primarily the conversion of mixed single and two family developments to medium density residential land use in the southern portions of the City. The existing medium density residential land use determined from the inventory for the Murray Planning Area was 262 acres. The future land use map shows in the Murray Planning Area the medium density residential future use is 663 acres for an increase of 401 acres. The additional acreage outside the city limits results from the conversion of agricultural lands in the northern portion of the planning area to medium density residential land use.

The following criteria provide guidance to the Planning Commission for the evaluation of Medium Density Residential development:

- Vacant tracts shall generally be predominantly developed for single-family and multi-family residential uses to facilitate development of a compact nature in locations with high levels of public infrastructure capacity.

- Residential planned development projects with mixed residential densities and varied housing types and non-residential uses where supported by adjacent land use patterns may be considered.

- Mobile home parks may be considered where ready access exists to public services, including transportation and social services.

- All new developments in medium density residential areas should be supported by an adequate level of street connectivity and other public services.

- Office and commercial uses that serve the neighborhoods may be allowed where appropriate at the edge of these residential areas that front arterial roadways.

- Maximum allowable densities are defined in the zoning ordinance; however, any medium density residential area depicted on the Final Land Use Map should be developed so that the average density is less than the maximum density.

- New medium density developments may be appropriate as buffers between low density areas and high density residential or commercial areas.

High Density Residential: The high-density residential category is intended to be used for the development of neighborhoods at the higher densities allowed by the zoning ordinance. Congregate living facilities are generally included in this classification. High density residential areas are for large, dense multiple family housing developments with gross densities up to 15.8 dwelling units per acre. The intent of this land use category is not to allow the maximum densities to be attained throughout an entire area designated for a high-density residential land use. Rather, the intent is that in each area there be a mix of developments of various densities to achieve an average density that is less than the maximum density.

The existing high-density residential land use determined from the inventory within the Murray city limits was 256 acres. Map LU-9 shows for the Murray city limits the high density residential future land use is 324 acres indicating a decrease of 68 acres. This decrease is primarily the

conversion of land with lower density multi-family developments in the City to medium density residential land use. The existing high-density residential land use determined from the inventory for the Murray Planning Area was 304 acres. The future land use map shows in the Murray Planning Area the high density residential future land use is 272 acres for a decrease of 32 acres.

Future demand for high density residential areas will continue to increase in the Northwest planning area, near the university, and nearby high-volume commercial areas. Future development sites should be large enough for proper site design. The future land use map shows two new significant areas of high-density residential development. They are an area west of 12th Street in the Stadium View Drive area adjacent to the TVA power line easement and an area east of 12th Street and south of Glendale Road.

The following criteria provide guidance to the Planning Commission for the evaluation of High-Density Residential development:

- Vacant tracts shall generally be predominantly developed for multi-family residential uses to facilitate development of a compact nature in locations with high levels of public infrastructure capacity.

- Residential planned development projects with mixed residential densities and varied housing types and non-residential uses where supported by adjacent land use patterns may be considered.

- Suitable accessibility to commercial areas should be available in high density residential developments not only by street connectivity but also by encouraging the use of sidewalks, bike lanes, walking trails, etc.

- All new developments in high density residential areas should be supported by an adequate level of street connectivity and other public services.

- Developments on two-lane roads that are at, or near capacity during peak travel times and that are not suitable for widening should not be approved.

- Housing oriented to students shall be discouraged at locations distant from the Murray State University campus, but shall be encouraged at suitable locations near the campus.

- Office and commercial uses that serve the neighborhoods may be allowed where appropriate at the edge of these residential areas that front arterial roadways.

- Access to public transportation shall be a consideration for new developments.

- Maximum allowable densities are defined in the zoning ordinance; however, any high density residential area depicted on the Final Land Use Map should be developed so that the average density is less than the maximum density.

- New high density developments may be appropriate between medium density areas and commercial areas.

Future Commercial Land Use

Commercial land use generally allows for the activity necessary to provide goods and services. The commercial activity includes businesses of all types and professional and business office space. Commercial ventures create jobs that provide an essential part of the Murray and Calloway County economy. These ventures may be located in free-standing buildings or in various types of shopping centers. Shopping centers generally contain on-site and off-street parking and are owned and operated by a single entity. Shopping centers are broadly classified on the basis of size and service radius. A neighborhood shopping center is small, serving the immediate needs of the surrounding neighborhood while a community shopping center is larger, serving the needs of several neighborhoods. A regional shopping center serves several communities and generally includes a large area and several shopping locations. Murray can be classified as a regional shopping location containing several businesses that cater to residents and businesses in the surrounding counties.

Commercial areas in Murray provide for all types of wholesale and retail enterprises, including grocery stores, restaurants, fruit markets, drugstores, barber shops, beauty shops, shoe repair shops, laundry and dry-cleaning shops, movie theaters and drive-in's, offices, hotels and motels, auto sales, bakeries, antique shops, clothing stores, and electronic sales and repair shops. Churches are permitted in commercial areas in Murray. Land uses other than commercial activities are allowed in commercial areas. Examples of these uses include libraries, parks, recreational facilities, utilities, and public protection facilities.

In the development of commercial areas, it is important that the uses accommodated should not have a detrimental effect on residential and other non-residential neighbors. In most instances, transitional businesses, commonly in the form of professional office facilities, offer a buffer that can help provide protection of residential uses from the undesirable external effects of other more intensive commercial uses. In all cases, landscaping and screening standards between residential and commercial developments should be designed to provide adequate separation. In addition, site development standards for commercial developments should be revised to promote the environmental enhancement "green" initiative for Murray that is one of the basic principles of this plan. This includes the planting of trees, preservation of green space, walking rails, and building construction. In addition, the Planning Commission will consider ways to monitor developments to ensure that the "green" initiatives undertaken are preserved throughout the development and post-development period.

Map LU-9 shows the future commercial land use in the Murray city limits and within the Murray Planning Area. The existing commercial land use determined from the inventory within the Murray city limits was 726 acres. The future land use map shows 930 acres of commercial land use in the Murray city limits, an increase of 204 acres. This increase is primarily the result of the conversion of agricultural and residential land to commercial land. Existing commercial land for the Murray Planning Area was 891 acres. The future land use map shows 1,283 acres of commercial land in the Murray Planning Area, an increase of 392 acres. The increase in commercial land within the planning area, but outside the city limits, results from conversion of agricultural land to commercial land.

The major commercial areas in Murray are generally concentrated along and adjacent to US HWY 641. The downtown central business district is also a major commercial area for Murray. The primary expansions of commercial activity in this Land Use Element include an area on the north side of Chestnut Street near the intersection of 4th Street and Chestnut Street and areas along Opportunity Drive. Commercial expansion is also included in the area between North 12th Street and north 16th Street in the vicinity of the TVA Electrical Transmission Line. Development of limited commercial Neighborhood Activity Centers is also projected for

residential neighborhoods in the southwest portion of the planning area.

General guidance for future commercial uses includes avoiding strip commercial uses as discussed in earlier sections of this element. In addition, new commercial developments should be created so there is suitable accessibility. Also, they should complement existing commercial developments, should not be a detriment to other land uses, particularly residential uses, and should not greatly diminish the level of service on roadways. Developments on two-lane roads that are at or near capacity during peak travel times and are not suitable for widening will not be approved. Consideration will be given to all developments as to the most efficient way of transporting customers by public transportation or by non-vehicular means.

Commercial land use in Murray is divided into five categories; Neighborhood Businesses, Highway Businesses, Central Business District, Medium Density Businesses, and Professional Office. A brief, general description and Planning Commission guidance for each of these uses is given below.

Neighborhood Businesses: Businesses that meet the needs of the immediate neighborhood by providing a narrow range of retail services and convenience goods and services.

The following criteria provide guidance to the Planning Commission for the evaluation of Neighborhood Business development:

- Planned development projects and other non-commercial uses may be considered where supported by adjacent land use patterns.

- All new developments in neighborhood commercial areas should be supported by a high level of street connectivity and other public services.

- Neighborhood Activity Centers, a mixture of commercial uses that serve the needs of the neighborhood in residential areas, are desirable and should be encouraged. They should not attract significant traffic from outside the neighborhood and be easily accessible by walking, bicycling, or with low impact motorized vehicles, thereby minimizing parking areas and traffic to the extent possible.

- Neighborhood business commercial areas are for the regular convenience of adjacent residential neighborhoods and shall be in environmentally well planned and visually appealing developments that are quiet and well buffered from adjacent residential areas.

- Safety and visual aesthetics should be incorporated in the physical design based on new land development regulations to be adopted.

- Existing commercial businesses serving neighborhoods should be preserved and enhanced instead of creating undesirable larger commercial developments.

- Office uses in neighborhood centers shall be at a scale that serves the adjacent neighborhood.

Highway Businesses: Businesses that provide for a broad range of general retail including areas where commercial activities have replaced or are replacing residential areas.

The following criteria provide guidance to the Planning Commission for the evaluation of Highway Business development:

- Planned development projects and other non-commercial uses may be considered where supported by adjacent land use patterns.
- All new developments in highway commercial areas should be supported by an adequate level of street connectivity and other public services.
- Highway commercial areas shall be in environmentally well planned and visually appealing developments that are well buffered from adjacent residential areas.
- Strip commercial areas are discouraged in favor of larger concentrations of general commercial areas.
- New developments and redevelopment activity shall have a balanced mix of activities permitted by the zoning ordinance.
- Redevelopment and expansion, especially in marginal and deteriorating commercial areas, shall take advantage of the opportunity to improve signage, access, and landscaping.

- Access should be provided for all modes of transportation.
    - Street cuts should be minimized to improve access management and allow more area for landscaping.

Central Business District: The area that forms the center for commercial, financial, professional, governmental, and cultural activities.

The following criteria provide guidance to the Planning Commission for the evaluation of development in the Central Business District:

- Planned development projects and other non-commercial uses may be considered where supported by adjacent land use patterns.
- All new developments in downtown commercial areas should be supported by a high level of street connectivity and other public services.

- The central business district with its many unique and historic structures should be protected and improved.

- Development of mixed uses with storefront retail, professional office, and residential dwelling uses should be promoted.
- Access to public transportation should be encouraged.
- Priority should be given to the development of vacant or under-utilized buildings and lots
- All new projects should improve the overall appearance of the area by removing or enhancing unsightly utilities, signs, and other outdated physical features.

Medium Density Businesses: Businesses that provide limited retail and services and professional offices in areas adjacent to residential neighborhoods.

The following criteria provide guidance to the Planning Commission for the evaluation of Medium Density Business development:

- Planned development projects and other non-commercial uses may be considered where supported by adjacent land use patterns.
- All new developments in medium density commercial areas should be supported by a high level of street connectivity and other public services.
- Medium density commercial areas shall be in environmentally well planned and visually appealing developments that are quiet and well buffered from adjacent residential areas and have transit accessibility and reduced parking.
- Existing commercial businesses serving neighborhoods should be preserved instead of creating undesirable larger commercial developments.

Professional Offices: Areas generally serving as transitional space between residential and commercial uses and providing for a mixture of office related activities.

The following criteria provide guidance to the Planning Commission for the evaluation of Professional Office development:

- Planned development projects and other non-commercial uses may be considered where supported by adjacent land use patterns.
- All new developments in commercial areas should be supported by an adequate level of street connectivity and other public services.
- New developments should strive for a campus like design with well landscaped common space.

- Commercial services, subject to the zoning ordinance, should be only at a scale to serve the needs of the office development.

- Buildings and sites that have access to multiple road frontages should be designed and landscaped to be equally visually pleasing from all view points.

Future Industrial Land Use

The industrial category is intended to be used for the development of industrial, manufacturing, warehousing, distribution, and other related uses. Industrial and warehousing uses are generally considered to be those that might cause the most undesirable impacts on other land uses. Traditionally, noise, odors, toxic chemicals, and transportation impacts from large trucks and workers are associated with industrial activity. Typical industrial and warehousing activities include manufacturing, packaging, mini-warehouses, commercial warehousing and distribution centers. Other industrial activities include construction yards, machine repair shops, bulk storage of liquids, scrap storage and processing yards, and research facilities.

In Murray, industrial activity is described as either light or heavy. Heavy industry includes those industries where the processing of products results in emission of any atmospheric pollutant, light flashes or glare, noise, or vibration that may be heard and/or felt off the premises. Heavy industry also includes those operations that constitute a fire or explosion hazard. Industries where the processing of products cause none of these impacts are considered light industry.

Permitted accessory uses in the industrial areas include off street parking areas and structures, dwelling units for caretakers, fenced outdoor storage areas, internal areas serving food to employees, offices, and recreational areas for employees. Permitted conditional uses include outdoor storage and processing areas, retail sales and consumer services, non-residential planned development projects, churches and related activities, and adult oriented businesses.

Location of additional new industrial areas must take into consideration the traffic generated by the industrial activity as well as potential noise, odors, and the other potential negative aspects of industrial activity. However, locating new industrial areas in the planning area has the positive effect of locating jobs near the population center and decreasing commuting times and distances for those employed in the industrial areas. Locating new industrial land in the planning area also takes advantage of the infrastructure that exists in the form of roads, water, wastewater, and electricity.

Newly developed industrial areas should be encouraged to provide attractive building facades and the integration of stormwater runoff controls into site landscaping to limit the negative

impacts of industrial activity in terms of visual appearance and stormwater runoff. In many cases the use of landscaped screens would be of benefit to improve the acceptability of industrial areas.

Map LU-9 shows the future industrial land use in the Murray city limits and within the Murray Planning Area. The existing industrial land use determined from the inventory within the Murray city limits was 795 acres. The future industrial land use map shows 1,479 acres of industrial land use in the Murray city limits indicating an increase of 684 acres. This increase is primarily the result of the conversion of agricultural lands in the industrial areas of Murray to industrial land use. The existing industrial land use determined from the inventory for the Murray Planning Area was 836 acres. The future land use map shows 1,751 acres of industrial land use in the Murray Planning Area, an increase of 915 acres.

The increase in industrial land use within the planning area, but outside the city limits, resulted from the conversion of agricultural land use to industrial land use near the new industrial park on US HWY 641 North.

Industrial and warehousing land use is generally located in the north and northeast portion of Murray, east of 12th Street and US HWY 641 North. A new industrial park has been completed west of US HWY 641 North in the northern portion of the planning area. Future industrial growth is expected to occur in these areas with the expansion in the area of the new industrial park west of US HWY 641 North.

The following criteria provide guidance to the Planning Commission for the evaluation of Industrial development:

- Non-residential planned development projects and other non-industrial uses may be considered where supported by adjacent land use patterns.
- All new developments in industrial areas should be supported by an adequate level of connectivity to arterial streets and other public services.
- New developments and buildings should be well landscaped to provide a visually pleasing buffer between sites and adjacent land uses.
- Approved industrial uses should monitor the negative effects of vibration, noise, air quality, water quality, and outdoor storage on surrounding properties.
- New industrial land uses should not be located adjoining residential land uses.
- Lot sizes, setbacks, buffering, and storage/loading areas should maintain compatibility with adjacent properties.

Future Public, Utilities and Educational Land Use

The future public and utilities category is intended to be used for lands owned by county, municipal, state, and federal governments, by government owned public corporations and agencies, or by public utilities. The Education category is used for lands owned by public agencies for primary and secondary schools, vocational and technical schools, and colleges and universities licensed by the Kentucky Education Cabinet. The Murray State University farms are classified as Education rather than Agriculture. Since government and public educational institutions can locate in any land use, no attempt was made to designate additional future lands for these uses. Publicly owned land used for public housing was classified as future residential land use rather than public land use and was included in the residential land use portion of the plan.

Map LU-12 shows the future public, educational, and utilities land use in the Murray city limits and within the Murray Planning Area. For the Murray city limits the land currently in public and utilities ownership is 1,527 acres; in the Murray Planning Area the land use includes 1,635 acres. Potential future needs for new government lands include the addition of park land and new general government offices. Future needs can be accommodated by the purchase of sites in other land uses or on existing government properties.

Land currently in educational facility ownership comprises 763 acres within the city limits and 799 acres within the planning area. The only known expansion of Educational land being considered is to the Murray State University farms. Since this expansion will be on Agricultural lands no attempt has to made to specify a location of this land use change on the future land use maps. Other appropriate locations for future development of educational facilities can be accommodated on sites that are compatible with adjacent areas and where appropriate accessibility exists. Future educational sites are subject to the zoning ordinance and the principles in this plan.

The following are appropriate concerns when considering public sector developments for general government, utilities, and educational facilities.

- Government, Utility, and Educational lands and their uses are not subject to regulation through the Comprehensive Plan and Zoning Ordinance; however, government facilities should be compatible with respect to the surrounding area and make every effort to comply with restrictions for the area.

- The expression of public concern may be used to direct the location and use of government lands in accordance with the principles detailed for similar uses in other land use categories.

- Buildings and structures of government agencies, public utilities, and public educational institutions shall be well landscaped to provide a visually pleasing buffer between sites and adjacent land uses and shall take measures to mitigate the negative effects of vibration, noise, air quality, water quality, and outdoor storage on surrounding properties.

- All new educational developments should be supported by an adequate level of street connectivity and other public services.

Future Semi-Public Land Use

The semi-public category is used for lands that are owned by non-profit corporations, organizations, and agencies that have services available to the public. The most common example is land owned by a church. Other examples might include meeting facilities, fraternal lodges, and recreational areas or facilities on land owned by a non-profit agency that allowed public use of the area or access to the facility. Membership owned golf courses, like country clubs, were included as semi-public facilities.

Map LU-13 shows the semi-public land use in the Murray city limits and within the Murray Planning Area. Land currently in semi-public uses comprises 247 acres within the city limits and 294 acres in the planning area. There are no known planned new developments resulting in the addition of Semi-Public lands. Future development of Semi-Public lands can be accommodated on sites where semi-public uses are a permitted or conditional use, subject to the zoning ordinance and the principles in this plan.

The following are appropriate concerns when considering developments for semi-public facilities.

- Separate zoning does not exist for semi-public uses which are often allowed as conditional uses within other land uses.

- All new semi-public developments should be supported by a high level of street connectivity, when necessary due to traffic demands, and other public services.

- New developments and buildings shall be well landscaped to provide a visually pleasing buffer between sites and adjacent land uses and shall take measures to monitor the effects of vibration, noise, air quality, water quality, and outdoor storage on surrounding properties.

Future Agriculture Land Use

The agriculture category is for lands that are used for the cultivation of crops, the raising of animals, or for lands that are being preserved in their natural state. Map LU-14 shows the future agriculture land use in the Murray city limits and within the Murray Planning Area. Land currently in agriculture uses comprises 806 acres, or 9 percent of the land in the city limits. Future agricultural land use in the city limits is expected to decrease to 3,201 acres or 22 percent of the total area. Existing agricultural land use in the planning area is 6,395 acres or 44 percent of the area. The future agricultural land use shown on Map LU-14 for the planning area is 3,201 acres or 22 percent of the total area.

The following criteria provide guidance to the Planning Commission for the evaluation of developments in agricultural areas:

- Prime farmland should be retained for agricultural uses when other suitable sites in non-prime farmland areas are available.

- Agricultural Development Districts should be taken into consideration when considering annexation plans.

- Planned development projects and other non-agriculture uses may be considered where supported by adjacent land use patterns.

- The construction of single family dwellings or placement of mobile homes shall be limited in a manner to maintain the agricultural nature and appearance of the land and not at such density and location to create the appearance of a single family residential subdivision or mobile home park.

- Uses attracting spin-off urban type development should not be allowed.

Future Transportation Land Use

Future transportation land use is illustrated on Map LU-15. The Transportation category is used for transportation facilities including roads, road rights-of-way, airports and other ancillary facilities. The Transportation Element of this Comprehensive Plan discusses present and future transportation facilities in considerable detail.

Land currently in transportation uses within the city limits comprises -1,764 acres. Future transportation land use in the city limits is expected to increase to 88 acres. Existing transportation land use in the planning area is 1,026 acres. The future transportation land use shown on Map LU-15 for the planning area is 1,165 acres.

Street Index

A

ROADNAME	SECTIONS
AIRPORT ROAD (KY 783)	A1, A2, A3, A4
AIRFIELD LANE	A1
ANDREVEUS DRIVE	D5
ANGELIA DRIVE	A8, B8
APPLEWOOD ROAD (KY 894)	E7, E8, E9
ARCADIA CIRCLE	D5
ASH STREET	D5
ASTREETORIA COURT	B5
ATKINS W AY	B9
AUDUBON DRIVE	C7
AUSTREETN COURT	B7
AZALEA COURT	B8
AZALEA DRIVE	B8, C8

B

ROADNAME	SECTIONS
BACK STREET	D7
BAGW ELL BOULEVARD	D7
BAGW ELL COURT	D8
BAGW ELL DRIVE	D7, D8
BAILEY ROAD	B3, C4 ,C5
BAMBI COURT NORTH	B7
BAMBI COURT SOUTH	B7
BAMBI LANE	B7
BATTLEFIELD DRIVE	C4, C5
BEALE STREET	D5
BECKETT DRIVE	C8,C9
BEE CREEK DRIVE	D5
BEE LANE	B7
BELLE MEADE DRIVE	A6,B6
BELMONT COURT	C8
BELMONT DRIVE	C8
BERKSHIRE COURT	B7
BIRCHW OOD DRIVE	B6
BIRNAMW OOD LANE	B7
BISON LANE	D2
BLAIR STREET	C7
BLISSFUL VIEW DRIVE	A8
BLUEBIRD DRIVE	C8
BOURLAND LN	D4
BRENTW OOD DRIVE	C6,C7
BRIDLEW OOD DRIVE	A7, A8
BRIGGS & STRATTON ROAD	D6
BROWN ROAD	C1,C2,C3
BROACH AVENUE	C6
BROAD STREET	D6,D7,D8
BROOKHAVEN DRIVE	B7
BROOKLYN DRIVE	C4

C

ROADNAME	SECTIONS
C.C. LOW RY DRIVE	D5,E5
CALLOW AY AVENUE	C6
CALUMET W AY	B9
CAMBRIDGE DRIVE	C4,C5
CAMELOT DRIVE	B8,B9
CAMPBELL STREET	C4
CAMPUS SUITES BOULEVARD	C4
CANTERBURY DRIVE	C8,C9
CARDINAL DRIVE	C7
CAROL DRIVE	B7
CAROLW OOD W AY	B6
CATALINA COURT	C8
CATALINA DRIVE	C7,C8
CENTER DRIVE	D4
CHAD W AYNE DRIVE	A8,B8
CHANTILLY DRIVE	D8
CHAUCER DRIVE	C8
CHERRY HILL LANE	A7
CHERRY STREET	D5,D6
CHESTNUT STREET (KY 1327)	A7,C5
CHESTNUT STREET (KY 2094)	D5
CHESTNUT STREET (U.S. 641)	D5
CHICKORY DRIVE	A8
CHRIS DRIVE	C4
CIRCARAMA DRIVE	D7
CLARK STREET	C5
CLAYSHIRE DRIVE	C8
CLAYTON DRIVE	E6
COLDW ATER ROAD	C5
COLEMAN TRAIL	A2,A3
COLES CAMPGROUND ROAD	C1,D1
COLLEGE FARM ROAD (KY 132	B5,C5
COLLEGE TERRACE	C6
COLLINS ROAD	A1
CONCORD DRIVE	B9
CONNER DRIVE	C4
COOK LANE	E4
CORNW ALL DRIVE	B6
COUNTRY CLUB LANE	B5
COUNTRY ROAD	B9
COUNTY CORK DRIVE	B7
COVEY DRIVE	B5,C5
CRESTW OOD DRIVE	C8
CROSS STREET	D7
CROSSFIELD DRIVE	B6
CROW LANE	E5
CRYSTAL BROOK LN	C4,D4
CULVER ROAD	A6

D

ROADNAME	SECTIONS
DANBURY DRIVE	C8
DARBY DAN DRIVE	B9
DEEPW OOD DRIVE	B9,C9
DINKER DRIVE	D3
DUGUID DRIVE	D4
DOGSON STREET	C5
DOGW OOD DRIVE	C7,C8
DORAN ROAD	C7,C6
DORAN ROAD, SOUTH	C8,C9
DREW DRIVE	C1,D1
DUDLEY DRIVE	C7

E

ROADNAME	SECTIONS
EARL COURT	D7
EDINBOROUGH DRIVE	B7
EDINBOROUGH DRIVE W EST	A7,B7
ELLIS DRIVE	D7
ELM STREET	D6
ELMBROOK COURT	B7
ENIX DRIVE	B9

F

ROADNAME	SECTIONS
FAIRLANE DRIVE	D7
FALW ELL LANE	B8
FARMER AVENUE	C6
FARRIS AVENUE	C6
FERNW OOD LANE	A7
FIELDVIEW LANE	B1,B2
FLEETW OOD CIRCLE	D4
FLEETW OOD DRIVE	B8
FONTANA DRIVE	A8
FOX MEADOW DRIVE	C8

G

ROADNAME	SECTIONS
GARDEN STREET	D6
GARLAND COURT	C8,C9
GATESBOROUGH CIRCLE	C7
GENERAL GRANT DRIVE	C4
GENERAL JACKSON DRIVE	C5
GENERAL LEE DRIVE	C5
GEORGE W ASHINGTON DRIVE	D1
GETTYSBURG DRIVE	C4,C5
GIL HOPSON DRIVE	D5
GILBERT GRAVES DRIVE	C5
GLENDALE ROAD (KY 1550)	C7,C8,D7
GLENW OOD DRIVE	B6
GLOBEMASTER DRIVE	D4
GOODMAN STREET	D7
GRACKLE LANE	E9
GRAHAM ROAD	B2,B3,B4
GRANT ROAD	A2,B2,C2
GRAYSON DRIVE	B6
GREENBRIAR DRIVE	B8,C8
GREENHILLS DRIVE	C8
GREENVIEW DRIVE	E8
GREENW OOD DRIVE	C8
GREGORY LANE	A6,A7
GUINEVERE DRIVE	B8,B9
GUINEVERE LANE	B9
GUTHRIE DRIVE	D7

H

ROADNAME	SECTIONS
HACKETT DRIVE	A1
HAL DRIVE	B6
HALE ROAD	B1,B2,B3
HAMILTON AVENUE	C6
HARVARD DRIVE	C4
HAVEN MEADOW COURT	C4
HAYNES CREEK DRIVE	A7
HENRY STREET	C7
HERMITAGE PLACE	C8
HICKORY DRIVE	C6
HILLW OOD DRIVE	D4
HOLIDAY DRIVE	C7
HOLLY PARK COURT	D4
HUDSON ROAD	A6,A6,A7
HUGHES STREET	C6
HUMMINGBIRD LANE	E7,E8
HUNTERS GLEN	B6
HUNTERS HORN	B6
HURT DRIVE	D7

I

ROADNAME	SECTIONS
INDUSTRIAL ROAD (KY 2094)	D5,D6
IRENE TERRACE	D7
IRONW OOD DRIVE	A7
IRVAN STREET	C6,C7

J

ROADNAME	SECTIONS
JAMESW OOD DRIVE	B6
JOHNSON BOULEVARD	C7
JONES-SPARKMAN ROAD	A5,B5
JORDADYN BAILEY DRIVE	C1

K

ROADNAME	SECTIONS
KY 121	A4,B4,B5,C5,D5,
KY 121 NORTH BYPASS	C5,D5
KY 2075	D3
KY 2094	D5,D6
KY 774	C5
KY 80	D2,E2
KY 80 PROPOSED	A2,B2,C2
KY 921	C7
KY 94	A6,A7,B4,E5,E6
KAITLYN LANE	A4
KANDI KAY LANE	A8,B9
KATHY DRIVE	C5
KEENELAND DRIVE	C7
KENTUCKY AVENUE	C5,C6
KING ARTHUR COURT	B8
KING DRIVE	B9
KINGSBURY CIRCLE	B6
KING RICHAROAD DRIVE	B9
KINGSW AY COURT	B7
KINGSW OOD LANE	B9
KIRKW OOD DRIVE	C7,C8
KNIGHT ROAD	E5
KNIGHTSW AY DRIVE	B8

L

ROADNAME	SECTIONS
LAFOLLETTE DRIVE	D7
LANCELOT DRIVE	B8
LARKSPUR DRIVE	B8,C7,C8
LEE STREET	B7
LEGACY LANE	A8
LINCOLN AVENUE	C6
LIPFORD LANE	B5
LOCH LOMOND DRIVE	C6
LOCUST GROVE ROAD	E9
LOCUST STREET	C6
LOGAN DRIVE	C8
LONDON DRIVE	C8,C9
LOW ES DRIVE	C5
L.P. MILLER STREET	D5,D6
LYNNW OOD STREET	C7

M

ROADNAME	SECTIONS
MAGNOLIA DRIVE	C7
MAIN STREET (KY 94)	C6,D6
MAPLE STREET	D6
MAPLEW OOD CIRCLE	E5,,E6
MARINA W AY	D1
MARTIN CHAPEL ROAD	C8,,C9
MARTIN DRIVE	B7,,B8
MAX HURT DRIVE	D2,E2
MEADOW GREEN CIRCLE	E8
MEADOW LANE	C7
MEGAN DRIVE	C4
MELROSE COURT	C8
MELROSE DRIVE	B8,C8
MELVIN HENLEY DRIVE	D3
MEMORY LANE	D7
MERLIN DRIVE	B8
MICHELLE COURT	D4
MICHELLE DRIVE	D4
MILDRED DRIVE	C8
MILLER STREET	C6
MIMOSA LANE	C7
MINERVA PLACE	C7
MISSION VELLEY DRIVE	C4,D4
MISTY CREEK DRIVE	C8
MITCHELL DRIVE	B6
MOCKINGBIRD DRIVE	C8,C9
MONROE AVENUE	C6
MULBERRY STREET	D7
MURRAY PARIS ROAD (KY 149	D9,,E8,E9

N

ROADNAME	SECTIONS
NANCY DRIVE	B7
NEALE TRAIL	E9
NORTHW OOD DRIVE	D4
NOTTINGHAM LANE	B9
NOTTINGHAM LANE SOUTH	B9

O

ROADNAME	SECTIONS
OAK ESTATES DRIVE	A7
OAK STREET	C7
OAKDALE DRIVE	C6
OAKHILL COURT	B8
OAKHILL DRIVE	B8
OAKHILL DRIVE SOUTH	B8,B9
OAKS COUNTRY CLUB ROAD	A7,A8
OAKW OOD CIRCLE	A6
OAKW OOD LANE	A6
OASIS LANE	D1
OLD CONCORD ROAD	D6
OLD SALEM ROAD	E7
OLIVE BOULEVARD	C6
OLIVE STREET	C6,D6
OPPORTUNITY DRIVE	C1,C2,C3
OVERBY STREET	C7
OXFORD DRIVE	C8,C9

P

ROADNAME	SECTIONS
PARMOUNT DRIVE	C5
PARKLANE DRIVE	C7
PARKS STREET	C5
PAUL BRADLEY DRIVE	A6
PAYNE STREET	C6,D6
PEGGY ANN DRIVE	C8
PELLA W AY	E3
PERRIN DRIVE	C7
PINE STREET	D6
PLAINVIEW DRIVE	C7
POQUE AVENUE	C7
POOR FARM ROAD	A5,B3,C3,D3
POPLAR STREET	C6,D6
PRINCETON DRIVE	C4

Q

ROADNAME	SECTIONS
QUAIL CREEK DRIVE	B7
QUEENSW AY DRIVE	B8

R

ROADNAME	SECTIONS
RAILROAD AVENUE	D6
RICHARDSON STREET	C7
RICHLAND	C7
RIDGEW OOD DRIVE	B8,C8,C9
RILEY COURT	D7
RIPPLING CREEK DRIVE	A8
RITZCRAFT COURT	D4
RIVER ROAD	D7,D8
RIVERFIELD DRIVE	C9
RIVERW OOD ROAD	D8
ROBERSON DRIVE	C8
ROBERT O MILLER ROAD	D3,E3
ROBERT W IGGINS DRIVE	C1
ROBERTSON ROAD NORTH	B4,B5,B6
ROBERTSON ROAD SOUTH	B6,B7,B8
ROBINHOOD DRIVE	B9
ROBINS COURT	B7
ROCKY DRIVE	D5
ROMANS W AY	B9
ROUNDTABLE COURT	B8
RUGBY DRIVE	B8
RYAN AVENUE	C5

S

ROADNAME	SECTIONS
SANDY PINE DRIVE	C8
SARATOGA DRIVE	A8,A9
SATTERW HITE LANE	E9
SCARLETT DRIVE	B9
SCHULTZ AVENUE	D4
SCHW ARTZ ROAD	D3
SETH LANE	C1
SHA-W A CIRCLE	C5
SHADY LANE	C7
SHARPE STREET	D6
SHASTA LANE	D4
SHELTER LANE	D7
SHERRIE LANE	C5
SHERW OOD DRIVE	B9
SHROPSHIRE DRIVE	E9
SOLAR DRIVE	D5
SOUTHW EST DRIVE	B9
SOUTHW OOD DRIVE	D4
SPINDLETOP DRIVE	B9
SPRING CREEK DRIVE	C8,C9
SPRING HILL COURT	C8
SPRUCE STREET	D6
SQUIRE ROAD	A7,B7
SQUIRE HOLLAND ROAD	D2,E2
STADIUM VIEW DRIVE	D4
STANFORAD DRIVE	C4
STARVIEW TRAIL	A7,B7
STONEGATE DRIVE	A6,B6
STONE RIDGE LANE	C7
STORY AVENUE	C7, D7
STRATFORD DRIVE	C7
SUNBURY CIRCLE	D7
SUNNY LANE	C7
SUNSET DRIVE	C7
SYCAMORE IND. ROAD	D7
SYCAMORE STREET (KY 921)	C7,D7

T

ROADNAME	SECTIONS
TABARD DRIVE	C8
TANGLEW OOD COURT	B7
TANGLEW OOD DRIVE	B7
TAYLOR DRIVE	C5
THE LANE	C7
THOROUGHBRED LANE	B6
TIFFANY LANE	C4
TRACI DRIVE	B7
TRANSIT W AY	C5
TRENTS LANE	B8,B9
TURNBRIDGE DRIVE	A6,B6

U

ROADNAME	SECTIONS
U.S. 641	C9,D1,D2,D1,D5
UNIVERSITY DRIVE	C6
UTTERBACK ROAD	D3

V

ROADNAME	SECTIONS
VAGABOND TRACE	D4
VALENTINE AVENUE	C5
VALLEY DRIVE	B9
VALLEYW OOD DRIVE	D4
VASSAR DRIVE	C4
VAUGHN DRIVE	C6
VILLA SQUARE DRIVE	B9
VINE STREET	C6,D6

W

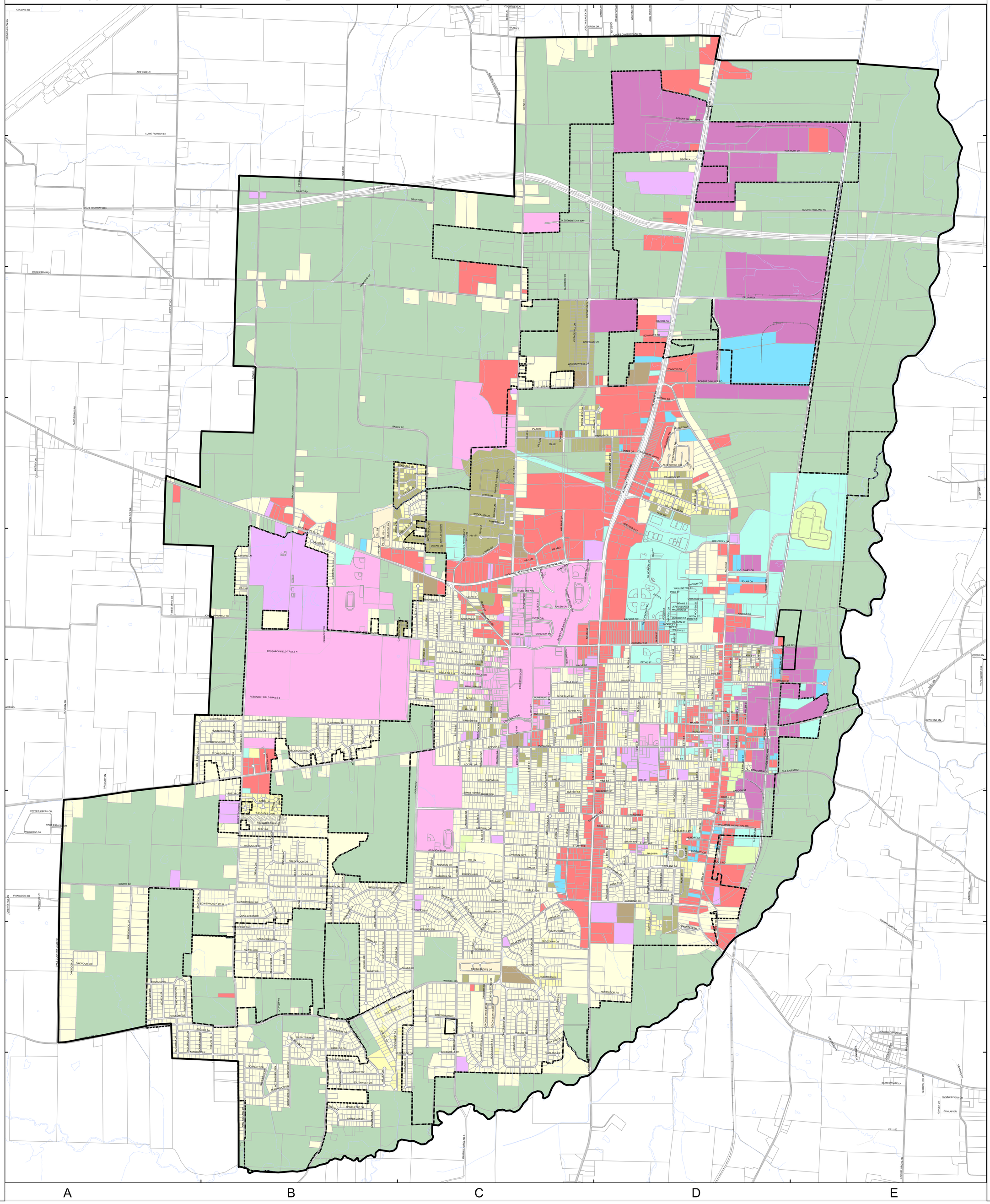
ROADNAME	SECTIONS
W ALDOP DRIVE	C5
W ALLACE DRIVE	A6,A5
W AL-MART DRIVE	C4,C5
W ALNUT STREET	D5
W ELCH DRIVE	C4
W ELLS BOULEVARD	D5
W ELLS DRIVE EXTENDED	C6
W ELLS PURDOM DRIVE	D1
W ESTGATE DRIVE	B7,,B8
W ESTW OOD DRIVE	B8,C8
W HIPPORW ILL DRIVE	C8,C9
W HITNELL STREET	C7
W ILLIAMS STREET	C6
W ILLIAMSBURG LANE	C5
W ILSHIRE DRIVE	C4
W ILW OOD DRIVE	A7
W INDSOR COURT	D4
W INDW ELL ROAD (KY 1550)	A8,B8,C8
W OODGATE DRIVE	B7
W OODLAW N STREET	C6,C7
W OODS ROAD	D7

Y

ROADNAME	SECTIONS
YOUTH W AY	D3

Numbered Streets

ROADNAME	SECTIONS
1ST STREET	D5,D6
3RD STREET	D5,D6,D7
3RD STREET EXTENDED	D6,D7
4TH STREET(KY 2075)	D4,D5,D6
4TH STREET (U.S. 641X)	D6,D7
5TH STREET	D5,D6
6TH STREET	D5,D6,D7
7TH STREET	D5,D6,D7
8TH STREET	D5,D6,D7
8TH STREET EXTENDED	D7
9TH STREET	D6,D7
10TH STREET	D5,D6
11TH STREET	D6,D7
12TH STREET (U.S. 641)	D4,D5,D6,D7,C7,
13TH STREET	C5,C6,C7
14TH STREET	C6
15TH STREET	C5,C6,C7
16TH STREET (KY 746)	C3,C4,C5,C6
16TH STREET (KY 822 & 1550)	C6,C7,C8
17TH STREET	C5,C6
18TH STREET	C5,C6,C7,C8
19TH STREET	C5
20TH STREET	C5



DEPARTMENT OF PLANNING & ENGINEERING
CITY OF MURRAY
CALLOWAY COUNTY KENTUCKY

JANUARY, 2020

LU-1: Existing Land Use

- Urban Services Area
- City Limits
- Agriculture
- Commercial
- Single Family
- Two Family
- Multi Family
- Group Quarters
- Manufactured Housing
- Education
- Public Use
- Semi-Public Use
- Industrial
- Warehousing
- Utilities

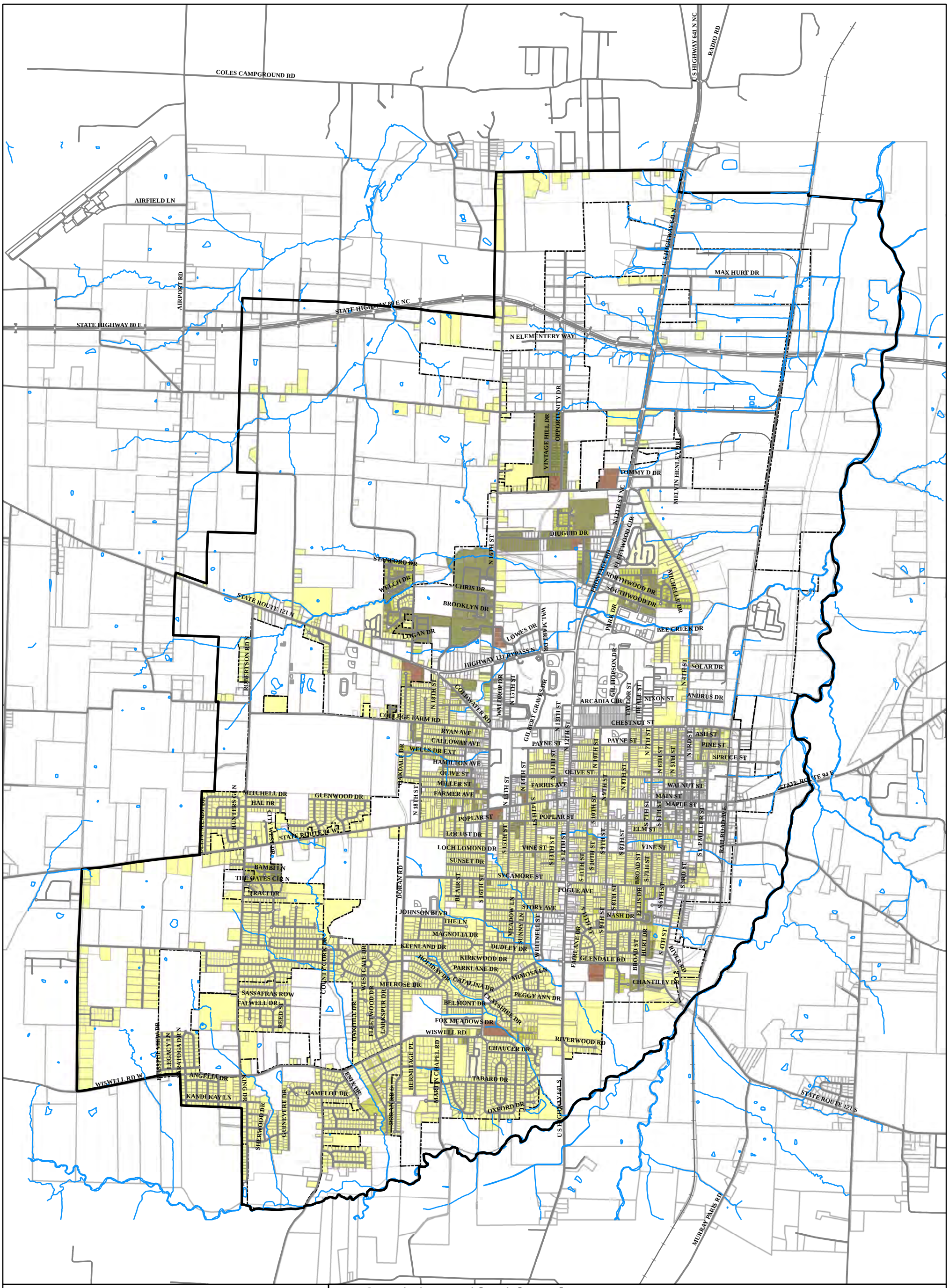
Original base map produced by photogrammetric methods from photography dated 01 April, 1998 and updated from digital orthophotography dated 02 March, 2017. This mapping conforms to National Map Accuracy Standards. Control based on 1983 N.A.D. All utility system data has been transferred from existing source documents and field notes and has not been precision located using photogrammetry or other surveying methods.

MAPPING BY THE CITY OF MURRAY

N

1 inch = 1,000 feet

0 500 1,000 2,000 3,000 4,000 Feet



DEPARTMENT OF
PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

LU-2: Existing Residential Land Use

- Non-Residential
- Single Family
- Two Family
- Multi-Family
- Group Quarters
- Manufactured Housing
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet

COLES CAMPGROUND RD
RADIO RD
AIRFIELD LN
AIRPORT RD
STATE HIGHWAY 80 E
STATE HIGHWAY 80 E NC
U S HIGHWAY 641 N
U S HIGHWAY 641 N NC
N 12TH ST NC
STATE ROUTE 121 N
HIGHWAY 121 BYPASS N
ROBERTSON RD N
COLLEGE FARM RD
N 16TH ST
N 12TH ST
N 4TH ST
CHESTNUT ST
STATE ROUTE 94 E
INDUSTRIAL RD
MAIN ST
STATE ROUTE 94 W
SYCAMORE ST
S 16TH ST
S 12TH ST
S 4TH ST
GLENDALE RD
WISWELL RD
WISWELL RD W
U S HIGHWAY 641 S
STATE ROUTE 121 S
MURRAY PARIS RD

DEPARTMENT OF
PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

LU-3: Existing Commercial Land Use

Commercial - Office / Retail / Business / Medical / Lodging

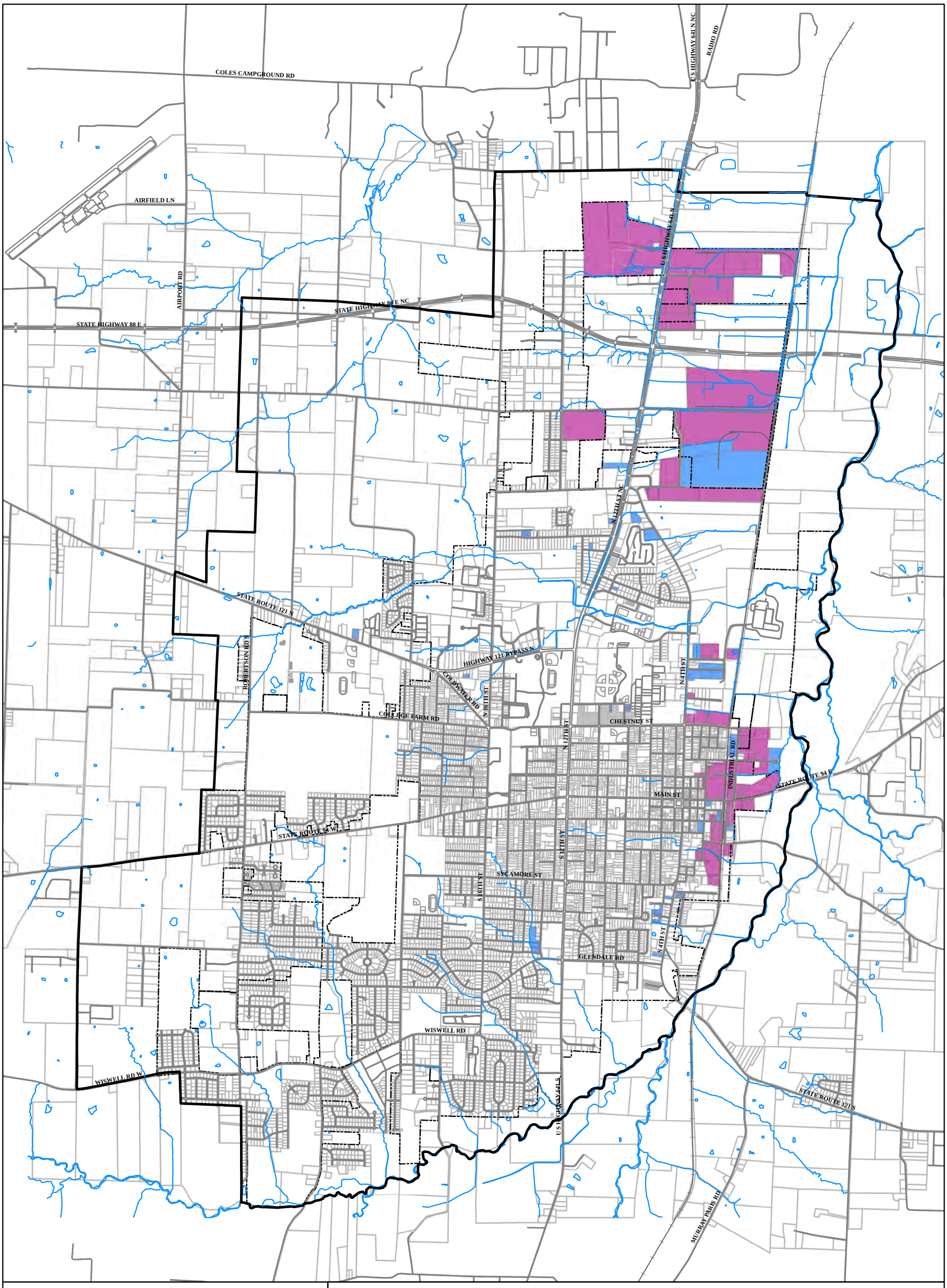
Urban Services Area

City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

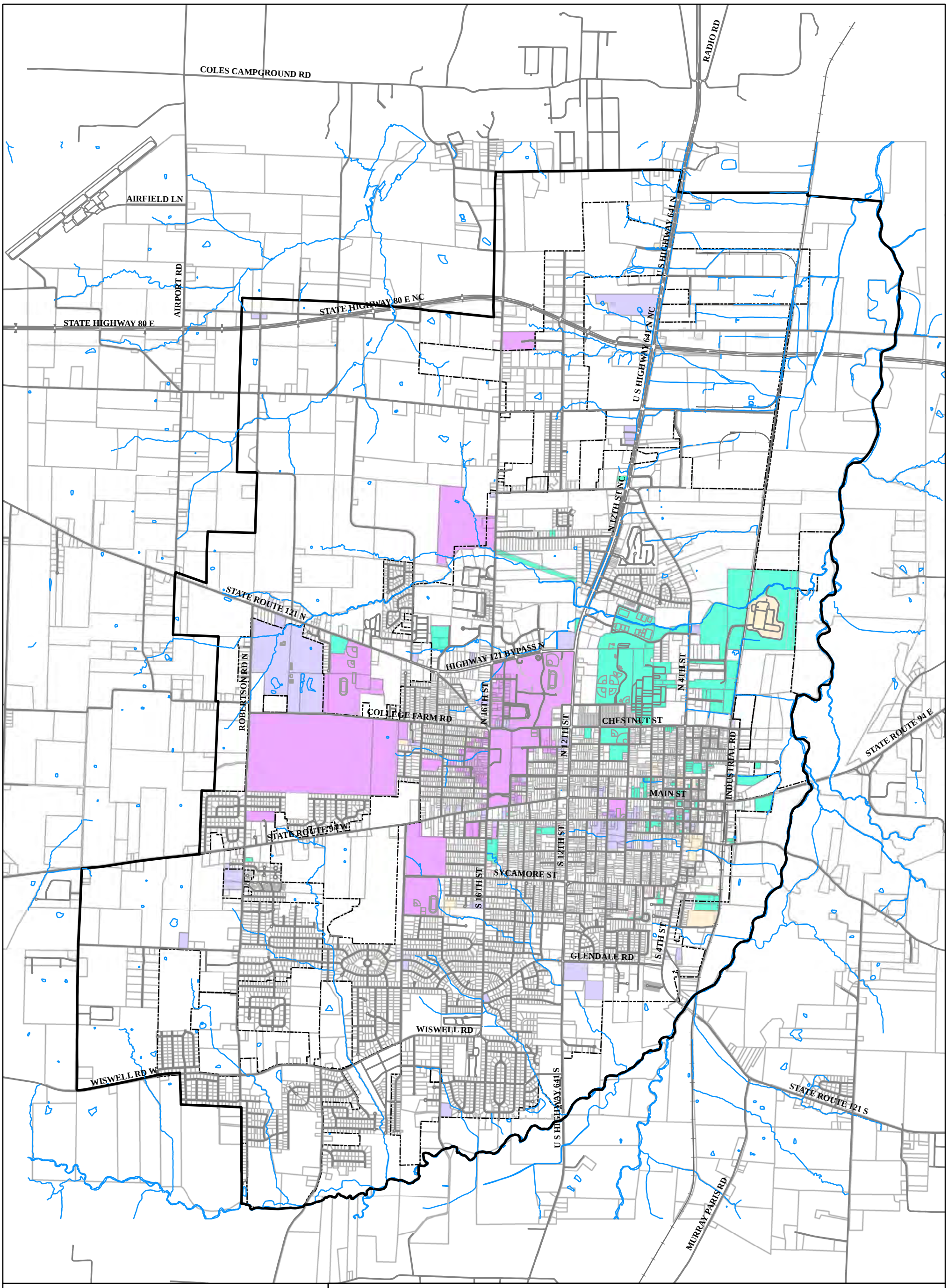
LU-4: Existing Industrial and Warehousing Land Use

- Warehousing
- Industrial
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
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CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

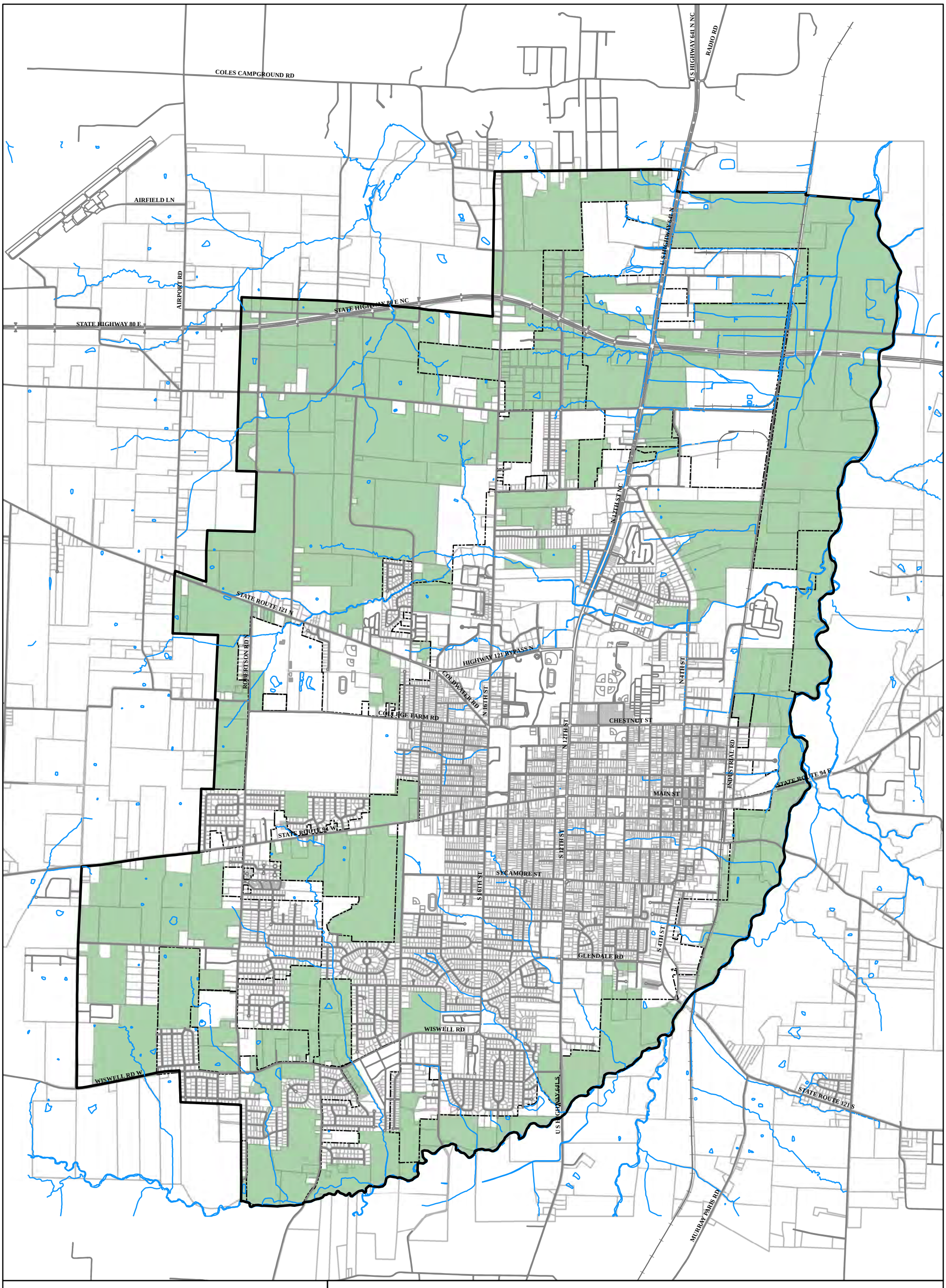
LU-5: Existing Public / Education / Utilities Land Use

- Education
- Public Use
- Semi-Public Use
- Utilities
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

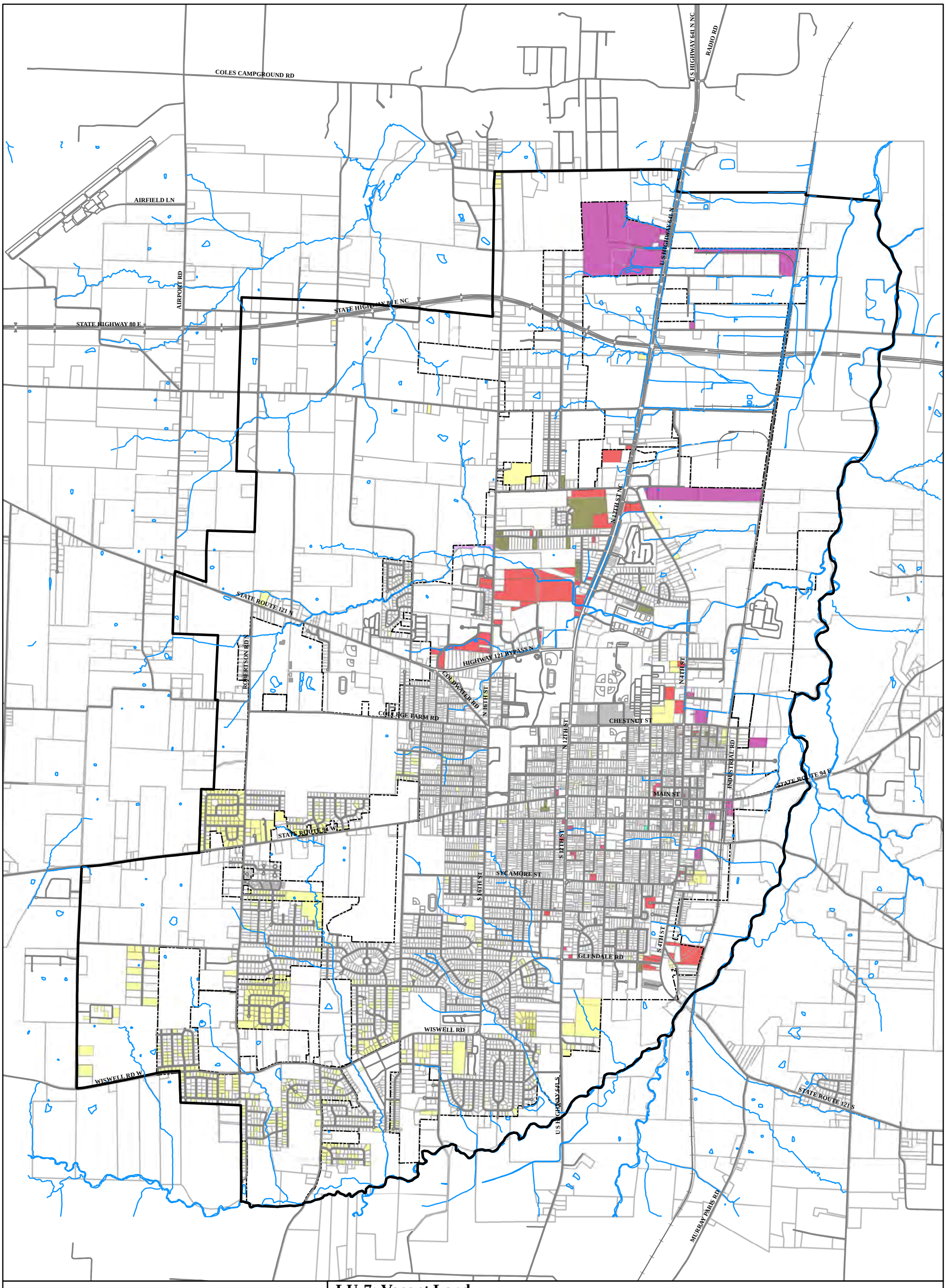
LU-6: Existing Agricultural Land Use

- Agriculture
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

LU-7: Vacant Land

- Single Family
- Two Family
- Multi-Family
- Group Quarters
- Manufactured Housing
- Agriculture
- Commercial
- Education
- Semi-Public Use
- Utilities
- Warehousing
- Industrial
- Public Use
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet

Street Index

A

ROADNAME	SECTIONS
AIRPORT ROAD (KY 783)	A1, A2, A3, A4
AIRFIELD LANE	A1
ANDREVEUS DRIVE	D5
ANGELIA DRIVE	A6, B6
APPLEWOOD ROAD (KY 894)	E7, E8, E9
ARCADIA CIRCLE	D5
ASH STREET	D5
ASTREETORIA COURT	B5
ATKINS W AY	B9
AUDUBON DRIVE	C7
AUSTREETN COURT	B7
AZALEA COURT	B8
AZALEA DRIVE	B8, C8

B

ROADNAME	SECTIONS
BACK STREET	D7
BAGW ELL BOULEVARD	D7
BAGW ELL COURT	D8
BAGW ELL DRIVE	D7, D8
BAILEY ROAD	B3, C4 ,C5
BAMBI COURT NORTH	B7
BAMBI COURT SOUTH	B7
BAMBI LANE	B7
BATTLEFIELD DRIVE	C4, C5
BEALE STREET	D5
BECKETT DRIVE	C8,C9
BEE CREEK DRIVE	D5
BEE LANE	B7
BELLE MEADE DRIVE	A6,B6
BELMONT COURT	C8
BELMONT DRIVE	C8
BERKSHIRE COURT	B7
BIRCHW OOD DRIVE	B6
BIRNAMW OOD LANE	B7
BISON LANE	D2
BLAIR STREET	C7
BLISSFUL VIEW DRIVE	A8
BLUEBIRD DRIVE	C8
BOURLAND LN	D4
BRENTW OOD DRIVE	C4,C7
BRIDLEW OOD DRIVE	A7,A8
BRIGGS & STRATTON ROAD	D6
BRINN ROAD	C1,C2,C3
BROACH AVENUE	C6
BROAD STREET	D6,D7,D8
BROOKHAVEN DRIVE	B7
BROOKLYN DRIVE	C4

C

ROADNAME	SECTIONS
C.C. LOWRY DRIVE	D5,E5
CALLOW AY AVENUE	C6
CALUMET W AY	B9
CAMBRIDGE DRIVE	C4,C5
CAMELOT DRIVE	B8,B9
CAMPBELL STREET	C4
CAMPUS SUITES BOULEVARD	C4
CANTERBURY DRIVE	C8,C9
CARDINAL DRIVE	C7
CAROL DRIVE	B7
CAROLW OOD W AY	B6
CATALINA COURT	C8
CATALINA DRIVE	C7,C8
CENTER DRIVE	D4
CHAD W AYNE DRIVE	A6,B8
CHANTILLY DRIVE	D8
CHAUCER DRIVE	C8
CHERRY HILL LANE	A7
CHERRY STREET	D5,D6
CHESTNUT STREET (KY 1327)	A7,C5
CHESTNUT STREET (KY 2994)	D5
CHESTNUT STREET (U.S. 641)	D5
CHICKORY DRIVE	A8
CHRIS DRIVE	C4
CIRCARAMA DRIVE	D7
CLARK STREET	C5
CLAYSHIRE DRIVE	C8
CLAYTON DRIVE	E6
COLDW ATER ROAD	C5
COLEMAN TRAIL	A2,A3
COLES CAMPGROUND ROAD	C1,D1
COLLEGE FARM ROAD (KY 132	B5,C5
COLLEGE TERRACE	C6
COLLINS ROAD	A1
CONCORD DRIVE	B9
CONNER DRIVE	C4
COOK LANE	E4
CORNW ALL DRIVE	B6
COUNTRY CLUB LANE	B5
COUNTRY ROAD	B9
COUNTY CORK DRIVE	B7
COVEY DRIVE	B5,C5
CRESTW OOD DRIVE	C8
CROSS STREET	D7
CROSSFIELD DRIVE	B6
CROW LANE	E5
CRYSTAL BROOK LN	C4,D4
CULVER ROAD	A6

D

ROADNAME	SECTIONS
DANBURY DRIVE	C8
DARBY DAN DRIVE	B9
DEEPW OOD DRIVE	B9,C9
DINKER DRIVE	D3
DUIGUID DRIVE	D4
DODGSON STREET	C5
DOGW OOD DRIVE	C7,C8
DORAN ROAD	C7,C8
DORAN ROAD. SOUTH	C8,C9
DREW DRIVE	C1,D1
DUDLEY DRIVE	C7

E

ROADNAME	SECTIONS
EARL COURT	D7
EDINBOROUGH DRIVE	B7
EDINBOROUGH DRIVE W EST	A7,B7
ELLIS DRIVE	D7
ELM STREET	D6
ELMBROOK COURT	B7
ENIX DRIVE	B9

F

ROADNAME	SECTIONS
FAIRLANE DRIVE	D7
FALW ELL LANE	B8
FARMER AVENUE	C6
FARRIS AVENUE	C6
FERNW OOD LANE	A7
FIELDVIEW LANE	B1,B2
FLEETW OOD CIRCLE	D4
FLEETW OOD DRIVE	B8
FONTANA DRIVE	A8
FOX MEADOW DRIVE	C8

G

ROADNAME	SECTIONS
GARDEN STREET	D6
GARLAND COURT	C8,C9
GATESBOROUGH CIRCLE	C7
GENERAL GRANT DRIVE	C4
GENERAL JACKSON DRIVE	C5
GENERAL LEE DRIVE	C5
GEORGE W ASHINGTON DRIVE	D1
GETTYSBURG DRIVE	C4,C5
GIL HOPSON DRIVE	D5
GILBERT GRAVES DRIVE	C5
GLENDALE ROAD (KY 1558)	C7,C8,D7
GLENW OOD DRIVE	B6
GLOBEMASTER DRIVE	D4
GOODMAN STREET	D7
GRACKLE LANE	E8
GRAHAM ROAD	B2,B3,B4
GRANT ROAD	A2,B2,C2
GRAYSON DRIVE	B6
GREENBRIAR DRIVE	B8,C8
GREENHILLS DRIVE	C8
GREENVIEW DRIVE	E8
GREENW OOD DRIVE	C6
GREGORY LANE	A6,A7
GUINEVERE DRIVE	B8,B9
GUINEVERE LANE	B9
GUTHRIE DRIVE	D7

H

ROADNAME	SECTIONS
HACKETT DRIVE	A1
HAL DRIVE	B6
HALE ROAD	B1,B2,B3
HAMILTON AVENUE	C6
HARVARD DRIVE	C4
HAVEN MEADOW COURT	C4
HAYNES CREEK DRIVE	A7
HENRY STREET	C7
HERMITAGE PLACE	C8
HICKORY DRIVE	C6
HILLW OOD DRIVE	D4
HOLIDAY DRIVE	C7
HOLLY PARK COURT	D4
HUDSON ROAD	A6,A6,A7
HUGHES STREET	C6
HUMMINGBIRD LANE	E7,E8
HUNTERS GLEN	B6
HUNTERS HORN	B6
HURT DRIVE	D7

I

ROADNAME	SECTIONS
INDUSTRIAL ROAD (KY 2994)	D5,D6
IRENE TERRACE	D7
IRONW OOD DRIVE	A7
IRVAN STREET	C6,C7

J

ROADNAME	SECTIONS
JAMESW OOD DRIVE	B6
JOHNSON BOULEVARD	C7
JONES-SPARKMAN ROAD	A6,B5
JORDADYN BAILEY DRIVE	C1

K

ROADNAME	SECTIONS
KY 121	A4,B4,B5,C5,D5,
KY 121 NORTH BYPASS	C5,D5
KY 2075	D3
KY 2994	D5,D6
KY 774	C5
KY 80	D2,E2
KY 80 PROPOSED	A2,B2,C2
KY 921	C7
KY 94	A6,A7,B4,E5,E6
KAITLYN LANE	A4
KANOI KAY LANE	A6,B9
KATHY DRIVE	C5
KEENLAND DRIVE	C7
KENTUCKY AVENUE	C5,C6
KING ARTHUR COURT	B8
KING DRIVE	B9
KINGSBURY CIRCLE	B6
KING RICHARDAD DRIVE	B9
KINGSW AY COURT	B7
KINGSW OOD LANE	B9
KINKW OOD DRIVE	C7,C8
KNIGHT ROAD	E5
KNIGHTSW AY DRIVE	B8

L

ROADNAME	SECTIONS
LAFOLLETTE DRIVE	D7
LANCELOT DRIVE	B8
LARKSPUR DRIVE	B5,C7,C8
LEE STREET	B7
LEGACY LANE	A8
LINCOLN AVENUE	C6
LIPFORD LANE	B5
LOCH LOMOND DRIVE	C6
LOCUST GROVE ROAD	E9
LOCUST STREET	C6
LOGAN DRIVE	C5
LONDON DRIVE	C8,C9
LOWES DRIVE	C5
L.P. MILLER STREET	D5,D6
LYNNW OOD STREET	C7

M

ROADNAME	SECTIONS
MAGNOLIA DRIVE	C7
MAIN STREET (KY 94)	C6,D6
MAPLE STREET	D6
MAPLEW OOD CIRCLE	E5,E6
MARINA W AY	D1
MARTIN CHAPEL ROAD	C8,,C9
MARTIN DRIVE	B7,,B8
MAX HURT DRIVE	D2,E2
MEADOW GREEN CIRCLE	E8
MEADOW LANE	C7
MEGAN DRIVE	C4
MELROSE COURT	C8
MELROSE DRIVE	B8,C8
MELVIN HENLEY DRIVE	D3
MEMORY LANE	D7
MERLIN DRIVE	B8
MICHELLE COURT	D4
MICHELLE DRIVE	D4
MILDRED DRIVE	C8
MILLER STREET	C6
MIMOSA LANE	C7
MINERVA PLACE	C7
MISSION VELLEY DRIVE	C4,D4
MISTY CREEK DRIVE	C8
MITCHELL DRIVE	B6
MOCKINGBIRD DRIVE	C8,C9
MONROE AVENUE	C6
MULBERRY STREET	D7
MURRAY PARIS ROAD (KY 149	D9,E8,E9

N

ROADNAME	SECTIONS
NANCY DRIVE	B7
NEALE TRAIL	E9
NORTHW OOD DRIVE	D4
NOTTINGHAM LANE	B9
NOTTINGHAM LANE SOUTH	B9

O

ROADNAME	SECTIONS
OAK ESTATES DRIVE	A7
OAK STREET	C7
OAKDALE DRIVE	C6
OAKHILL COURT	B8
OAKHILL DRIVE	B8
OAKHILL DRIVE SOUTH	B8,B9
OAKS COUNTRY CLUB ROAD	A7,A8
OAKW OOD CIRCLE	A6
OAKW OOD LANE	A6
OAKS LANE	D1
OLD CONCORD ROAD	D6
OLD SALEM ROAD	E7
OLIVE BOULEVARD	C6
OLIVE STREET	C6,D6
OPPORTUNITY DRIVE	C1,C2,C3
OVERBY STREET	C7
OXFORD DRIVE	C8,C9

P

ROADNAME	SECTIONS
PARMOUNT DRIVE	C6
PARKLANE DRIVE	C7
PARKS STREET	C5
PAUL BRADLEY DRIVE	A6
PAYNE STREET	C6,D6
PEGGY ANN DRIVE	C6
PELLA W AY	E3
PERRIN DRIVE	C7
PINE STREET	D6
PLANVIEW DRIVE	C7
POQUE AVENUE	C7
POOR FARM ROAD	A5,B3,C3,D3
POPLAR STREET	C6,D6
PRINCETON DRIVE	C4

Q

ROADNAME	SECTIONS
QUAIL CREEK DRIVE	B7
QUEENSW AY DRIVE	B6

R

ROADNAME	SECTIONS
RAILROAD AVENUE	D5
RICHARDSON STREET	C7
RICHLAND	C7
RIDGEW OOD DRIVE	B8,C8,C9
RILEY COURT	D7
RIPPLING CREEK DRIVE	A8
RITZCRAFT COURT	D4
RIVER ROAD	D7,D8
RIVERFIELD DRIVE	C9
RIVERW OOD ROAD	D5
ROBERSON DRIVE	C8
ROBERT O MILLER ROAD	D3,E3
ROBERT W IGGINS DRIVE	C1
ROBERTSON ROAD NORTH	B4,B5,B6
ROBERTSON ROAD SOUTH	B6,B7,B8
ROBINHOOD DRIVE	B9
ROBINS COURT	B7
ROCKY DRIVE	D5
ROMANS W AY	B9
ROUNDTABLE COURT	B8
RUGBY DRIVE	B8
RYAN AVENUE	C5

S

ROADNAME	SECTIONS
SANDY PINE DRIVE	C8
SARATOGA DRIVE	A8,A9
SATTERW HITE LANE	E9
SCARLETT DRIVE	B9
SCHULTZ AVENUE	D4
SCHW ARTZ ROAD	D3
SETH LANE	C1
SHA-W A CIRCLE	C5
SHADY LANE	C7
SHARPE STREET	D6
SHASTA LANE	D4
SHELTER LANE	D7
SHERRIE LANE	C5
SHERW OOD DRIVE	B9
SHROPSHIRE DRIVE	E9
SOLAR DRIVE	D5
SOUTHW EST DRIVE	B9
SOUTHW OOD DRIVE	D4
SPINDLETOP DRIVE	B9
SPRING CREEK DRIVE	C8,C9
SPRING HILL COURT	C8
SPRUCE STREET	D6
SQUIRE ROAD	A7,B7
SQUIRE HOLLAND ROAD	D2,E2
STADIUM VIEW DRIVE	D4
STANFORDAD DRIVE	C4
STARVIEW TRAIL	A7,B7
STONEGATE DRIVE	A6,B6
STONE RIDGE LANE	C7
STORY AVENUE	C7, D7
STRATFORD DRIVE	C7
SUNBURY CIRCLE	D7
SUNNY LANE	C7
SUNSET DRIVE	C7
SYCAMORE IND. ROAD	D7
SYCAMORE STREET (KY 821)	C7,D7

T

ROADNAME	SECTIONS
TABARD DRIVE	C8
TANGLEW OOD COURT	B7
TANGLEW OOD DRIVE	B7
TAYLOR DRIVE	C5
THE LANE	C7
THOROUGHBRED LANE	B6
TIFFANY LANE	C4
TRACI DRIVE	B7
TRANSIT W AY	C5
TRENTS LANE	B8,B9
TURNBRIDGE DRIVE	A6,B6

U

ROADNAME	SECTIONS
U.S. 641	C5,D1,D2,D3,D5
UNIVERSITY DRIVE	C6
UTTERBACK ROAD	D3

V

ROADNAME	SECTIONS
VAGABOND TRACE	D4
VALENTINE AVENUE	C5
VALLEY DRIVE	B9
VALLEYW OOD DRIVE	D4
VASSAR DRIVE	C4
VAUGHN DRIVE	C6
VILLA SQUARE DRIVE	B9
VINE STREET	C6,D6

W

ROADNAME	SECTIONS
W ALDOP DRIVE	C8
W ALLACE DRIVE	A6,A6
W AL-MART DRIVE	C4,C5
W ALNUT STREET	D6
W ELCH DRIVE	C4
W ELLS BOULEVARD	C6
W ELLS DRIVE EXTENDED	C6
W ELLS PURDOM DRIVE	D1
W ESTGATE DRIVE	B7,,B8
W ESTW OOD DRIVE	B6,C6
W HIPPORW ILL DRIVE	C8,C9
W HITNELL STREET	C7
W ILLIAMS STREET	C6
W ILLIAMSBURG LANE	C5
W ILSHIRE DRIVE	C4
W ILW OOD DRIVE	A7
W INDSOR COURT	D4
W INW ELL ROAD (KY 1550)	A8,B8,C8
W OODGATE DRIVE	B7
W OODLAW N STREET	C6,C7
W OODS ROAD	D7

Y

ROADNAME	SECTIONS
YOUTH W AY	D3

Numbered Streets

ROADNAME	SECTIONS
1ST STREET	D5,D6
3RD STREET	D5,D6,D7
3RD STREET EXTENDED	D7
4TH STREET(KY 2075)	D4,D5,D6
4TH STREET (U.S. 641K)	D6,D7
5TH STREET	D5,D6
6TH STREET	D5,D6,D7
7TH STREET	D5,D6,D7
8TH STREET	D5,D6,D7
8TH STREET EXTENDED	D7
9TH STREET	D6,D7
10TH STREET	D5,D6
11TH STREET	D6,D7
12TH STREET (U.S. 641)	D4,D5,D6,D7,C7,
13TH STREET	C5,C6,C7
14TH STREET	C6
15TH STREET	C5,C6,C7
16TH STREET (KY 748)	C3,C4,C5,C6
16TH STREET (KY 822 & 1550)	C6,C7,C8
17TH STREET	C5,C6
18TH STREET	C5,C6,C7,C8
19TH STREET	C5
20TH STREET	C5

DEPARTMENT OF PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
JANUARY, 2020

LU-8: Future Land Use

- Urban Services Area
- City Limits
- Agriculture
- Commercial
- Single Family
- Two Family
- Multi Family
- Group Quarters
- Manufactured Housing
- Education
- Public Use
- Semi-Public Use
- Industrial
- Warehousing
- Utilities

Original base map produced by photogrammetric methods from photography dated 01 April, 1998 and updated from digital orthophotography dated 02 March, 2017. This mapping conforms to National Map Accuracy Standards. Control based on 1983 N.A.D. All utility system data has been transferred from existing source documents and field notes and has not been precision located using photogrammetry or other surveying methods.

MAPPING BY THE CITY OF MURRAY

N

1 inch = 1,000 feet

0 500 1,000 2,000 3,000 4,000 Feet

COLES CAMPGROUND RD
RADIO RD
AIRFIELD LN
AIRPORT RD
STATE HIGHWAY 80 E
STATE HIGHWAY 80 E NC
U S HIGHWAY 641 N
U S HIGHWAY 641 N NC
N 12TH ST
STATE ROUTE 121 N
ROBERTSON RD N
HIGHWAY 121 BYPASS N
COLLEGE FARM RD
N 16TH ST
N 12TH ST
CHESTNUT ST
N 4TH ST
STATE ROUTE 94 E
INDUSTRIAL RD
MAIN ST
STATE ROUTE 94 W
S 16TH ST
S 12TH ST
SYCAMORE ST
S 4TH ST
GLENDALE RD
WISWELL RD
WISWELL RD W
U S HIGHWAY 641 S
STATE ROUTE 121 S
MURRAY PARIS RD

DEPARTMENT OF
PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

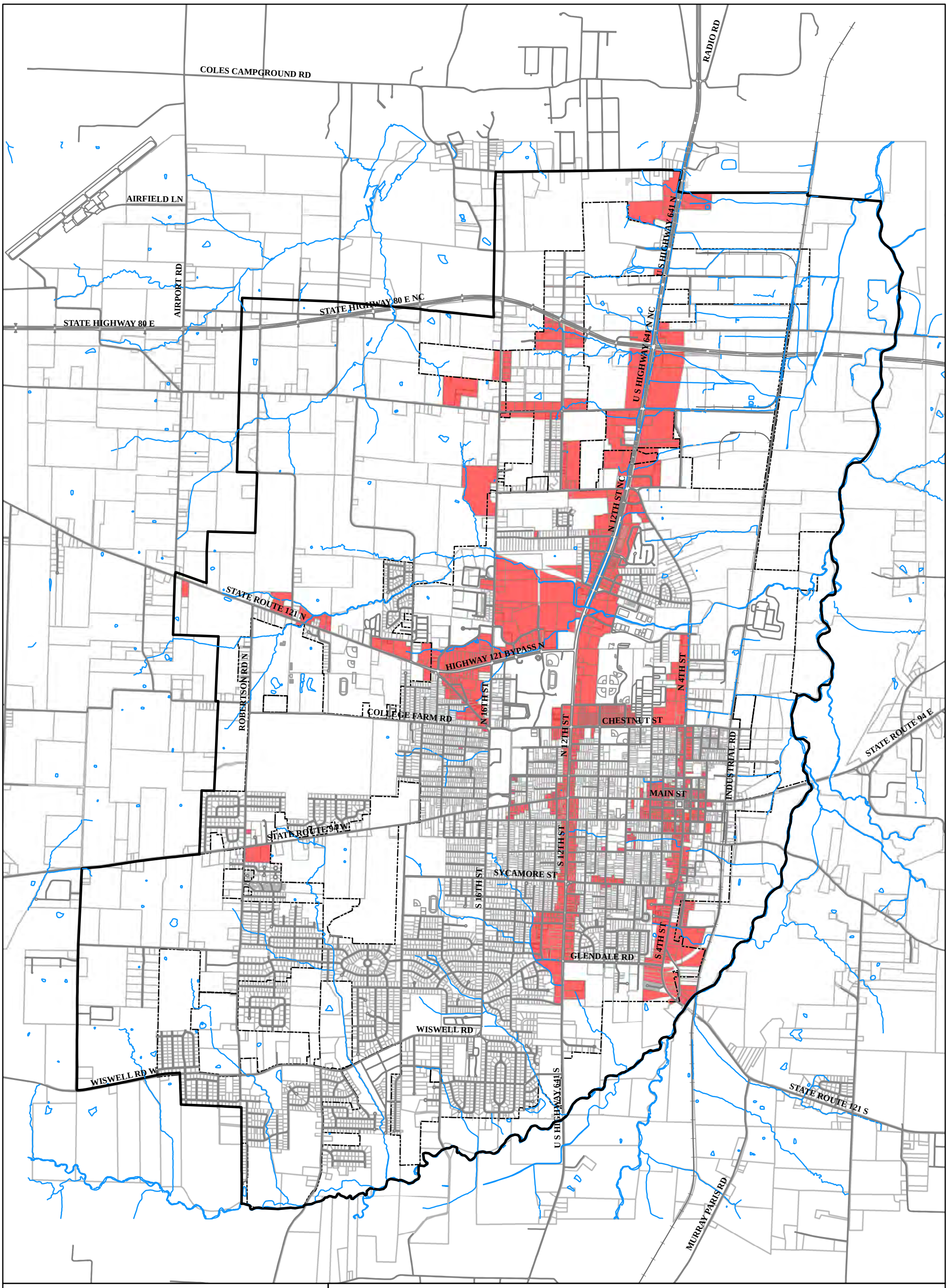
LU-9: Future Residential Land Use

- Non-Residential
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

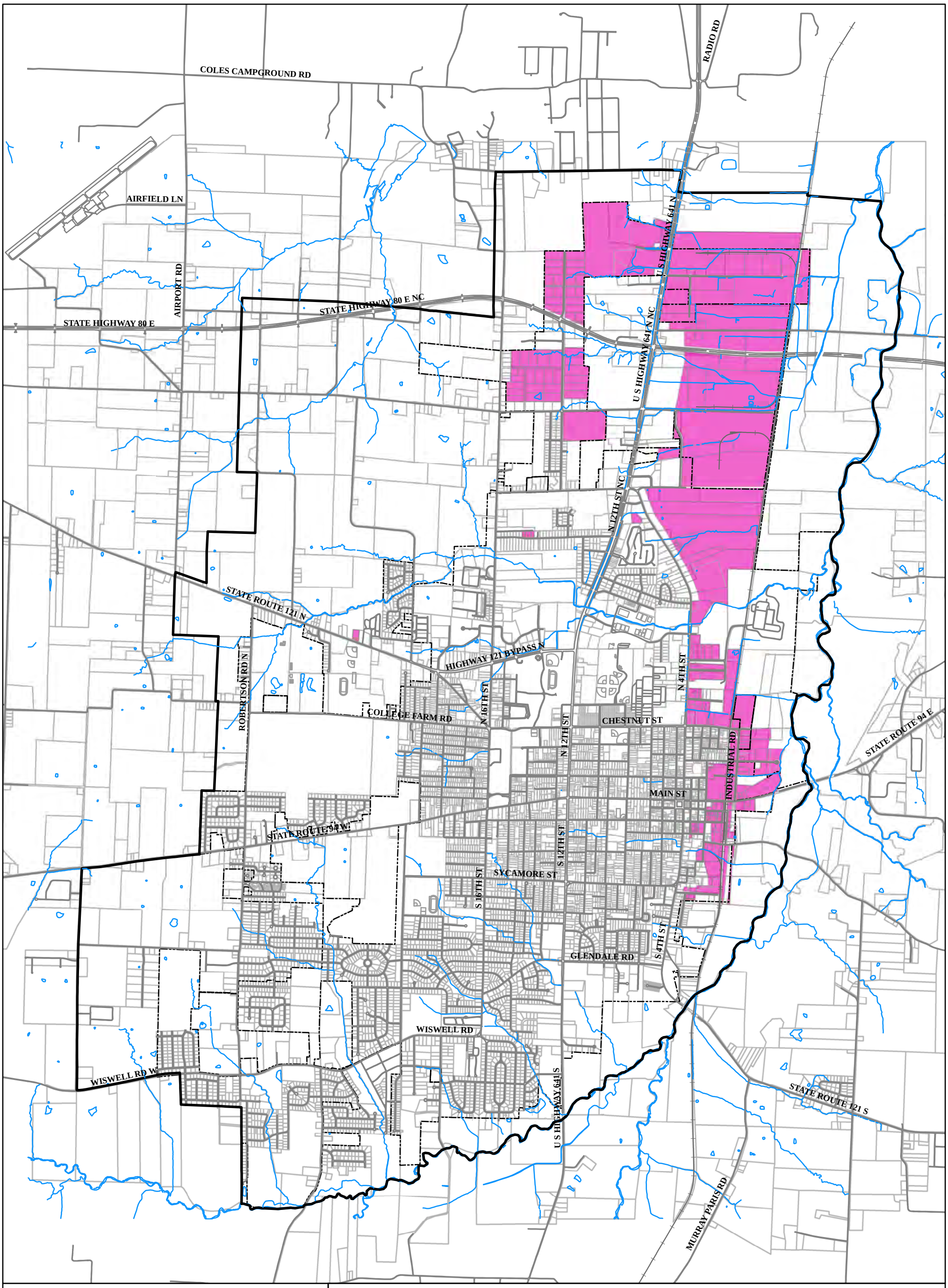
LU-10: Future Commercial Land Use

- Commercial
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
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CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

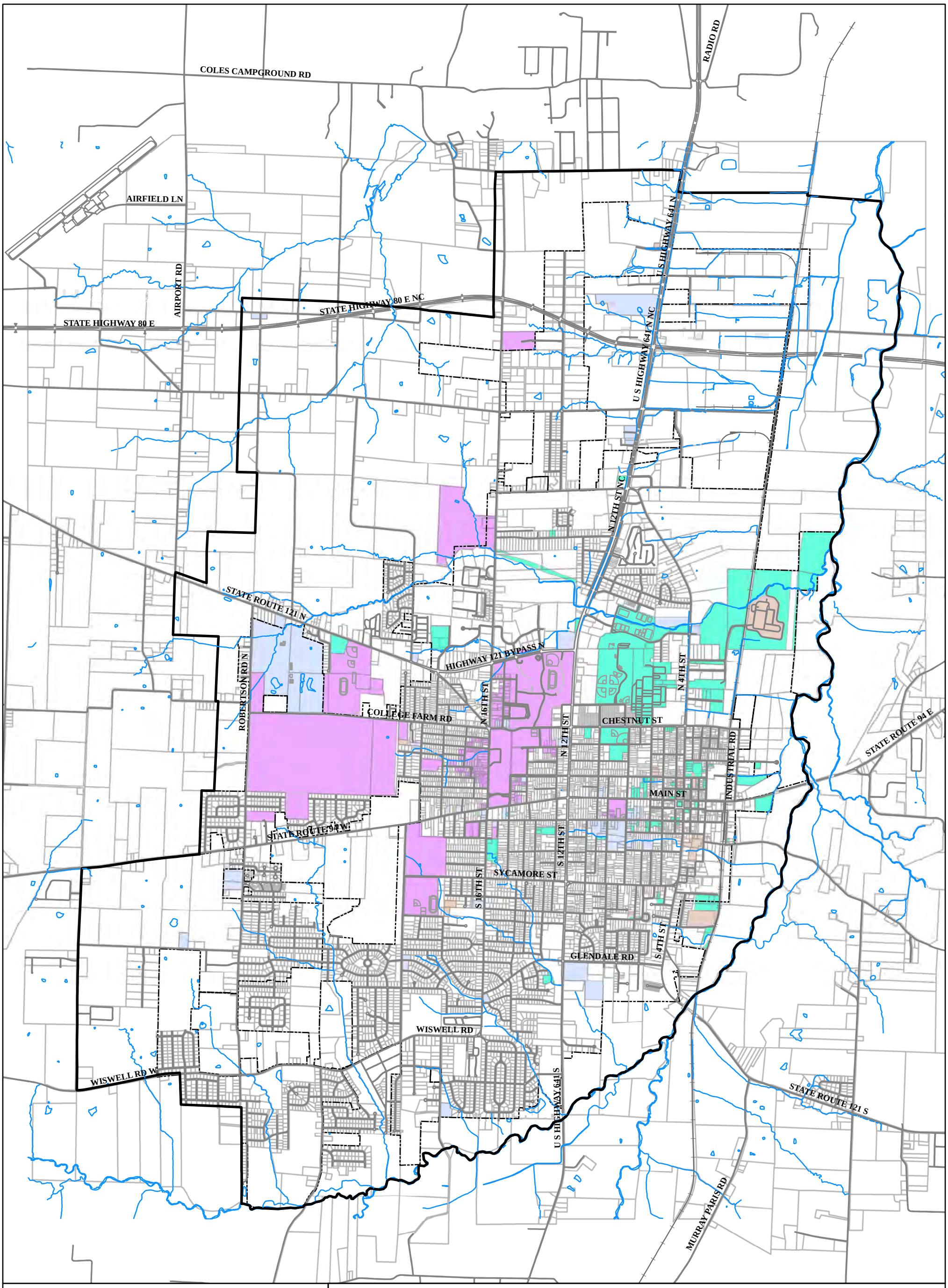
LU-11: Future Industrial / Warehousing Land Use

- Industrial
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
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CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

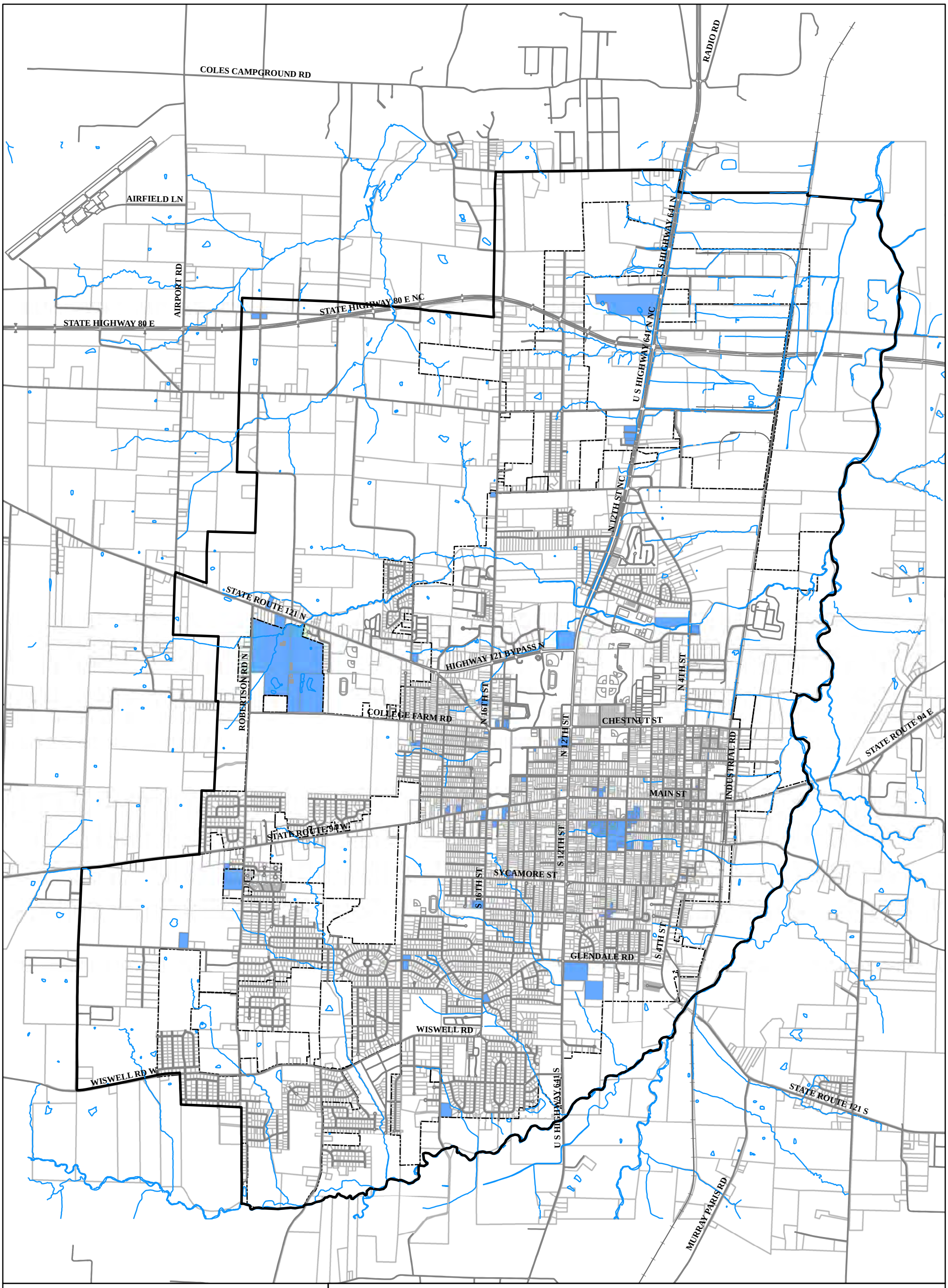
LU-12: Future Public / Semi-Public / Education / Utilities Land Use

- Education
- Public Use (Governmental)
- Semi-Public Use (Instutional)
- Utilities
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
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CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

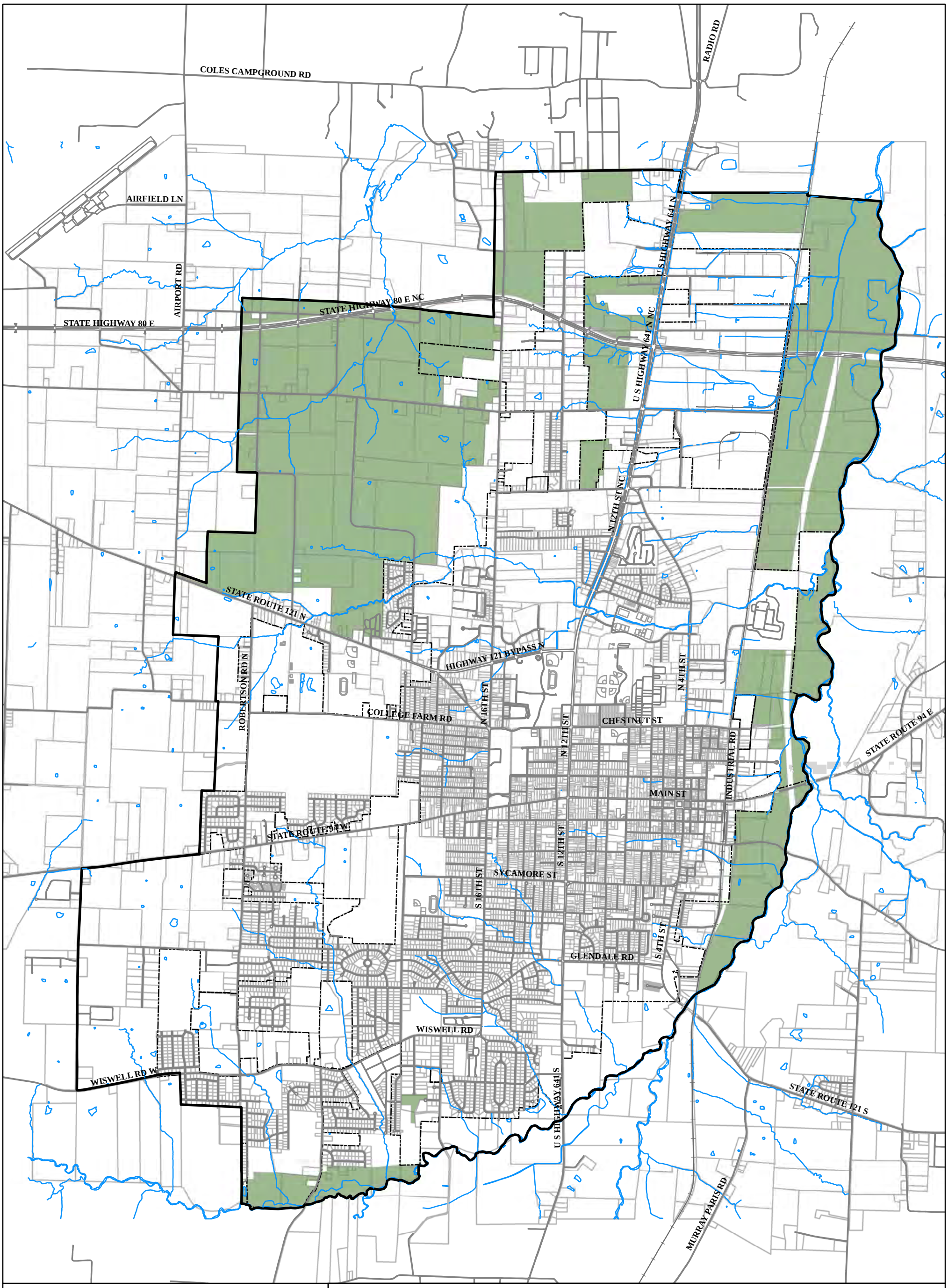
LU-13: Future Semi-Public Land Use

- Semi-Public Use (Instutional)
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
PLANNING & ENGINEERING
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CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

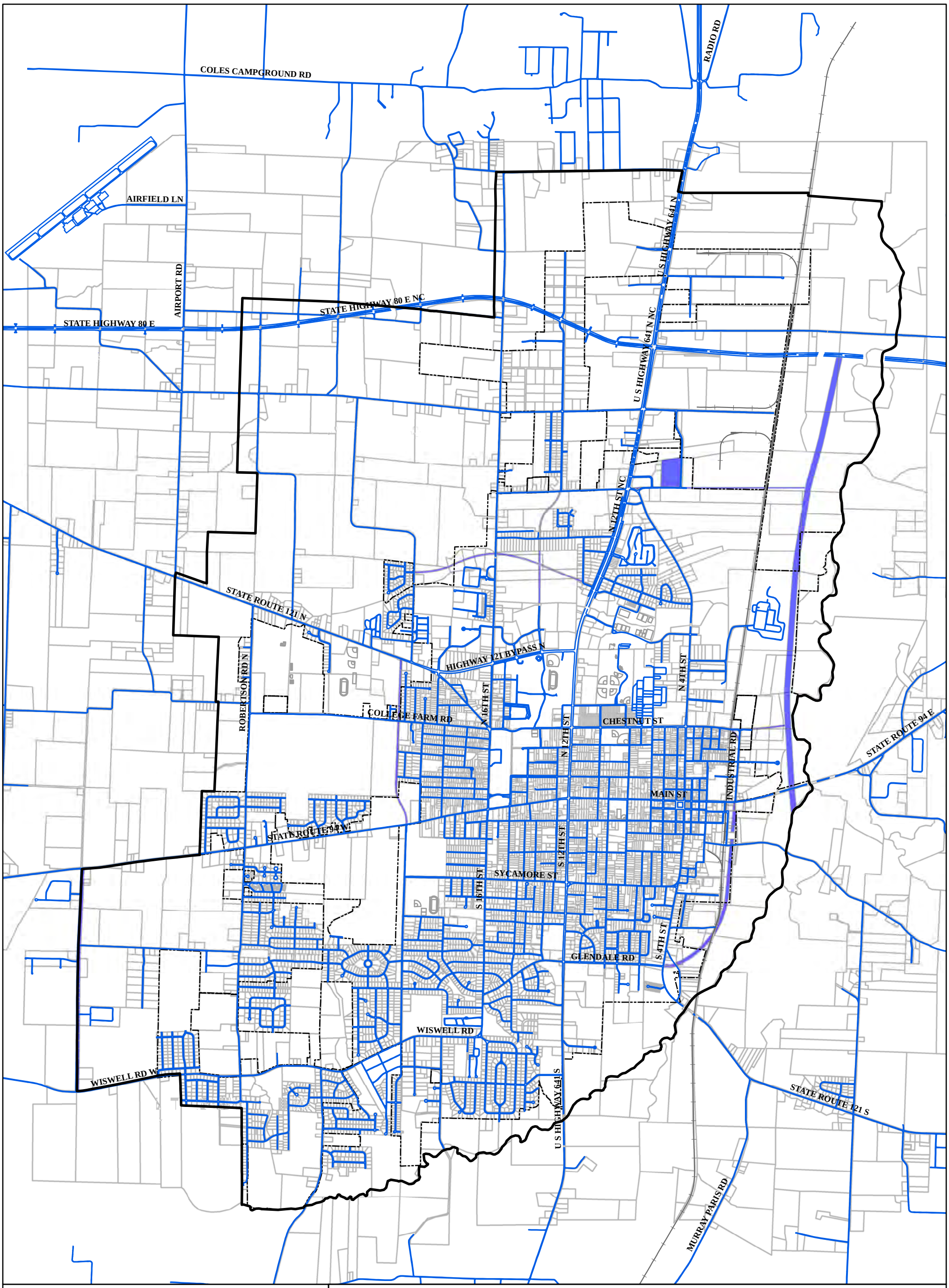
LU-14: Future Agricultural Land Use

- Agriculture
- City Limits
- Urban Services Area

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

LU-15: Future Transportation Land Use

- Urban Services Area
- City Limits
- Transportation

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet

TRANSPORTATION ELEMENT

INTRODUCTION

The Kentucky Revised Statutes (KRS) 100.187 specifies the content of a Comprehensive Plan in Kentucky. KRS 100.187 (2) state that a comprehensive plan must include a transportation plan element, which shall show proposals for the most desirable, appropriate, economic, and feasible pattern for the general location, character, and extent of the channels, routes, and terminals for transportation facilities for the circulation of persons and goods for specified times as far into the future as is reasonable to foresee. The channels, routes, and terminals may include, without being limited to, all classes of highways or streets, railways, airways, waterways, routings for mass transit trucks, and terminals for people, goods, or vehicles related to highways, airways, waterways, and railways.

The transportation network serving an area consists of roadways and other modes of transportation including air service, railways, bike trails, sidewalks and greenway trails. The roadway system is generally the primary mode of surface transportation and is comprised of a network ranging from regional roads to local streets. Regional roadways connect with neighboring counties, the state and the nation. Local streets provide access to area collectors and arterials that link neighborhoods to opportunities for employment, the consumption of goods and services, recreation, religion, and education.

The Transportation Element of the comprehensive plan provides guidelines for maintaining and improving the transportation system to facilitate local and regional travel demands. The Transportation Element has been closely coordinated with the other plan update elements to provide for a viable system-wide transportation network which satisfies the need for the safe, efficient movement of goods and people.

Recent planning studies for the area have been completed by the Commonwealth of Kentucky Transportation Cabinet. Information presented in the 2008 Small Urban Area Study continues to be relevant and has been considered in the development of the Transportation Element of the Comprehensive Plan. This Transportation Element includes a prioritized major street plan complete with goals, objectives and actions to support it. The major street plan will be beneficial to the City of Murray as a guide for securing rights of way and upgrading and extending the roadway network serving the community. This Transportation Element also contains recommendations for improving other modes of transportation.

TRANSPORTATION GOALS AND OBJECTIVES

Goals and objectives have been adopted by the City of Murray Planning Commission to address major issues and concerns that are and will be affecting the City of Murray now and into the future. The overall goal of the Transportation Element is to provide for the development and management of a transportation system that accommodates the various means of moving people and goods from place to place in a safe and efficient manner.

Specific objectives identified by the City of Murray to achieve the goals set forth include:

(1) Identify potential problem areas such as HWY 80 along 641 North and Brinn Road, N. 16th Street from Main Street to HWY 80, and the Five Points Intersection.

(2) Coordinate efforts with state and local officials to work toward completion of projects identified in the Kentucky Transportation Cabinet Six Year Highway Plan.

(3) Identify intersections that need to be realigned.

(4) Continue to seek funding for state priority projects such as the Murray Business Loop and the HWY 641 South widening and improvement project.

(5) Establish a Strategic Traffic Management Plan that would expand cooperative efforts with KYTC regarding the 2008 Small Urban Area Traffic Study.

(6) Maximize connectivity between existing and proposed developments to facilitate traffic flow throughout the city.

(7) Continue a sidewalk maintenance program and expand the current sidewalk system in accordance with the Five-Year sidewalk improvement plan.

(8) Establish suitable bikeways that ensure safety and promote bicycle travel through a bikeway improvement plan.

(9) Re-inventory or reclassify streets as necessary.

(10) Update subdivision regulations to ensure that residential developments are constructed with sidewalks.

(11) Support government efforts to upgrade the facilities at the Kyle-Oakley airport.

(12) Encourage the use of public transportation and provide fixed routes through the Murray Calloway County Transit Authority.

(13) Coordinate efforts with local authorities to avoid traffic delays and hazards at community events.

(14) Increase public awareness programs and support government sponsored initiatives that encourage alternative sources of fuel (or alternative forms of energy) for transportation.

(15) Work with the Kentucky Transportation Cabinet on bike paths along KY 80 continuing into Murray.

EXISTING TRANSPORTATION FACILITIES

Transportation facilities are very important to the growth and development of an area. Keeping transportation facilities adequate to handle the needs of a community is a challenge for state and local governments. This section of the Transportation Element of the Murray Comprehensive Plan describes the current status of each mode of transportation. Maps showing the major transportation facilities are included.

Roadways

The roadway system is the primary mode of surface transportation serving the City of Murray and

Calloway County. The roadway system is comprised of a network ranging from regional roads to local streets. Regional roadways connect Murray with neighboring counties, the rest of Kentucky and the multi-state region. Local streets provide access to area collectors and arterials that link neighborhoods to business districts, industrial areas, community facilities, schools, parks, and other common destinations.

Primary access to Murray is via US 641 and KY 80. US 641 bisects the area running north and south. KY 80 traverses the area on an east–west alignment. Both US 641 and KY 80 connect with I-24 providing linkage with the nation's interstate network. Upon completion of the final sections, KY 80 will provide a connection to the I-69 previously known as the Julian Carroll Purchase Parkway in Graves County and a four-lane 65 mph connection to I-69 through US 641 N in Marshall County. In addition to US 641 and KY 80, KY 121 and KY 94 are primary routes that pass through the Murray area.

Roadway Classification System

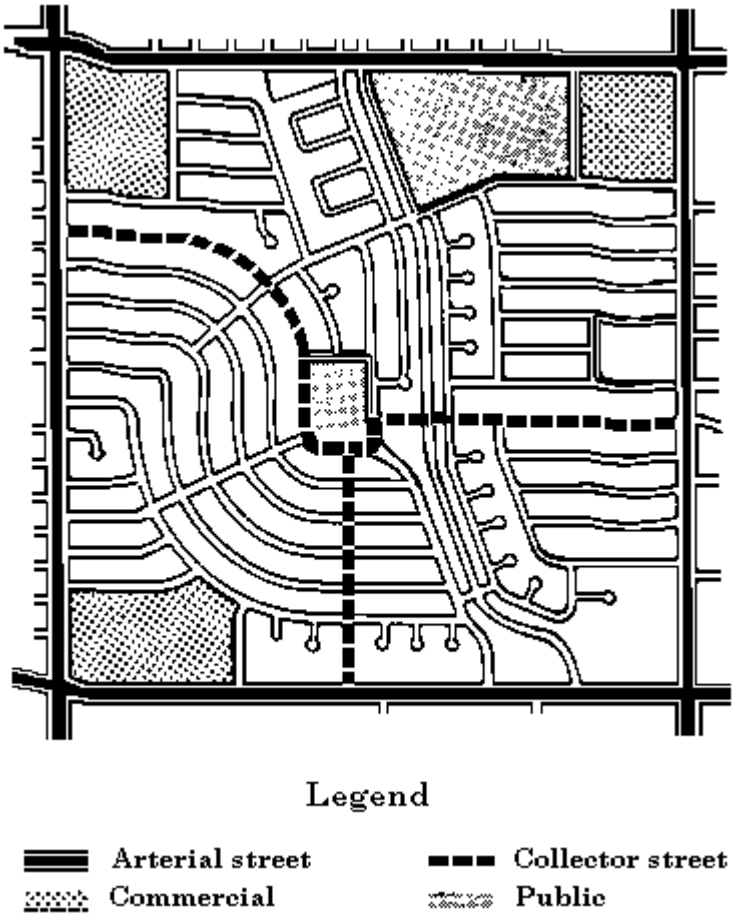
Functional classifications are used to group streets and highways according to the character of service they are intended to provide. This classification system recognizes that individual roads and streets do not serve travel independently. Rather, most travel involves movement through networks of roads and can be categorized relative to such networks in a logical and efficient manner. Therefore, functional classification of roads and streets is also consistent with categorization of travel.

The two major considerations in classifying highway and street networks functionally are access and mobility. The classification system presented herein is consistent with the guidelines established in the "American Association of State Highway and Transportation Officials Geometric Design of Highways and Streets". The four functional classifications and their definitions are as follows:

Principal Arterial System

The principal arterial system is designed to carry major traffic and carries most of the trips entering and leaving the urban area as well as most of the through movements bypassing the central city. The majority of fully or partial access controlled routes fall into this functional system. However, the system is not limited to controlled access routes. Principal arterials typically serve the major centers of activity of an urban area and the highest traffic volume corridors. These routes typically carry a high proportion of the traffic even though they constitute a relatively small portion of the roadway network.

Figure T-1 Traditional Roadway Network



Minor Arterial System

The minor arterial system interconnects with and augments the principal arterial system. It accommodates trips of moderate length at a somewhat lower level of travel mobility than principal arterials. This system includes all arterials that are not classified as primary arterials. This system places more emphasis on land access and may carry local bus routes and provide Intra-community continuity, but ideally does not penetrate identifiable neighborhoods.

Collectors

The collector system provides both land access service and traffic circulation within residential neighborhoods and commercial and industrial areas. It differs from the arterial system as it may penetrate residential neighborhoods, distributing trips from arterials through the area to the ultimate destination. Conversely, this system collects traffic from local neighborhoods and channels it into the arterial system.

Local Streets

The local streets system offers the highest amount of access and the lowest amount of mobility. The system is comprised of all roadway facilities not in one of the higher systems defined above. Local streets primarily permit direct access to abutting lands and connection with higher order systems. Service to “through traffic” movement usually is deliberately discouraged.

The traditional approach to roadway planning in the United States incorporates a grid configuration with a hierarchy of roadways with varying functional classifications including expressways, arterials, collectors and local streets. The grid configuration forms a series of blocks. Super blocks are typically bounded by arterials. Within the super blocks, sub-blocks are formed by the various collectors and local streets. In general, access is greatest and mobility is lowest within the interior of the sub-blocks. Mobility increases and access decreases as you move away from each sub-block to the perimeter of the super blocks. Figure T-1 illustrates the traditional roadway network concept.

Existing Roadway System

Existing roadways and rights of way make up approximately 635 acres or nine percent of the land

area within the Murray city limits and 933 acres or six percent of the land within the Murray planning area. Within the Murray city limits the amount of land in transportation uses increased from 541 acres in 2002 to 635 acres in 2008. Transportation uses make up approximately 13 percent of the developed land within the Murray city limits and the Murray planning area.

The transportation system serving the Murray area is comprised of a network of various hierarchy or functional classification roadways including local streets, collectors and arterials. The streets within the older portions of Murray are laid out in a grid format typical of period development across Kentucky and the region. Newly developed areas feature local street layouts that include curvilinear alignments and-cul-de-sacs to help deter thru traffic in the area. However, the fundamental function of the system remains intact as the majority of the street system is inter-connected to a block framework that promotes mobility across the planning area.

Principal arterials serving the area include US 641 (north–south), portions of KY 121 (east– west), KY 80 (east–west), and 16th Street (north-south). Minor arterials include the remaining portions of KY 121, KY 94, KY 1327 (College Farm Road and Chestnut Street), KY 2075 (4th Street) and Sycamore Street. The system includes a number of collectors distributed throughout the planning area. Principal arterials, minor arterials and collectors that serve the planning area are shown on Map T-1. Table T-1 summarizes the approximate mileage for each classification of roadway within planning area.

Table T-1 Functional Classification Roadway Length within Planning Area

Functional Classification	Miles
Principal Arterial	13
Minor Arterial	14
Collector	10
Local Street	125

The maximum recommended spacing of arterials is typically five miles. From an east to west directional perspective the number of arterials would appear to be adequate for the planning area. From a north to south perspective, additional arterials may be warranted. Previous studies within the planning area completed by the Kentucky Transportation Cabinet and others have recognized this need. The lack of arterials in a north–south direction impacts the area by increasing congestion along US 641, Fourth Street and 16th Street

Collector spacing throughout the older portions of Murray appears to be adequate. Newly developed areas to the west and southwest include areas that appear to be deficient in the number of collectors provided. In typical grid arrangements, collectors are normally provided on approximately ½ mile increments. Identification of needed collector corridors in this portion of the planning area is warranted to ensure that sufficient rights of way are set aside for needed facilities to serve system requirements as growth continues.

The physical characteristics of the various streets comprising the system vary. Pavement widths,

horizontal/vertical alignments, and intersection geometrics are variable, indicative of period standards in place when facilities were constructed. Inadequacies in relation to current standards in some instances impair mobility and present hazards under current traffic loadings.

Previous Planning for Roadway Improvements

In 2008, The Kentucky Transportation Cabinet issued a report entitled the "Murray Small Urban Area Study." The primary goal for the study was to identify potential operation modifications to improve the transportation within the Murray planning area. Focus was placed on identification and analysis of road system data for problem spots that are safety and congestion related. The process included a review of the primary arterial and collector routes serving the planning area and evaluating each route's adequacy rate and volume to service flow ratio. In addition, a detailed review of crash history in the area was completed to evaluate the Critical Rate Factor along these state routes. Other considerations reviewed included environmental impact including environmental justice issues.

The findings of the study included a number of project recommendations including operational improvements, minor spot improvements, and widening projects to improve level of service within the system. The recommendations contained in the original study that are still applicable today have been considered in the development of this Transportation Element. The City has accomplished a majority of the projects in the study and has requested the Transportation Cabinet to complete an updated "Small Urban Area Study." The completion of that study should cause the transportation element to be revisited and revised to include the study's findings.

The Kentucky Transportation Cabinet continually programs roadway improvements throughout the system it maintains. The most current plan is the 2018 Highway Plan. Three projects are included in the plan that address needs that were identified in the previous studies. They include:

- Widening of US 641 South to five lanes to the Tennessee state line
- Address pavement conditions on KY 94
- Address pavement conditions on KY 121

The Purchase Area Development District maintains a transportation committee that is responsible for transportation planning efforts throughout the eight county Jackson Purchase Area. The

committee contains representatives from each of the counties through the region. Representatives specializing in various modes of transportation including surface, air & water are appointed to the committee. The committee routinely interfaces with the Kentucky Transportation Cabinet and includes representatives of the Cabinet. A primary function of the Committee is identification of roadway improvement projects across the area for consideration in the Kentucky Highway Plan. The committee maintains a list of non-prioritized projects and tracks those which are included into the official plan. Several of the projects included in the non- prioritized list are in the Murray planning area. Projects on the list supported by the City of Murray have been reviewed and have been included, where appropriate, in recommendations for future roadway improvements.

Pedestrian and Bike Planning

Walking and cycling have long been recognized as important activities; however, mobility and access as measured in traditional planning practices focused on motor vehicle travel. There is increasing recognition that balanced transportation choices are important to individual travelers and society overall. Planning for non-motorized travel is critical to the overall transportation needs for Murray. The compact character of the community, presence of a major university campus and local environment offers an excellent opportunity to promote pedestrian and bicycle travel. A number of benefits of a well-planned system can be attained including increased safety and comfort of pedestrians and cyclists, broadened travel options for non-drivers, reduced conflicts between motorists and other road users, reduced automobile traffic and the problems it creates, increase recreational activity and exercise, better accommodation of people with disabilities, and creation of more livable communities. Pedestrian walks and bike paths are in essence green improvements and result in potential significant savings of fuel that would otherwise be used for automobiles and other vehicles thus eliminating emissions to the environment.

Historically, there have been a number of planning efforts initiated in Murray to improve pedestrian and cycle travel. The 1990 & 2008 Comprehensive Plans included a detailed plan for bikeways and walkways in the community. While the plan was well presented, the majority of recommendations in the plan were not implemented due to funding constraints and prioritization of other transportation improvements above bike path and walkway improvements.

Other planning efforts have addressed bikeways and walkways including the 2005 Parks and Recreation Master Plan and a bike plan study completed by Murray State students in 2008. The 2008 plan is the most detailed and is shown on Map T-2.

All of the plans that have been previously developed still have relevance. The emphasis on implementation of bikeway and walkway improvements continues to increase nationwide and Murray officials are very interested in implementing projects. The City of Murray has been very successful in past years in obtaining funding for the replacement of sidewalks within the community. Officials indicate the program will be continued as long as funding can be obtained.

The key to implementing a sustainable program to improve bikeways and walkways is securing a reliable source of funding and development of a program that is fiscally attainable within the funding limitations. Additionally, regulatory requirements associated with new development must be reviewed and revised where necessary to ensure that bikeway and walkway improvements are prioritized within new developments.

A program to implement bikeway and walkway improvements can be developed from the previous planning documents listed herein. The plans can be reviewed and priorities can be established based on needs such as mobility around the college campus area and recreational uses along greenways throughout the community.

The Kentucky Transportation Cabinet created the Pedestrian and Bicycle Design Guidance Task Force in response to the then new USDOT publication "Design Guidance Accommodating Bicycle and Pedestrian Travel: A Recommended Approach." The task force was headed by the Multimodal Programs division. Its goal was to develop policies to guide the Kentucky Transportation Cabinet on when, where, and how to include bicycle and pedestrian facilities. The task force has coordinated its efforts with other agencies nationwide to create and maintain resources to aid in the planning, design and construction of bikeway, walkway and multi-use trail improvements. Information is available on the web to guide community leaders with design and funding of these facilities.

Information from the design guidance can be utilized to identify appropriate improvements for each priority facility and budget estimates can be generated to establish a program that can be implemented.

Public Transportation

Murray Calloway Transit Authority (MCTA) is the public transportation agency in Calloway County. The transit authority is managed by an Executive Director who reports to the Transit Authority Board. The Transit Authority has established itself as a dependable, cost-effective service within the community. The mission of the Transit Authority is to provide affordable transportation for people of Murray-Calloway County for educational, medical, recreational, and health care transportation needs.

The intent of the MCTA is to make transportation accessible for local residents to improve their way of life. In addition, public transportation provides benefits to businesses by increasing their access to their customer base. Having public transportation benefits the environment and increases the quality of life by improving the livability and the economic vitality of the community and the entire region.

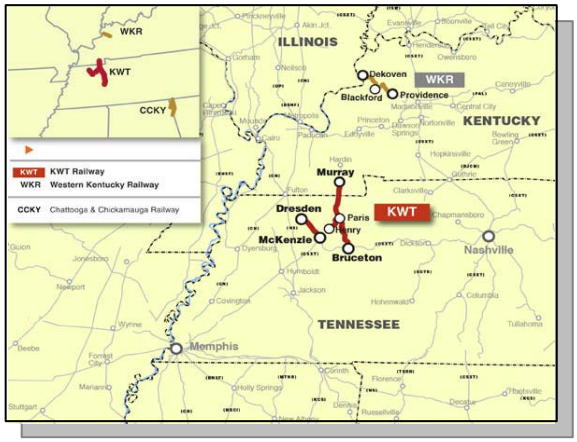
The service area of the MCTA is in Calloway, Marshall, and Graves Counties. Buses and vans operate on an on-call schedule with charges established by general location within the service area. The Authority also provides transportation

for Murray State University athletic events and the major festivals in Murray. The majority of their buses are RV cutaways that accommodate 14 passengers and two-wheel chairs. The Authority also owns several mini-vans. All told, the MCTA has 30 vehicles and 38 employees. They provided over 107,391 rides in FY19 covering over 626,208 miles. They participate in the $10 share ride to Paducah and Mayfield on a scheduled route. Additionally, they provide a shuttle service for Murray State events such as football, basketball, and graduation. Their facility is located at 1111 Transit Way, which is just North of Highway 121.

Ridership levels in 2008 were in the 75,000 range so the FY19 ridership level of 107,391 is a 43% increase. The Authority is constantly reviewing operating enhancements to improve service.

Railways

Murray and southern Calloway County are served by the Kentucky West Tennessee Railway. This railway was acquired in 2005 by Genesee & Wyoming Inc. (GWI). GWI owns and operates short line and regional freight railroads in the United States, Canada, Australia and the Netherlands. Their operations currently include 115 railroads organized in nine regions, with more than 13,000 miles of owned and leased track. The Kentucky West Tennessee railway provides Murray businesses and industries rail access between Murray and the CSX's "Memphis to Nashville main line" at Bruceton, Tennessee. Currently, the rail has limited usage.



Murray Calloway County Airport

The Murray Calloway County airport was opened in 1961 and is operated by the Airport Board. Kyle- Oakley field is a single runway airport serving the recreational and commercial aviation needs of Murray and Calloway County. The runway is 6,200 feet long by 100 feet wide. The airport offers instrument landings. Traffic control is provided by the Memphis Air Traffic Control Center.

The airport terminal has been recently expanded. It has 24-hour restrooms and snack/vending machines. The terminal also includes a pilot lounge, flight planning area, and access to reports on weather through Meteor Logix. 45 small hangars and three large hangars are available.

The airport serves as a valuable resource for the region. The airport runway is long enough to accommodate jet traffic and is frequently used by area industries for corporate transportation. The

airport is of benefit for attracting businesses and industries interested in making investments in the economy of Murray.

The nearest commercial passenger air service is provided through Barkley Regional Airport located in Paducah, Kentucky approximately 45 minutes away. Many of the citizens utilize the Nashville International Airport for both international and domestic flights, which is approximately 120 miles away.

FUTURE TRANSPORTATION FACILITIES

The Future Transportation Facilities section of the Murray Comprehensive Plan describes the planned future transportation system in the planning area. The future transportation facilities were developed based on the goals and objectives established for the plan and sound planning principles. A part of enhancing the lifestyle of Murray residents includes the planning of transportation facilities to support the land use and community facilities. The future transportation portion of the plan has been prepared with the goal of enhancing the quality of life in the Murray planning area through the integration of modern growth policies and environmental enhancement related to the transportation system. An adequate transportation system results in the ease of movement of residents, goods, and services within the Murray planning area and thereby complements the unique lifestyle and the overall quality of life in Murray. An adequate transportation system is also important to recruiting and retaining commercial and industrial investment in Murray.

Planned Roadway Improvements

A number of improvements to the roadway system in the area have been identified to address the goals and objectives set forth in the comprehensive plan. Many of the improvements were identified in previous planning efforts as described herein. Map T-3 illustrates the proposed location of improvements. The following summarizes major planned improvements grouped for each functional classification:

Principal Arterials

KY 80: The Kentucky Transportation Cabinet 6-year plan has highlighted a plan to connect KY 80 to I-24. Work is underway on a four-lane road east of the Lake Barkley Bridge to the Cadiz Bypass which is scheduled for completion in 2020. Completion of this four-lane road will make KY 80 a four-lane highway from Murray to I-24.

HWY US 641: The Kentucky Transportation Cabinet has programmed widening improvements to HWY US 641 South from the current five lane section to the Tennessee State Line. The five-lane urban section that extends from Glendale Rd. to the Clarks River Bridge is currently in utility relocation and the road construction has started. Construction of this section is scheduled to finish in 2021. Plans are to improve the remaining sections in a southerly direction to a four-lane divided facility with limited access to the state line with financial resources provided by the BUILD grant awarded to the Calloway County Fiscal Court.

Murray East Bypass: Conceptual planning efforts by the transportation committee of the Murray Calloway County Chamber of Commerce in 2004 identified the need for a fully controlled access eastern bypass within a floodplain. The conceptual proposal entails construction of a four-lane divided access controlled facility extending along an alignment adjacent to the Clarks River extending from US 641 south of the Clarks River to the new Kentucky 80 east of

US 641. Funding for this project has not been programmed to date. The construction of the Murray Business Loop is anticipated to reduce the need for this project. Additionally, the cost of construction in the floodplain coupled with the increased access to KY 80 have alleviated some of the issues. Accordingly, additional review of the project appears warranted.

Minor Arterials

Murray Business Loop: A business loop is being designed on the southeast side of Murray. Plans are to construct a two-lane rural section along an alignment that traverses to the east of the business district from Glendale Road to Kentucky 94. This project has all the property acquired and is currently working on right-of-way acquisition which will be closely followed by utility relocation. At that point, the City will need additional funding for the construction of the roadway through the state budget process.

Five Points Intersection: The Five Points intersection at 16th Street, Coldwater Road, and College Farm Road on Murray State University's western edge has been under study for a number of years. The project was programmed in the KYTC Six Year Plan at one time. A number of options have been studied. One option is the conversion of the intersection from the five-legged intersection and the potential use of one-way couples using Coldwater Road and 16th Street between College Farm Road and KY 121 to improve capacity. The congestion problems with this intersection still persist and additional study should be completed to determine the preferred alternate for alleviating the problem. Upon determination of the preferred solution, the City of Murray should work closely with the Kentucky Transportation Cabinet to have the project included back into the six-year plan.

Murray West Bypass: A bypass is proposed around the western portion of the planning area. This route would relieve congestion along US 641 and would improve mobility by providing a more direct route from the residential areas on the west side of Murray to the Murray State Campus and the KY 121 corridor. Ideally, the route should extend to connect with Kentucky 80. It is envisioned the bypass could eventually extend to US 641 south of Murray. Phasing of the route is recommended and the initial phases would extend the route from Wiswell Road to KY 121. The second phase could extend the route from KY 121 to KY 80. Future phases would complete the connection to US 641 to the south. The proposed alignment for the initial phases of the road could follow along the Oaks Country Club Road, Hudson Road, and on new alignment to connect up with Airport Road at KY 121. Subsequent phases would follow the existing Airport Road alignment to KY 80. The number of lanes for the facility should be studied closely. In the absence of detailed traffic data, it would appear that a two lane facility may be adequate initially. Sufficient right of way should be acquired to enable the route to be widened as needed periodically to add lanes.

4th Street and Sycamore Intersection: Upgrade of this intersection to an urban intersection is warranted to address adequacy, capacity and safety issues. The current design of the intersection is substandard given it is a "Y" intersection with one leg of the "Y" allowing traffic to travel in both directions while the other leg allows only 4th Street south bound traffic to turn onto Sycamore St.

KY 94 West: Widening and other improvements on Ky 94 West will be necessary to improve the flow of traffic in the areas between 12th Street and the proposed West Bypass. Generally, widening will be in the form of turn lanes to increase the level of service of this roadway.

Collectors

16th Street and Brinn Road Widening: This project consists of improving the existing 16th Street and Brinn Road from a two lane section to an urban three lane section with bike lanes. The improvements along this north-south route will extend from Murray State's campus (KY 1327– College Farm Road north to KY-121. Ultimately widening of the route north towards KY 80 appears warranted to maintain its function as a collector in a northwest portion of the planning area that is currently experiencing growth. This section of the street runs through a major crossing for students walking to the west side of campus. Closing this street through the campus when it is the busiest will cut down on the amount of vehicle to pedestrian accidents.

New Collector - Doran Road Extension to KY 121: This project consists of the construction of a new connector that will function as a collector on new alignment extending from State Route 94 West and Doran Road to KY 121. This route would be expected to relieve congestion along US 641, providing an alternate north–south route through the mid portions of the planning area.

Opportunity Drive Extension: This route is proposed as a collector to serve the northwestern portion of the planning area which has been subject to significant growth. The City of Murray worked closely with KYTC to provide a point of access along KY 80 for Opportunity Drive. This route would extend on a new alignment in a southerly direction to connect up with Walmart Drive within a rapidly growing commercial area adjacent to KY 121.

Industrial Road Widening: The construction of the Murray Business Loop will direct traffic to a point where Industrial Road intersects with KY 94. Industrial Road provides a connection between Chestnut Street and Kentucky 94. Improvement of the link between KY 94 and Chestnut Street is warranted for improving mobility. Re-alignment to improve the 90° curve along Industrial Road is warranted. The pavement section should be evaluated and if necessary improved. Two 12 ft. wide lanes should be provided to accommodate truck traffic. In addition striping and signing will be needed.

New Collectors - Growth Areas:
Collectors should be designed and constructed to the cross-sectional template standards adopted in the city's subdivision ordinance. An update of the city's traffic model is suggested to determine the recommended number of lanes for these improvements as well as the improvements suggested for the arterials above. In some instances, a three lane section may be warranted to maintain an adequate level of service.

Existing Collectors: The improvement of numerous existing collectors including Wiswell Road, Doran Road from Wiswell Road to KY 94 West, and South 16th Street from Wiswell Road to Sycamore Street will improve the flow of traffic as Murray continues to grow. The improvement of the connectors will generally be in the form of widening and turn lanes.

Local Streets

Intersection Re-alignments and Improvements: Murray has improved several offset intersections around town, including one at South 15th Street and Main Street. Realignment of these intersections is recommended where practical to improve mobility. There are also several intersections where general improvements would benefit the flow of traffic which include the intersections of South 16th Street and Sycamore Street, North 8th Street and Chestnut Street, Main Street and Thirteenth Street, and Main Street and Fourteenth Street.

US 641 Frontage Road: Murray planning staff continues to explore funding opportunities to

implement plans to connect the frontage roads along the east and west sides of US 641 North along the Bee Creek area to improve circulation in the area.

Traffic Calming Improvements: Neighborhoods in Murray's urban core appear to desire traffic calming. Recently, three speed tables were added on North 16th Street through the Murray State University Campus that have proven to slow traffic. In the past Murray has placed four-way stop signs, but realizes this is not an optimal solution. Other measures are available and should be studied on a case by case basis for providing a solution to problems such as speeding, excess traffic etc. Enhancement of collectors in the area adjacent to observed problems will help reduce problems associated with the excessive traffic located on local routes. Lateral obstructions, offset alignments, offset parking and other measures have been used successfully in the region and are worthy of consideration in Murray.

Future Transportation Principles

The future transportation principles and resulting goals defined in this section are a restatement of the transportation goals and objectives adopted by Murray for the Comprehensive Plan and listed at the beginning of this Transportation Element. Each principle is defined along with a related goal and several strategies to achieve that goal. The strategies outline actions that can be taken to work toward the attaining of the goal. The full list of goals and objectives adopted by Murray for the Comprehensive Plan is contained in Appendix A.

The Transportation Facilities Principles discussed in this section include some of the principles that are the basic tenants of this Comprehensive Plan and were included in the Land Use and Community Facilities Elements. However, the importance of transportation facilities to maintaining the compact nature and enhancing the community character of Murray leads to the introduction of the new transportation related principle titled "Move People and Goods Efficiently."

1) Move People and Goods Efficiently

The restriction of the movement of traffic, commonly referred to as congestion, is a characteristic of any urban area. Traffic congestion is many times relative. What someone used to small town life might consider traffic congestion; others used to a larger urban area might consider relatively smooth traffic flow. Increases in the number of personal vehicles, even in small towns, contribute to more traffic being on roadways. Many times new residential or commercial development put more vehicles in a given area thereby impeding the flow of traffic. The type and geographic distribution of development is usually the cause of impeded traffic movement. In addition, Murray is a regional center for commercial services, employment, and recreation that draws traffic from multiple counties. Murray lies on one of the major north south routes from Western Kentucky into Tennessee. A large percentage of the Murray State University students commute to Murray several times each week.

One way to improve traffic movement is to reduce the number of vehicle trips per resident. Reducing trips using automobiles increases the movement of traffic and improves air quality, saves energy, and increases bicycle and pedestrian safety. Public transportation is one method for reducing the number of routine automobile trips. Also, public transportation is a method for improving the movement of traffic during special events in Murray. As long as Murray remains relatively compact, the large number of university students who might use public transportation presents an opportunity to generate a reduction in automobile trips and thereby improve traffic movement.

The movement of traffic can be enhanced by improving and expanding the transportation

system. Also, traffic management measures may be instituted to improve the movement of traffic.

Walking, bicycle riding, and the use of other smaller low-impact vehicles may also be used to reduce the number of automobile trips. Other methods for reducing the number of trips or the length of trip are related to development methods. Placing smaller commercial areas closer to residential areas generally keeps automobiles off major thoroughfares. Other forms of mixed use development also can place residents in closer proximity to commercial areas and encourage alternative means of transportation.

This “moving people and goods efficiently” principle addresses ways to reduce the increased movement of traffic through public transportation, the expansion and enhancement of roadways, and the use of traffic management techniques. Other forms of transportation like walking and bicycling are addressed in the “quality of life” principle below.

Move People and Goods Efficiently Goal: Expand and enhance the transportation system to improve the flow of traffic and reduce automobile dependency by increasing access to other less congestive transportation modes like public transportation.

Strategy 1: Enhance and Expand Public Transportation

The Murray Calloway Transit Authority provides public transportation services to the citizens of Murray and Calloway County. Transportation is generally provided on a “call before you ride” basis. The desire is for the Transit Authority to develop a set of routes and a time schedule for making the routes. Additional increases in the demand for public transportation are required to make establishing routes successful.

Murray will consider encouraging the use of public transportation by establishing routes and installing attractive and convenient bus shelters at strategic locations along the routes. In addition, the Planning Commission will consider, in the revision of the zoning ordinance and land development standards, the integration of development requirements to install attractive and convenient bus shelters and safe bus pull-offs into new development and redevelopment projects. Also, allowing a higher development density in direct proximity to transit routes should be included in the revision of the zoning ordinance and land development standards. Murray should also pursue a partnership with Murray State University to assist in the movement of students from satellite parking lots to campus destinations. The zoning ordinance was revised in 2019. However, additional changes may be needed to reflect all the desires in the 2020 Comprehensive Plan.

Strategy 2: Enhance Traffic Movement for Community Events

Murray is the site of numerous community festivals and events that generate large amounts of traffic movement. In addition, the basketball games, football games, and other special events at Murray State University result in traffic movement problems.

Murray will develop a traffic management strategy for these times of increased traffic movement. Consideration will be given to ways to use the public transportation system to assist in improving traffic movement. In addition, Murray and the Transit Authority will consider partnering with Murray State University to utilize Transit Authority resources to shuttle participants to events at the university.

Strategy 3: Enhance Traffic Management Measures

Traffic management is the process of optimizing the efficiency of the existing roadway network. Traffic management options are generally applied to existing roadways before more capital intensive road widening is considered. Monitoring of the roadway system to track traffic growth is an important element of a good traffic management plan. Monitoring and traffic management plan development allows the prioritization of street improvements and the identification of congested roadways as areas that require special analysis during the development review process.

The adoption of regulatory measures is another approach to traffic management. Effective regulatory measures can make a big impact on the management of the impacts of traffic growth. Limiting the number of access points and greater controls on the location and spacing of driveway cuts on arterial roadways can increase the efficiency and safety of major arterials to motorists. The safety of bicyclists and pedestrians can also be enhanced by the reduction of access points onto these street networks. In general, the transportation system concentrates traffic on a limited number of major arterial roadways. As Murray grows, more and more pressure is placed on a relatively small number of roadways to handle the flow of traffic.

Roadway connectivity from neighborhood to neighborhood, as well as from neighborhoods to commercial areas is a tool that can be a great help in the management of traffic. Residential development trends have created clusters of homes isolated from one another, all relying on the same arterial roadway to connect to each other and the wider community. Increased neighborhood roadway connectivity would reduce the number of neighborhoods relying on certain roadways to connect themselves to each other and to the community as a whole. Increased connectivity would also provide for multiple routes of travel, relieving pressure on major arterials by providing options to the motoring public.

Murray will establish a Strategic Traffic Management Plan in cooperation with KYTC that builds upon the Small Urban Area Traffic Study conducted for Murray. Murray will coordinate with KYTC in the establishment of additional monitoring to identify areas where additional traffic management would be beneficial to the flow of traffic. As part of the plan, Murray will inventory and reclassify its streets as necessary.

As part of its revision to the zoning ordinance and land development standards, the Planning Commission will establish driveway cut and spacing requirements that assist traffic movement and increase safety to motorists and pedestrians. In addition, the Planning Commission will integrate neighborhood connectivity into the revision of the zoning ordinance and land development standards. The zoning ordinance was revised in 2019. However, additional changes may be needed to reflect all the desires in the 2020 Comprehensive Plan.

The traffic model for the community that was completed in 1995 must be updated to aide in the planning process for new routes and widening projects. The updated model will be integral in providing guidance for the number of lanes required and will provide information to enhance the design selection of the appropriate lane and shoulder widths for each segment in accordance with current guidelines. In addition, the model will provide a tool for providing data for use in other operations evaluations such as signal timing/coordination studies and access management improvements.

Strategy 4: Enhance and Expand the Roadway System

Enhancing or expanding the roadway system may be necessary in instances where traffic management measures on existing roadways cannot be effective for enhancing traffic

movement. Also, the location and density of development may dictate the enhancement or expansion of the roadway system. Enhancement of the system generally takes the form of road widening or the realignment of intersections. Expansion of the roadway system requires the anticipation of future growth and the construction of new roadways sufficient to handle the growth along with the existing traffic. Future land use patterns are important in the planning of expansions to the roadway system.

Roadway Inventory and Pavement Management

To further enhance the transportation system, the roadway inventory will be updated and all of the roadways re-classified in accordance with the functional classification system that is nationally recognized. The portion of the city's subdivision ordinance should be reviewed to determine if standard roadway cross-section (template) requirements are current with criteria recommended by the American Association of State Highway Transportation Officials. Deviations should be evaluated and the ordinance should be updated as applicable. Deficiencies identified in the inventory and re-classification process should be identified and plans for improvements to meet revised requirements should be developed and included in the city's transportation improvement plan.

To ensure the roadway system is properly maintained, Murray will develop a pavement management system in accordance with requirements set forth by the American Society for Testing and Materials (ASTM). The pavement management system will provide for a network rating of pavement condition for each component of the network using visual evaluations and non–destructive tests. The evaluations allow for a pavement condition rating that can be used to prioritize roadway maintenance and provide a basis for street maintenance funding to maintain the quality of the roadway system.

Strategy 5: Continue to Support Funding of Local Transportation Projects

The size of the Murray budget does not generally allow the funding of large roadway projects. Roadway projects must therefore be funded through state government with state and federal appropriations. More often than not, state and federal appropriations do not keep up with planning and local need. Murray will continue to work with state and federal agencies and legislative delegations to encourage the funding of local projects on the state's Six-Year Plan and to encourage special appropriations.

2) Enhance Unique Small Town Community Character

Murray is a unique town with a progressive regional university that has won numerous awards for its educational value. Murray has also been recognized as a top retirement destination. Murray is in the center of an agricultural area and has the small town feel generally associated with agriculture. This blend of economies supports services and activities not generally associated with similar sized towns in Kentucky. The blends of these different cultures and the life style they support give the residents of Murray a distinct pride in their community and its character. The character of Murray will be enhanced through the ability to move people and goods efficiently throughout the area.

Community Character Goal: Enhance Murray's unique community character by protecting and enhancing core neighborhoods, the downtown, and historic areas, while providing for the efficient flow of people and goods throughout.

Strategy 1: Develop Progressive Zoning Ordinance and Land Development Standards

Zoning procedures and the standards by which land is developed are very important in shaping

the future character of the Murray area. The Planning Commission recognizes that its overall land development process needs to be improved and will revise the existing zoning ordinance and land development standards to reflect the kind of community that Murray strives to become. Different sections of this Transportation Element include items that should be considered in a new zoning ordinance and land development standards. Examples of changes to be considered by the Planning Commission include roadway section and highway cut requirements. The zoning ordinance was revised in 2019. However, additional changes may be needed to reflect all the desires of the 2020 Comprehensive Plan.

3. Enhance, Preserve and Protect the Environment

Murray is a very environmentally aware community. The environmental programs at Murray State University and the ever-increasing awareness of environmental impacts from human activity have fostered this environmental awareness. This element recognizes the desire of the area's citizens that the development of transportation facilities occur in an environmentally friendly manner and that the resulting developed facilities contain significant environmentally friendly features or green space, as appropriate. Streams, their associated floodplains, and forested areas are the most significant environmentally sensitive features in the Murray area. The common trend in environmentally friendly communities is to recognize that protection of environmentally sensitive areas and the provision of green space are important public facilities and not just desirable amenities.

The development of transportation facilities in Murray should not compromise environmental integrity. Environmentally sensitive roadway and other transportation facility construction recognize that preservation is more important than mitigation of impacts. Sensitive environmental areas should be identified in advance of roadway project development and alternative uses of land planned accordingly. Best management practices should be used as key measures to protect developing areas.

Landscaping is also a useful technique to add to the concept of a more visually pleasing environment in Murray. Opportunities exist in the development of transportation projects to include landscaping.

Environmental Goal: Maintain a natural environment by protecting, preserving, and enhancing natural resources and promoting design, development and construction practices that create green space, neighborhood connectivity, and a visually pleasing environment.

Strategy 1: Include Beautification in New Roadway Projects

This strategy is to add to the beautification of Murray theme that is found throughout this Comprehensive Plan. Where feasible and practicable, Murray will incorporate landscaping features in its development of new transportation facilities. Murray will work with local, state, and federal agencies to incorporate landscaping in the transportation projects funded by these agencies in the Planning Area.

Strategy 2: Promote Environmentally Sensitive Transportation Facility Development

The intent of this strategy is to encourage the incorporation of environmentally sensitive measures into the design of transportation facilities. Identifying and mapping sensitive areas and Integrating environmental and more conservation oriented measures into design can result in the creation of a more environmentally friendly project. Murray will integrate environmentally friendly measures into the design of its transportation facilities. It will work with state and federal agencies to insist that environmentally friendly designs are used for projects in the Planning Area.

4) Develop and Enhance Quality of Life Measures

Quality of life is a key component for Murray to keep its current residents, attract new retiring residents, or attract new commercial and industrial investment in the community. Murray currently has a high quality of life, but there are measures that can be taken to increase its attractiveness for future residents and related commercial and industrial investment. There are many things that contribute to a high quality of life and some of these measures have already been addressed in Principles 1-3. Additional measures are discussed in this section.

Quality of life components that are related to transportation facilities include bike trails, walking trails, and sidewalks. The potential for decreasing the number of automobile trips using walking or biking in Murray is good as many destinations are within walking or biking distance. If walking and bicycling, especially using sidewalks, are to compete with driving, the sidewalk environment must be inviting and user friendly. Making sidewalks more user friendly usually means separating them from moving traffic. Wider sidewalks or tree plots not only makes walking safer, but also buffers pedestrians from spray, dust, and noise. Good site design can make the sidewalks more attractive, thereby enticing walkers and bike riders to use them. Regularly spaced street trees can be added to provide shade, beauty, and visual interest.

Quality of Life Goal: Develop new programs, events, and other quality of life measures while enhancing existing cultural and recreational opportunities and where possible integrate these quality of life measures into all aspects of life in Murray.

Strategy 1: Develop System of Recreational Walking and Bicycle Trails

Like parks, recreational walking and bicycle trails are an important component of the quality of life. When incorporated with open/green space, they present areas that are not only visually pleasing but also contribute to a healthy life style for the citizens using them. Recreational trails can also be used to provide neighborhood connectivity. The Parks and Recreation Master Plan identified a greenway connecting many of the neighborhoods in the southern and western portion of the Planning Area. In many instances land for this greenway trail and other recreational trails can be acquired during the land development process using techniques previously described for open/green space.

The development of new recreational trails is an important aspect of the reduction of traffic flow in the planning area. When residents can utilize walking and bike trails to move between neighborhoods, automobile trips are reduced. The Planning Commission will evaluate new developments looking toward neighborhood connectivity and the acquisition of land suitable for new recreational trails. As part of this effort, a bikeway improvement plan will be developed.

Strategy 2: Enhance the Use of Sidewalks

Sidewalks are a form of recreational trail and facilitate the opportunity of residents to move within and between neighborhoods without the use of automobiles. Sidewalks on both sides of the street in residential neighborhoods also contribute to a friendly atmosphere giving residents the opportunity to interact more freely than if sidewalks were limited to only one side of the street. The existing subdivision regulations require sidewalks within the street right-of-way on each side of arterial and collector streets in all subdivisions that are developed inside the corporate city limits, those lying in whole or in part inside the city limits,

and those lying within the four-mile planning area. In certain instances, the Planning Commission may waive the use of sidewalks.

As part of the revision of the zoning ordinance, the subdivision regulations will be reviewed and consideration will be given to extending the requirement for sidewalks to the entire Urban Services Area. In addition, the sidewalk waiver provision in the subdivision regulations will be reviewed. Changes in the subdivision regulations will also be considered to increase the width of sidewalks on one side of the street in appropriate situations to facilitate inter-neighbor and intra-neighborhood connectivity through the accommodating of alternative means of low-impact transportation. The use of these alternative means of transportation could be included in an alternative source of fuel encouragement program. The zoning ordinance was revised is 2019. However, additional changes may be needed to reflect all the desires in the 2020 Comprehensive Plan.

In addition, Murray will continue its sidewalk maintenance program. It will also continue to expand the current sidewalk system in accordance with the Five-Year Sidewalk Improvement Plan.

5) Maintain Economic Opportunity

Approximately 29 percent of the jobs and 32 percent of the income result from jobs in the educational, health care and social assistance, giving Murray a stable employment base. Approximately 11 percent of the jobs and 17 percent of the income come from manufacturing. Despite current challenges in the manufacturing sector due to the national downturn, future economic potential for the Murray area appears good. The completion of the industrial park on Highway 641 North gives the area excellent future potential for attracting new industrial investment and the resulting jobs. The continued growth of the Murray Calloway County Hospital and the completion of the expansion there also bode well for the future of the Murray area. Agriculture will also continue to play an important role in Murray's economic future.

The quality of life is high in Murray and actions taken as a result of this Comprehensive Plan should ultimately make it even better. The quality of life and proximity to Kentucky Lake and the Land Between the Lakes National Recreational Area should prove to be positive and important factors for the Murray area in recruiting new businesses, new retirees, and developing income from tourism.

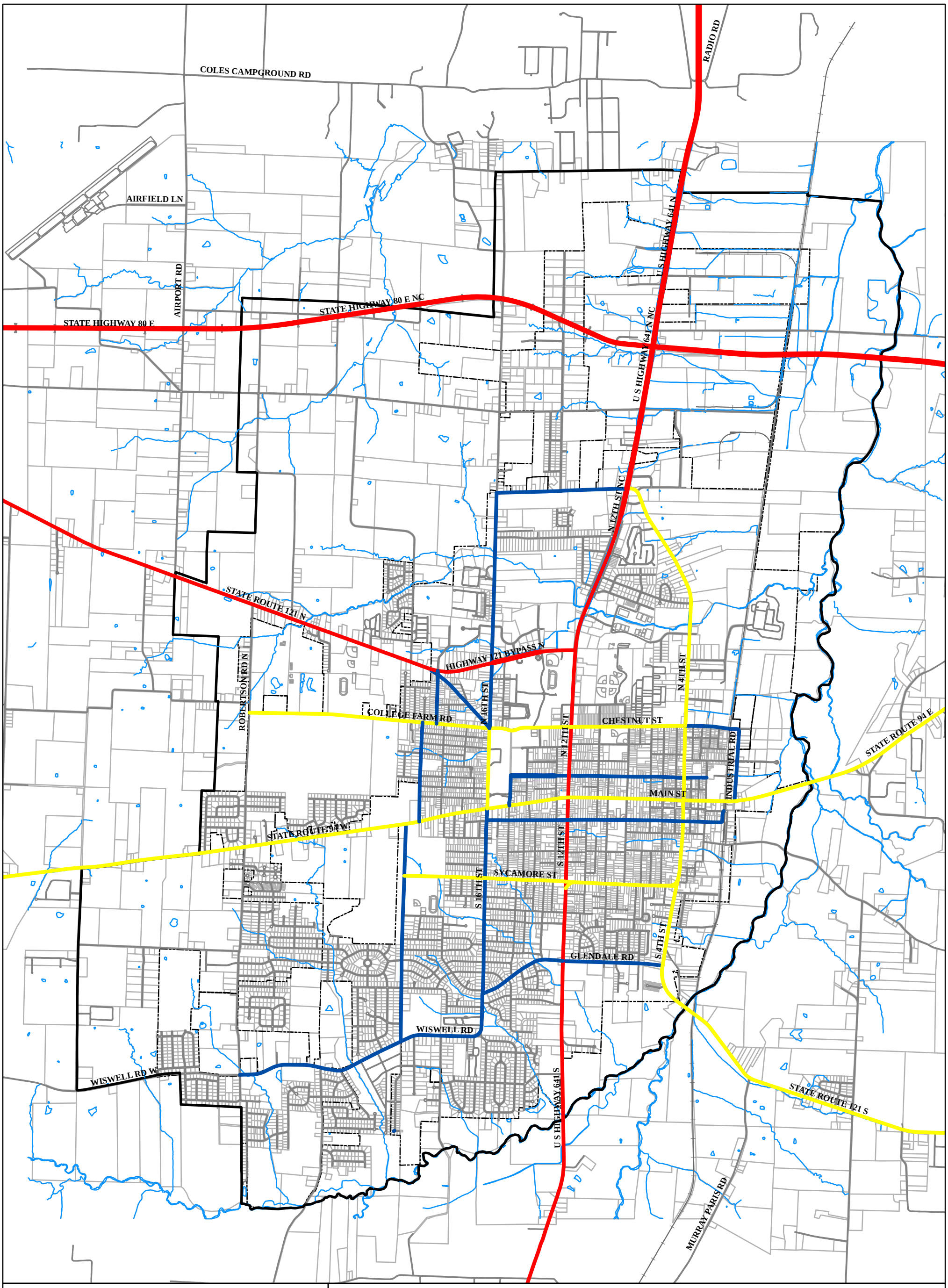
Economic Goal: Build upon Murray's quality of life assets and location to encourage new capital investment and the creation of quality jobs to enhance Murray's strong economic base.

Strategy 1: Enhance and Expand the Airport

The Murray Calloway County airport is an important element in the future economic development of Murray and Calloway County. Murray will work with Calloway County and the Federal Aviation Administration toward an expansion of the facilities at Kyle-Oakley Field.

Strategy 2: Support Regional Transportation Development Efforts

Regional transportation projects have a significant impact on economic development in Murray. When these regional projects improve access to and from Murray, the opportunity for economic investment increases. As part of its economic development efforts, Murray will work with KYTC and other state and federal agencies to encourage the construction of regional transportation system improvement projects like the U.S. Highway 68/KY 80 bridges over the Tennessee and Cumberland Rivers.



DEPARTMENT OF
PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

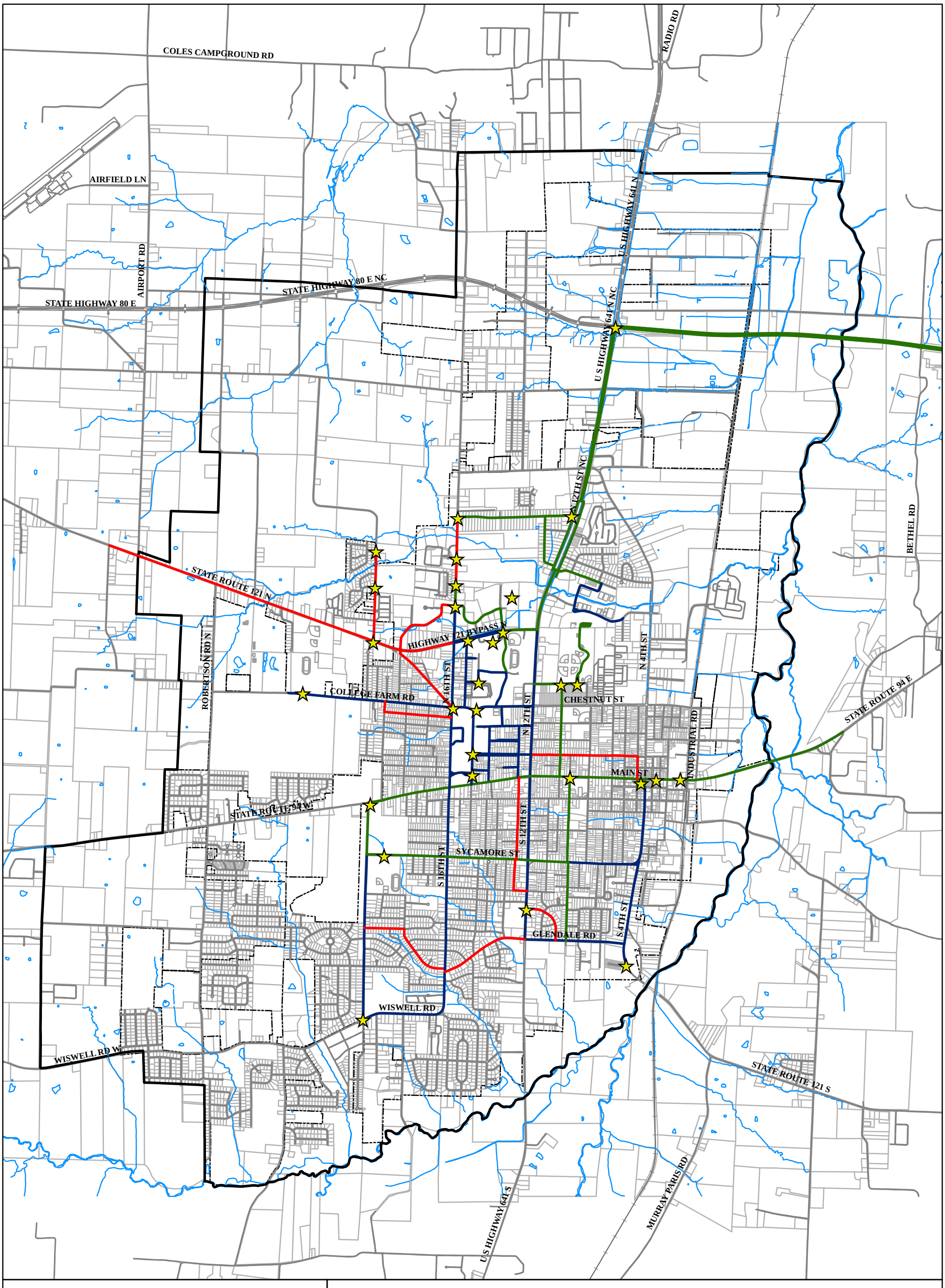
T-1: Existing Roadways in the Murray Planning Area

- Principal Arterial
- Minor Arterial
- Collector
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

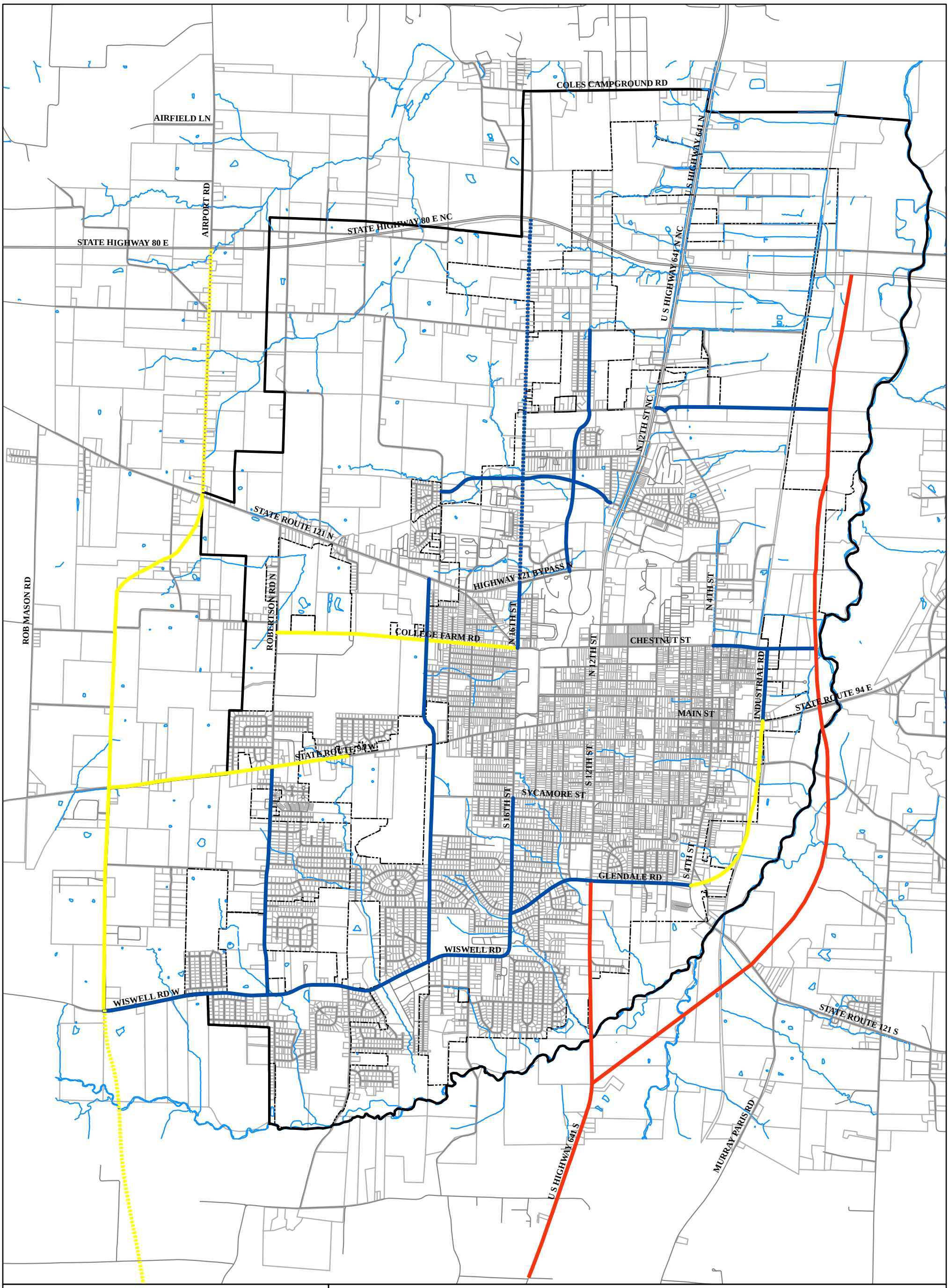
T-2: Cycling Paths

- Phase 1
- Phase 2
- Phase 3
- Points of Interest
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



DEPARTMENT OF
PLANNING & ENGINEERING
CITY OF
MURRAY
CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

T-3: Planned Roadway Improvements in the Murray Planning Area

- Collector Improvement
- Collector Improvement (Future)
- Minor Arterial Improvement
- Minor Arterial Improvement (Future)
- Principal Arterial Improvement
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet

COMMUNITY FACILITIES ELEMENT

INTRODUCTION

Kentucky Revised Statutes (KRS) 100.187 specifies the content of a comprehensive plan in Kentucky. KRS 100.187 (4) states that comprehensive plan shall include a community facilities plan element which shall show proposals for the most desirable, appropriate, economic, and feasible pattern for the general location, character, and the extent of public and semipublic buildings, land, and facilities for specified times as far into the future as is reasonable to foresee. The facilities may include, without being limited to, parks and recreation, schools and other educational or cultural facilities, libraries, churches, hospitals, social welfare and medical facilities, utilities, fire stations, police stations, jails, or other public office or administrative facilities.

KRS 100.187 (6) states the comprehensive plan may include any additional elements such as, without being limited to, community renewal, housing, flood control, pollution, conservation, natural resources, regional impact, historic preservation, and other programs which in the judgment of the planning commission will further serve the purposes of the comprehensive plan.

These two paragraphs from the Kentucky Statutes frame the requirements of the Community Facilities Plan. The Murray Community Facilities Plan is divided into two sections; utilities and other community facilities. The focus of the Community Facilities Plan is to ensure that adequate lands and facilities are available to support the community now and into the future.

UTILITIES

Utilities play a large part in the growth and development of an area. Keeping utilities operating efficiently is a challenge to the company or governmental entity responsible for the utility. This section of the Community Facilities Element of the Murray Comprehensive Plan addresses water supply, wastewater, stormwater, natural gas, electricity, telecommunications, and solid waste. The current status of each utility is generally described. In addition, future plans of each utility related to serving its existing and future customers are delineated. Maps showing service areas and/or system facilities are included for all utilities except solid waste.

Goals and Objectives

Goals and objectives have been adopted by the City of Murray to address the major issues and concerns that are and will be affecting the City of Murray now and into the future. The goals and objectives that relate to the utilities section of the Community Facilities Plan are listed below. The list includes the general area of each goal followed by an objective.

(1) Public Utilities and Services – Continuously review and monitor city infrastructure services and practices (water, electricity, sewer, natural gas, sanitation, telecommunications, stormwater) to identify new ways to deliver these services in an efficient, cost effective manner while taking into consideration the impact of any new infrastructure.

(2) Public Utilities and Services – Provide for the safest and most efficient integration of cellular antenna towers for cellular or personal communications services within the community, primarily through private enterprise, but in cooperation with government.

(3) Environment – Continue to promote community outreach programs such as "Make a Difference Day" and "Adopt a Highway" that stress environmental protection

Water System

Planning

The Murray Water System supplies potable water to the City of Murray and portions of surrounding Calloway County. Administrative office facilities for the water system are located on Andrus Drive. The water system serves approximately 7,682 residential, 1,447 commercial, and 11 industrial customers. The water system currently has a water loss of approximately 9 percent. Plans for the water system are summarized in the "Water Distribution System Master Plan" dated September 2014. The plan described Murray's water system and identified future system needs out to year 2033. This summary breaks down the plan into the areas of Source, Treatment, Pumps, Storage, Distribution, and Future Plans.
Each of these areas is described below.

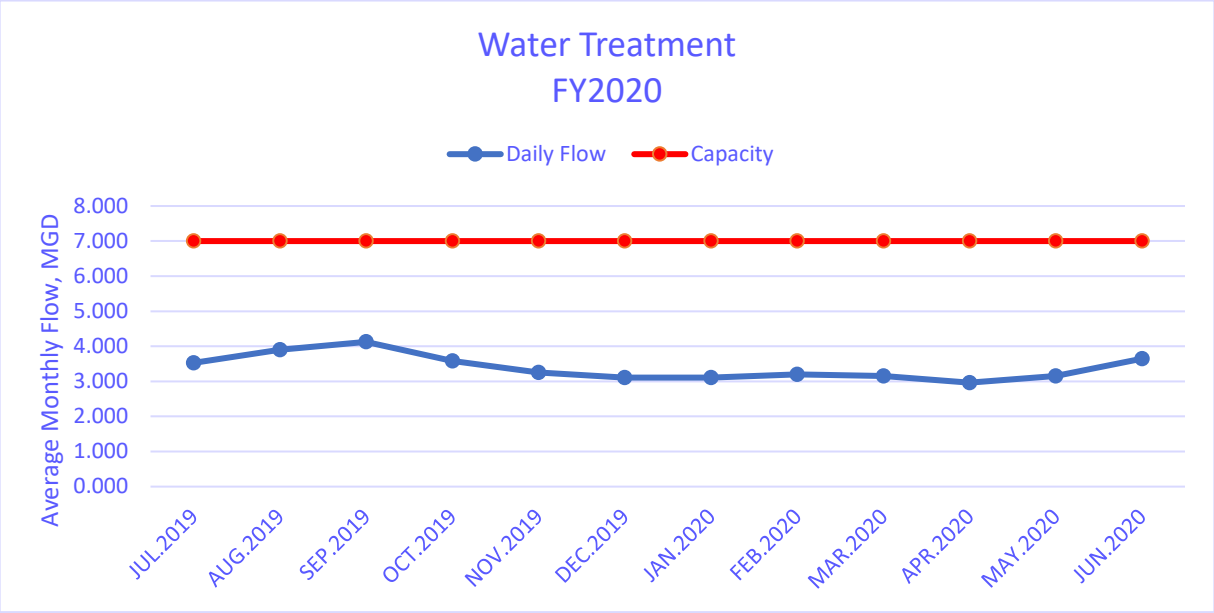
Source

Groundwater is used as the raw water source. There are three well fields consisting of six wells, each with a capacity between 700 to 1,200 gallons per minute (gpm), that pump water to the Murray water treatment plant for processing. The water is chemically and physically treated, then disinfected and stored in two 1,000,000-gallon clearwells.

Treatment

The water treatment plant has a rated capacity of 7 million gallons per day (MGD). Figure CF-1 shows the daily average flow and plant capacity for the period of July 2019 to June 2020. Daily maximum pumping volumes ranged from 4.61 MGD in September 2019 to 3.40 MGD in December 2019. The 2014 plan projected the peak water demand to be 7.76 MGD by the year 2033.

Figure CF-1. Water Demand for Murray, July 2019-June 2020



Pumps

Three new vertical turbine high service pumps are available to draw water from the clearwells and to pump it up to the elevated storage tanks in the distribution system. All three pumps have a rated capacity of 3,000 gpm each (4.3 MGD each). There is space provided for a fourth high service pump to be installed in the near future.

Storage

In addition to the two clearwells at the water treatment plant, there are four storage tanks in the distribution system: two are standpipes on the west side of the city and two are elevated tanks, one at the northern edge of the system near the Industrial Park on 641 North , and one out 94 West. Table CF-1 summarizes the pertinent data associated with each of the storage facilities.

Table CF-1 Existing Storage Facilities

Storage Facility	Location	Type	Overflow Elevation (ft.)	Available Storage (gal.)
Tank A	Intersection of 18th and Miller Streets	Standpipe	663.00	1,250,000
Tank B	Robertson Road South	Standpipe	667.00	1,000,000
Tank C	Highway 641 – North	Elevated	657.39	475,000
Tank D	Hudson Road off KY- 94 West	Elevated	715.00	200,000
Clearwells	Water Treatment Plant (2-1,000,000 ea.)	Reservoir	488.00	2,000,000
TOTAL				**4,925,000**

Source: Murray Water Distribution System Master Plan, 2014

Distribution

The central portion of the distribution system is a looped grid system, which allows for continuous service should one portion be temporarily closed for repairs. Water from the treatment plant to the system storage tanks flows through the distribution grid and not through a centralized transmission system. With the acquisition of Water District #3, in 2013, a booster pump station was added at the Robertson Road standpipe to pump water to a new elevated storage tank on Hudson Road off KY 94 West for increased pressure to Water District #3. The City of Murray also finalized the acquisition of Water District #2 (KY 121 South) in May 2020.

Upgrades to the distribution system were made as a result of the 2014 plan to obtain increased pressures to satisfy fire flow demands and to enhance system function in certain parts of the system. The control tank for the system is the Robertson Road South tank, and the telemetry system to record tank levels and control system pressure has been implemented (SCADA System). Tank levels are monitored at the Water Treatment Plant.

Future Plans

Murray Public Utilities is always evaluating and analyzing where improvements to the system can be made based upon demand and system pressures. With limited financial resources, these plans have to be prioritized each year based upon available capital budgets made available by Council. Smaller projects are accomplished by in-house distribution crews, while larger projects need to be bid out to water system construction companies. Some high priority plans are shown in Table CF-2.

Table CF-2: Short Term Planned Water System Improvements

Improvements	Location
16” transmission main	8th and Olive Streets to Chestnut, to 7th St. entrance to cemetery, to Bee Creek Dr. to 12” water main on east side of 4th St.
4th St main relocation	Relocate and upsize to 8” main out of street to west side of street right-of-way, from Walnut St. to Chestnut St.
Main St main relocation	Relocate and upsize to 8” main out of right-of-way, from 5th St. to 12th St.
Water Distribution System Hydraulic Model	System wide distribution model using InfoWater software by Innovyze, or equal, to be compatible with ESRI GIS database of water distribution assets.
In-house small water main replacement	Annual list of small water main project replacements for mains 4”” or less in diameter with new 6” water mains.
Source: Murray Public Utilities	

An electrical design of the power system for the water plant has been completed, which calls for a new electrical distribution system and standby generator system for the water plant and all the well fields. Continued improvements to the SCADA system and automatic monitoring of the treatment process are in the upgrade project. WTP improvements total around $2.5 million dollars, and the project should go out to bid in the summer of 2021. Improvement to the distribution system have also been planned, including replacing water mains 4 inch or less in size, more loop connections to improve distribution and redundancy, and fire protection. Water distribution improvements total 12 million dollars. Lastly, the metering of

the water flow throughout the system and to our customers will be upgraded to take advantage of technological advances in cellular metering systems AMI ($500,000 – this price also includes the automated gas meter readings),

Table CF-3: Long Range Water System Improvements	
Improvements	**Location**
8,640-l.f. of 12-inch	Along Roy Graham Road between Highway 121 and Poor Farm Road (Loop)
3,300-l.f. of 12-inch	Along Poor Farm Road between Roy Graham Road and Bailey Road (Loop)
4,830-l.f. of 12-inch	Along Poor Farm Road between Bailey and Brinn Roads (Loop)
7,300-l.f. of 8-inch	Along Bailey Road between Poor Farm Road and Highway 121
1.0 MG elevated storage (NW)	At the intersection of Robertson Road North and State Route 121 N (#23)
700-l.f. of 12-inch	From the proposed Robertson Road North Tank to the intersection of Robertson Road North and State Route 121 N

Map CF-1 shows the Murray Water System.

Wastewater System

Planning

The Murray Wastewater System supplies wastewater treatment to the City of Murray and portions of surrounding Calloway County. Administrative offices for the wastewater system are located on Andrus Drive in the same building as the water system operating offices. The system currently serves approximately 6492 residential, 1317 commercial, and 9 Industrial customers. The wastewater system is summarized in the "Wastewater Facilities Plan Update for the City of Murray" dated December 2009. The plan identifies future system needs up to year 2035. This summary breaks down the plan into the areas of Collection, Transmission, Treatment/Disposal, and Future Plans. Each of these areas are described below.

The City of Murray entered into an Agreed Order with the Kentucky Division of Enforcement in 2015 to upgrade two main interceptor lines, upgrade the East Fork Clark's River Pump Station, and upgrade and expand the Bee Creek Wastewater Treatment Plant. The cost of these Agreed Order projects totaled $61,100.00. These projects will be finished in 2021.

Collection

The Murray wastewater collection system is a separate sanitary sewer system that includes

gravity sewers ranging in size from 6-inches to 48 inches in diameter. Due to topography, the system is primarily gravity flow. The total population served by the sewer system is estimated to be approximately 19,000 (2.28 persons per household). The old Bee Creek interceptor was upgraded in 2015 to a 24" pipe size with new manholes at a cost of $1,538,095. The East Fork Clark's River inceptor was upgraded in 2016 to a 30" and a 24" pipe size with new manholes for $2,667,317.

Transmission

There are six (6) wastewater pumping stations. The largest of the pumping stations is the 7.0 MGD East Fork of Clark's River Pump Station located near the intersection of the Clark's River and KY 121 South. The station was constructed in 1974, expanded in 1982, and renovated in 1997, and totally upgraded in 2015 through 2021 for $3,225,000. The new East Fork Clark's River Pump Station now has two pumping stations, each rated at 3.5 MGD; one for normal flow and the other for excess stormwater flows Table CF-4 summarizes the pertinent data associated with each of the pumping stations.

Table CF-4: Existing Pumping Stations

ID	Pumping Station	Number of Pumps and Pump Type	Estimated GPM / pump
PS No. 1	East Fork Clarks River (Wet)	(3) Dry Pit	2,300
PS No. 1	East Fork Clarks River (Dry)	(3) Submersible	2,300
PS No. 2	Old Benton Road No. 1	(2) Submersible	95
PS No. 3	Old Benton Road No. 2	(2) Submersible	125
PS No. 4	Industrial Park	(2) Submersible	240
PS No. 5	Poor Farm Road	(2) Suction Lift	220
PS No. 6	BP Station/641N	(2) Grinder	120

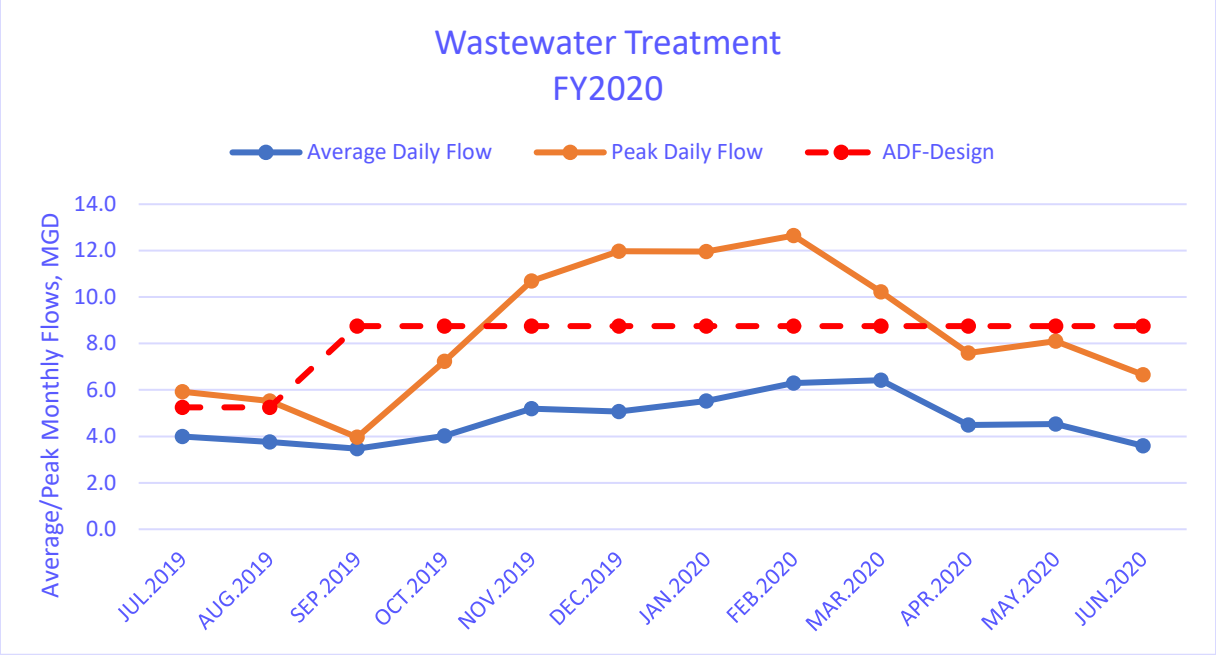
Source: Wastewater Facilities Plan Update for Murray, 2014

Treatment / Disposal

The Bee Creek Water Resource Recovery Facility in Murray is located on CC Lowry Drive at the southeast intersection of the KWT Railroad and Bee Creek. The plant discharges into Bee Creek, which is a wet weather tributary to the East Fork Clark's River. The facility has a design average treatment capacity of 8.75 million gallons per day (MGD) with a design peak hydraulic capacity of 24.0 MGD. Figure CF-2 shows the daily average flow and peak daily flow for the period of July 2019 to June 2020. The daily average flow to the facility ranged from 3.5 MGD in September 2019 to 6.4 MGD in March 2020. The peak daily flow during this same time period ranged from 3.96 MGD in September 2019 to 12.65 MGD in February 2020. Average daily wastewater flow projections for the year 2035 were estimated by the plan to be 8.75 MGD with maximum daily flows of 24 MGD.

The new treatment process consists of fine screening, followed by grit removal, influent pumping, and flow measurement. A new Vertical Loop Reactor Biological process for enhanced nutrient removal is followed by the existing three oxidation ditches for biological treatment, eight final clarifiers (three of which are new), water/solids separation, ultraviolet light disinfection, and then effluent pumping. Sludge is treated using the existing Cannibal Solids Reduction Process (which has been upgraded) and then sludge dewatered for disposal to a sanitary landfill.

Figure CF-2. Flow at the Murray Wastewater Plant, July 2019 - June 2020



Future Plans

Murray has designed five new 18" PVC interceptor lines to replace the existing 12" VCP lines that tie into the East Fork Clark's River Interceptor. Construction of lines #1 and #3 are now complete. There are two existing interceptors that feed the Bee Creek Interceptor that need to

be upgraded in the future. There is a new north interceptor in design to serve the north and northwest side of Murray, consisting of 36" and 24" lines and a smaller feeder line to that interceptor. This line will eliminate four of the existing pump stations and the North Elementary School packaged treatment plant that has been giving problems. The north interceptor will provide gravity service to Max Hurt Drive and the Industrial Parks. All of these projects total more than $23,660,000 in improvements.

At the Bee Creek Water Resource Recovery Facility there are conceptual plans to expand/upgrade the sludge dewatering system, expand the MLSS screening process, provide for nutrient recovery for Nitrogen and Phosphorus, and add Per Acidic Acid (PAA) disinfection to reduce the energy demand of the UV Light Disinfection process, and even add a solar energy grid to provide up to 30% of the plant's energy needs from sunlight. These projects could total around $10 million dollars of capital projects in the next 5-10 years.

Murray is working on an update to its wastewater collection system master plan that includes a hydraulic model of the system. This effort should better define the City's future wastewater needs for years to come. Map CF-2 shows the Murray Wastewater System.

Stormwater Quality Management

Planning

The City of Murray's stormwater quality management activities are summarized in the "City of Murray Stormwater Quality Management Plan 2018." The plan is broken down into seven general categories; Local Water Resources, Public Education and Outreach, Public Involvement and Participation, Illicit Discharge Detection and Elimination, Construction Site Runoff Control, Post Construction Stormwater Management, and Pollution Prevention/Good Housekeeping for municipal operations. The plan addresses community involvement and communication. The stormwater program in Murray is supervised by the stormwater supervisor who reports to the Director of Public Works & Utilities. Offices are located on Andrus Drive.

Local Water Resources

The main surface water bodies in Calloway County are the Clarks River, Bee Creek, and Kentucky Lake. Kentucky Lake is the largest body of water in the county, but is located on the east border of Calloway County outside of the permitted stormwater area. Clarks River and Bee Creek reside within the East Fork Clarks River and Middle Fork Clarks River watersheds, located within the Tennessee River Basin.

Stormwater runoff from Murray drains into Bee Creek, Middle Fork, and Clarks River and each are classified as Impaired Water bodies with the total maximum daily load (TMDL) under development for the pollutant causing impairment. The primary pollutant for Bee Creek is Fecal Coliform; the primary pollutants for Middle Fork are nutrients/eutrophication and Fecal Coliform; and the primary pollutants for Clarks River are Fecal Coliform, organic enrichment and nutrient/eutrophication. Each of these streams are also on the Kentucky Division of Water 305b list with Bee Creek and portions of Clarks River not supporting

aquatic life, drinking water, fish consumption, and primary contact recreation.

Through Nonpoint Source Implementation 319h grants, the Four Rivers Basin Team is in the process of developing a Watershed Based Plan for the East and Middle Forks of Clarks River. The purpose is to address sources of pollution, develop solutions, and establish Best Management Practices (BMPs) in both impaired and threatened streams. The focus area is along Clarks River from Bee Creek upstream.

Public Involvement and Participation

The City of Murray Public Involvement and Participation program has been very successful through the measures that have been taken to ensure its productivity. The city council throughout the year gives us an avenue to discuss matters of stormwater pollution with the local government, while allowing the citizens to voice their opinions and concerns over these matters. Being a member of the Four Rivers Basin Team allows the city to work with several volunteers that sample the surrounding watersheds. This supplies the city with valuable information about the pollutants that are in the streams and waterways. The use of our Stormwater Utility to fund our Stormwater Quality Management Plan and minimum control measures have also been a great asset for feedback concerning the support our citizens have for what we are trying to accomplish. The Stormwater Hotline that is in place, judging by the number of calls that are received, shows much improvement in the awareness of our citizens to recognize stormwater quality problems. The City of Murray will continue to partner with the 4RBT, NRCS, MSU, and the County Cooperative to put on events for all citizens to attend for volunteer and educational purposes.

Illicit Discharge Detection and Elimination

The City of Murray is in the process of digitally mapping the complete storm sewer system inside the city limits. At this time, all system conveyance structures and outfalls are inventoried in hard copy form. The city consists of 13 sub-watersheds. Currently 8 sub-watersheds basin studies of the 12 have been converted to digital format. All structures are manually inspected, information is compiled, pictures of the structures taken, and all structures are inspected for illicit discharges. The city will continue to complete these studies each year of the permit cycle until the digital storm sewer system mapping is complete.

An ordinance is in place that institutes prohibition on non-stormwater discharge and appropriate enforcement procedures and actions.

The City of Murray is using several ways to detect illicit discharges and educate the public on identifying possible illicit discharges into the system. “No Dumping” signage at all creek crossings have been put in place. Stormwater ads on TV and radio give the public hotline numbers to call if something has been spotted. The city has a policy of immediate response for illicit discharges that have been detected. The Four Rivers Watershed Watch Basin team samples 14 sites around the city. This information allows us to keep a very close eye on the outfalls surrounding the City of Murray. “Lets Make a Difference Day” is an event that is put on every quarter that allows citizens to dispose of wastes. Everything from cardboard to used motor oil is taken and properly disposed of.

Construction Site Stormwater Runoff Control

The objectives of the City of Murray concerning this measure is to reduce the impact of Construction Site Stormwater Runoff on the waters surrounding the City of Murray by using the appropriate program and the Best Management Practices (BMP's) to control runoff. The city's stormwater conveyance, erosion control and pollution prevention ordinance are the regulatory means of erosion and sediment controls. The ordinance also contains sanctions to ensure compliance.

Construction cannot begin within the city limits until a Notice of Intent has been filed and approved by the Division of Water. Submitted plans are reviewed to ensure that they address city requirements and address water quality. After construction begins, the City of Murray Stormwater and Drainage Management Department conducts periodic site inspections to protect water quality in the area. Inspections are conducted bi-weekly. Hard copies of the inspection reports are filled out at least once a month on each construction site. The city site inspector is a Certified Professional in Municipal Stormwater Management. The city works well with public inquires and their concerns of construction within their area.

Post Construction Stormwater Management

The City of Murray Engineering Department has had in place since 2001 a Stormwater Conveyance Facilities Ordinance. This section of the ordinance requires that any development within the city and its jurisdiction shall provide properly sized stormwater management facilities and shall contain on-site, or provide off-site stormwater management facilities capable of controlling increased stormwater runoff relative to its pre-developed condition. These post construction BMP's are vital in the reduction of stormwater runoff.

The ordinance was updated in 2014 to add water quality management and a treatment standard for water quality. All development and re-development of 1 acre or above must treat the first 0.7 inches of rainfall. As more cities try to promote green ways to help the environment, the Engineering along with the Planning department have taken steps toward promoting rain gardens, alternative pavements, treatment trains, and low impact development strategies that will further program development.

Such things as brush pickup and leaf pickup around the city helps us keep large amounts of sediment and debris from entering our streams. Although, selling this to developers has been hard, the individual residents within the city seem to be getting on board with these green ideas. The tonnage amount collected for the brush pickup and leaf pickup increases each year.

Good Housekeeping for Municipal Operations

The City of Murray Pollution Prevention and Good Housekeeping Plan is a key element of our MS4 Stormwater Quality Management Plan. The education that the city has brought to its employees is vital in keeping many pollutants from entering our storm sewer system. Inspections on vehicles are conducted weekly, while buildings and storage areas are conducted yearly to ensure proper containment and disposal of any material that might be harmful to the environment. The awareness of our employees is a very critical thing that makes for a successful program. Constant training, fleet management, and good

housekeeping by municipal employees will ensure the success of this minimum control measure.

Regional Stormwater Facilities
Murray staff has studied the construction of regional stormwater facilities to reduce the impact of stormwater runoff from areas that were developed before the stormwater ordinance was enacted. The potential location of these regional facilities and the drainage system in the Murray area are shown on Map CF-3

Natural Gas

Management
The City of Murray owns the Natural Gas System that serves the Murray Comprehensive Plan area. The Murray Natural Gas System operates under the direction of the City of Murray Department of Public Works and Utilities. The offices for the Natural Gas System are located on Andrus Drive. The system annually sells 1.508 million cubic feet per year. System sales of natural gas have increased by 20 percent over the last several years.

Service Area
The Murray Natural Gas System supplies natural gas to the City of Murray, portions of Calloway and Graves Counties and transports gas for the City of Hardin in Marshall County. Murray Natural Gas serves approximately 7,501 customers with residential and commercial customers using approximately 40% of the demand and industrial customers using the other 60%.

Facilities
The City of Murray is served by two transmission companies: Texas Gas and ANR Pipeline. The Texas Gas Transmission supply line is a six-inch line with 520 psi pressure main that runs along KY 121. The ANR Pipeline is an eight-inch line with 500 psi pressure main that runs west into the city near Vanderbilt Chemical Company.

The system is mostly steel with cathodic protection. Gas system employees install all gas mains and house service lines, while licensed merchants provide house piping in accordance with state plumbing and NFPA regulations. The system has an extensive on-going maintenance program that has resulted in a low amount of unaccounted for gas. The system has begun the installation of radio read meters to minimize meter reading costs. A new SCADA system has been installed, along with flow controllers to maintain system flow and pressures.

Future Plans
General plans are to expand the system to serve additional residential areas to the east of Murray. In addition, a loop on the east side of Murray is planned to increase system pressures in that area. The long-term natural gas supply and the distribution system appear adequate to serve the future land use needs of the Murray Comprehensive Plan area.

Map CF-4 shows the Murray Natural Gas System.

Solid Waste Management

Planning

The City of Murray's solid waste management activities are summarized in the "Calloway County Solid Waste Management Five Year Plan 2018-2022." The plan describes Calloway County's and the City of Murray's solid waste activities in four general areas: collection, transfer, disposal, and recycling. Details of the City of Murray's and Calloway County's participation in each of these areas are described in the following:

Management

The City of Murray's solid waste activities are managed by the Solid Waste Manager of the Murray Sanitation Department, who reports to the City of Murray Director of Public Works. The operating offices for the Sanitation Department are located on Andrus Drive.

Calloway County's solid waste activities are managed by the Calloway County Solid Waste Coordinator, whose office is located in the Court House and reports to the Calloway County Judge Executive.

Collection

The City of Murray has mandatory curb side solid waste collection for its residents and businesses. A fleet of collection trucks operated by Republic Services under contract with the City of Murray collects solid waste curbside for City residents. The Sanitation Department through Republic Services, provides residents with 96 gallon roll-out carts, businesses are provided either 96 gallon carts or a commercial front load dumpster ranging in size from 2 to 8 yards based upon the customers' needs. Roll-off container services are also available for open-top or compactor receivers. Murray also conducts annual leaf and brush collection.

Calloway County does not have mandatory solid waste collection. Several licensed private solid waste companies operate in the county to collect solid waste for those citizens who desire to have curb side collection.

Transfer Station

The City of Murray operates the only solid waste transfer station in Calloway County. Residents may deliver their solid waste to the transfer station for disposal. Republic Services is under contract with the City of Murray for pickup, transfer, and disposal of all solid waste collected at the Transfer Station.

Disposal

The solid waste from the Murray transfer station is transported to Republic Service's Northwest Tennessee Disposal Landfill in Union City, Tennessee. This landfill operates under permit from the Tennessee Department of Environment and Conservation.

Recycling

The City of Murray began single stream curbside recycling in March 2021 for City residents. This is a voluntary subscription-based recycling program. Materials collected curbside include OCC (old corrugated carboard), mixed paper, numbers 1 and 2 plastics, aluminum and steel cans. Recycling materials are delivered to the Hopkinsville Recycling Processing Center in Hopkinsville, Kentucky for processing and introduction into the recycling market.

The Murray Rotary Club sponsors a quarterly "Make a Difference Day" where recycling facilities collectors are available for a multitude of solid wastes, including e-waste. Several private companies collect a variety of materials for recycling, like scrap metal, tires, batteries, and motor oil.

Murray State University also offers a recycling drop-off point at the North Farm the first Saturday of each month. They collect paper, OCC, metals, and plastics 1-7.

Future Plans

Murray plans to look at expanding its recycling collection program in the future for businesses and industry and possibly to county residents. Should this happen, this will increase the amount of collected recyclables and would most likely necessitate the need for a Recycling Transfer Station to collect and consolidate the recycling materials for transportation to a recycling processing facility. This new transfer station would most likely be co-located with the City's current solid waste transfer station.

Murray's solid waste activities appear to be adequately funded through user fees. The residents in Calloway County outside the city pay user fees for private curb side pickup. The combination of city and private solid waste activities should be adequate to serve portions of the Comprehensive Plan area that are projected to develop in the future.

A goal of the "Calloway County Solid Waste Management Plan" is to increase recycling efforts, especially curb side recycling, in both the city and county.

Electrical

Electrical services in the City of Murray Comprehensive Plan area are provided by the Murray Electric System, with offices on Olive Street, and West Kentucky Rural Electric Cooperative, with a billing office in Murray and main offices on the south side of Mayfield. The service area and the services provided by each of these electrical utilities are discussed below.

Murray Electric System

Service Territory: Murray Electric's service territory is primarily within the city limits of Murray. The utility currently provides service to approximately 7,724 customers. The Tennessee Valley Authority is the electricity provider for Murray Electric. Since Murray Electric's service area is surrounded by the West Kentucky Rural Electric Cooperative, there is no room for expansion and the utility's main function is providing service to its existing customers.

Planning: Murray Electric has a 2012 Strategic Plan that describes the long range planning efforts for its electrical system. Murray Electric System has been and will continue to be proactive in system planning, improvements, and implementing new customer service improvements and collaborating with partner TVA in meeting the demands of an ever changing and fast-growing community. Since the adoption of the Strategic Plan, Murray Electric has remodeled its main office building and purchased adjacent property. A need had been identified for a new facility for warehousing, vehicle storage, crew quarters, pole and transformer loading and unloading, and storage. Murray Electric believes its staffing is sufficient to serve the needs of its customers.

Murray Electric takes delivery of wholesale power from TVA at its Primary Substation. From this point it is delivered to 5 other substations, 3 of which were built within the last 20 years. The West Murray Substation, built in 1965 is currently being upgraded to increase its capacity. Murray Electric has sufficient substation and distribution system capacity to meet the needs of current and future projected customers.

The last City of Murray Comprehensive Community Facilities Plan, completed in 2009, indicated that planning should begin for converting Murray Electric's overhead power lines to underground power lines with a 15-year time frame for completion of the project. This project was found to be not feasible due to the cost of converting existing above ground lines to underground lines. However, Murray Electric now uses steel poles instead of wooden poles when poles need to be replaced. In addition, any new subdivisions have underground service. The use of steel posts and underground service in new subdivisions is believed to result in lesser damage and down time during extreme weather events.

Murray Electric has recently completed a new project for a second delivery point on the major transmission line into the city to serve as a backup for the current one delivery point from TVA.

Future Plans: (1) replacing of transformers at the District Substation, and (2) systematic replacement of substation breaker relays and step-voltage regulator controls for interfacing with the remote monitoring and control system.

West Kentucky Rural Electric Cooperative

Service Territory: West Kentucky RECC serves approximately 49,000 customers in Calloway, Marshall, Graves, Carlisle, Fulton, and Hickman Counties. The distribution of customers is approximately 31,440 residential, 8,500 commercial and small industrial, and 6 large industrial. In Calloway County, West Kentucky RECC operates 3 substations serving 13,300 residential, 129 small industrial and commercial, and 2 large industrial customers. The

service area includes all of the City of Murray not served by Murray Electric System. The Tennessee Valley Authority is the electricity provider for West Kentucky RECC.

Planning: West Kentucky RECC is in the process of updating its long-range plan. The staff's focus is to continue to construct projects that upgrade service to existing customers and provide the facilities necessary to serve future customers. Recent projects have been completed to upgrade substations, including the installation of new circuit breakers. In addition, projects have been completed to provide dedicated feeds from the substations for Murray industry. Also, a second double circuit has been installed on Poor Farm Road to increase system capacity and reliability in that area.

Calloway County is served by three Western Kentucky RECC substations, Stella Substation, East Murray Substation, and Coldwater Substation. The Stella and the East Murray Substations serve the Murray planning area. The Stella Substation is located on the west end of Poor Farm Road. This substation is fed by a 161kV transmission line supplied by the Tennessee Valley Authority. The substation consists of five residential circuits and one industrial circuit. The industrial circuit serves Vanderbilt Chemical, Pella, IWIS, and all of Max Hurt Drive. It will also serve the new industrial park located on US 641, north of Max Hurt Drive, which is where TPG Plastics is located.

The East Murray Substation is centrally located on Outland School Road. This substation consists of three residential circuits and one residential/industrial back-feed circuit. The industrial back-feed circuit provides automated back-feed to the industrial customers served by the Stella Substation.

Future Plans: West Kentucky RECC has been adding approximately 400 customers each year. For 2007 its peak usage was 197 MW and for 2008 its peak usage was 185 MW. The 2007 peak was due to the unusual extreme heat. The projected normal draw for 2012 was estimated to be 196 MW. Within the next five years, projects are planned to (1) increase capacity on one of the Stella Substation circuits, (2) install a new 3-phase circuit on the East Murray Substation, and (3) upgrade the 3-phase on Highway 121 south of Murray.
The system has stable load projections. These projections, coupled with the upgrades undertaken over the last few years, indicate there is sufficient substation and distribution system capacity to meet the needs of existing and future customers.

Map CF-5 shows the electrical system serving the Murray planning area.

Telecommunications

Telecommunications, including broadband internet services, in Murray and Calloway County are provided by Murray Electric System, West Kentucky Rural Telephone Cooperative, AT&T, Spectrum, Comcast, Galaxy, T-Moble, Cricket and Verizon. The services provided by each of these providers are listed below:

Murray Electric System
- Telephone
- Cable/Digital television
- Broadband

Spectrum
- Telephone
- Broadband
- Cable/Digital Television

AT&T
- Telephone
- Broadband
- Wireless

West Kentucky Rural Telephone Cooperative
- Telephone
- Broadband
- Digital Television

Comcast
- Telephone
- Broadband
- Cable/Digital Television

Galaxy
- Cable/Digital Television
- Broadband

T-Mobile
- Wireless

Cricket Wireless
- Wireless

MediaCom
- Cable/Digital Television
- Broadband

Verizon
- Wireless

With the multitude of telecommunication providers in Murray and Calloway County, there should be sufficient system capacity to meet the needs of existing and future projected customers.

Map CF-6 shows the service territory of broadband providers in the Murray area.

OTHER COMMUNITY FACILITIES

In addition to Utilities, there are numerous other community facilities that play a large part in supporting the well-being of an area. These agencies cover a wide spectrum of the life of the community. This section of the Community Facilities Element of the Murray Comprehensive Plan addresses several of these agencies. The current status of each agency is generally described. In addition, future plans of each agency related to serving the existing and future population are described. Maps showing service areas and/or agency locations are included.

Goals and Objectives

Goals and objectives have been adopted by the City of Murray to address the major issues and concerns that are and will be affecting the City of Murray now and into the future. The goals and objectives that relate to the Other Community Facilities section of the Community Facilities Element are listed below. The list includes the general area of each goal followed by an objective.

(1) Community Relations - Encourage participation to enhance the community through citizen support, neighborhood groups, service by citizens on Boards and Commissions, government outreach programs including Fire and Police Academies, West Kentucky Night, and other civic organizations such as Character Counts, Community of Promise,

Leadership Murray, Leadership Tomorrow, Town & Gown, and CASA.

(2) Community Relations - Improve intergovernmental relations with county, state, and federal governments, the University, the Purchase Area Development District, and other agencies that promote Murray.

(3) Economy - Support economic growth sponsoring entities such as the Economic Development Corporation, Chamber of Commerce, Murray Convention and Visitor's Bureau, Murray Main Street, and MSU Center for Economic and Entrepreneurial Development.

(4) Public Facilities and Services - Maintain government facilities so that they promote accessibility, efficiency, and safety for citizens and government employees.

(5) Public Facilities and Services - Secure library facilities and services that satisfy resident needs, including timely, helpful, and readily available services that are attractive, accessible, convenient, and provide continuing education to all.

(6) Public Facilities and Services - Enhance the City of Murray Park System by, assisting with the completion of a new Parks and Recreation Master Plan, continuing to seek funding for maintaining existing neighborhood parks and encouraging developers to dedicate land for adding additional neighborhood parks in newly developed areas, search for private land opportunities to expand the City Park System by citizens and private enterprise dedicating land, gifts, and through philanthropy, continuing to look for alternative sources of revenue such as the leasing of government property for a narrow and limited range of commercial uses, and investigate the possibility of creating a Regional Park that will attract recreational leagues to participate in sporting activities.

(7) Public Facilities and Services - Provide adequate health care services and facilities to accommodate all citizen needs and continue to seek funding for health care expansion and facility improvement.

(8) Housing - Encourage a greater sense of community within the city's residential neighborhoods through the organization of neighborhood associations or similar groups, with emphasis on safety, beauty, and overall pride.

Law Enforcement

Law Enforcement in the Murray Comprehensive Plan area is provided by the City of Murray Police Department, the Calloway County Sheriff, Murray State University, and the Kentucky State Police. The law enforcement agencies are described in this section.

City of Murray Police Department

The Murray Police Department consists of a staff of 48, including 40 sworn officers. The Police Chief, one of the sworn officers, exercises administrative control over the

department. One of the officers is dedicated to crime prevention and community relations and serves as the department's media spokesperson. The department does provide three resource officers in the Murray City Schools. There is one resource officer assigned to each of the schools. The department operates dispatch for both the Murray Police Department, and the Fire Department, and the ambulance service. The department's fleet consists of 9 patrol vehicles, 5 investigative vehicles, 3 administrative vehicles, and one utility truck.

The department moved to its operating space at North 5th Street in September 2018. The building was constructed in 1978 and renovated in 2004 when it was used as City Hall. The operating space consists of 16,786 square feet. This space has two floors and a basement. The first floor consists of lobby area, report room, copy room, armory, server room, dispatch room, sally room, roll call room, records archive, office supply room, seven offices, two kitchens, and one conference room. The second floor consists of an evidence vault, two interview rooms, evidence processing room, training room, office supply room, found property room, conference room/library, seven offices, and one kitchen. The basement consists of a mechanical room and separate male and female locker rooms. Another operating space is an impound lot on Andrus Drive. The department currently has no satellite police stations.

All the Murray departments operate on the same radio frequency. They use UHF to be able to communicate with the County and Murray State University law enforcement. In 2008, the Murray Police Department implemented a Computer Dispatch System (CAD) for easier record keeping. Since then, the new CAD system has been updated to a newer version in 2014. The City and County sought grant funding for a new CAD system and were awarded in 2019. The CAD system became operational in 2020. All the department's patrol vehicles have Mobile Data Terminals. Each patrol vehicle also has mobile tablets that have built in cell cards. The department practices Roll Call Training through the Kentucky League of Cities.

Both Murray and Calloway County operate Enhanced 911 systems. They are in the process of implementing a Phase 2 wireless system where 911 calls from cell phones in the Murray area are routed to the city dispatch center rather than to the Kentucky State Police.

In 2017, the Murray Police Department received accreditation from the Kentucky Association of Chiefs and Police, which is good for 5 years. The accreditation lowers the department's liability insurance. In addition to funds from the general fund, the department receives income from the liquor license ordinance that was implemented in 2001, increased in 2012, and decreased in 2020. The pay scale for officers of the Murray Police Department is about the median for officers of other third class cities in Kentucky.

Current needs for the department include 4 new officers and updated mobile and portable radios. In late 2019, new vehicles with new equipment and new tasers were ordered, and both were put in service in 2020. Another highlight in future plans is to maintain competitive salaries. This will be done by keeping salaries consistent to what other local agencies are paying. Murray Police Department is committed to the school resource officer program. As evidence of this commitment, is a grant project funded by COPS grant to install cameras in the Middle

School and Elementary School to compliment the cameras in the High School. Lastly, the Murray Police Department administration plans to expand the leadership training program.

Map CF-7 shows the location of the Murray Police Station.

Calloway County Sheriff

The Calloway County Sheriff's office is located at 701 Olive Street in a building separate from the Calloway County Courthouse. The Sheriff's Department consists of 33 full time employees and 3 part time employees. Of the full-time staff, there are 16 patrol deputies, 6 dispatchers, 2 resource officers, 6 court security deputies, 2 office workers, and one records clerk. The department has 11 reserve deputies and hires part-time office staff during tax collections. The department owns a fleet of 17 patrol vehicles and 7 administration vehicles. Of the 17 patrol vehicles, 14 are assigned full-time to officers and 3 are spare vehicles.

The department works with the Murray Police Department, the Murray State University Police, and the Kentucky State Police to develop a Crime Scene Task Force. The department implemented in 2008 a Memorandum of Understanding with Murray State University that granted Murray State's 16 officers county wide jurisdiction and makes them available on an as needed basis. In addition, the two agencies alternate answering the alarms at the Hancock Biological Station and the county schools. The Sheriff's department has radios to communicate with the Kentucky State police and the police in the adjoining Tennessee Counties.

Future plans for the Calloway County Sheriff's Department include adding 2 detectives, one for general use, and one for drugs. They also plan on replacing four patrol vehicles and upgrading their radio systems.

Map CF-7 also shows the location of the Calloway County Sheriff's Office.

Murray State University

The Murray State University Police are primarily responsible for safety and security on the Murray State University campus. The department consists of 16 sworn officers and 24 support personnel. As described above, the department, through a Memorandum of Understanding, works with the Calloway County Sheriff's Department to assist in law enforcement in Calloway County.

Kentucky State Police

The Kentucky State Police has a nearby post in Mayfield. The state police have 3 officers assigned to the Murray area to assist the City of Murray Police and the Calloway County Sheriff's Department in law enforcement activities.

Fire Protection

Fire protection is provided in the Murray Comprehensive Plan area by the City of Murray Fire Department and by Calloway County Fire-Rescue. These two fire protection agencies are discussed in this section.

City of Murray

The City of Murray Fire Department provides fire protection within the Murray city limits. The department's staffing, dispatch, equipment and the city's water system result in an ISO rating of 3 for those structures within the city limits. The department operates out of three fire stations. Station 1 is the downtown station and is located on South 5th Street. A new Station 2 is was built next to the old station 2, which was demolished. Station 2 is located on 16th Street. Station 3 is located on US HWY 641 North. The department is equipped with 3 engines, 2 aerial ladders, a command vehicle, a multi-purpose vehicle, technical rescue trailer, breathing air/command trailer, and a hazmat vehicle (not owned by the City). The operating staff of the Murray Fire Department consists of 36 fire fighters assigned to operations, and 4 sworn officers assigned to administration.

Future plans for the Murray Fire Department include replacing 3 engines and 1 ladder in the fleet, completely replacing self-contained breathing apparatus, adding an additional 9 new fire fighters, an additional full-time fire inspector, and develop an Information Technology (IT) staff.

Map CF-7 shows the location of the existing fire stations for the Murray Fire Department.

Calloway County

Fire protection outside the Murray city limits is provided by Calloway County Fire-Rescue, an all volunteer organization. Calloway County Fire-Rescue serves a single fire district composed of 11 fire stations. The ISO ratings of the areas served by the fire stations range from 7 to 10, with 9 stations rated a 7, and 2 stations rated a 10. Calloway County Fire-Rescue consists of approximately 65 volunteer firefighters.

Map CF-7 shows the county fire stations and the districts served by the fire stations.

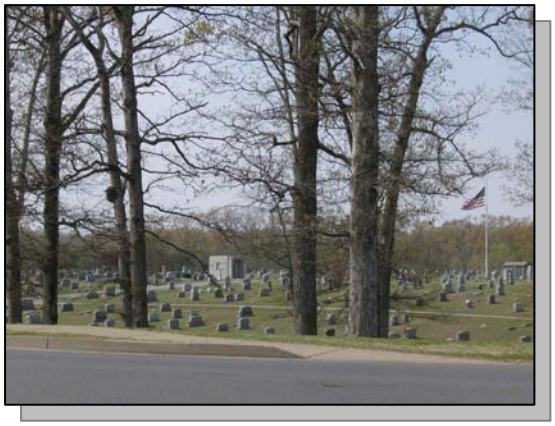
General Government Facilities

Several state and federal agencies maintain office facilities in Murray. However, the two primary government agencies that maintain office facilities in Murray are the City of Murray and Calloway County. The facilities of these two agencies are discussed in this section.

City of Murray

The facilities of the City of Murray, in addition to the Police Department, Fire Department, Utility Departments, Tourism, and Mass Transit facilities discussed elsewhere in this plan, are the City Hall and the Cemetery. The building currently used as City Hall was purchased from BB&T Bank in May of 2017. The building was renovated, and city departments moved in December 2017. The Finance Department,

the Human Resources Department, the Planning Department, and the Administration Department are in the City Hall building.



At the City Cemetery, there is one small office building. The city is in the process of constructing a larger maintenance building that will be equipped with water and sewer facilities. A second mausoleum was built in 1994. A columbarium was constructed in 2019 near the mausoleum. The last acquisition of property for the cemetery was in 2019. The current land is believed to be sufficient for up to 50 years. There are lands adjacent to Cemetery property that currently might be available for purchase if a need arose to further expand the Cemetery.

Map CF-8 shows the location of City Hall and the City Cemetery.

Calloway County

Government facilities for Calloway County Government, in addition to the Sheriff's office discussed earlier, include the Court House, the Robert O. Miller Courthouse Annex, the Judicial Center, and the Road Maintenance Facility. The locations of these facilities are shown on map CF-8.

Murray Convention and Visitors Bureau

In 1979, Murray's City Council created the Murray Tourism Commission. The office did not become full-time until the late 1990s. In 2007, the name of the organization was changed to Murray Convention & Visitors Bureau (CVB). The mission of the CVB is to increase the overnight stays in Murray through tourism and events, such as conferences and sporting events. The CVB also works closely with other community organizations to increase the economic impact in Murray and Calloway County.

The CVB staff plan and execute Freedom Fest, Murray's Fourth of July celebration, the city-wide yard sale, and a fundraiser for Freedom Fest.

The CVB is located downtown at 206 South 4th Street. Visitors and locals alike are welcome to visit the Bureau to find the most up-to-date information on community happenings and to browse the wide array of brochures available. The main focus of the Murray Convention and Visitors Bureau is to attract events to Murray that generate tourism revenue for local businesses. The Bureau is also rented out to the public for special events for a nominal fee. The space is rented out for the purpose of conventions, wedding receptions, forums, business meetings, etc.

The location of the Convention and Visitors Bureau is shown on Map CF-8.

The Convention and Visitors Bureau is currently developing a "brand" for Murray to use in

its tourism promotion activities. The Bureau has developed and promotes events like the Ice Cream Festival, R/C Aircraft Fly-In, Lumberjack Challenge, Highland Festival, Trail of Treats, Dickens Alley, Fiddle Festival, Freedom Festival, Downtown Saturday Market, and the City-Wide Yard Sale. In addition, the Bureau promotes nearby attractions like the Hazel Antique District, Kentucky Lake, and the "Land Between The Lakes National Recreational Area".

Tourism activities are supported by a number of facilities owned and operated by other entities like Murray State University. One example of this is the West Kentucky Livestock and

Exposition Center, a venue for rodeos, American Quarter Horse Association shows, tractor pulls, pony pulls and the Murray Motocross. Also, on the campus of Murray State is the CFSB Center, home to Murray State basketball. The CFSB Center also hosts a variety of events, including the annual West Kentucky Boat and Outdoor Show, Home and Garden Show, circuses and concerts. Roy Stewart Stadium on Murray State campus is home to the Murray State football, rifle and women's track and field teams. The stadium hosts a variety of events, including band competitions, Special Olympics, and fund-raising events. The American Society of Golf Architects designated the Frances E. Miller Memorial golf course as one of the best-designed 18-hole courses in America. Miller offers a variety of challenges, with over 50 sand bunkers and scenic water hazards. Murray is also home to Sullivan's par 3 golf course with a challenging 18-hole par 3 course, a driving range, and mini golf. There are 2 private golf clubs; Oaks Country Club, founded in 1961, and Murray Country Club, established in 1956.

Murray has long been known for its attractiveness to retirees. In 1987, "Rand McNally's Retirement Places Rated" named Murray and the surrounding lakes area as the number one place in the nation to retire. Since then, Murray has welcomed hundreds of retirees choosing to relocate to Murray from all over the United States. In 2001, Murray was selected as a Certified Retirement Community by the Kentucky Tourism Development Cabinet.

"IF YOU ARE SEEKING A WELL-ROUNDED COMMUNITY WITH PLENTY OF OUTDOOR RECREATION, LOW HOUSING COSTS WITH A FOUR SEASON CLIMATE, THEN MURRAY MAY BE JUST WHAT YOU'RE LOOKING FOR."
-RETIREMENTAMERICA.COM

In addition to being named the Friendliest Small Town in America by Rand McNally and USA Today, the community constantly receives other recognition and awards. Recently, the city was named a Playful City USA, "100 Best Communities for Young People", and the #1 Place to Live in Kentucky. Murray was chosen because of the community's efforts to fulfill five essential promises critical to the well-being of young people: caring adults who are actively involved in their lives; safe places in which to learn and grow; a healthy start toward

adulthood; an effective education that builds marketable skills; and opportunities to help others.

The attractiveness of Murray as a retirement and relocation area should result in a steady future demand for residential housing and the accompanying demand for commercial services. In addition, the Convention and Visitors Bureau would like to see the development of a Convention Center that could host a range of large events and conventions.

Murray-Calloway County Parks and Recreation

Planning

The Murray-Calloway County Parks and Recreation Department is a joint effort by the City of Murray and Calloway County. The department is managed by a Board of Directors appointed by the City Council and the Fiscal Court. Funding comes from the city and county as well as from grants. The Murray-Calloway County parks system is comprised of two community parks totaling over 162 acres. The parks system for Murray and Calloway County is described in the "Murray–Calloway County Parks and Recreation Master Plan" dated March 2005. The community parks operated by Murray-Calloway County Parks and Recreation consist of Central Park and Chestnut Park.

Central Park and Bee Creek Soccer Complex

The Central Park and Bee Creek Soccer complex is composed of approximately 144 acres. The southern entrance to the park is off Arcadia Circle and the access to the Bee Creek Soccer complex on the northern end is off Fourth Street, and there is access off of HWY 641 North through Keepers Way. This area is located in the northern portion of the City of Murray. Existing facilities in the park include:

(1) Five baseball and softball fields. Four of the fields are in a wagon wheel arrangement with the restroom/ concession/press box building in the center.
(2) The Bee Creek Soccer Complex with 15 soccer fields. The arrangement could provide for more fields. In addition, there are paved parking lots, a playground, a restroom/concession facility, and a walk/bike/run trail around the Soccer Complex.
(3) An "L" shaped swimming pool and bathhouse. In 2004, improvements were made with a new liner and improvements to the filtration system. Additional repairs will be required in the near future to guarantee the reopening of the pool.
(4) Six picnic shelters including the one in the Bee Creek area.
(5) Six playgrounds located throughout the site, and an "aquatic spray ground".
(6) Rotary Memorial Walkway, located between the ball field complex and the main road. The walk is highlighted with Willow Oak Trees that are planted with memorial plaques with the names of past governors of Rotary.
(7) The Waters School House, an old school house relocated to this site.
(8) The Old Courthouse located north of the ball field complex. The Courthouse was the first courthouse and first public building in the Jackson Purchase area and was built in 1823.
(9) An amphitheater originally developed using grant funds for an open-air performance area. Future plans are to add a changing building with bathrooms.

(10) A 27-Hold Disc Golf Course that is the park's most used facility. The 27-hole course is located off Arcadia Drive.
(11) A variety of trails in the park with natural surfaces. The Ryan Loop extends from the tobacco barn area and is approximately one-half mile. The John Mack Carter Trail outlines the park. The Maple Trail starts near the area of the old courthouse and extends to the western portion of the site and to the Bee Creek area.
(12) Concrete Skate Park located in the Southwest Corner of the Park, next to Arcadia Circle.
(13) A fenced in, leash free, dog park with two sections for smaller and larger dogs.
(14) Home of Playhouse in the Park. The theatre is one of the oldest continuously producing theatres in the county.

Chestnut Park
Chestnut Park was the original Murray Park and consists of 18.4 acres. The park is located south of Chestnut Street and is bordered on the east by 8th Street and on the west by 10th Street. Payne Street goes through the center of the park. The existing facilities in the park include:

(1) A small park headquarters building.
(2) Two lighted baseball/softball fields.
(3) Three lighted basketball courts.
(4) A playground
(5) Four picnic shelters.
(6) A paved figure eight walking path.
(7) A 9-hole foot golf course.
(8) Veterans' Park on the northeast corner of Chestnut and North 10th Street.

The locations of the Murray Parks are shown of Map CF-8.

Adequacy of Park Land and Expenditures
The Parks and Recreation Master Plan compared the ratio of citizens per acre of park in Murray and Calloway County to the ratio obtained from a survey of 1,242 parks and recreation departments across the country. The national median was 132 citizens served per acre of park land. In the year 2004, Murray had 112 citizens per acre, and Calloway County had 206 citizens served per acre. Projecting out to 2020, population shows that the city would have 117 citizens served per acre, and the county would have 240 citizens served per acre.

This comparison indicated that the residents of the City of Murray are much better served with park land than the residents of Calloway County.

The Parks and Recreation Master Plan also compared the expenditures for parks and recreation facilities and services in Calloway County with those of other parks and recreation organizations in Kentucky. It found the overall expenditure of the local and county government bodies for parks and recreation facilities and services in Calloway County to be less than $12.05 per capita. The average per capita expenditure for 40 cities and counties in

Kentucky with parks and recreation departments was found to be $33.76. The plan also found the cities and counties in Kentucky known for strong park programs spend in the range of $58 to $130 per capita. The Master Plan concluded this less than average expenditure is evident in the overall shortage of park space, the lack of parks in some parts of the county, and the lack of parks programming.

Future Plans

The Parks and Recreation Master Plan provided a list of action items for future activities of the park system in Murray and Calloway County. Several of the action items in the plan have been completed, including the establishment of an off-leash dog park. Some of the more significant items remaining to be completed include:

(1) Continue to seek alternative sources of revenue for parks and recreation.
(2) Develop a greenway system to connect parks, schools, and neighborhoods.
(3) Make upgrades to the baseball/softball field lighting and backdrops.
(4) Develop a new park in the southwest portion of the city.
(5) Add a changing building next to the amphitheater with bathrooms.
(6) Upgrade the pool area.

Calloway County Public Library

The Calloway County Public Library is located at 710 Main Street. The library contains approximately 10,000 square feet and was initially constructed in 1970 with an addition in 1975. The location of the library is shown on Map CF-8.

The library currently houses approximately 65,000 items. Because of space limitations, unused items are discarded on a regular basis. There are approximately 80 parking spaces at the library. Current services provided by the library include public bathrooms, reading space, meeting space, genealogy, and computers. The library houses the Regional Office of the Kentucky Department for Libraries and Archives.

There is not a written long-range plan for the library. However, expansion of the facility is under construction.

Murray-Calloway County Senior Citizens Center

The mission of the Center is to support the mature population in the community by improving their physical, mental, and emotional well-being so they can lead independent, fulfilling lives. The 10,000 square foot facility is equipped with a large dining room; a billiards room; a large, fully-equipped workout room; a gymnasium with room for basketball, ping pong, or shuffleboard; a modern, internet accessible computer lab, including Wi-Fi; a large, contemporary library; and areas for lounging, relaxing, quilting, and more. The goals of the Center are to promote healthy living, improve nutrition, and socialization.

Public Schools

The public school system serving the City of Murray Comprehensive Plan area includes the Murray Independent School District, the Calloway County School District, and the Murray-

Calloway County Technology Center. These educational organizations are discussed in this section.

Murray Independent School District

In 2021, Murray Independent School District had a total enrollment of approximately 1683 students in K-12 and 95 preschool students. Students in grades 9-12 attend Murray High School, and students in grades 4-8 attend Murray Middle School. Students in Kindergarten through grade 3 attend the Murray Elementary School. The Murray Independent School District has approximately 156 certified instructional personnel, and 400 total employees. Map CF-9 shows the boundary of the Murray Independent School District and the locations of the District's facilities.

The boundary of the Murray Independent School District and the Calloway County School District that surrounds it are shown on Map CF 9. Over the last twenty years, approximately 100 pieces of property have been taken from within the fixed district boundary by expansions of the Murray-Calloway County Hospital and Murray State University. The

loss of students from these properties and the removal of these properties from the tax roll have significantly impacted the revenue of the Murray Independent School District.

Due to its landlocked boundaries, enrollment within the Murray Independent School District has stabilized. The Murray High School facility was expanded to the east and south from 2017 to 2019. The front entrance was changed to Sycamore Street from Doran Road.

Calloway County School District

In 2021, the Calloway County School District had a total enrollment of approximately 2896 students in K-12, and 169 preschool students. Students in grades 9-12 attend Calloway County High School, and students in grades 5-8 attend Calloway County Middle School. The Calloway County School District has three elementary schools serving kindergarten through grade 4, and a preschool. The three elementary schools are East Calloway Elementary, North Calloway Elementary, and Southwest Calloway Elementary. The Calloway County School District has approximately 230 certified instructional personnel, and 575 total employees. Map CF-9 shows the locations of the Calloway County School District facilities. Enrollment at each of the Calloway County schools is as follows:

Calloway County High School	862
Calloway County Middle School	677
East Calloway Elementary School	294
North Calloway Elementary School	549
Southwest Calloway Elementary School	441
Calloway County Alternative School	73
Calloway County Preschool	169

Recent improvements within the Calloway County School District include renovations at the high school's gymnasium. At this time, there are no future plans for building renovations. Enrollment is stable and projected population growth in Calloway County does not indicate the need for additional school construction in the near future. There are plans to construct an auxiliary gymnasium on the high school/middle school campus.

Murray-Calloway County Area Technology Center

The Murray-Calloway County Area Technology Center is located at 126 Roberson Road North on property owned by the Murray Independent School district and is operated by the Kentucky Education and Workforce Development Cabinet. The primary purpose of the area technology center is to serve high school students by enhancing and expanding student career options that lead to continuation of education at the postsecondary level and/or successful employment upon graduation from high school. Students receive instruction in sound academic principles, theory, laboratory and clinical experiences to ensure they can compete successfully in today's changing workplace. The enrollment is approximately 300 students. The programs available are Automotive Technology, Carpentry, Culinary Arts, Health Sciences, Machine Tool Technology, Marketing Education, and Welding.

Murray State University

General

Murray State University is a state funded regional comprehensive university serving approximately 9,569 students, and 1,100 faculty and staff. It is composed of four academic colleges (Jesse D. Jones College of Science, Engineering and Technology, Arthur J. Baurenfeind College of Business, College of Education and Human Services, College of Humanities and Fine Arts), and two academic schools (School of Nursing and Health Professionals and the Hutson School of Agriculture).

There are nine residential colleges on campus. The main campus is comprised of 72 major core buildings and two libraries. The university libraries hold approximately 460,000 volumes, 33,801 audio-visual materials, 1,569 periodical titles, and 207,121 microforms materials for the community to enjoy.

The University extends its services to its space bound students through its Regional

campuses in Paducah, Hopkinsville, Madisonville, Fort Campbell, and Henderson; and through its distance learning programs.

The University also houses the Breathitt Veterinary Center in Hopkinsville, which is a fully accredited animal diagnostic laboratory dedicated to the efficient production of safe animal products to the consumers of Kentucky.

Enrollment/Student Body

For the fall 2020 semester, the student body consisted of a total of approximately 9,569 students. Of the total, approximately 6,718 were full time and 2,851 were part time. Approximately 62% were female and 38% were male. At the undergraduate level the percentages of full-time and part-time students have stayed fairly consistent over the years. Of the fall 2020 student population, approximately 86% were undergraduate students while 14% were graduate students. Most undergraduate students (82%) are full-time, whereas 69% of the graduate students are part-time. The student body represented 45 states, 46 countries, and 119 Kentucky Counties. The out-of-state population was 27% of the total. Students older than 24 years made up 32% of the total population.

Murray State receives its first-time freshman students who are Kentucky residents mainly from Calloway, Christian, Graves, McCracken and Marshall Counties. The top-sending states are Kentucky, Illinois, Indiana, and Missouri.

The undergraduate student to faculty ratio at Murray State during the fall of 2020 was 15 to 1. Full-time faculty was 86% of the total faculty. Faculty with doctoral or terminal degrees in their field in 2020 made up 78% of the total. Fifty-four percent of full-time instructional faculty are tenured. Twenty-four percent of faculty were not on tenure track.

Minority faculty made up 11% of the full-time instructional faculty. Females were about 39% of full-time instructional faculty.

Faculty/Class Size/Academic Offerings

The average class size at Murray State was 19. Classes that have less than 20 students made up 62% of all classes and classes that have more than 50 students made up 3% of all classes. Murray State University has 143 academic programs that encompass areas that position students for their future careers.

National Honors

- A “Top Tier” university in academic quality for 29 consecutive years – 1992-2019 – *US*

News & World Report.

- Ranked 24th Best Regional University Among all Public Universities in the South Region in 2019 – *US News & World Report*.
- Ranked 11th Top Public Regional University among all public universities in the southern region – 2019- *US News & World Report*.
- Recognized as the top four-college in Kentucky by *Schools.com*.
- Ranked on the "America's Best Colleges" list twelve consecutive years – 2018-2019 - *Forbes*.
- Murray State ranked "Best Bang for the Buck" – 2016, 2019 – *Washington Monthly*.

University Facilities

Map CF-10 shows the buildings and grounds of the main campus and Map CF-11 shows the boundaries of the properties owned by the university. Table CF-5 gives a summary of the facilities at the various Murray State campuses. Henderson Community College, Madisonville Community College, and Fort Campbell Education Center also have Murray State Campuses, which are not owned by Murray State.

Table CF-5. Summary of Facilities owned by Murray State University

Campus	Square Footage
Main Campus	3,484,191
West Farm	285,989
North Farm	3,902
Garrett Farm	8,653
Biological Station	40,682
Breathitt Veterinary Center	77,141
Hopkinsville Campus	36,342
Paducah Campus	42,861
Total	3,989,761

The Arboretum at Murray State

The mission of the Arboretum is to provide and display a collection of both local and introduced plants, with emphasis on native trees, shrubs, and flowers of historic significance to the Western Kentucky regions. There is a 0.8-mile-long track where you can walk, run, or walk your leashed dog. The students maintain the gardens.

Future Plans

Murray State is currenting working on a new Master Plan. The current Master Plan was presented to the Board of Regents in 2013. Specific expansion areas and facilities in the Master Plan update included the site for a new Library building, look into North 16th Street closure and pedestrian mall concept, continue to develop new residential halls, addition of an Athletic Field House facility east of the football field, improvements to the stadium parking lot,

relocation of the Tennis facility, relocation of the motor pool, changes to Waldrop Drive, adding additional signs along 12th Street, and possibly a new parking structure.

The Master Plan highlights general plans for the residential campus. These plans come from the 2012 Housing Strategic Plan laid out by Murray State. This study included a Housing Assessment and Needs report based on the quality and quantity of existing residential facilities, reviewed national housing trends and developed growth projections for Murray State to the academic year 2023. The report recommendations were to renovate Hart, Regents, Hester, and Elizabeth Residential Colleges.

Also highlighted in the plan is to develop three new low-rise residential colleges. The last plan was to continue support and renovate the existing College Court apartments.

The general trend of Murray State campus development is to the west. Current development on the west side of 16th Street has increased student crossings of this busy street. Campus planners indicate that the campus probably won't extend much further to the south. Murray State currently has three agricultural farms to support the University's agricultural programs. The Murray State Regents have voted to form a task force to look at expanding the agricultural properties and program.

Overall enrollment at the main campus of Murray State has been relatively stable over the past few years. It is envisioned to remain that way and the emphasis for growth is at the satellite campuses.

Hospital and Public Health Facilities

Murray-Calloway County Hospital

Murray-Calloway County Hospital is located at 803 Poplar Street. It is a public/not for profit facility serving West Kentucky and Northwest Tennessee. It began as the William Mason Memorial Hospital in 1910, was purchased by the Murray Hospital Association in 1947, and was called Murray Hospital from 1947 to 1964, In 1964 it became Murray-Calloway County Hospital. The location of the hospital is shown on Map CF-7.

Murray-Calloway County Hospital employs approximately 955 with 670 full time equivalent employees. The Medical staff consists of 30 physicians, 25 med-level providers (Nurse Practitioners and Physician Assistants, representing 28 medical specialties. The hospital currently has 152 acute licensed beds and 226 long-term care beds located at Spring Creek Heath Care Nursing & Rehabilitation. The hospital is accredited by the Joint Commission on Accreditation of Healthcare Organizations, the Kentucky Health Facilities and Health Services, American Association of Blood Banks, and the Kentucky Department of Health and Human Services.

The hospital is a member of the American Hospital Association, The Kentucky Hospital Association, the Premier Healthcare Alliance, and the Twin Lakes Hospital District.

The hospital offers the following services – Acute Inpatient Rehabilitation, Adult Day Care, Ambulance, Blood Bank, Cardiac Rehab, Cardiovascular, Center for Diabetes, Center for Health & Wellness, Center for Rehab & Sports Medicine, Critical Care/Progressive Care, Emergency, Health Express Mobile Screening Unit, Home Care, Hospice, Laboratory, Medical Records, Miracle Moments Maternity, Nutrition, Obstetrics, Pastoral Care, Pharmacy, Radiology, Regional Cancer Center (under construction), Rehabilitation Services, Social Services, Inpatient and Outpatient Surgery, Women's Health, and Wellness Works/Health Promotions.

Spring Creek Health Care, was owned by Murray- Calloway County Hospital, and was renovated in June of 2006. The new construction added 64 beds, including 14 private rooms, a full-service kitchen, and many improved amenities including a separate room for physical therapy and occupational therapy. This expansion also allows for x-rays to be taken on-site, expediting care plans and serving as a convenience to the residents and staff while avoiding the historical ambulance transfer to the hospital. The Spring Creek Health Care is currently owned by Spring Creek KY Opco LLC.

The Anna Mae Owen Residential Hospice House opened in November of 2016. This facility provides specialized end of life care to people in their disease process by providing education, assistance, and comfort for our community and surrounding region.

Future Plans

Murray-Calloway County Hospital has a Strategic Plan that sets specific goals for the hospital. The most recent Strategic Plan established the following goals:

- provide the highest quality services in the region,
- create a culture of excellence for all stakeholders,
- implement a physician recruitment and retention process,
- become a regional healthcare facility,

- improve the physical facilities to support organizational goals, and
- maintain and improve financial performance

Each goal has a set of key initiatives aimed at accomplishing the goal. The key initiatives related to improving the physical facilities include the most recent addition of the Women's Pavilion, Acute Inpatient Rehabilitation Unit, Spring Creek renovations, and renovations to the Medical Arts Building, as well as the current hospital expansion that is underway.

Since the founding in 1910, the hospital has strived to provide the highest quality health care services for the region. Beginning in the 1970's & 1980's the hospital added new beds, laboratory facilities, and a major renovation and expansion. In the 1990's, Murray-Calloway County Hospital added a freestanding Regional Cancer Center; a new Center is under construction. Within the last twenty years, the hospital added the Centers for Sleep Studies, Rehabilitation & Sports Medicine, Diabetes, Health and Wellness, and the acquisition and expansion of Spring Creek Health Care Nursing & Rehabilitation.

Murray-Calloway County Hospital is continuing its long-range plan to provide the highest quality health care services to the region by expanding its facilities and services offered.

Calloway County Health Center

The Calloway County Health Center located at 602 Memory Lane works in the areas of preservation of community health, disease prevention, health statistics, health education, and environmental protection. The Center's General Health Services include AIDS and other sexually transmitted infections, cardiovascular and diabetes services, PAP and mammography services, tuberculosis programs, and communicable diseases.

The Environmental Health program includes issuing permits and investigating complaints related to a variety of environmental health risks. Also included are the testing of private water supplies and the issuing of subsurface wastewater disposal permits. The program also responds to nuisance complaints regarding the control of rodents, mosquitoes, and birds. Periodic distribution of rodent bait and lead paint testing and follow-up are also part of this program. Other programs conducted by the Health Center include Health Education, Nutrition Education, Maternal and Child Health Services, Tobacco Prevention and Cessation, and Safe Communities.

The location of the Calloway County Health Center is shown on Map CF-7.

FUTURE COMMUNITY FACILITIES PRINCIPLES

The planning principles related to Utilities and Other Community Facilities and resulting goals defined in this section are a restatement of the community facilities goals and objectives adopted by Murray for the Comprehensive Plan. Each principle is defined along with a related goal and strategies to achieve that goal. The strategies outline actions that can be taken to work toward the attaining of the goal. The full list of goals and objectives adopted by Murray for the Comprehensive Plan is contained in Appendix A.

All of the Community Facilities Principles discussed in this section are the same as the Land Use Principles except for "Preserve Strong Public Utilities". "Preserve Strong Public Utilities" could probably be a subset of the one Land Use Principle, "Preserve Compact Nature", not listed in this section. However, because of the importance of public utilities to the life, growth, and development of the community, it is listed and discussed here as a stand-alone Community Facilities Principle.

1. **Preserve Strong Public Utilities**

The City of Murray is fortunate to own and operate water, wastewater, stormwater, electric, telecommunications, solid waste – now contracted with Republic Services, and natural gas utilities. These utilities primarily serve within the Murray city limits, but service is provided outside the city limits where there is a demand and the service can feasibly be provided. Having strong public utilities allows Murray to plan and develop the utilities and related services in a manner to facilitate the growth of the city. Making sure these utilities remain strong is a priority with the City of Murray.

Strong Utilities Goal: Preserve strong public utilities by conducting timely planning that leads to strong systems that serve without interruption with rate structures that adequately support system expansion, operation, and maintenance.

Strategy 1: Maintain Up To Date Planning

Planning is very important to maintaining a strong public utility. Although plans with 20-year horizons may be useful in developing system road maps for the future, they have proven not sufficient to meet the shorter time frames necessary for efficient operation of public utilities. While 10-year planning time frames may be appropriate for large capital expenditures, like treatment plants and major utility transmission improvements, 1-year and 5-year periods are the work horses of utility planning.

Murray will evaluate its public utility planning efforts and develop up to date master plans with 5 and 10 year planning horizons for the water, wastewater, stormwater, electric, solid waste, and natural gas systems. Once developed, they will be formally reviewed each year. The plans will be revised every five years.

Strategy 2: Provide Systems with Redundancy

In the operation of public utilities there are strong systems and systems that just meet basic needs. Systems that just meet basic needs have service disruptions when system components fail. Strong systems have constructed facilities that provide backups to key components and continue to provide service even with failures of system components.

As part of each utility's master planning, system redundancy will be evaluated. Capital

planning associated with the master plans will include the development of projects that provide the maintaining of high levels of service in time of system component failure.

Strategy 3: Maintain Sound Rate Structure

The rate structure plays a key role in determining whether a public utility is a strong utility or one that just provides the minimum level of service. The rates for services should be set at levels to provide top quality operations and maintenance, system redundancy to maintain continuous operation, systems expansions, and a depreciation fund for the replacement of system components that have passed their useful life. Rates for the operation of a public utility should be set based on sound business principles and never on political considerations. Grants should not be used to fulfill the basic mission for providing utility service, but to shorten the time frame for system expansions.

Many times utility rates are adjusted at long time intervals that bear no correlation to the changing needs of the utility. Many public utilities find automatic adjustment of rates based on economic indicators to be very useful. Many utilities also find useful more frequent and smaller adjustments of rates based on business needs.

As part of the master planning for its public utilities, Murray will review the rates of its public utilities and assess their ability to fund the components mentioned above for strong utilities. Murray will also consider integrating yearly rate adjustments into the rate ordinance based on utility needs or economic indicators. In addition, Murray will conduct comprehensive rate evaluations every five years as part of the utilities master planning.

Strategy 4: Efficiently Manage the Assets

Murray's public utilities are valuable assets worth 10's of millions of dollars. Murray strives to manage these assets in a manner that allows them to increase their value to the

community. Strong systems cannot be sustained if adequate operations and maintenance personnel are not employed to extend the life of the assets by keeping them in top operating order. Preventative maintenance programs and the stocking of, sometimes expensive, spare parts and components can be instrumental tools in managing the assets.

Murray will constantly monitor the programs in place for managing its public utility assets. New programs, including the integration of new software, will be developed when found necessary to properly manage these important assets.

2. Enhance Unique Small Town Community Character

Murray is a unique town with a progressive regional university that has won numerous awards for its educational value. Murray has also been recognized as a top retirement destination. Murray is in the center of an agricultural area and has the small town feel generally associated with agriculture. This blend of economies supports services and activities not generally associated with similar sized towns in Kentucky. The blends of these different cultures and the life style they support give the residents of Murray a distinct pride in their community and its character. The character of Murray will be enhanced through the integration of improved planning, citizen participation, and the installation of community based technology to enhance the desired academic atmosphere.

Community Character Goal: Enhance Murray's unique community character by protecting

and enhancing core neighborhoods, the downtown, and historic areas, while providing for the efficient flow of people and goods throughout.

Strategy 1: Improve Community Development Coordination

There are several agencies that impact the planning and execution of community development in the Murray planning area. In addition to the City of Murray, these agencies represent Calloway County Government, State and Federal Government, the Purchase Area Development District, and Murray State University. When multiple agencies are involved, the speed at which a community development project progresses is generally a function of the amount of coordination that occurs.

Murray will develop steps to improve the character of the community through coordination with other governmental agencies to improve community development efforts. Tools to be considered for improved coordination include face to face meetings at a regularly scheduled frequency and regularly scheduled teleconferences.

Strategy 2: Encourage Citizen Participation

The participation of the citizens is always important in developing and enhancing the community's character. Murray has lots of opportunities where citizens can be involved including service on boards and commissions, Fire and Police Academies, West Kentucky Night, Character Counts, Community of Promise, Leadership Murray, Leadership Tomorrow, Town and Gown, and Court Appointed Special Advocate. Another possible avenue for citizen involvement is through neighborhood associations.

Murray will continue to encourage and enlist citizen participation in the many activities that define the community's character. Murray will encourage the development of active neighborhood associations and assist the neighborhoods in their formation as part of the effort to encourage participation by its citizens.

Strategy 3: Go "High Tech"

The sophisticated, academic image desired by Murray to define its community character can be facilitated through the integration of technology. Many cities have integrated into their operating strategies the expansion of electronic government services. The high availability of affordable broadband service in the Murray area facilitates the use of the internet to provide governmental services. Another use of technology that would be "over the top" in terms of enhancing the desired academic image would be establishing Murray as a "wireless city". In addition to benefitting local residents, access to wireless anywhere in the city would be a benefit to students when they visit off campus locations in Murray.

Murray will investigate the expansion of technology to enhance its image. Opportunities like enhanced electronic government services and the creation of "Wireless Murray" will be investigated.

3. **Enhance, Preserve, and Protect the Environment**

Murray is a very environmentally aware community. The environmental programs at Murray State University and the ever-increasing awareness of environmental impacts from human activity have fostered this environmental awareness. This principle recognizes the desire of the area's citizens that the development of land occur in an environmentally friendly manner and that the resulting developed land contain significant environmentally friendly green space. Streams, their associated floodplains, and forested areas are the most

significant environmentally sensitive features in the Murray area. Environmentally friendly communities recognize that enhancement of the environment goes beyond land development activities to include other actions that impact the entire community. Several of these activities are discussed here.

Environmental Goal: Maintain a natural environment by protecting, preserving, and enhancing natural resources and promoting design, development and construction practices that create green space, neighborhood connectivity, and a visually pleasing environment.

Strategy 1: Enhance Community Outreach

Events in the Murray area that reach the public and emphasize the protection of the environment include "Make a Difference Day" and "Adopt a Highway." Numerous additional opportunities for community environmental outreach exist, particularly in the public schools and Murray State University.

Murray will continue to promote existing community outreach activities. The addition of new events and new outreach audiences will be evaluated.

Strategy 2: Increase Community Recycling

Murray's solid waste program currently contracts with Republic Services to conduct limited curb side recycling. A recycling program is also conducted monthly on campus at Murray State University's north farm. Environmentally friendly communities have strong recycling programs and Murray desires to increase its participation in recycling efforts.

Murray will seek ways to increase its participation in recycling programs. Murray will also evaluate the potential of increasing recycling by establishing a cooperative recycling

program with Murray State University.

Strategy 3: Improve Building Designs

Environmentally friendly communities strive to reduce their carbon foot print. One common way to accomplish this is to reduce the energy consumed by new buildings through the use of energy efficient designs. In addition, existing buildings can sometimes be retrofitted to reduce energy consumption. Another aspect of environmentally friendly buildings is the use of sustainable materials in their construction.

Murray will evaluate the use of environmentally friendly building design in all new city owned buildings and in existing city owned building retrofits. In addition, Murray will evaluate ways to encourage other public and private building owners to design, construct, and retrofit their buildings in an environmentally friendly manner. Options to be evaluated include the adoption of policies and ordinances, conducting education to encourage voluntary programs, and voluntary programs with incentives.

Strategy 4: Efficiently Integrate Cell Towers

Structures that support wireless services are a concern from an environmental and safety viewpoint. A progressive "high tech" environmentally friendly city generally embellishes the expansion of wireless services, but desires that the facilities supporting the services be constructed so as not to distract from the pleasing visual aspect desired for the community. In addition, safety concerns also dictate that the structures be located to minimize potential damage to residents and property in the event of failure during disasters.

Murray will work with public and private agencies in developing a plan for the location of facilities supporting wireless communications. The plan will seek to identify best locations for these facilities so they blend with the environment and be in safe locations. Murray will also seek ways to encourage the location of new wireless facilities on existing structures.

4. **Develop and Enhance Quality of Life Measures**

Quality of life is a key component for Murray to keep its current residents, attract new retiring residents, or attract new commercial and industrial investment in the community. Murray currently has a high quality of life, but there are measures that can be taken to increase its attractiveness for future residents and related commercial and industrial investment. There are many things that contribute to a high quality of life and some of these measures have already been addressed in Principles 1-3. Additional measures are discussed in this section.

Quality of Life Goal: Develop new programs, events, and other quality of life measures while enhancing existing cultural and recreational opportunities and where possible integrate these quality of life measures into all aspects of life in Murray.

Strategy 1: Maintain a Safe Environment

A safe community is a community where its citizens can move about freely without fear of being a victim of a crime. A safe community also is able to protect property from destruction by fire. In a safe community, citizens can visit government and other buildings without fear of safety and accessibility problems.

Murray will seek ways to continue to improve police and fire protection services to the community. The construction of the new fire station on South 16th Street was completed

in 2021. Murray will also continue to seek ways to improve building safety and accessibility for its employees and the public.

Strategy 2: Maintain a Caring Environment

Residents of communities with a high quality of life sense a feeling that the community and its leaders truly care about them and their needs. The caring of a community is expressed in the manner a community provides for its elderly, disabled, and youth. Murray strives to be a retirement destination. As an outgrowth of attracting retires, the median age of Murray's population will continue to increase, necessitating the provision of more and better services for the elderly.

Murray will continue to seek ways to make the quality of life better for all its citizens, especially the youth, the elderly, and the disabled. Murray will evaluate the formation of an Advisory Group to seek ways to enhance services to these target groups.

Strategy 3: Maintain a Healthy Environment

Murray has excellent health care facilities available for its citizens. The availability of good health care is an important measure of the quality of life, especially to an aging population. Health care has, to a large degree, become a technology driven enterprise. Funds must continually be sought to finance the technology improvement necessary to provide adequate health care.

Another aspect of a healthy environment is the availability of programs that educate citizens on things they can do to improve their health. Murray-Calloway County Hospital and the Calloway County Health Center offer several excellent programs that serve this need, like nutrition and smoking cessation. An additional aspect of a healthy environment becoming more and more important to community citizens is the ability to visit public places without the exposure to second hand smoke from tobacco products. This could be an important element in the attraction of retirees to the Murray area. Several of the area's restaurants have voluntarily become "smoke free" In 2018, the City passed an ordinance making all workplaces and public spaces in Murray smoke-free.

A third aspect of a healthy community is the opportunity to participate in recreational activities that contribute to a healthy life style. Access to sidewalks, parks and recreational trails create these healthy life style opportunities.

Murray will continue to seek ways to fund advances in health care and to expand the desired health care services and facility improvements. Murray will continue to encourage healthy life style programs like nutrition and smoking cessation.

Strategy 4: Enhance and Expand the Park System

The access to public parks and recreational trails is an important measure of the community's quality of life. It is also an important element in the attraction of the retired community to Murray. The Land Use Element of the Comprehensive Plan discusses ways to enhance the park system through the land development process. Other means are available to assist with park expansion and include citizen philanthropy and income from leasing park facilities for a limited range of commercial services.

Murray will continue to seek ways to expand and enhance the public park system, including recreational trails. Murray will also continue to seek grants and citizen and business philanthropy to assist funding of the needed park system enhancement.

Strategy 5: Improve the Public Library

In a community focused on maintaining an academic nature, the provision of library services is very important. These services are also important to the age group of the retirees Murray hopes to attract, as many of them are not yet fully a part of the digital media revolution. Murray has an excellent library and recognizes the need to expand library facilities and services to enhance their availability to the area's citizens.

Murray will support the planned expansion of library facilities and services. Support may take the form of assistance with needed utilities, public services, and other means available to city government.

Strategy 6: Increase Adult Education

Adult education is a community amenity that contributes to a high quality of life, especially for an aging population. Older citizens want to stay active and continue the learning process, which has been found to have health benefits.

Murray will continue to seek ways to maintain an active community adult education program. This will include seeking ways to cooperate with the public schools and Murray State University to leverage their resources for providing community based adult education.

5. **Maintain Economic Opportunity**

Approximately 25 percent of the jobs and 30 percent of the income result from jobs in the public sector giving Murray a stable employment base. Approximately 13 percent of the jobs and 20 percent of the income come from manufacturing. Despite current challenges in the manufacturing sector due to the national downturn, future economic potential for the Murray area appears good. The completion of the industrial park on Highway 641 North gives the area excellent future potential for attracting new industrial investment and the resulting jobs. The continued growth of the Murray-Calloway County Hospital and the completion of the expansion there, also bode well for the future of the Murray area. Agriculture will also continue to play an important role in Murray's economic future.

The quality of life is high in Murray and actions taken as a result of this Comprehensive Plan should ultimately make it even better. The quality of life and proximity to Kentucky Lake and the Land Between the Lakes National Recreational Area should prove to be positive and important factors for the Murray area in recruiting new businesses, new retirees, and developing income from tourism.

The Land Use Element included several economic strategies related to land use. Additional strategies are included here.

Economic Opportunity Goal: Develop a diverse economic base with multiple employers to help promote stability in employment for Murray and the surrounding area.

Strategy 1: Support and Enhance Economic Development

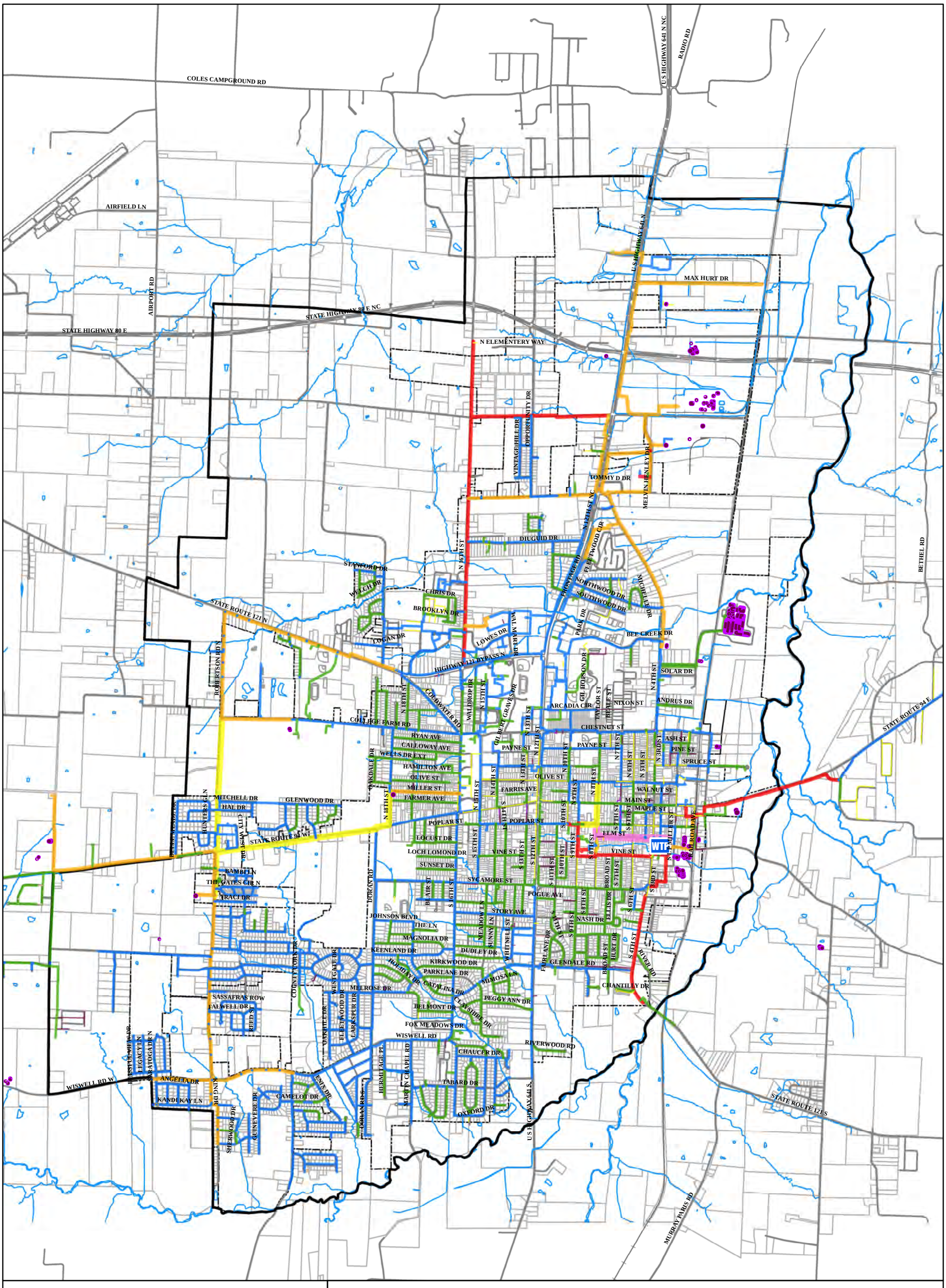
The economic development team in Murray supported by local government consists of the Economic Development Corporation, Chamber of Commerce, Convention and Visitors Bureau, and Murray Main Street. Another excellent economic development resource in the Murray area is the Center for Economic and Entrepreneurial Development at Murray State University. These agencies support a range of economic development activities including encouraging downtown growth, developing industrial land, and recruiting new investment in industrial facilities.

Murray will coordinate and continue to support the local economic development team.

Strategy 2: Improve Educational Opportunities

A key element in attracting outside investment to create economic opportunity is the quality of the local work force. Maintaining a quality work force happens by design, not by chance. Murray State University, the public schools, and the Area Technology Center provide a strong nucleus of educational agencies to provide the kinds of training needed by the Murray area work force.

The Murray economic development team will coordinate activities between these educational institutions and assist them in structuring the correct educational programs for the Murray area.



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CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

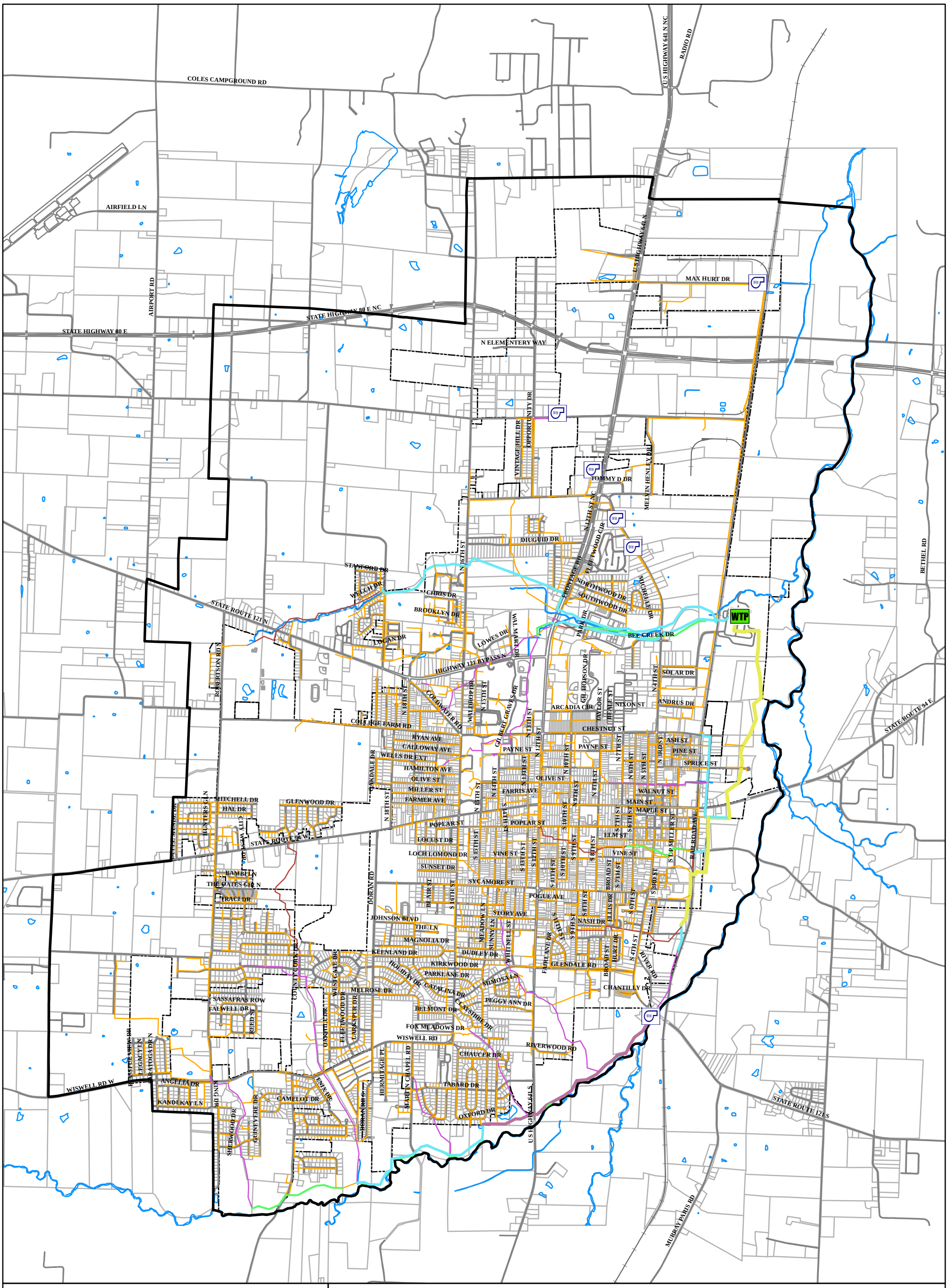
CF-1: Murray Water System

- 1" Water Main
- 2" Water Main
- 3" Water Main
- 4" Water Main
- 6" Water Main
- 8" Water Main
- 9" Water Main
- 10" Water Main
- 12" Water Main
- 14" Water Main
- 16" Water Main
- 24" Water Main
- City Limits
- Urban Services Area
- Tanks and Reservoirs
- WTP Water Treatment Plant

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



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KENTUCKY
NOVEMBER, 2018

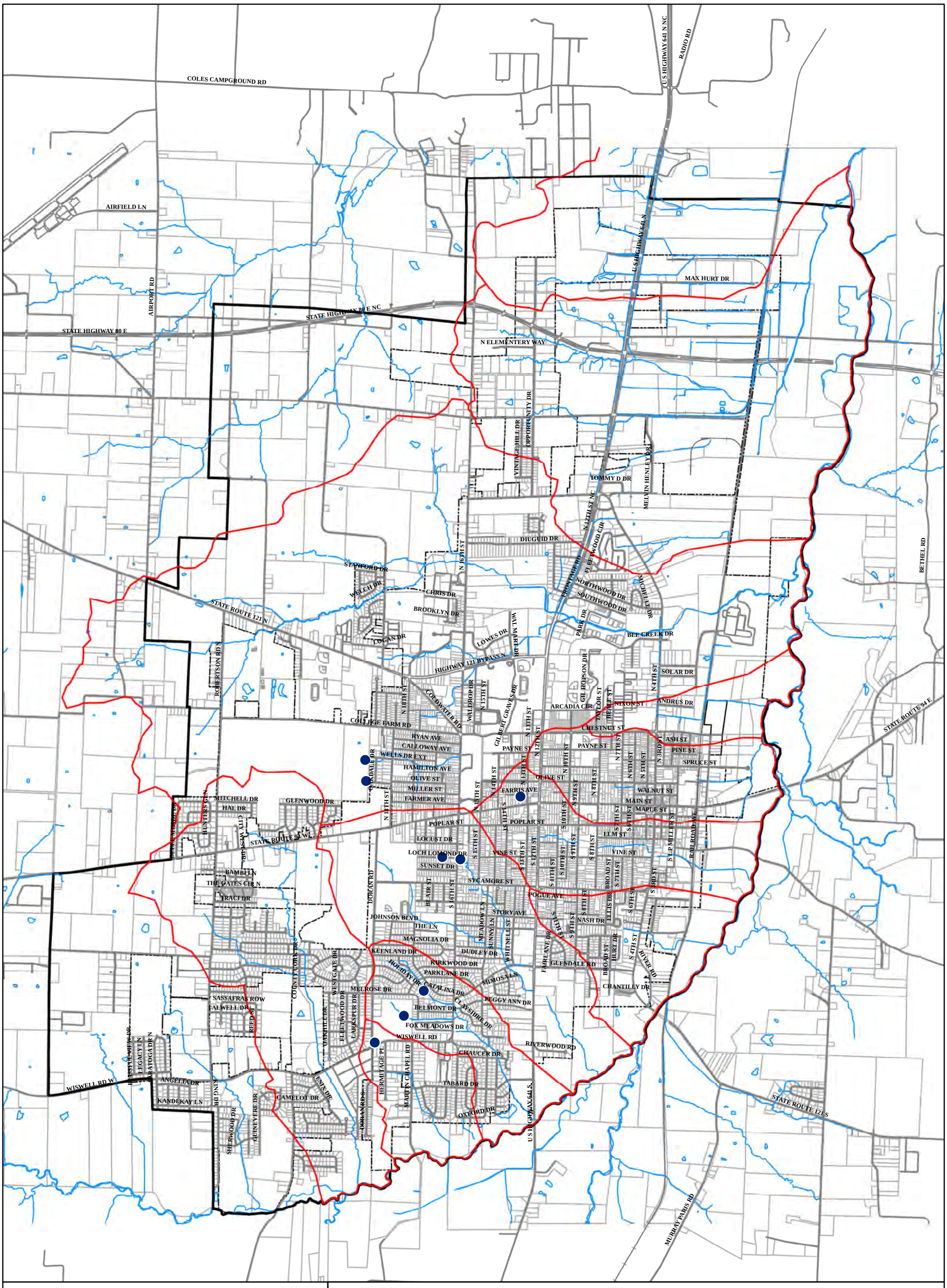
CF-2: Wastewater System

- Small Diameter Sewers <10"
- 12"
- 15"
- 16"
- 18"
- 24"
- 30"
- 36"
- WTP — Wastewater Treatment Plant
- Lift Station
- City Limits
- Urban Services Area

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



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CALLOWAY COUNTY

KENTUCKY

NOVEMBER, 2018

CF-3: Stormwater Facilities

- Potential Detention Ponds
- Stormwater Drainage Basins
- City Limits
- Urban Services Area

N

1 inch = 3,000 feet

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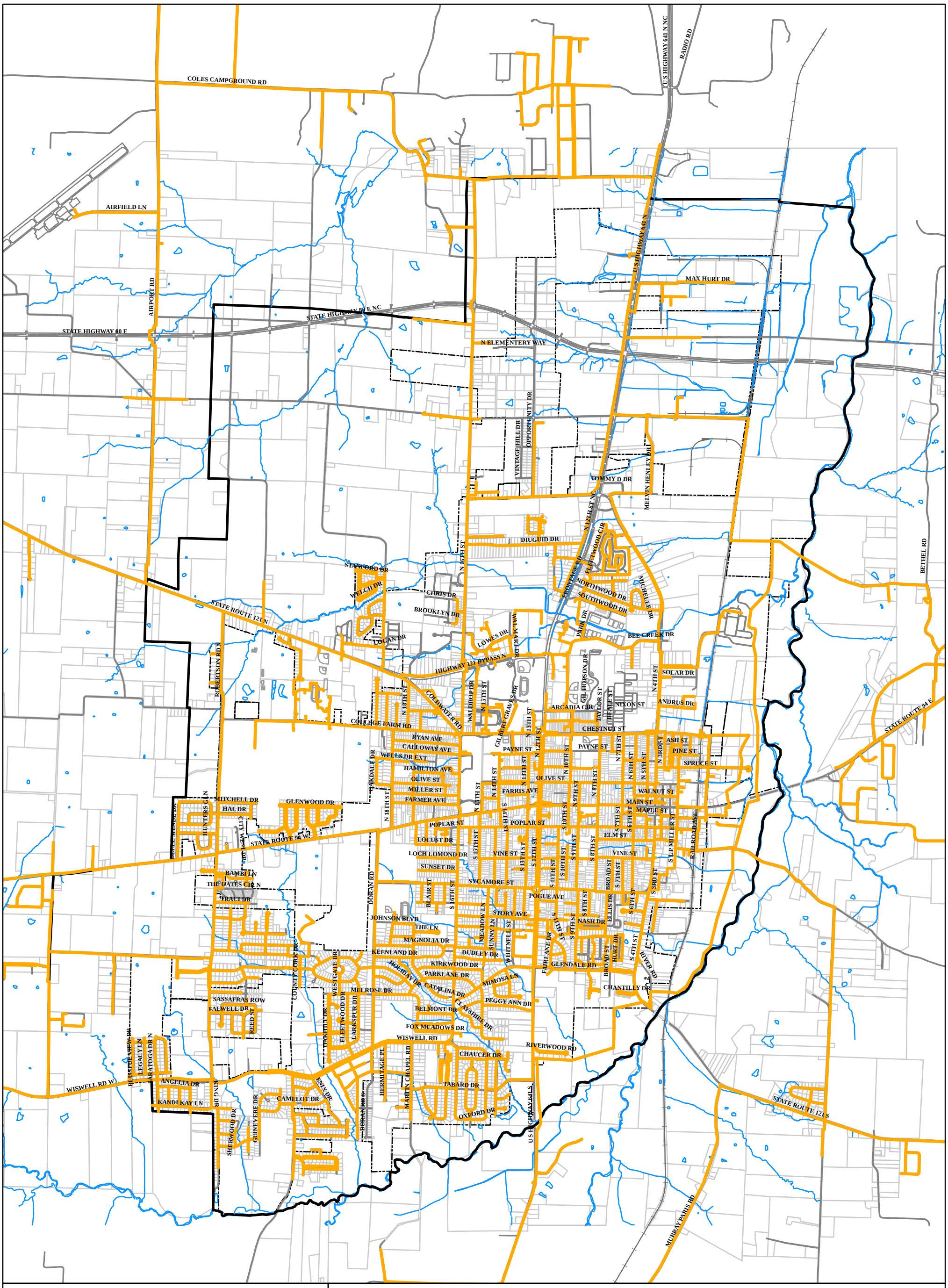

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KENTUCKY
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CF-4: Natural Gas System

- Natural Gas Lines
- Urban Services Area
- City Limits

N

1 inch = 3,000 feet

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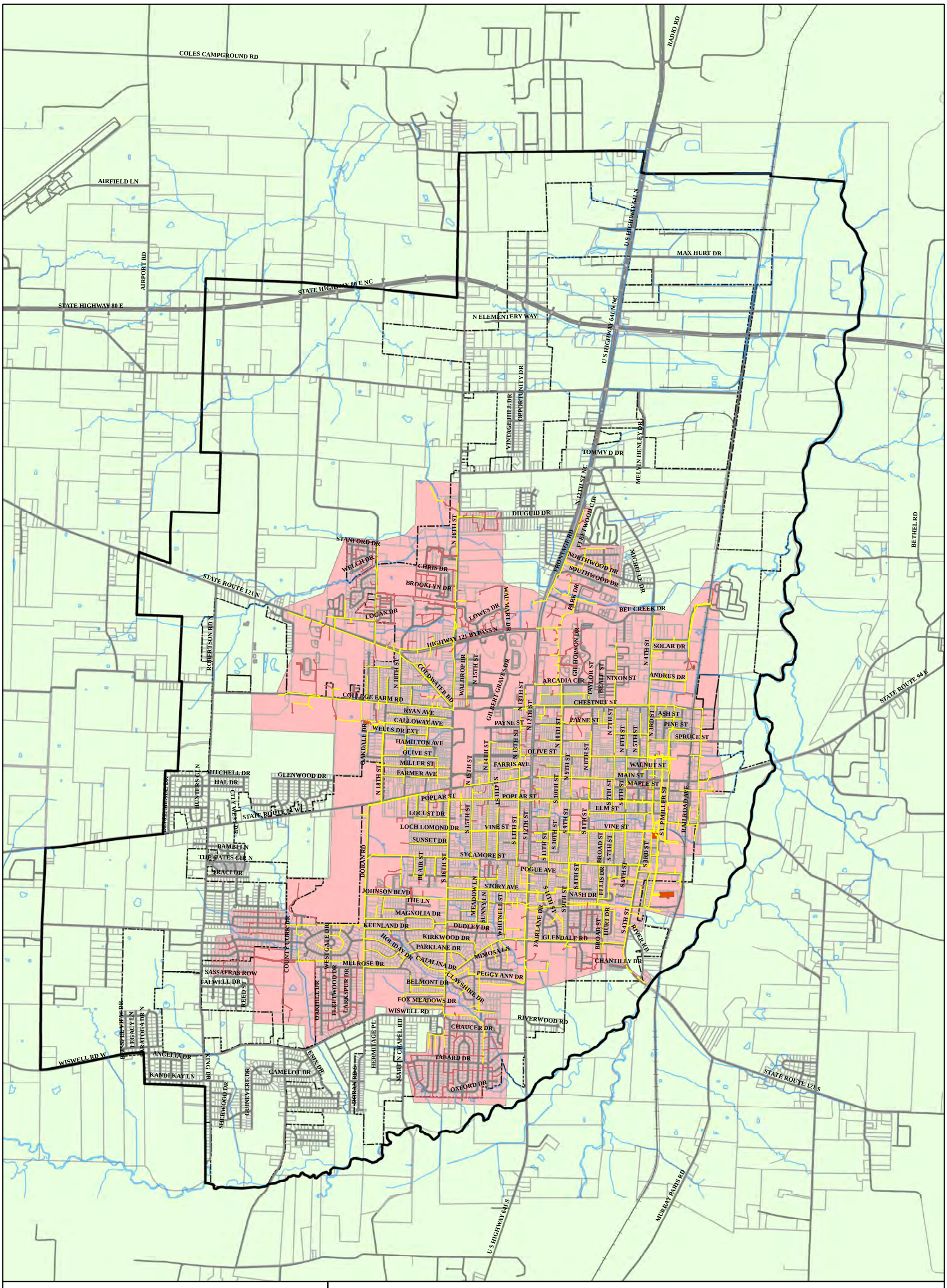

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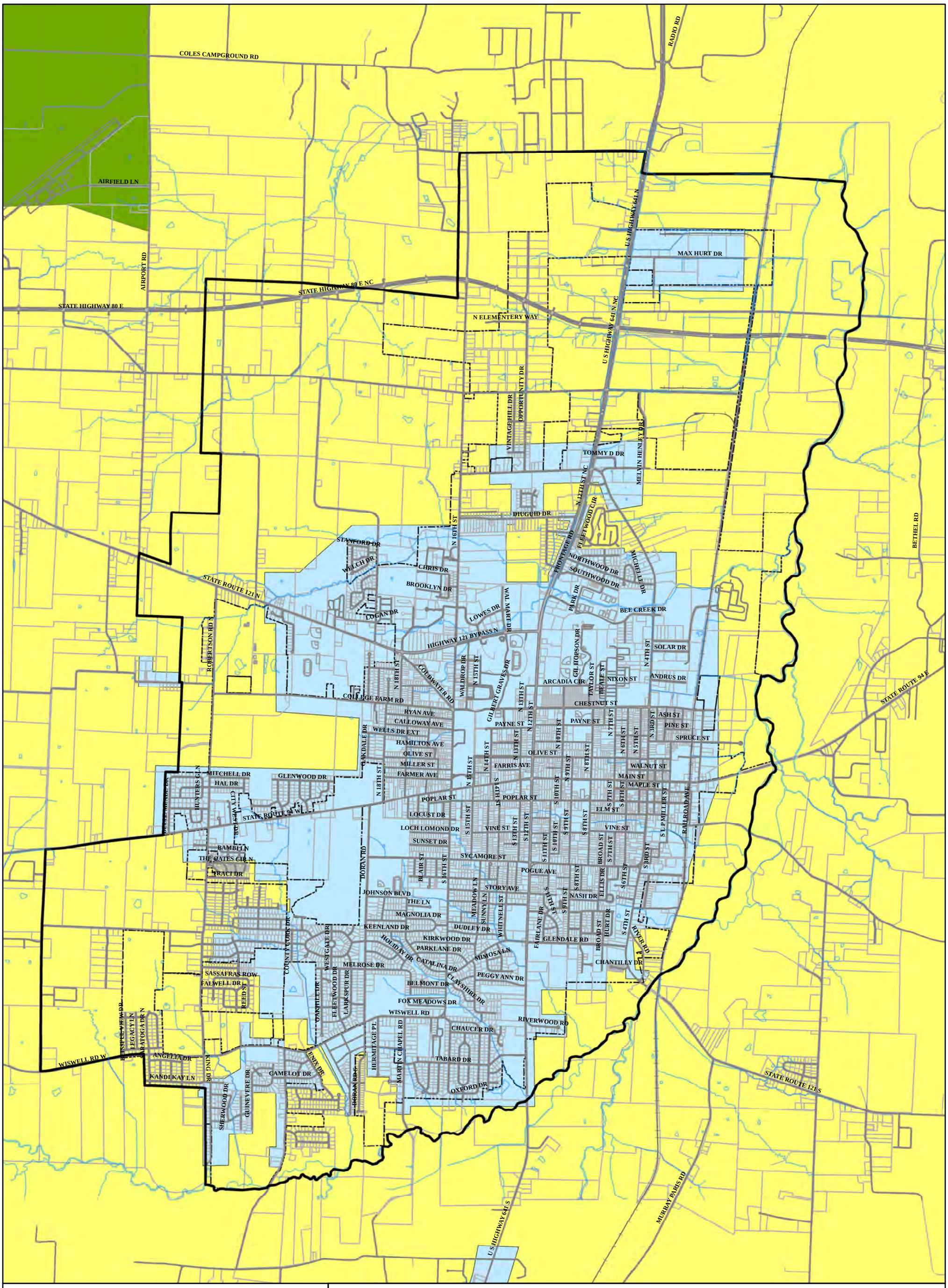
CF-5: Electric Systems

- Murray Electric Underground Primary Service Lines
- Murray Electric Overhead Primary Service Lines
- Urban Services Area
- City Limits
- Murray Electric Substations
- Murray Electric Service Area
- Other Electric Providers

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



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KENTUCKY
NOVEMBER, 2018

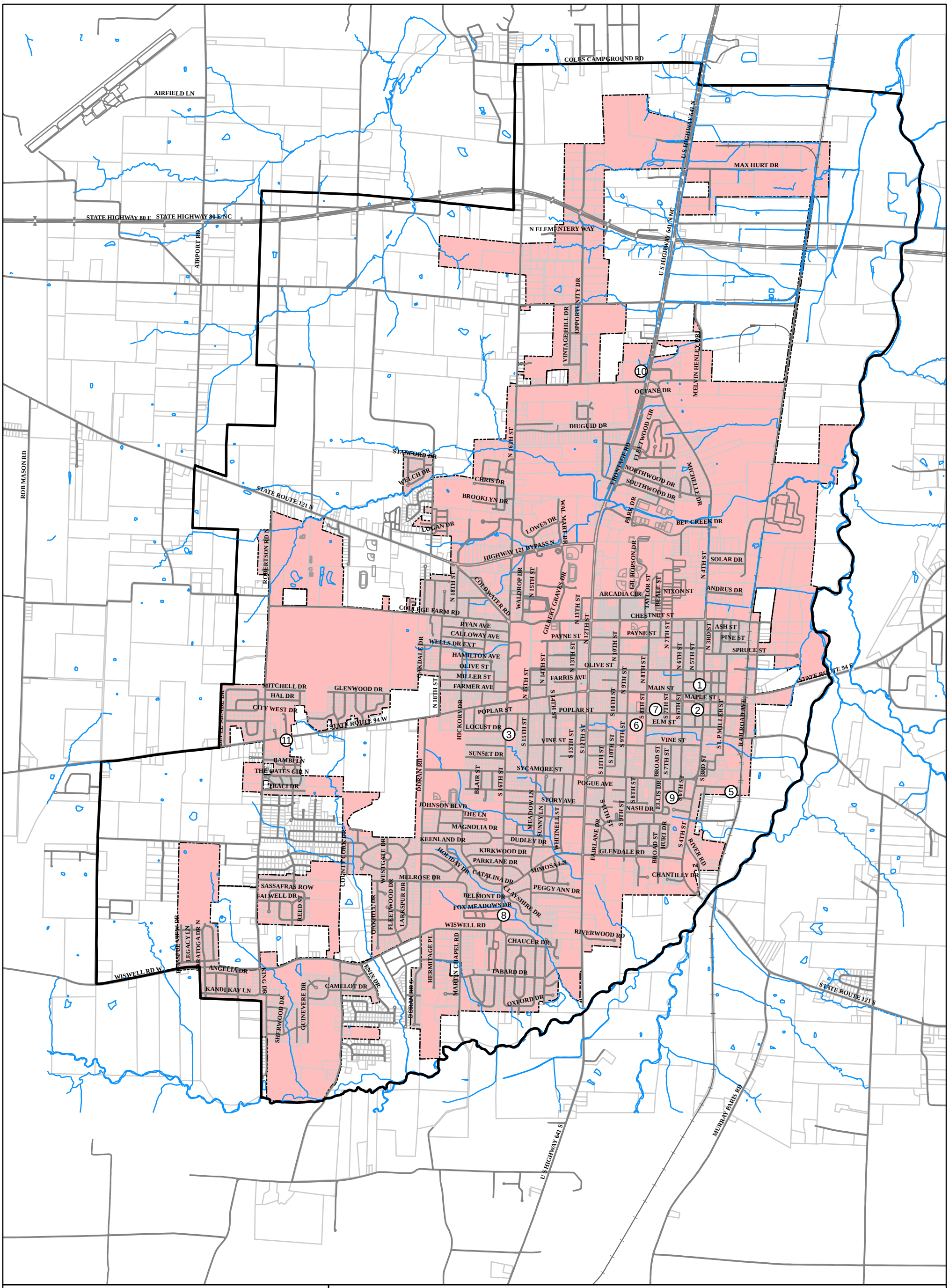
CF-6: Telecommunications

- Urban Services Area
- City Limits
- Murray Electric Service Area
- West Kentucky Rural Telephone Cooperative
- Other Telecommunitcation Providers

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



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CF-7: Law Enforcement, Fire, & Medical Facilities

- Facility Locations
- Urban Services Area
- City Limits
- City of Murray Fire District
- Calloway County Fire District

Id	Facility Names
1	Murray Police Station
2	Murray Fire Station No.1
3	Murray Fire Station No.2
5	Calloway County Rescue Squad
6	Murray-Calloway County Hospital
7	Wellness Center
8	Spring Creek Health Care
9	Calloway County Health Center
10	Murray Fire Station No. 3
11	Anna Mae Owens Hospice House

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet

COLES CAMPGROUND RD
AIRFIELD LN
AIRPORT RD
STATE HIGHWAY 80 E
STATE HIGHWAY 80 E NC
U S HIGHWAY 641 N
U S HIGHWAY 641 N NC
BETHEL RD
N 12TH ST
STATE ROUTE 121 N
HIGHWAY 121 BYPASS N
ROBERTSON RD N
N 16TH ST
N 4TH ST
COLLEGE FARM RD
CHESTNUT ST
N 12TH ST
INDUSTRIAL RD
STATE ROUTE 94 E
MAIN ST
STATE ROUTE 94 W
SYCAMORE ST
S 12TH ST
S 16TH ST
S 4TH ST
GLENDALE RD
WISWELL RD
WISWELL RD W
U S HIGHWAY 641 S
STATE ROUTE 121 S
MURRAY PARIS RD

6 7 4 3 5 2 1 10 9 8

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CF-8: Courthouses, Judicial, City, Parks, & Library Facilities

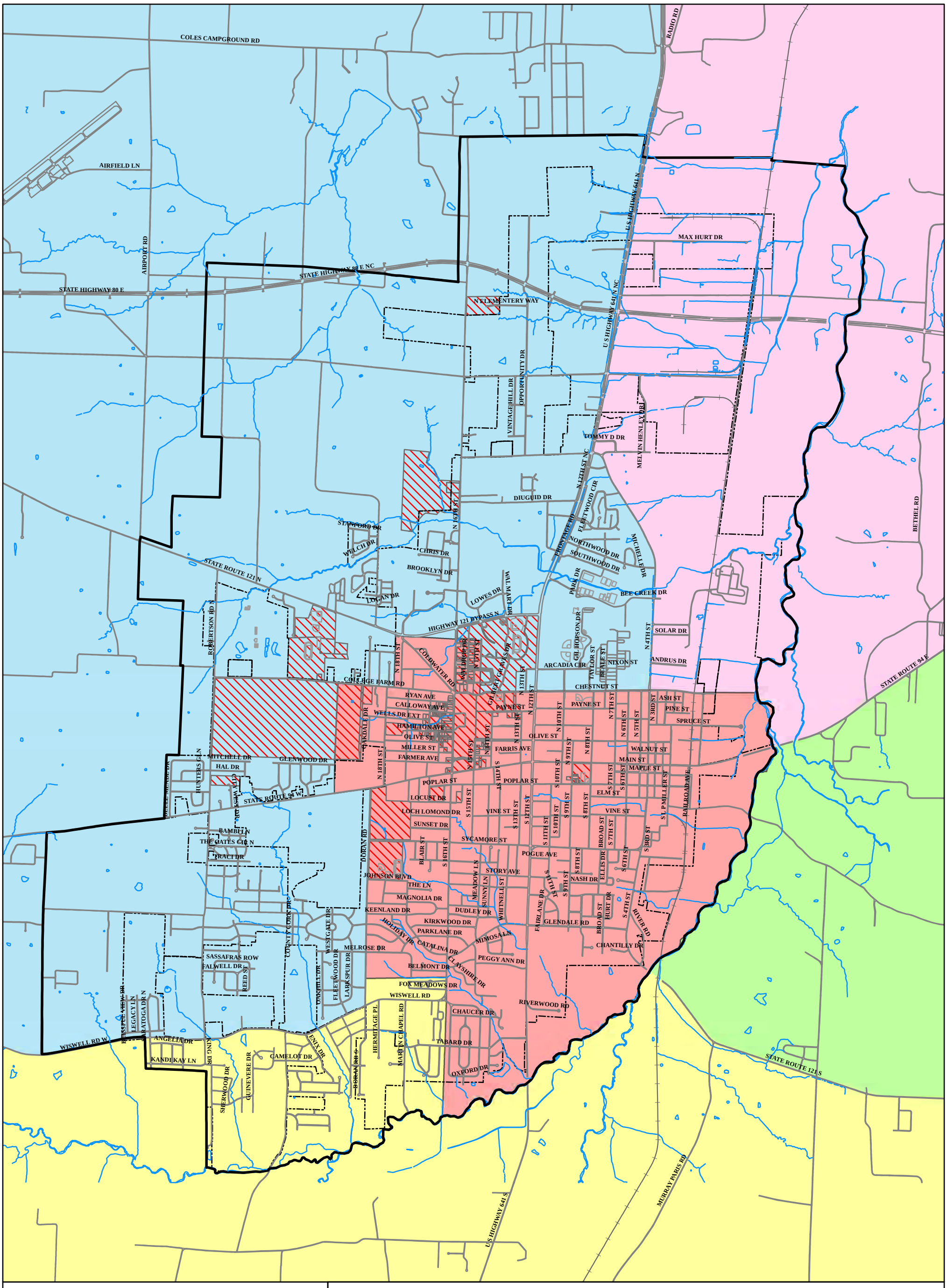
Urban Services Area
City Limits
Points of Interest

Id	Name
1	Callow ay County Courthouse
2	City Hall
3	County Jail
4	Calllow ay County Judicial Center
5	Murray-Callow ay County Library
6	Central Park
7	Chestnut Park
8	Callow ay County Road Department
9	State Highw ay Department
10	Murray Convention & Visitor's Bureau

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet



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KENTUCKY
NOVEMBER, 2018

CF-9: Schools & District Boundries

- Murray Independent School District
- Urban Services Area
- City Limits
- School Campuses
- Murray Independent
- Calloway School District 1
- Calloway School District 2
- Calloway School District 3
- Calloway School District 5

N

1 inch = 3,000 feet

0 500 1,000 2,000 3,000 Feet

Id	Building_n
1	Oakhurst
2	Sparks Hall
3	Chemistry Building
4	Wilson Hall
5	Wrather Hall
6	Stubblefield Monument
7	Nash House
8	Public Safety
9	Business Building (North)
10	Business Building (South)
11	Low ry Center
12	Pogue Library
14	Wells Hall
15	Biology Building
16	Alexander Hall
18	Faculty Hall
19	Lovett Auditorium
20	Doyle Fine Arts Center (North)
21	Doyle Fine Arts Center (South)
22	Waterfield Library
24	Woods Hall
26	Hutson School of Agriculture
27	Carr Health
28	Visual Arts Building
29	Oakley Applied Science Building
30	Blackburn Science Building
33	Publc Advocacy
34	Collins Industry and Technology Center
35	Curris Center
38	Cutchin Fieldhouse
39	Mason Hall
40	White College
41	Regents College
42	Bennie Purcell Tennis Courts
45	Richmond College
47	Elizabeth College
48	Franklin College
49	Hart College
50	Winslow Dining Hall
51	Clark College
52	Intramural Sports Field
52	Intramural Sports Field
53	Outdoor Tennis Courts
54	Hester College
55	Springer College
61	Susan E. Bauernfeind Student Recreation
64	College Courts
67	Engineering Building
68	New Richmond College (Out of Commisio

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NOVEMBER, 2018

CF-10: Murray State University Campus

(X) Murray State Buildings

Murray State Property

N

1 inch = 308 feet

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CALLOWAY COUNTY
KENTUCKY
NOVEMBER, 2018

CF-11: Murray State University

MSU Property Boundary

N

1 inch = 500 feet

0 0.025 0.05 Miles

IMPLEMENTATION

This implementation section of the Murray Comprehensive Plan is a summary of the future land use, transportation, and community facilities principles, goals, and strategies. It is presented so the user of the plan can view a composite and total picture of the implementation strategies for all the plan elements. The detail related to the principles and strategies is found in each of the plan elements.

Principle 1. Preserve Compact Nature

Compact Nature Goal: Create a land use development pattern that efficiently provides delivery of governmental, commercial and professional services; utilizes existing infrastructure resources; and maximizes return on infrastructure expenditures while maintaining the small town nature of Murray.

Strategy 1: Limit Expansions of the Urban Services Area

Strategy 2: Keep New Residential Development in the Urban Services Area

Strategy 3: Encourage Neighborhood Commercial Activity

Principle 2. Enhance Unique Small Town Community Character

Community Character Goal: Enhance Murray's unique community character by protecting and enhancing core neighborhoods, the downtown, and historic areas, while providing for the efficient flow of people and goods throughout.

Strategy 1: Protect and Enhance Core Neighborhoods

Strategy 2: Protect and Enhance Downtown Gateways

Strategy 3: Expand Downtown and Improve Downtown

Vitality

Strategy 4: Encourage Neighborhood Renovation and Revitalization

Strategy 5: Maintain Murray's Historic Character

Strategy 6: Strengthen Murray State University-City Planning Interaction

Strategy 7: Develop Progressive Zoning Ordinance and Land Development Standards

Strategy 8: Improve Community Development Coordination

Strategy 9: Encourage Citizen Participation

Strategy 10: Go "High Tech"

Principle 3. Enhance, Preserve and Protect The Environment

Environmental Goal: Maintain a natural environment by protecting, preserving, and enhancing natural resources and promoting design, development and construction practices that create green space, neighborhood connectivity, and a visually pleasing environment.

Strategy 1: Protect Trees and Create Green Space during Development

Strategy 2: Protect Floodplains and Water Quality

Strategy 3: Promote Environmentally Sensitive Development

Strategy 4: Include Beautification in New Roadway Projects

Strategy 5: Promote Environmentally Sensitive Transportation Facility Development

Strategy 6: Enhance Community Outreach

Strategy 7: Increase Community Recycling **Strategy 8:** Improve Building Designs **Strategy 9:** Efficiently Integrate Cell Towers

Principle 4. Develop and Enhance Quality of Life Measures

Quality of Life Goal: Develop new programs, events, and other quality of life measures while enhancing existing cultural and recreational opportunities and where possible integrate these quality of life measures into all aspects of life in Murray.

Strategy 1: Enhance and Expand the Park System

Strategy 2: Develop System of Recreational Walking and Bicycle Trails

Strategy 3: Enhance the Use of Sidewalks

Strategy 4: Maintain a Safe Environment

Strategy 5: Maintain a Caring Environment

Strategy 6: Maintain a Healthy Environment

Strategy 7: Improve the Public Library

Strategy 8: Increase Adult Education

Principle 5. Maintain Economic Opportunity

Economic Goal: Build upon Murray's quality of life assets and location to encourage new capital investment and the creation of quality jobs to enhance Murray's strong economic base.

Strategy 1: Designate Lands for Quality Employment Opportunities

Strategy 2: Redevelop Appropriate Sites

Strategy 3: Develop New Opportunities

Strategy 4: Use Public Capital to Foster Private Investment

Strategy 5: Enhance and Expand the Airport

Strategy 6: Enhance and Expand Rail Service

Strategy 7: Support Regional Transportation Development Efforts

Strategy 8: Support and Enhance Economic Development

Strategy 9: Improve Educational Opportunities

Principle 6. Move People and Goods Efficiently

Move People and Goods Efficiently Goal: Expand and enhance the transportation system to improve the flow of traffic and reduce automobile dependency by increasing access to other less congestive transportation modes like public transportation.

Strategy 1: Enhance and Expand Public Transportation

Strategy 2: Enhance Traffic Movement for Community Events

Strategy 3: Enhance Traffic Management Measures

Strategy 4: Enhance and Expand the Roadway System

Strategy 5: Continue to Support Funding of Local Transportation Projects

Principle 7. Preserve Strong Public Utilities

Strong Utilities Goal: Preserve strong public utilities by conducting timely planning that leads to strong systems that serve without interruption with rate structures that adequately support system expansion, operation, and maintenance.

Strategy 1: Maintain Up To Date Planning

Strategy 2: Provide Systems with Redundancy

Strategy 3: Maintain Sound Rate Structure

Strategy 4: Efficiently Manage the Assets

Appendix A

Goals and Objectives Statement Adopted for the Comprehensive Plan

GOALS AND OBJECTIVES

The Kentucky Planning and Zoning Legislation, contained in Chapter 100.187 of the *Kentucky Revised Statutes*, include a requirement that the Planning Commission and City Council shall adopt statements of goals and objectives. The statements shall serve as a guide for the physical development as well as the economic and social well being of the city.

FRAMEWORK

The establishment of community goals and objectives is an essential step in the comprehensive planning process for Murray and will provide the legal framework and documentation for supporting planning and development decisions by the Murray Planning Commission. The goals and objectives should address the major issues and concerns that are and will be affecting the City of Murray now and in the future.

Goal – A goal is defined as a general statement of a desired result. Goals establish the long- term end toward which land use programs and activities are directed.

Objective – An objective is a statement of a specific, measurable, intermediate end that is achievable and marks progress toward a goal. Statements on community objectives provide the official governmental guidance for achieving goals.

FUTURE LAND USE GOAL

To achieve a balanced pattern of land use that meets the needs of the population, stimulates physical, social and economic development, and protects the environmental well being of the community.

The City of Murray is seen as a place where people can:

- Provide shelter and meet the basic needs for themselves and their families.
- Provide equal opportunity to all people.
- Enjoy the beauty, safety, and security of our community.
- Become responsible citizens.
- Promote a community which is aesthetically attractive for residents, visitors, and potential investors.
- Create happier, healthier, and smarter children by promoting community wide efforts that improve the well being of our youth.

Goal – Community Relations: *To improve, both locally and regionally, the interrelationships among citizens, government, community, education, and business.*

Objectives

- Encourage participation to enhance the community through citizen support, neighborhood groups, service by citizens on Boards and Commissions, government outreach programs including Fire and Police Academies, West Kentucky Night, and other civic organizations such as Character Counts, Community of Promise, Leadership Murray, Leadership Tomorrow, Town & Gown, and CASA.

- Work toward better coordination of community development activities with County officials and representatives.

- Improve intergovernmental relations with county, state, and federal governments, the university, the Purchase Area Development District, and other agencies that promote Murray.

- Continue assisting Murray and Calloway County's elderly and people with disabilities to be more independent and to live a fuller life.

- Establish a monitoring system for the comprehensive plan to ensure that the goals and objectives are being pursued.

Goal - Economy: *To improve the local economy through a planning process that stresses retention, expansion, attraction, local initiatives, diversification, and quality of businesses and manufacturers.*

Objectives

- Support economic growth sponsoring entities such as the Economic Development Corporation, Chamber of Commerce, Murray Convention and Visitor's Bureau, Murray Main Street, and MSU Regional Business and Innovation Center that would:

  a. Encourage growth in the downtown business sector.

  b. Utilize land for industrial development and continue recruiting new manufacturers.

  c. Promote the use of the new Murray EDC Industrial Park on 641 North.

  - Work with the educational systems in their effort to provide an educated, skilled work force.

  - Prepare for the economic impact of HWY 80 and the widening of HWY 121 Bypass North by addressing annexation policies and zoning regulations.

  - In accordance with our zoning ordinance and boundaries, establish more neighborhood businesses along the periphery of residential zoning districts (within buffer zones) that are of lower impact and limited to neighborhood residential convenience needs such as groceries, pharmacies, barber and

beauty shops, and similar uses that contribute limited traffic into the area, while minimizing resident trips out of the neighborhood for purchases.

- Continue investigating sources of revenue that will provide for growing service demands, finance capital improvements, and close the gap of unfunded mandates.

- Support regional economic planning efforts; in particular the Regional Industrial Park to be located in Graves County.

- Consider incentives and other programs that would promote infill, redevelopment and community improvement.

Goal -Transportation: *Plan for the development and management of a transportation system that accommodates the various means of moving people and goods from place to place in a safe and efficient manner.*

Objectives

- Identify potential problem areas such as HWY 80 along 641 North and Brinn Road,
  N. 16th Street from Main Street to HWY 80, and the Five Points Intersection.

- Support efforts which encourage the construction of the HWY 68/80 bridges across Kentucky Lake and Barkley Lake.

- Coordinate efforts with state and local officials to work toward completion of projects identified in the Kentucky Transportation Cabinet Six Year Highway Plan.

- Identify intersections that need to be realigned.

- Continue to seek funding for state priority projects such as the Murray Business Loop, HWY 121 Bypass North improvement project, and the HWY 641 South widening and improvement project.

- Establish a Strategic Traffic Management Plan that would expand cooperative efforts with KYTC regarding the 2008 Small Urban Area Traffic Study:

  a. Maximize connectivity between existing and proposed developments so as to facilitate traffic flow throughout the city.

  b. Continue a sidewalk maintenance program and expand our current sidewalk system in accordance with the Five-Year sidewalk improvement plan.

  c. Establish suitable bikeways that ensure safety and promote bicycle travel through a bikeway improvement plan.

  d. Re-inventory or reclassify streets as necessary.

- Update subdivision regulations to ensure that residential developments are constructed with sidewalks.

- Support government efforts to improve upon the facilities at the Kyle-Oakley airport.

- Recognize the need for private railroad companies that will provide goods-movement services in areas where noise, pollution, accident and conflict potential with vehicular street traffic will be kept to a minimum while meeting required federal and state standards.

- Encourage the use of public transportation and provide fixed routes through the Murray Calloway County Transit Authority.

- Coordinate efforts with local authorities to avoid traffic delays and hazards at community events.

- Increase public awareness programs and support government sponsored initiates that encourage alternative sources of fuel (or alternative forms of energy) for transportation.

Goal – Public Facilities and Services: *To improve the quality of life for all citizens by providing a wide range of services and facilities to include education, recreation, health/social, protective (fire, police, and emergency), infrastructure (water, sewer, streets, drainage), waste disposal, planning/code enforcement, and administration.*

Objectives

- Investigate expanding E-Government services and utilize internet capabilities that quickly process and deliver information. Consider the possibility of making Murray a "wireless city."

- Enhance commercial and residential public safety services by:

  a. Expand the S. 16th Street fire station to a centralized public safety facility (police, fire, and 911 dispatch) to better serve the southwest annexation area, Murray State University, and the downtown area.

  b. Construct a new fire station on HWY 641 North that will provide adequate coverage for residential, commercial, and industrial development.

  c. Promote the safety of the community and a feeling of security among the residents as well as encourage citizen participation through programs such as the Citizen and Youth Police Academies.

  d. Continue to update fire and police equipment by seeking state and federal funding through grants.

- Maintain government facilities so that they promote accessibility, efficiency, and safety for citizens and government employees.

- Secure library facilities and services that satisfy resident needs, including timely, helpful, and readily available services that are attractive, accessible, convenient, and provide continuing education to all.

- Enhance the City of Murray Park System by:

  a. Continuing to seek funding for maintaining existing neighborhood parks and encouraging developers to dedicate land for the purpose of adding additional neighborhood parks in newly developed areas.

  b. Search for private land opportunities to expand the City Park System by citizens and private enterprise dedicating land, gifts, and through philanthropy.

  c. Continuing to look for alternative sources of revenue such as the leasing of government property for a narrow and limited range of commercial uses.

  d. Identify land in the Future Land Use Element of the Comprehensive Plan for expansion of the City Park System and designate land as either public or semi- public.

  e. Investigate the possibility of creating a Regional Park that will attract recreational leagues to participate in sporting activities.

- Continuously review and monitor city infrastructure services and practices (water, electricity, sewer, natural gas, telecommunications, sanitation, stormwater) to identify new ways to deliver these services in an efficient, cost effective manner while taking into consideration the impact of any new infrastructure.

- Provide for the safest and most efficient integration of cellular antenna towers for cellular or personal communications services within the community, primarily through private enterprise, but in cooperation with government.

- Provide adequate health care services and facilities to accommodate all citizen needs and continue to seek funding for health care expansion and facility improvement.

Goal – Housing: *To support a diversity of housing opportunities that provide adequate, safe, and affordable housing units for the citizens of Murray; and, to upgrade the quality and character of residential areas.*

Objectives

- Protect natural resources that enhance the quality and character of development.

- Upgrade the city's landscaping requirements for buffer areas between residential and commercial uses.
- Inventory older homes and neighborhoods that need revitalization. Seek TIF funds, CDBG grants, or other funding mechanisms for neighborhood revitalization.

- Encourage renovation of older neighborhoods.

- Establish a historical district that encourages mixed uses with renovated buildings that will accommodate suitable living space.

- Support stricter enforcement of the Property Maintenance Code to help preserve neighborhood aesthetics.

- Update the City of Murray's subdivision regulations and zoning ordinance.

- Encourage a greater sense of community within the city's residential neighborhoods through the organization of neighborhood associations or similar groups, with emphasis on safety, beauty, and overall pride.

- Allow for a wide range of residential types and densities throughout the city while continuing to support programs that provide more affordable housing opportunities for single and multi-family homes.

Goal –Commercial, Industrial, and Agricultural Areas: *To recognize the need for a variety of commercial, industrial, and agricultural areas in our community that will provide the necessary goods and services while minimizing adverse effects on all other nearby uses.*

Objectives

- Improve the landscaping standards for site development.

- Adopt minimum standards for building design that will sustain and enhance community character.

- In accordance with our zoning ordinance and boundaries, establish more neighborhood businesses along the periphery of residential zoning districts (i.e. within buffer zones) that are of lower impact and limited to neighborhood residential convenience needs such as groceries, pharmacies, barber and beauty shops, and similar uses that do not attract much traffic into the area, but will minimize resident trips out of the neighborhood for their most frequent purchases.

- Avoid conditions and patterns that would create hazards in vehicular circulation.

- As urban expansion continues, secure additional agricultural lands and increase production accordingly, to offset the growing demands of food, raw materials, and other necessities of life.

Goal – Historic Preservation: *To protect and preserve Murray's historic sites and structures while promoting a better understanding of the significance of the city's historic places, people, and events.*

Objectives

- Update the current Architectural Review Board ordinance by establishing an overlay district in the zoning ordinance.
- Sites and structures shall adhere to Historic Preservation Design Guidelines

as administered by the Architectural Review Board.

- Support the Murray Main Street Master Plan by encouraging revitalization through rehabilitation of substandard buildings, removal of unattractive poles, wires, and signs that will make buildings, sidewalks, and other facilities in the downtown area more attractive, efficient, and convenient.

- Continue to seek state and federal funding for historical preservation.

Goal – Environment: *To protect the natural environment from further deterioration and to improve existing environmental quality.*

Objectives

- Continue to promote community outreach programs such as Make a Difference Day and Adopt-A-Highway that stress environmental protection.

- Encourage the use of green space for both residential and non-residential developments.

- Reduce forms of pollution and continue researching (and implementing) alternative sources of energy that decrease pollution.

- Review the need for adopting a policy to encourage the construction of public and commercial buildings according to "Green-Building" standards.

- Continuously review stormwater management practices so that site developments are designed to minimize the volume of stormwater runoff by requiring the use of porous pavement, detention facilities, or other dissipating mechanisms.

- Establish a cooperative recycling plan in conjunction with Murray State University's Community Recycling Center.