Section 2: Planning Area Profile

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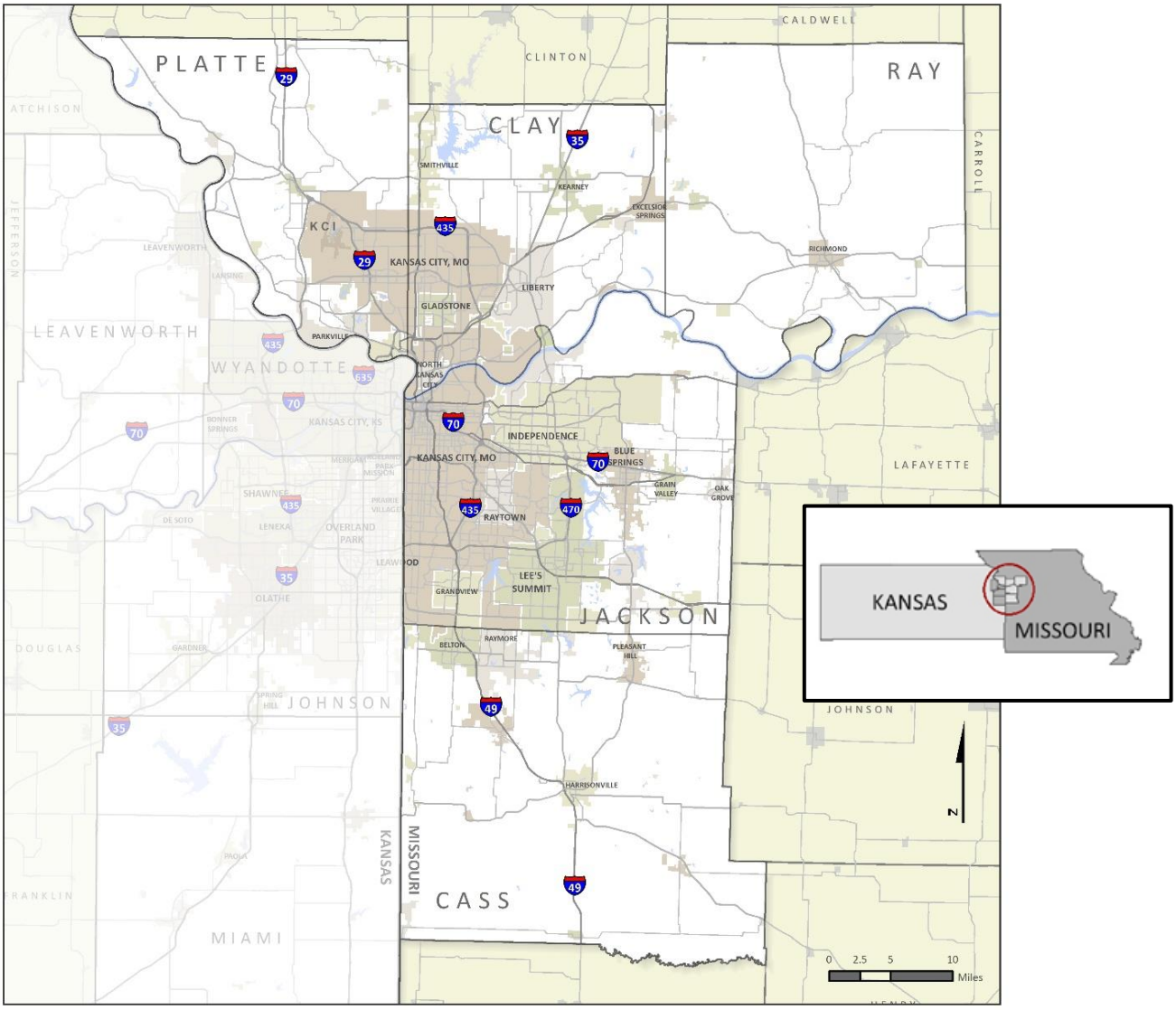
Section 2: Planning Area Profile

This Section discusses the people, jobs, property and infrastructure that, together, comprise the region's assets and capabilities at risk from hazards, should they occur.



Source: MARC

Figure 2.1: The Hazard Mitigation Planning Area

2.1 Planning Area Description

The planning area for this regional hazard mitigation plan is the five counties on the Missouri side of the Kansas City region – Cass, Clay, Jackson, Platte and Ray **(Figure 2.1)**. Because of the integrated nature of this region, some trends, assets and capacities are best understood if initially described from the point of view of the entire region before describing the jurisdictions in the planning area in more detail, and some important contextual data is only available for the 9-county MARC region or for the entire 14-county Kansas City metropolitan area. The focus of this chapter remains on the five Missouri counties in the planning area.

2.2 Planning Area Geography and Environment

2.2.1 Geography

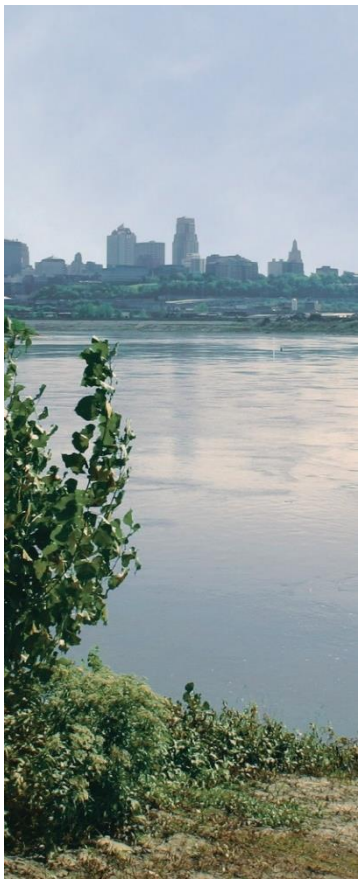


Figure 2.2: Kansas City at the Confluence of the Missouri and Kansas Rivers

Located at the confluence of the Missouri and Kansas rivers, Kansas City began in the mid-1800s as a trading post and jumping-off point for pioneers heading west on the Santa Fe, California and Oregon trails.

The five Missouri counties that make up the Regional Hazard Mitigation Planning Area—Cass, Clay, Jackson, Platte and Ray— have a combined area of over 2,700 square miles. The region is located in the west-central and northwest parts of Missouri. It falls within the Central Dissected Till Plains and Osage Plains sections of the Central Lowlands, as defined by the U.S. Geological Survey and the Missouri Ecological Classification System.

Elevations in the region range from a low of 656 feet above sea level in Ray County to a high of 1,181 feet above sea level in Platte County, with most of the area falling between 700 and 1,000 foot elevations. Soils are mostly fertile and well drained, and are formed of loess, residuum and alluvium. The region's underlying bedrock consists of shale, limestone and sandstone.

Topography in the region is heavily influenced by the Missouri and Kansas rivers and their tributaries **(Figure 2.2)**. Much of the land is level to sloping, especially in floodplains and bottomlands, with uplands ranging from moderate slope to occasional steep bluffs and hills.

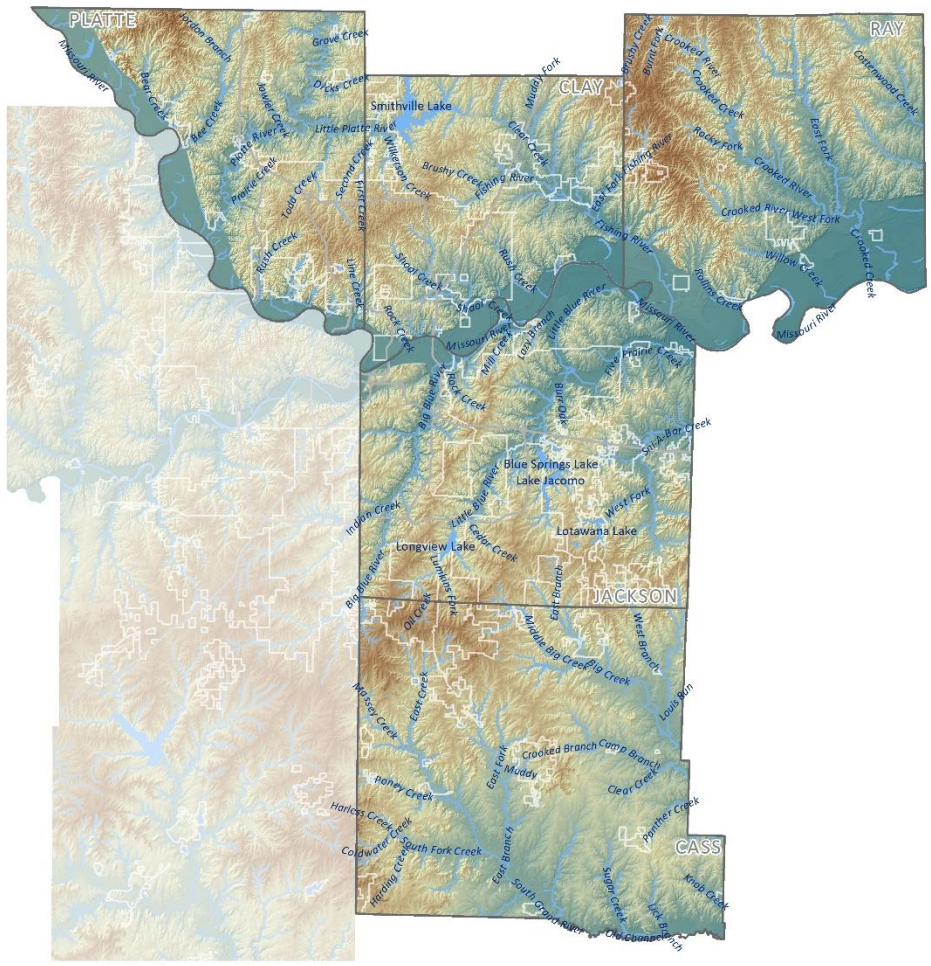
2.2.2 Waterways and Water Resources

Water, particularly surface water, is a great natural resource in the Kansas City area. The region is drained by three river basins: The Lower Missouri-Grand-Chariton River Basin, the Lower Missouri-Blackwater-Lamine River Basin and the Osage River Basin. The vast majority of the region's watersheds drain into the Missouri River, which is one of Missouri's (and the nation's) major rivers. In Cass County, however, watersheds drain into the Osage River Basin. See **Figure 2.3** Waterways and Topography in the Greater Kansas City Region on the following page.

Much of the region's water supply comes from the Missouri River, and in recent years degradation of the riverbed has become a concern. The U.S. Army Corps of Engineers conducted a multiyear study beginning in 2014 to assess riverbed degradation between Rulo, Neb., and St. Louis, Mo., focusing on the stretch of river in the Kansas City area where degradation is the most severe. The final Missouri River Bed Degradation Feasibility Study Technical Report was completed in May 2017. The study determined the causes of degradation, explored how future degradation can be prevented, and recommended ways public infrastructure can be protected.

According to the U.S. Army Corps of Engineers, the average flow of the region's major rivers and streams range from a high of 35,070 million gallons per day in the Missouri River to a low of less than 13 million gallons per day in some of the region's small streams.

Some of the region's rivers, such as the Missouri River, are subject to minimum flow requirements in order to maintain water quality standards. The minimum flow requirement for the Missouri River is



Source: MARC

Figure 2.3: Waterways and Topography in the Greater Kansas City Region

2,620 million gallons per day. This requirement is maintained by the Corps' regulation of upstream reservoirs and their respective dams in Montana, North and South Dakota and Nebraska — Fort Peck, Garrison, Oahe, Big Bend, Fort Randall and Gavins Point. There are no designated wild and scenic rivers under the National Wild & Scenic Rivers System in the five-county area.

In the Kansas City area, significant quantities of ground water are found only in alluvial deposits along the Missouri River. These alluvial deposits can be more than 100 feet deep in the Missouri river valley (with an average depth of 80 to 90 feet). Saturated water- bearing materials range in depth from 30 to 60 feet, although they are generally found near a depth of 40 feet. Water wells in these alluvial deposits can yield from 1,500 to 2,000 gallons per minute, with an average yield between 500 and 1,000 gallons per minute.

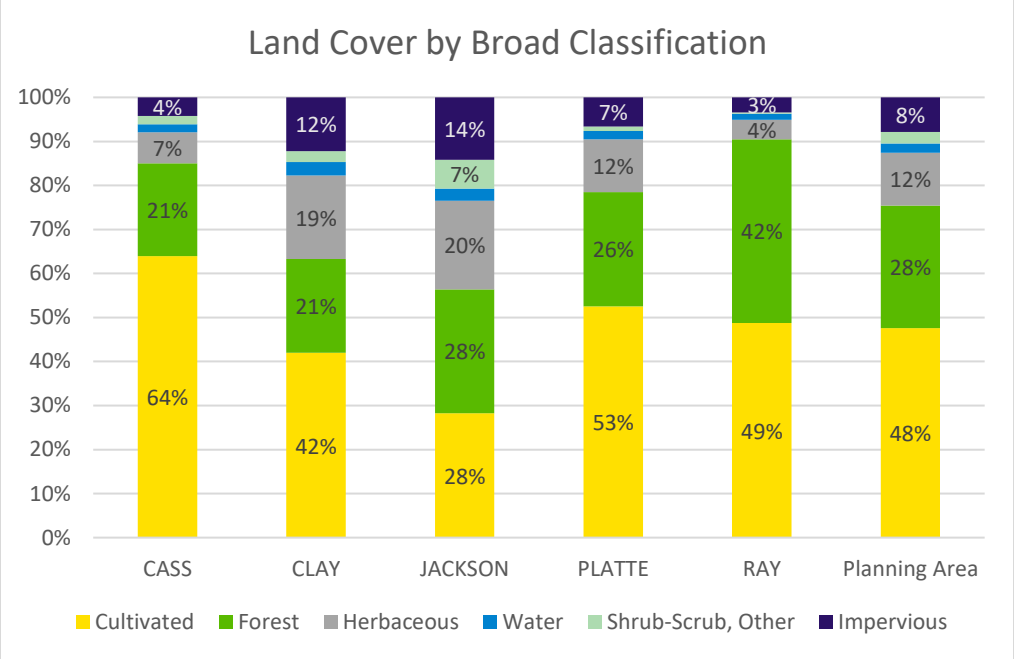
In the region's tributary valleys, the availability of ground water is limited. The alluvial deposits in these areas range in thickness from 20 to 70 feet in the lower reaches to less than 10 feet in the upper reaches. In addition, the large amounts of shale in these tributary valleys results in mainly clay fill sediments in the alluvial aquifer. Because this material has a low water transmissibility, water well yields in these areas

can be as low as one to 10 gallons per minute. Tributaries in areas comprised mainly of sandstone, however, may produce wells with higher yields, since these areas have sediments with greater water transmissibility.

Aquifers in the region's uplands are found in materials of glacial origin or from weathered materials above bedrock. Neither of these areas produces substantial yields of ground water. Although some ground water yields in areas of glacial deposits can exceed 100 gallons per minute, the varying thickness of glacial deposits results in highly variable yields of ground water. Ground water from areas with deposits of material over bedrock provide yields that are generally less than 10 gallons per minute, although some isolated yields can be greater. In addition, water from bedrock tends to be mineralized and contains hardness and iron that exceed national drinking water standards.

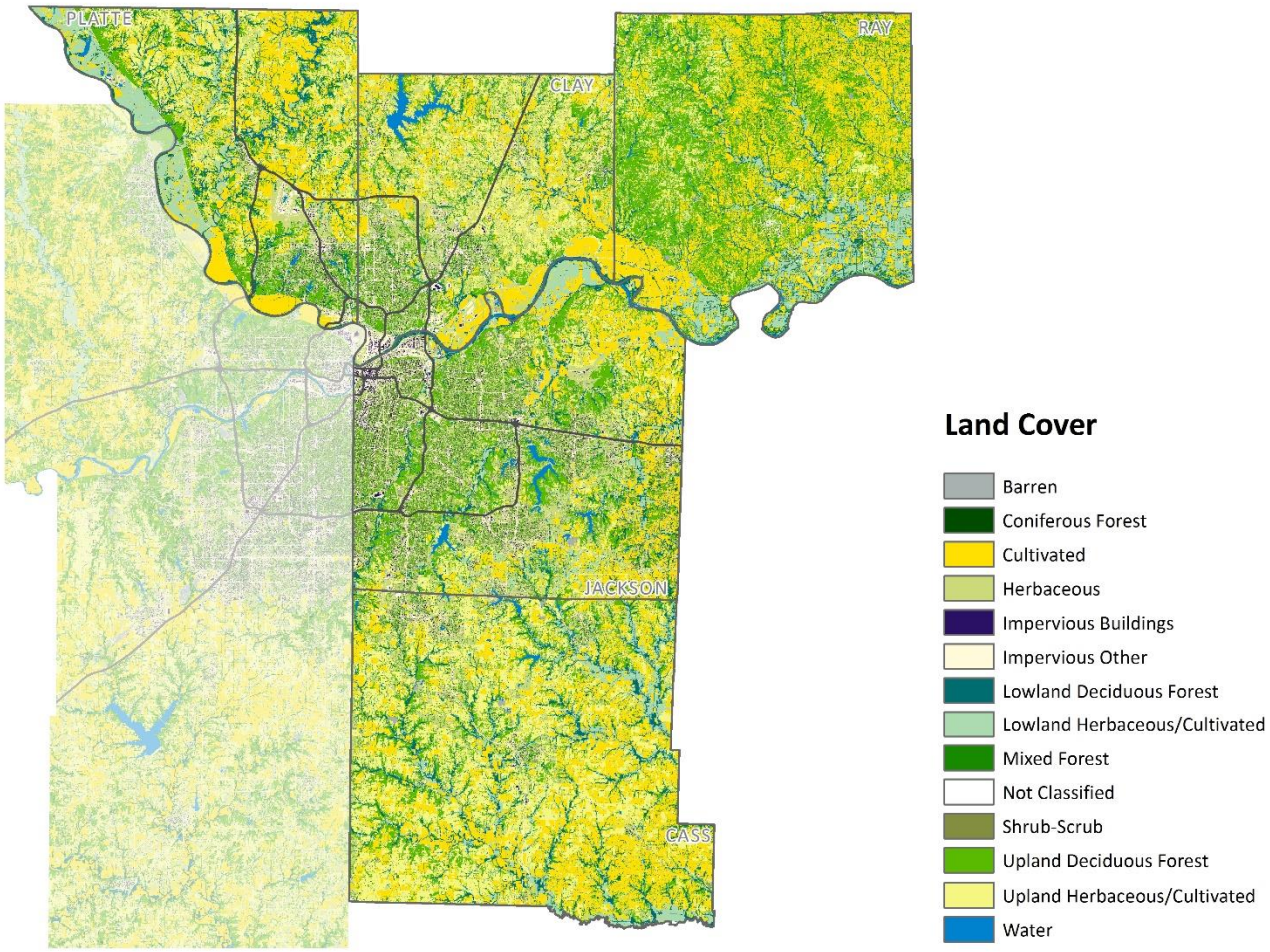
2.2.3 Land Cover

As **Figure 2.5 Topographical Land Cover** shows on the next page, the planning area's primary land cover is cultivated at 23 percent followed by upland deciduous forest at 19 percent and upland herbaceous/cultivated at 18 percent. In **Figure 2.4**, Jackson, Clay, and Platte Counties are the Planning Area's most urbanized counties with 14 percent, 12 percent and 7 percent impervious surface land cover, respectively. Jackson and Clay Counties also have the highest percentages of water in the planning area, at 3 percent each. Ray County is planning area's most rural county, with 49 percent of its land cultivated, another 42 percent in forests and only 3 percent as impervious surface. The next most forested counties are Jackson and Platte, with 28 percent and 26 percent forest land cover, respectively. Nearly two-thirds of the land in Cass is cultivated, as is a majority of the land in Platte County.



Source: MARC Natural Resource Inventory

Figure 2.4: Land Cover by County

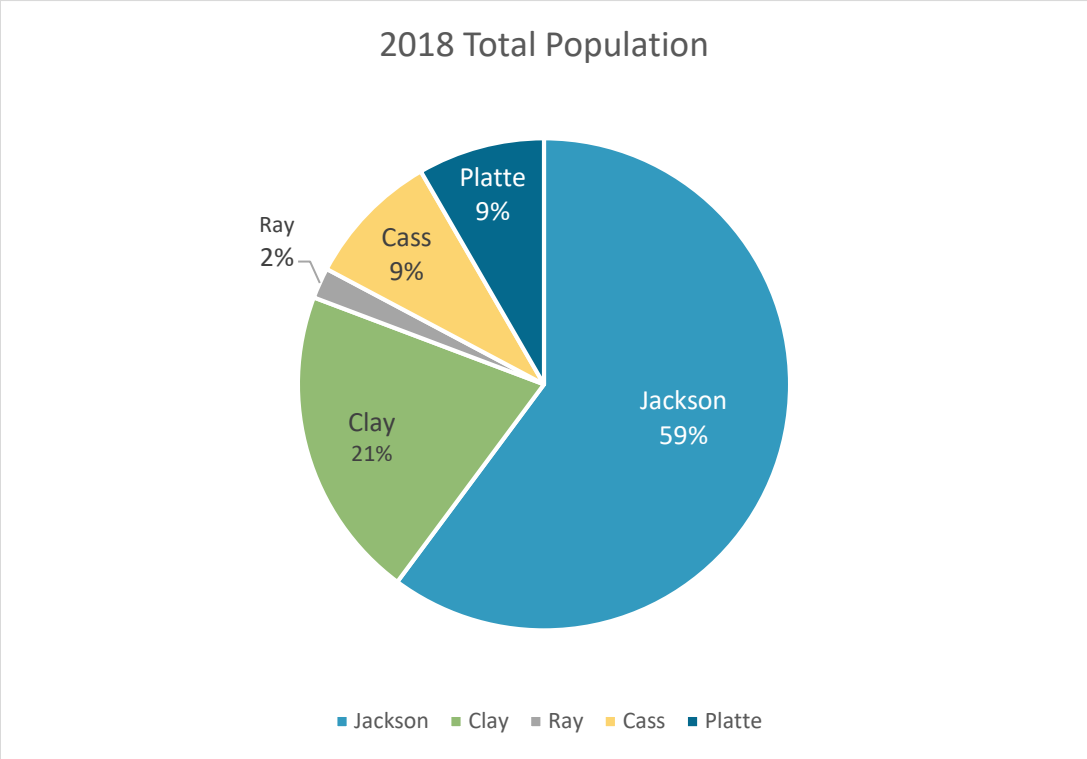


Source: MARC Natural Resource Inventory

Figure 2.5: Topographical Land Cover

2.3 Demographics

The population of the planning area in 2018 was an estimated 1,177,494. As the graph below (**Figure 2.6**) shows, about six in ten people living in the planning reside in Jackson County, making it the most populous county. Clay County follows, with about two in ten area residents living there. A little less than one in ten people live in Cass and Platte Counties, with the remainder in Ray County.



Source: Census Bureau, 2018 population estimates

Figure 2.6 Planning Area Population

2.3.1 Population Density

Population is densest in Jackson County, especially in Kansas City inside the I-435 loop, where a combination of smaller lot sizes and larger quantities of multifamily housing create an average population density of 15.7 persons per residential acre but reach more than twice that, at 32.3 persons per residential acre, in the core of Kansas City from the Missouri River to the Country Club Plaza. Suburban cities such as Independence, Grandview, Lee's Summit, Blue Springs, Gladstone and Liberty have lower average densities, ranging from 6.4 persons per residential acre in Independence to 9.1 persons per residential acre in Blue Springs. **Figure 2.7** shows the area's 2017 population density by census tract.

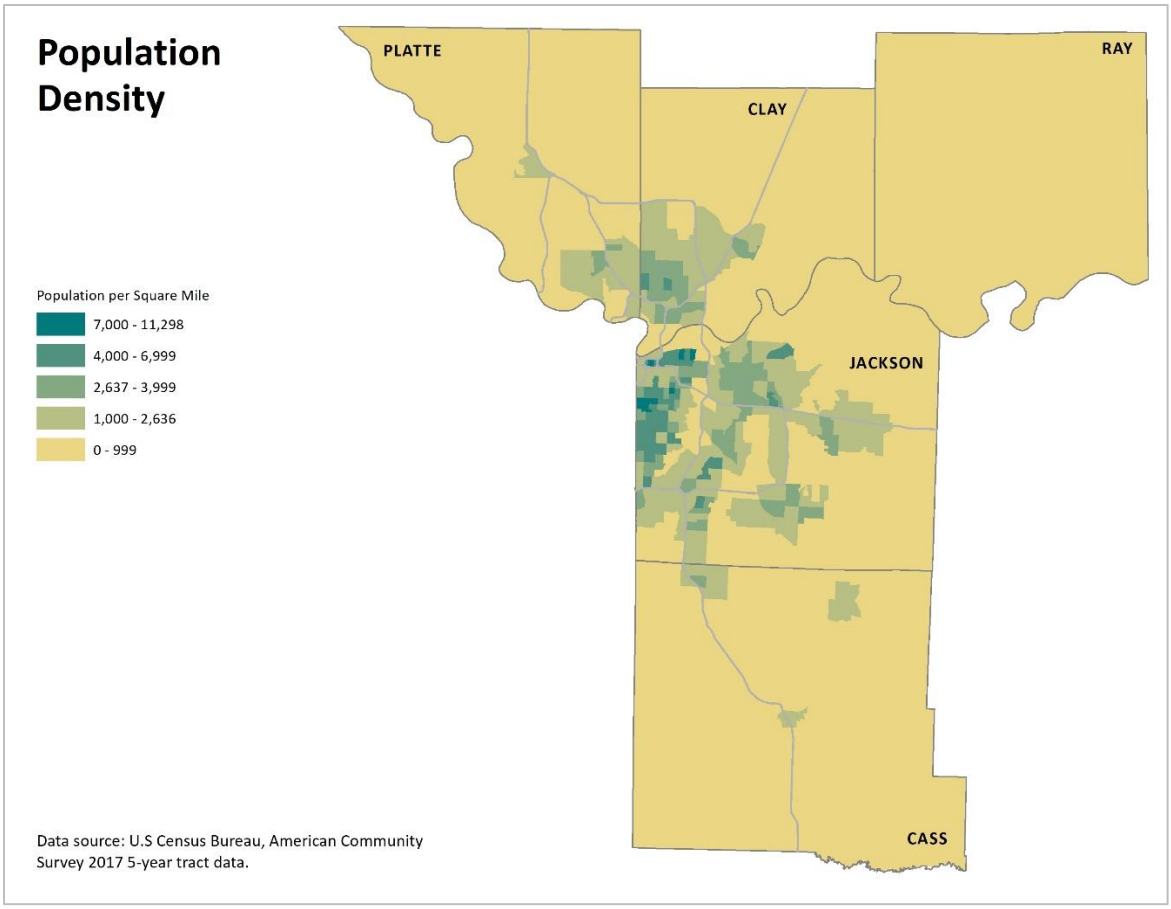


Figure 2.7: Planning Area Population Density, 2017 Source: MARC

2.3.2 Population Trends – Total Population

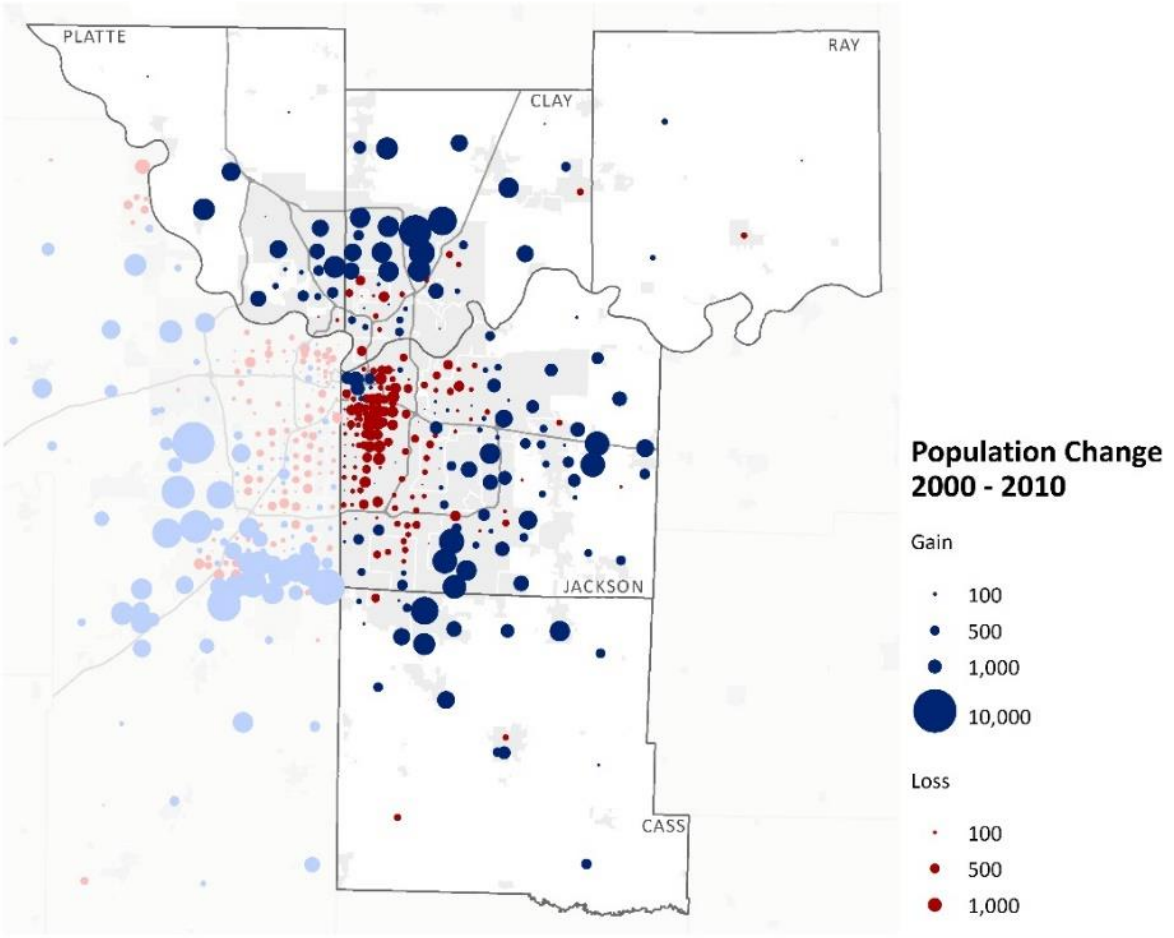
The population of the nine-county MARC region grew by over 136,000, or seven percent, from 2010 to 2018, from 1,919,089 to 2,055,405 (US Census Bureau, American Community Survey). The planning area accounted for 51 percent of this growth, or 69,103 individuals. The five-county planning area is growing almost as fast as the MARC region as a whole. **(Table 2.1)**.

Table 2.1: Population, 2010-2018

County	2010	2014	2018	2010-2018 Change	2010-2018 % Change
Cass	99,478	100,889	104,954	5,476	5%
Clay	221,939	233,682	246,365	24,426	10%
Jackson	674,158	683,191	700,307	26,149	4%
Platte	89,322	94,788	102,985	13,663	13%
Ray	23,494	22,949	22,883	-611	-3%
Planning Area	**1,108,391**	**1,135,499**	**1,177,494**	**69,103**	**6%**
MARC Region	1,919,089	1,948,195	2,055,405	136,316	7%
Planning area share	58%	58%	57%	51%	88%
Kansas City	460,737	470,678	491,918	31,181	6%

Source: Census Bureau, 2010 decennial census, plus 2014 and 2018 population estimates.

The more suburban counties of Cass, Clay and Platte grew by five percent or more between 2010 and 2018. Clay and Platte grew significantly faster the regional average, with 10 percent and 13 percent, respectively. Clay County gained the most residents – 24,426 residents over the period. However, Platte had the highest percent increase. Cass County's population growth has slowed significantly since their growth in the early 2000s. However, the county has grown by about 4,000 persons since the 2015 Plan, more than the growth between 2010 and 2014 of about 1,400 residents (US Census Bureau, American Community Survey). Ray County, the region's most rural county, recorded a slight decline over the period, losing 611 residents.



Source: Census Bureau, 2000 and 2010 decennial censuses

Figure 2.8: Area Population Change, 2000-2010

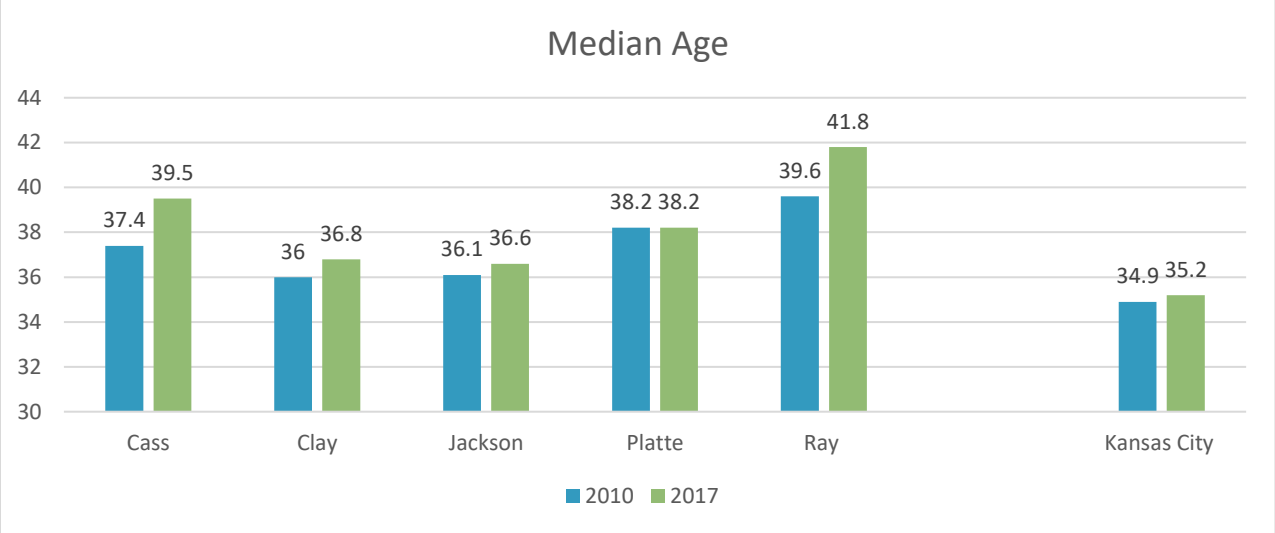
While most of the growth in recent decades has been concentrated in suburban counties, the region's urban center is experiencing growth in many areas, particularly around downtown and the southwest Kansas City, Missouri corridor. Jackson County's overall rate of growth lags slightly behind the region's, at 4 percent over the period. Still as the region's largest county, the low rate of growth translates into adding over 26,000 people during the period, the highest level among Missouri side counties.

The portions of the planning area experiencing population decline are concentrated in the southeast part of the city of Kansas City, Missouri, south of the Missouri River. However, Kansas City is benefiting from the substantial reinvestment and redevelopment in and around its downtown, which has resulted

in an increase in the population there for the first time in decades. The 2018 population estimates show a six percent increase in Kansas City over the 2010-2018 period. In addition, Kansas City also includes most of the high-growth areas north of the Missouri River in Clay and Platte counties. For the five-county planning area as a whole, the growing areas outweigh the declining areas, resulting in an increase of 136,316 residents between 2010 and 2018, a seven percent increase.

2.3.3 Population by Age

The data collected for this section came from the Census Bureau and the American Community Survey, Five-Year Estimates. This source offers data that is current through 2017. In the 2015 Plan update, like this update, the American Community Survey was used for subsections 2.3.2 Population by Age and Population by Race and Ethnicity. However, the 2015 Plan showed a 13-year period, 2000-2013. For this Plan update, the data covers a seven-year period, 2010-2017. Table 2.1: Population, 2010-2018, shows the total population as calculated starting in 2010. If this Plan and the 2015 Plan update are compared, values may differ due to changes in the time period duration.

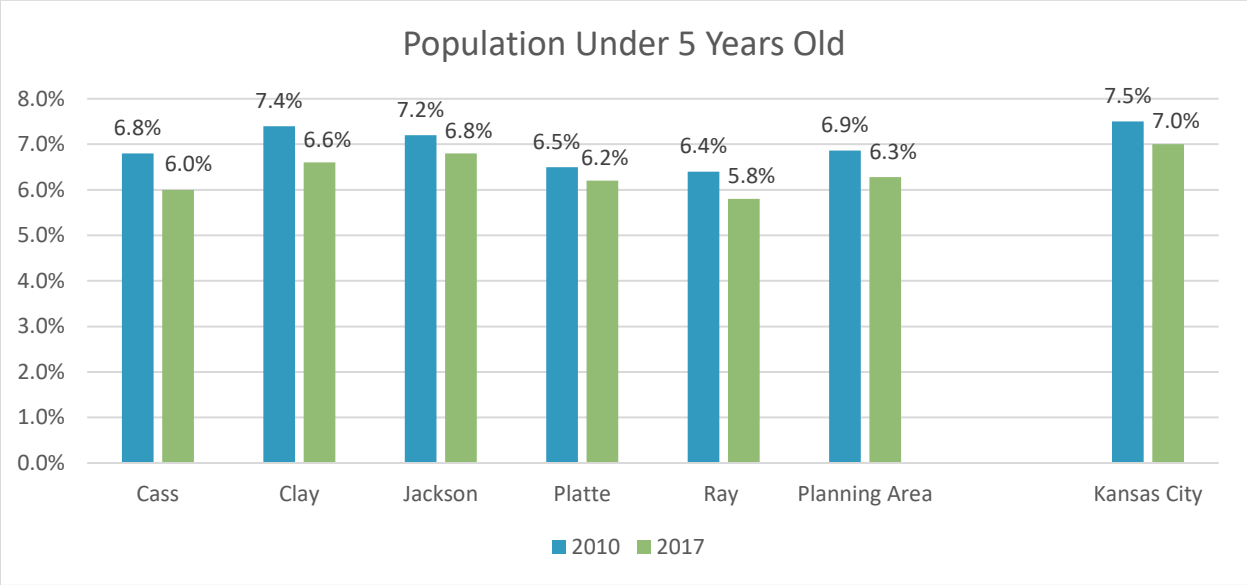


Source: Census Bureau, 2010 - 2017 American Community Survey, 5-year Estimates

Figure 2.9: Area Population by Median Age, 2010 and 2017

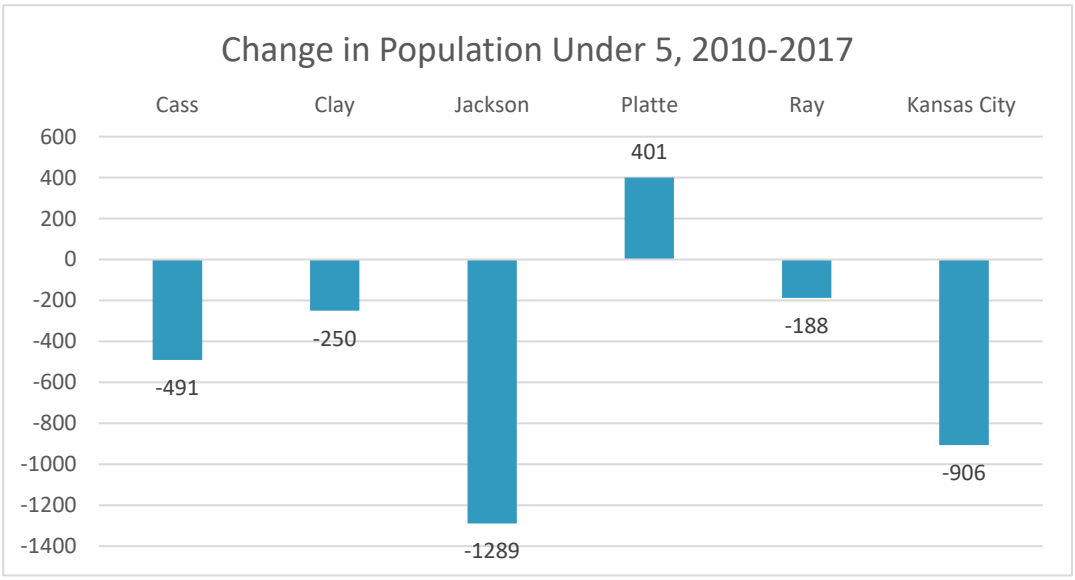
The aging of the population is part of a long-term, national trend, caused by improvements in life expectancy, an increase in Hispanic families as well as the aging of the post-World War II baby boom population. This is reflected locally by the median age increasing in all counties, except Platte (American Community Survey). Jackson and Clay are the youngest counties, each with a median age around 36.7 years. However, Jackson and Clay experienced modest increases in median age over the 2010 to 2017 period of 0.5 and 0.8, respectively. On the other hand, Ray County's population is the oldest, with a median age of 41.8 years, having increased 2.2 years over the seven-year period. Cass has experienced an increase of 2.1 years, while Platte has remained at 38.2 years over the seven-year period. Meanwhile, the city of Kansas City is the youngest major jurisdiction, with a median age of 35.2 years. The median age of Kansas City's population also increased during the 2010-2017 period, a minor increase of 0.3 years. Changing race and ethnicity of the population played a role in moderating the increase in that county's median age.

Young children and the elderly are among the region's most vulnerable populations. As might be expected from its median age, Kansas City has the highest proportion of children under the age of five, at 7.0 percent (See below). However, all jurisdictions have seen a decline in their population under 5 years during the 2010-2017 period. Platte County was the only jurisdiction to see an increase during the period. Jackson County lost the largest number of young persons, decreasing by 1,289 people under the age of 5 from 2010-2017.



Source: Census Bureau, 2010 - 2017 American Community Survey, 5-year

Figure 2.10: Population Under 5 Years Old, 2010



Source: Census Bureau, 2010 - 2017 American Community Survey, 5-year

Figure 2.11: Change in Population Under 5, 2010-2017

The population of children under five years old decreased for all counties except Platte. Although the percentage of children under five decreased in Platte, there was still an increase in number of children over the period. All counties except Ray increased their total population but decreased their population under five years old. This reflects the national trend of families having fewer children and older generations living longer. (Source: US Census Bureau, American Community Survey). The largest concentration of young children appears to be in central and suburban Jackson County, though Cass, Clay, Platte, and Ray counties also have substantial concentrations of the population under five years of age.

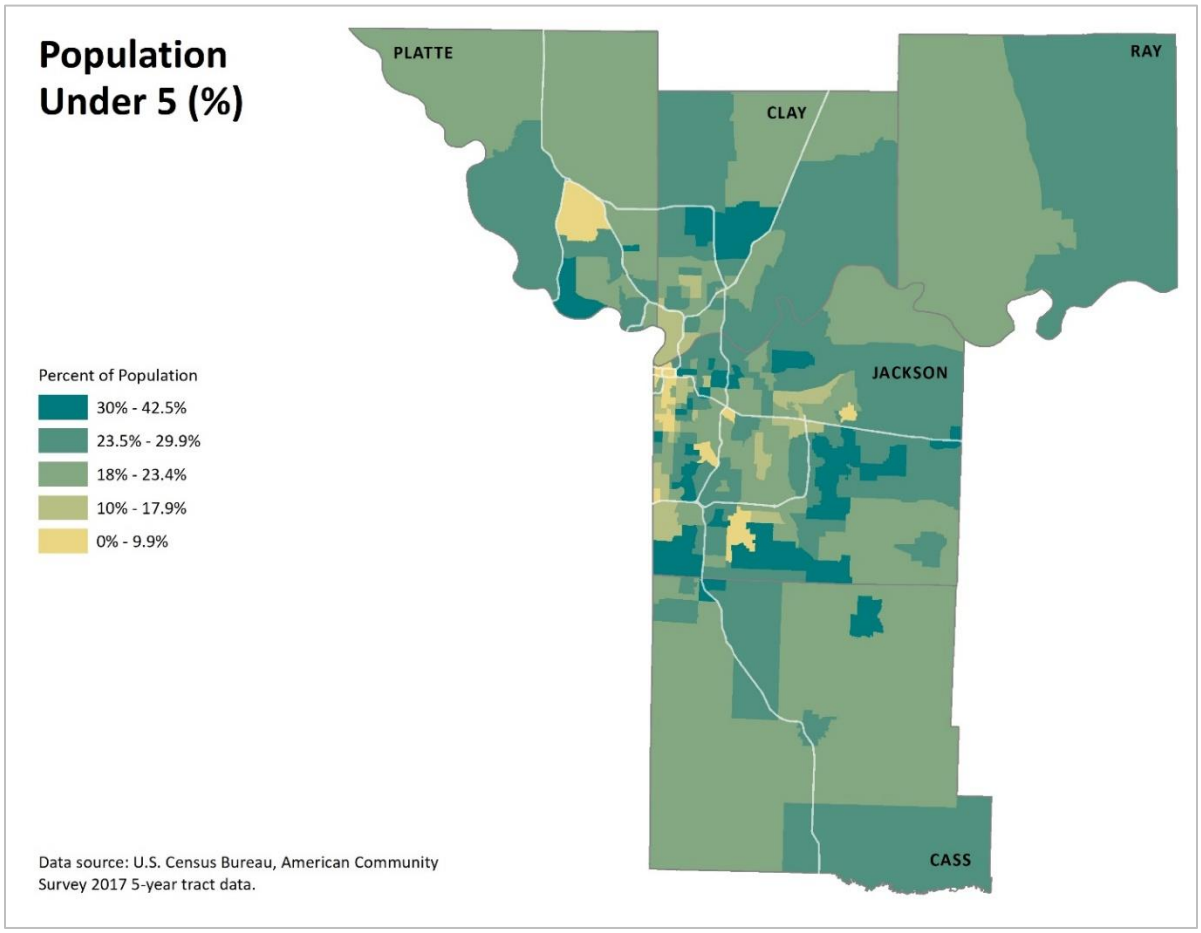
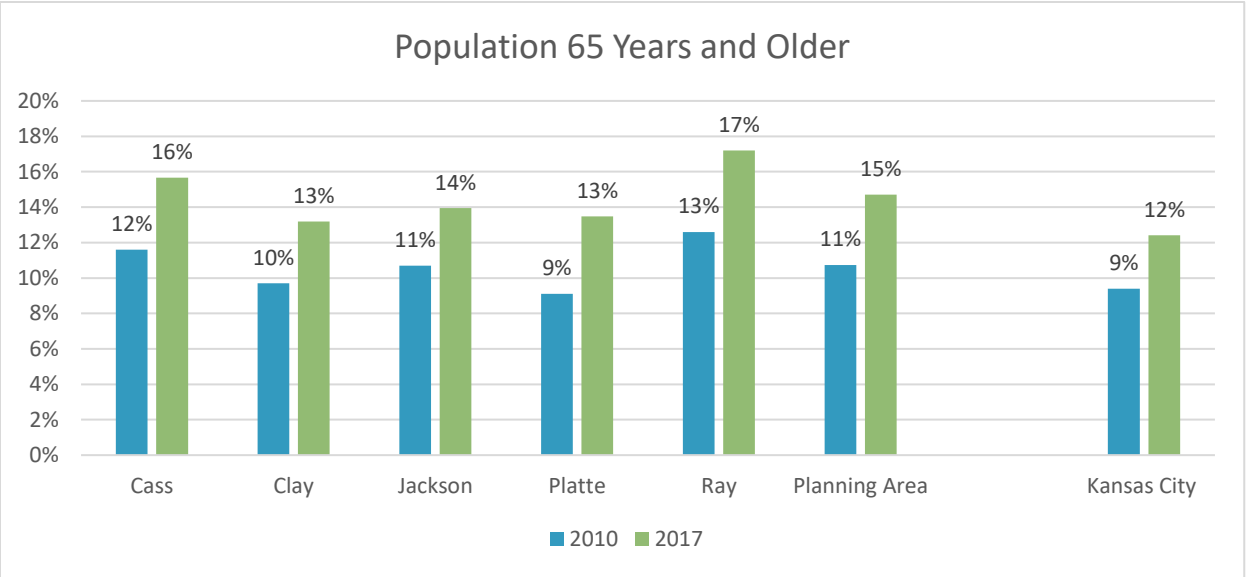


Figure 2.12: Population Below the Age of 5 (%)

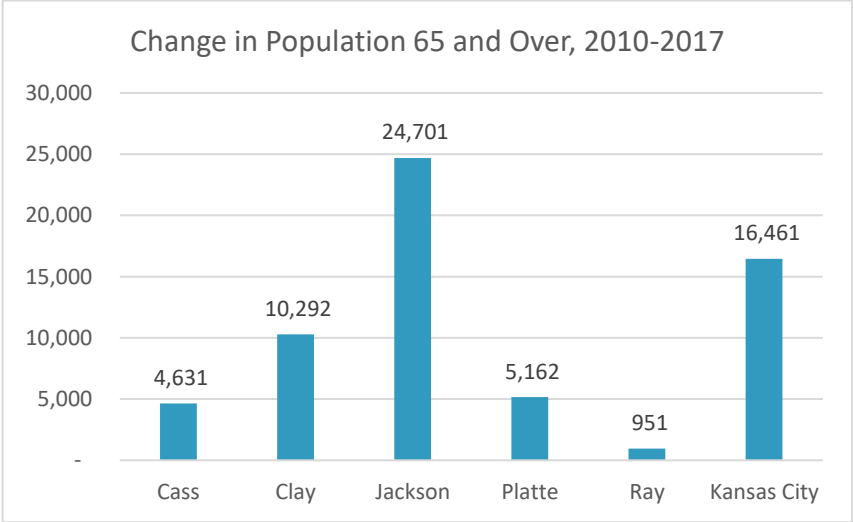


Source: 2010-2017 American Community Survey, 5-year

Figure 2.13: Population 65 Years and Older, 2010

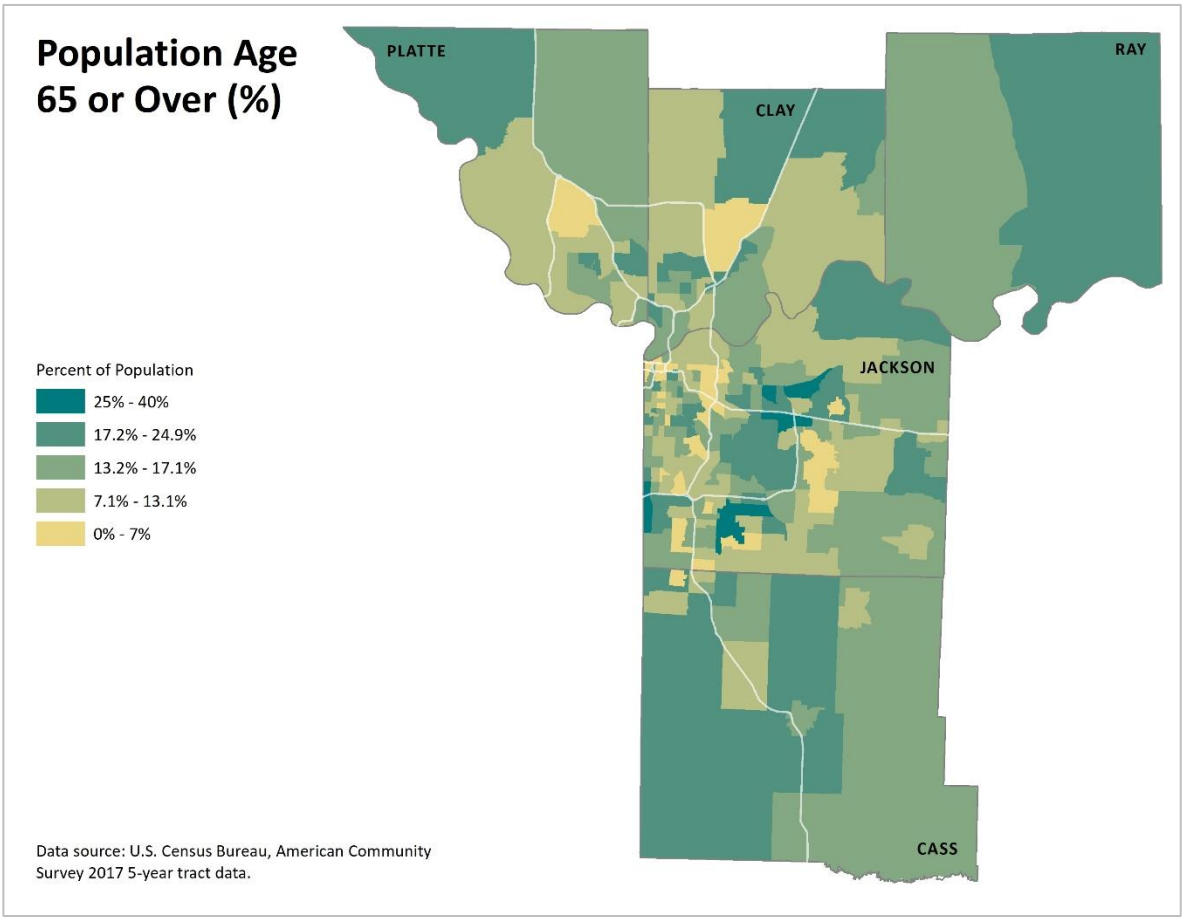
While the more urban counties have the highest proportion of the young, it is the more rural counties of Cass and Ray that have the highest proportion of older adults, with about one in six residents being 65 years or over. Cass, Platte, and Ray all saw the greatest increase in their proportion of seniors, rising four percent in each county. Remaining jurisdictions, Clay, Jackson, and Kansas City increased their senior population by three percent. (Source: US Census Bureau, American Community Survey).

In absolute numbers, Jackson County experienced the greatest increase in its senior population, adding over 24,000 older adults between 2010 and 2017. This was substantially higher than increases recorded in the other four counties. Much of the increase for Jackson County occurred in Kansas City. (Source: US Census Bureau, American Community Survey).



Source: 2010 - 2017 American Community Survey, 5-year data

Figure 2.14: Change in Population 65 and Over, 2010-2017



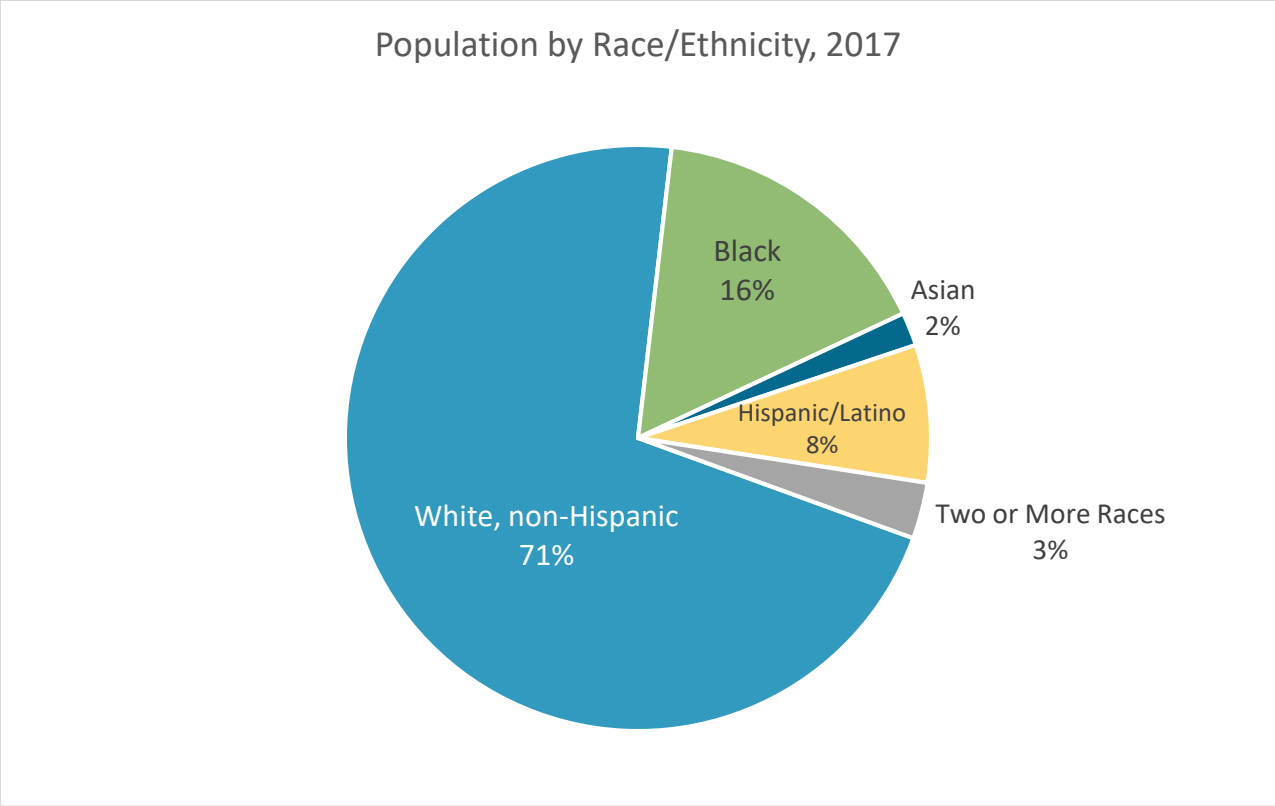
Source: MARC

Figure 2.15: Population Age 65 and Over (%)

Unlike young children, older adults reside throughout the five-county planning area. There are pockets of older adults concentrated in eastern Kansas City in Jackson County as well as western Independence and southeastern Jackson County. There are also concentrations of older adults in North Kansas City and near Gladstone in Clay County, northern and central Cass County, eastern Ray County, as well as some parts of northern Platte County.

2.3.4 Population by Race and Ethnicity

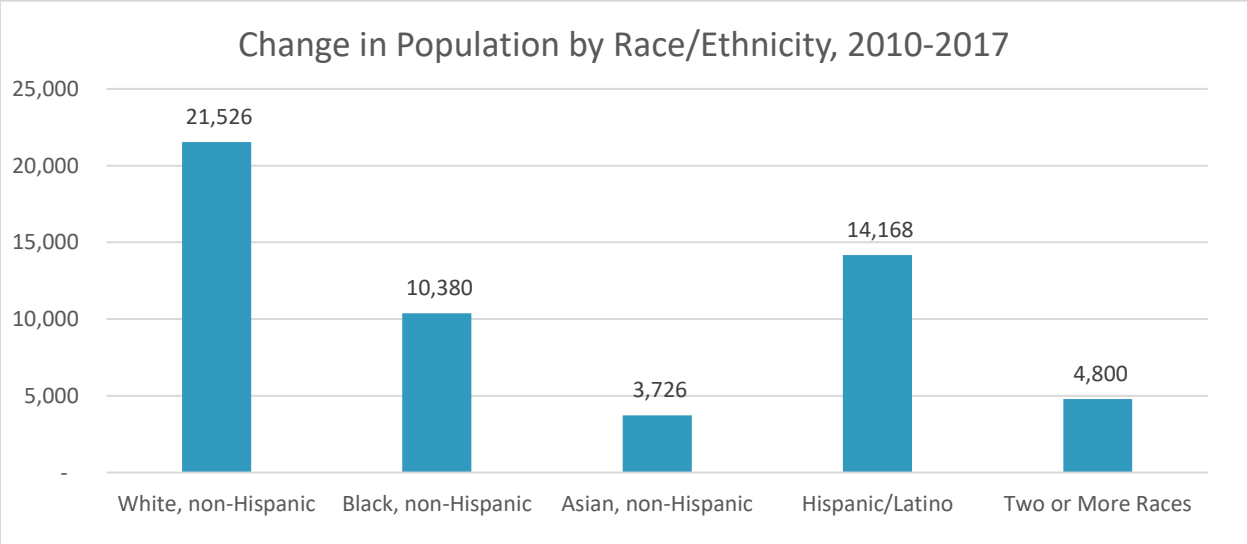
The population of the Planning Area is mostly white, non-Hispanic, accounting for about 815,000 out of the 1.1 million residents, or 71 percent of the total, up from 793,780 in 2010. Black persons make up the next largest racial segment, at 16 percent of the Planning Area's population. Hispanic persons comprise eight percent of the population in the area, with Asians, multi-racial individuals, and other races comprising the remaining five percent. (Source: US Census Bureau, American Community Survey.)



Source: 2010-2017 American Community Survey, 5-year data

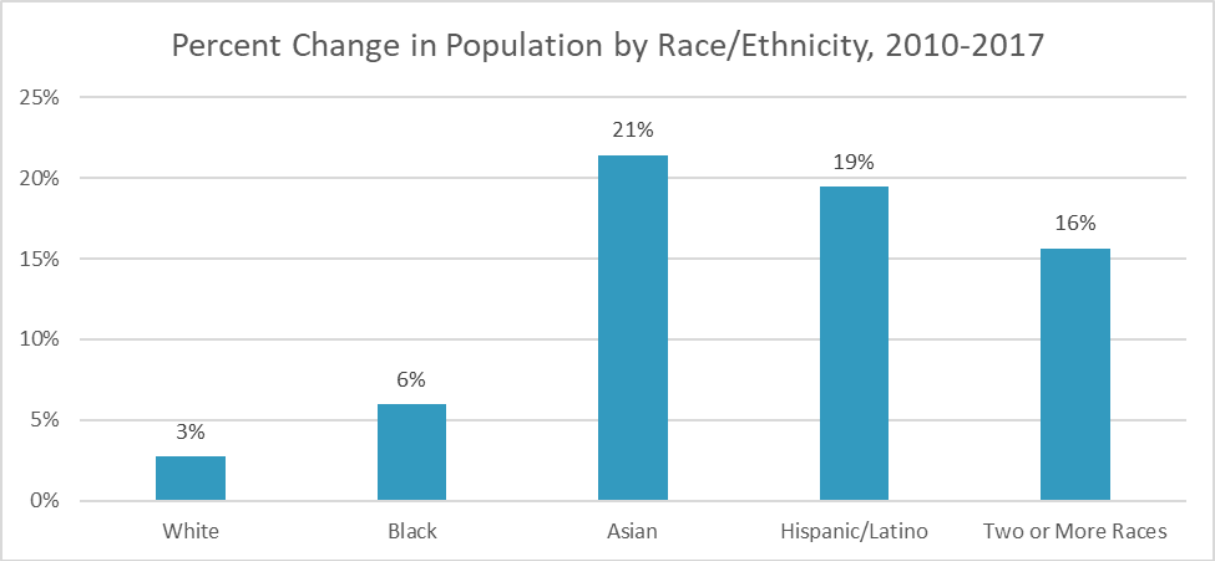
Figure 2.16: Area Population by Race/Ethnicity, 2017

The White population grew the most out of any race or ethnic group between 2010 and 2017 in the Planning Area, adding 21,526 people. Hispanics/Latinos grew by 14,168 while Blacks grew 10,380. While the Asian population's absolute growth was relatively small, the 3,700 additional Asian individuals added to the region since 2010 represented a 21 percent increase over its base of around 21,000.



Source: 2017 American Community Survey, 5-year data

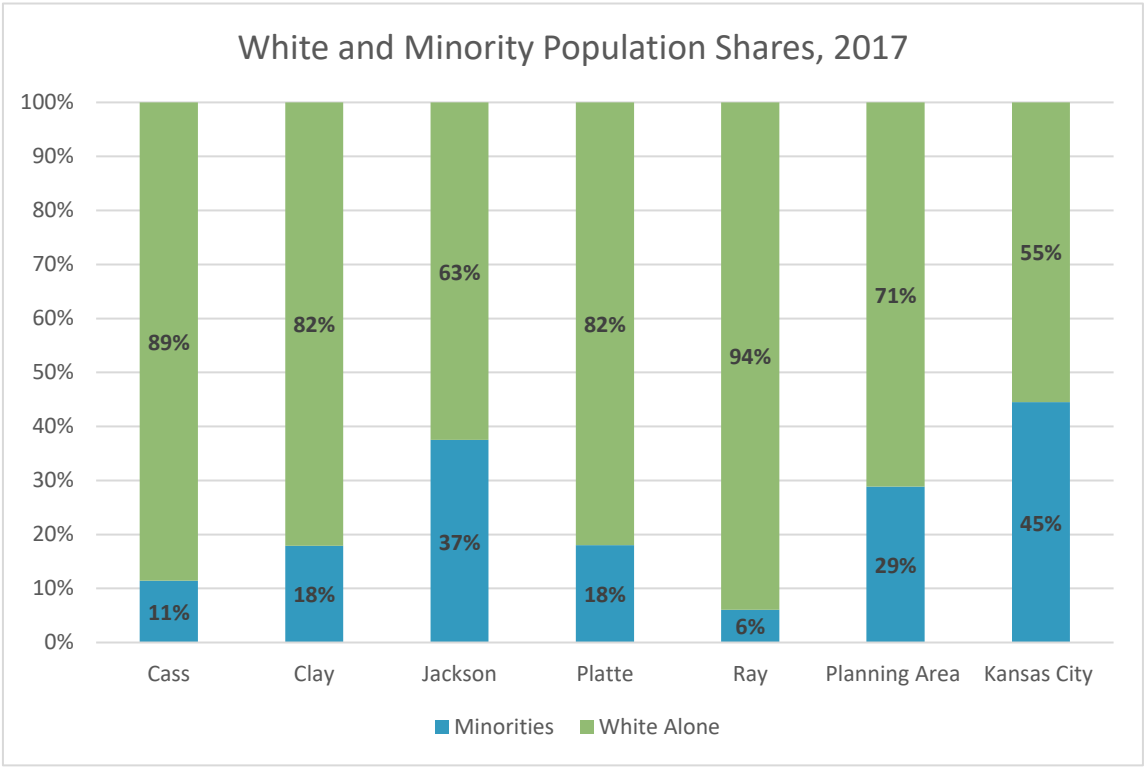
Figure 2.17: Change in Population by Race/Ethnicity, 2010-2017



Source: 2010-2017 American Community Survey, 5-year data

Figure 2.18: Percent Change in Population by Race/Ethnicity, 2010-2017

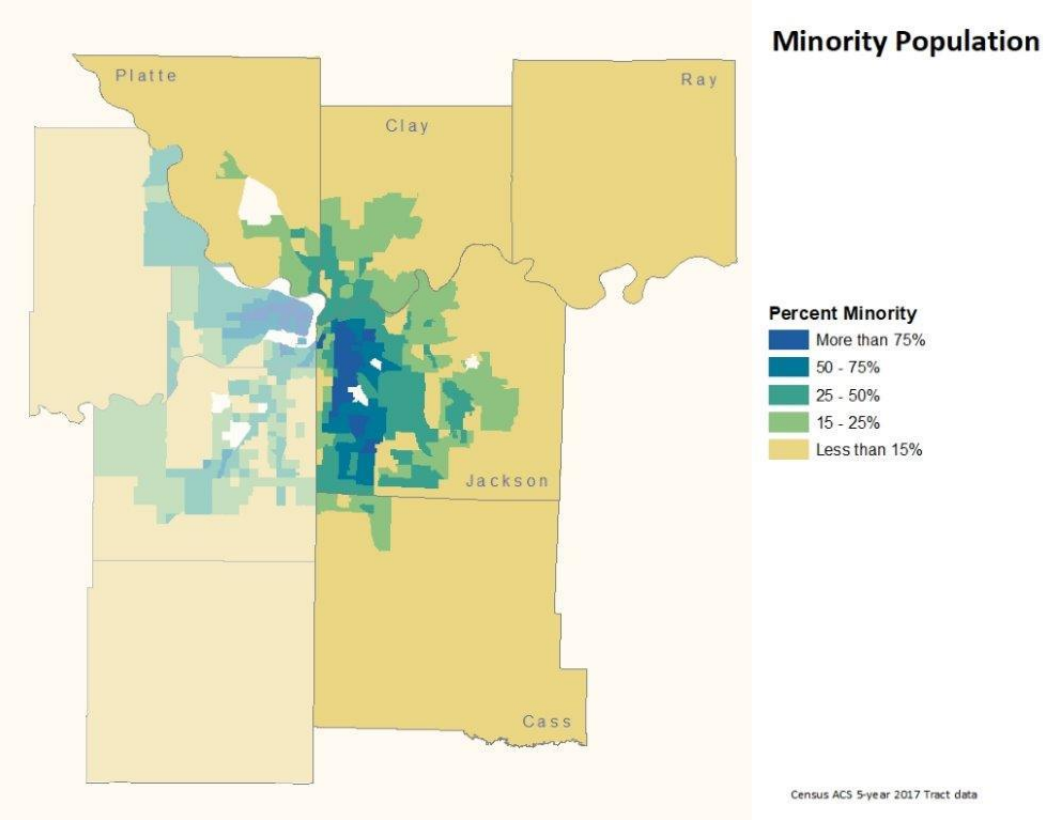
Forecasts of the region's population by race and ethnicity suggest that if the minority population continues to grow faster than the White population, then at some point the Planning Area may become majority minority. The Kansas City, Missouri, minority population is 45 percent of the total population. The area's more rural counties are the planning area's least racially and ethnically diverse. Ray County has a white non-Hispanic population of 94 percent and Cass County's is 89 percent. (Source: US Census Bureau, American Community Survey)



Source: 2017 American Community Survey, 5-year

Figure 2.19: White and Minority Population Shares, 2017

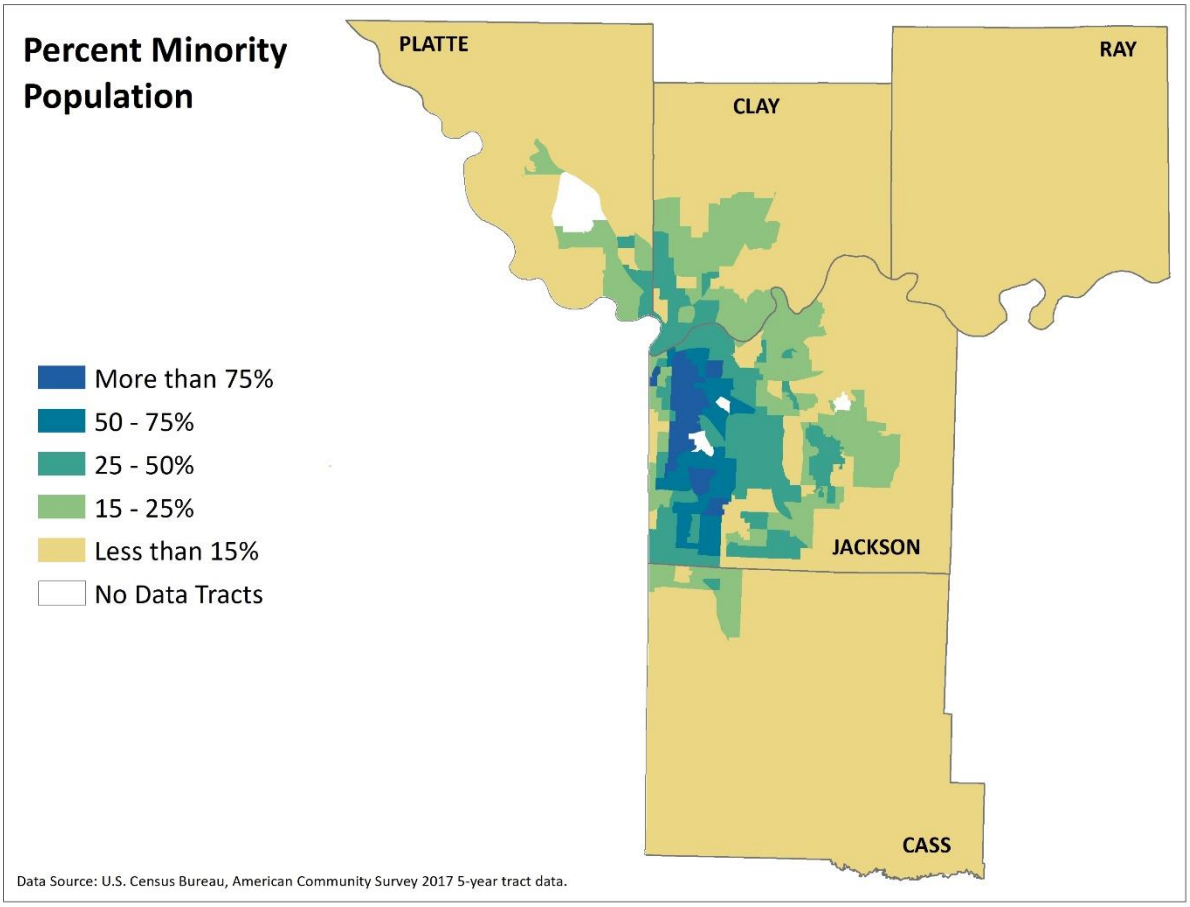
While Kansas City has the largest concentration of minorities, they are not spread uniformly throughout the city. The minority population, particularly the black population is concentrated east of Troost Avenue, the historic racial dividing line due to legally sanctioned racial practices prior to the Civil Rights era. As a result of historic practices and policies, there remains a strong racial dividing line running north to south along Troost Avenue with blacks and other minorities concentrated to the east of it in the portion of Kansas City that is in Jackson County.



Source: US Census Bureau, American Community Survey 2017

Figure 2.20: Minority Population 2010-2017 (%)

Not all minorities are distributed similarly. While the central portion of Kansas City where minorities are most concentrated is largely African American, Hispanic persons are more dispersed, with some concentrations in the northeast Kansas City area, and, to a lesser extent, to the south in Grandview.



Source: American Community Survey 2017

Figure 2.21: Hispanic Population (%)

The concentration of Hispanic persons mirrors closely the distribution of those who are not proficient speaking English. The most prevalent language spoken in the planning area other than English is Spanish.

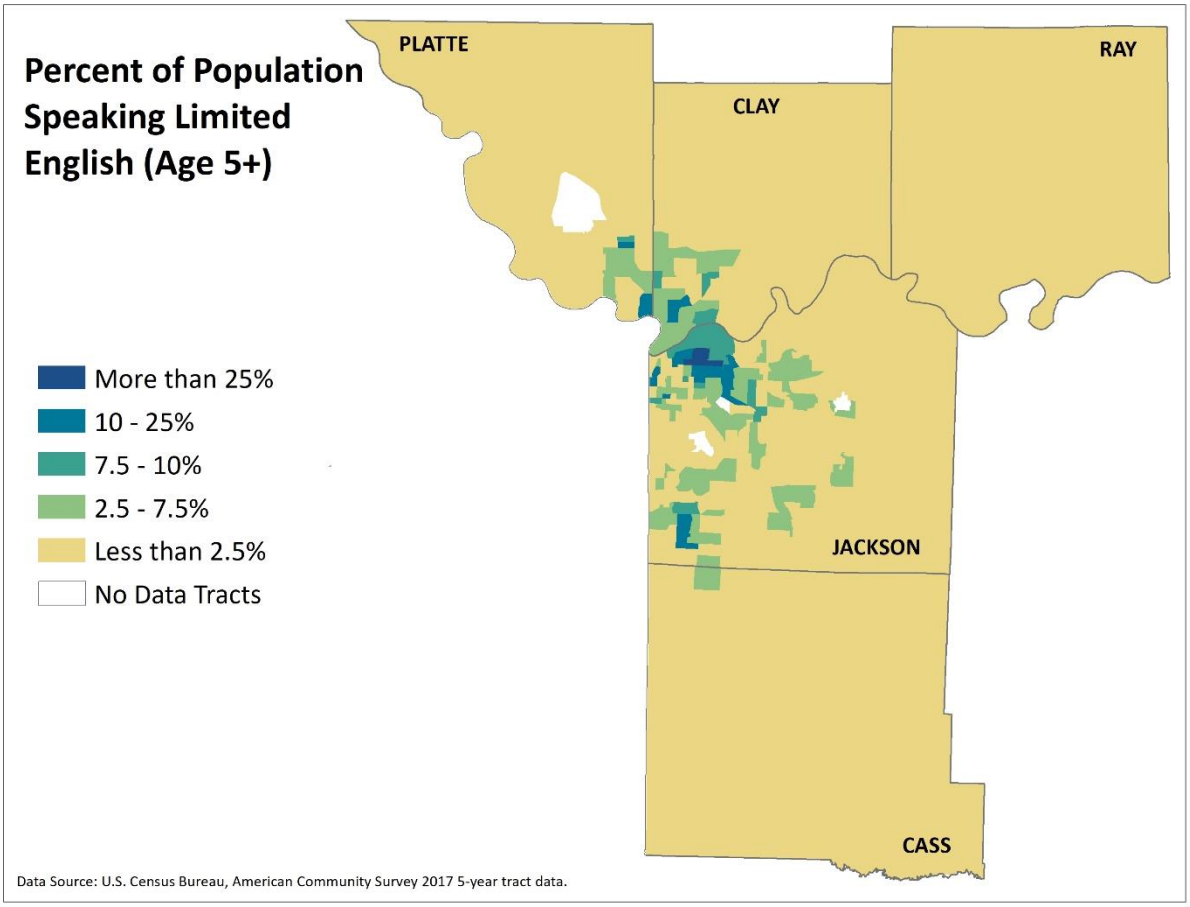
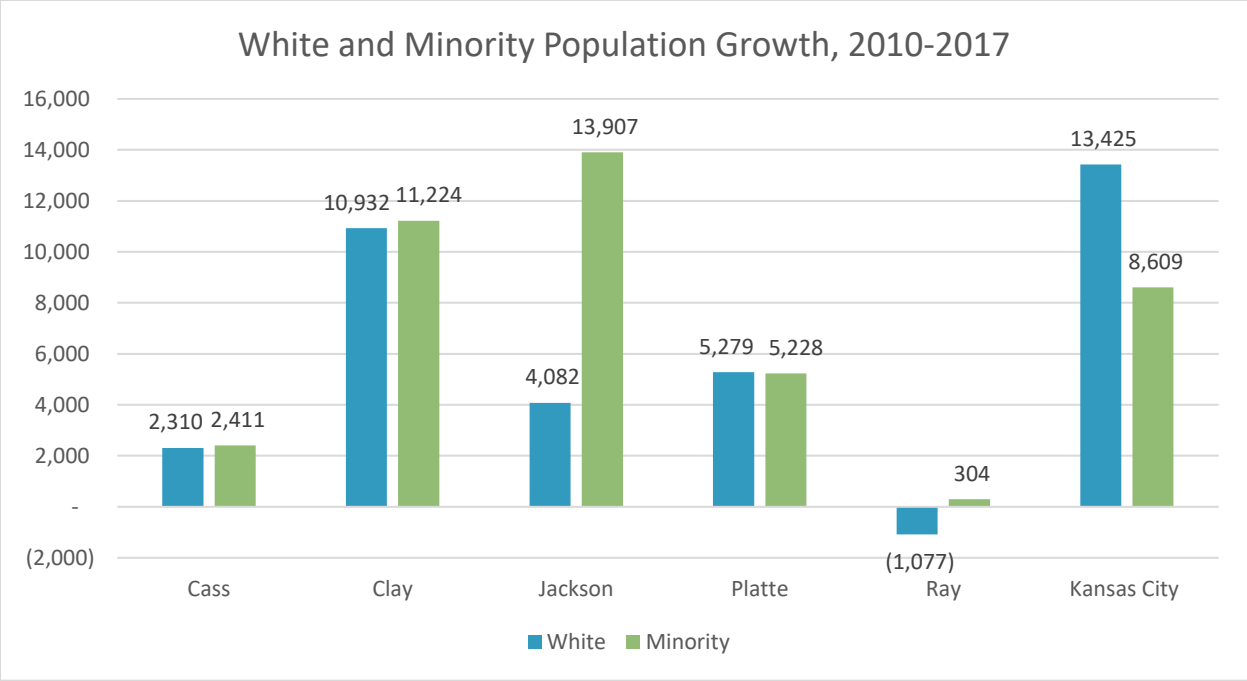


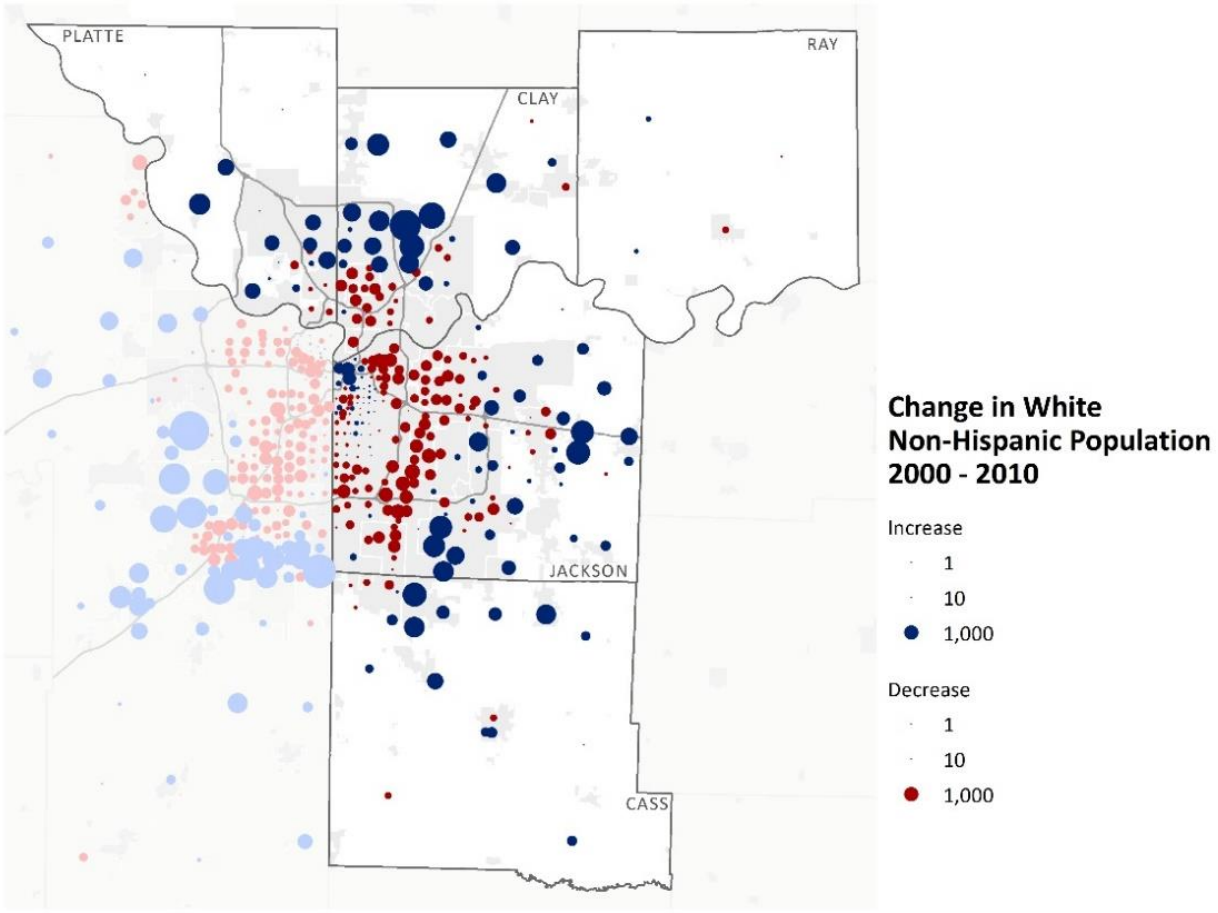
Figure 2.22: Population Speaking English Less than 'Very Well' (%)



Source: 2000 Census and 2013 American Community Survey, 5-year data

Figure 2.23: White and Minority Population Growth, 2010-2017

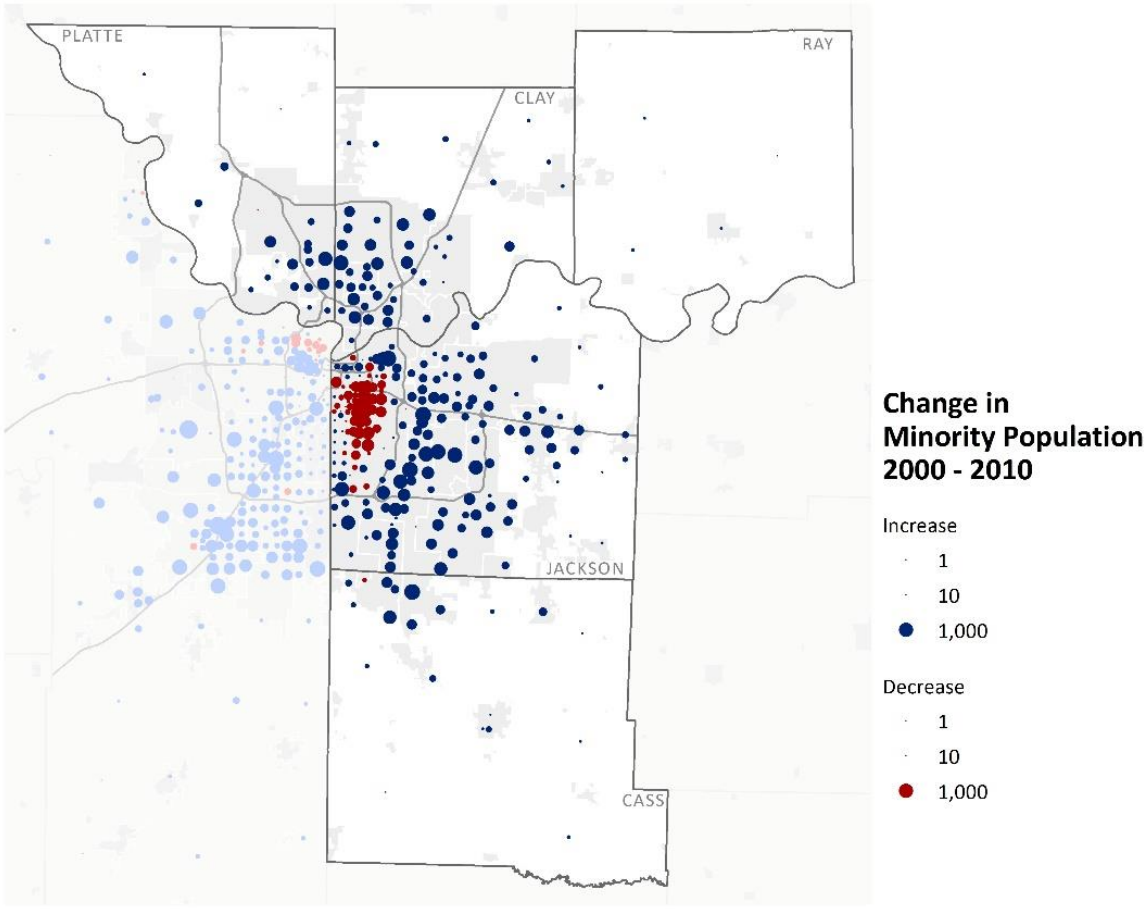
Overall, the white population growth was smaller in comparison with minorities between 2010 and 2017. Cass, Clay, and Platte counties saw similar growth between whites and minorities during the seven-year period (**Figure 2.23).** In Jackson County, minorities accounted for around 80 percent of the population growth. The city of Kansas City saw a majority of their population growth come from white persons, given that much of their population growth occurred in Clay and Platte counties.



Source: Census Bureau, 2000 and 2010 decennial censuses

Figure 2.24: Change in White Non-Hispanic Population 2000-2010

The county and large city totals mask the underlying dynamics of population shifts in the Planning Area. The area where minorities are most concentrated is also the area of Kansas City experiencing population loss. Similar to whites in previous generations, minorities are also moving outward in search of better opportunities for jobs and housing, safer neighborhoods and better schools. As a result, suburbs have experienced increasing racial and ethnic diversity (US Census Bureau, Decennial Census).

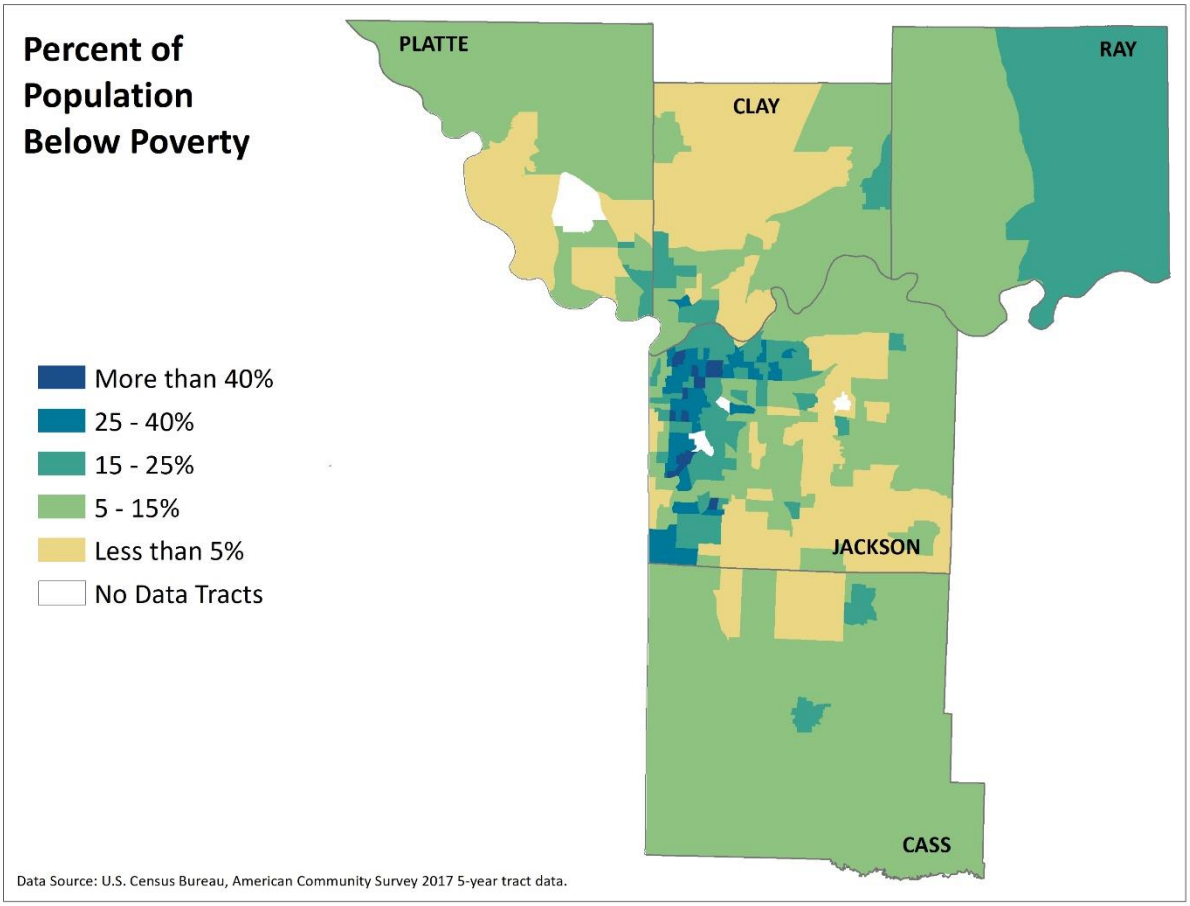


Source: Census Bureau, 2000 and 2010 decennial censuses

Figure 2.25: Change in Minority Population, 2000-2010

2.3.5 Poverty

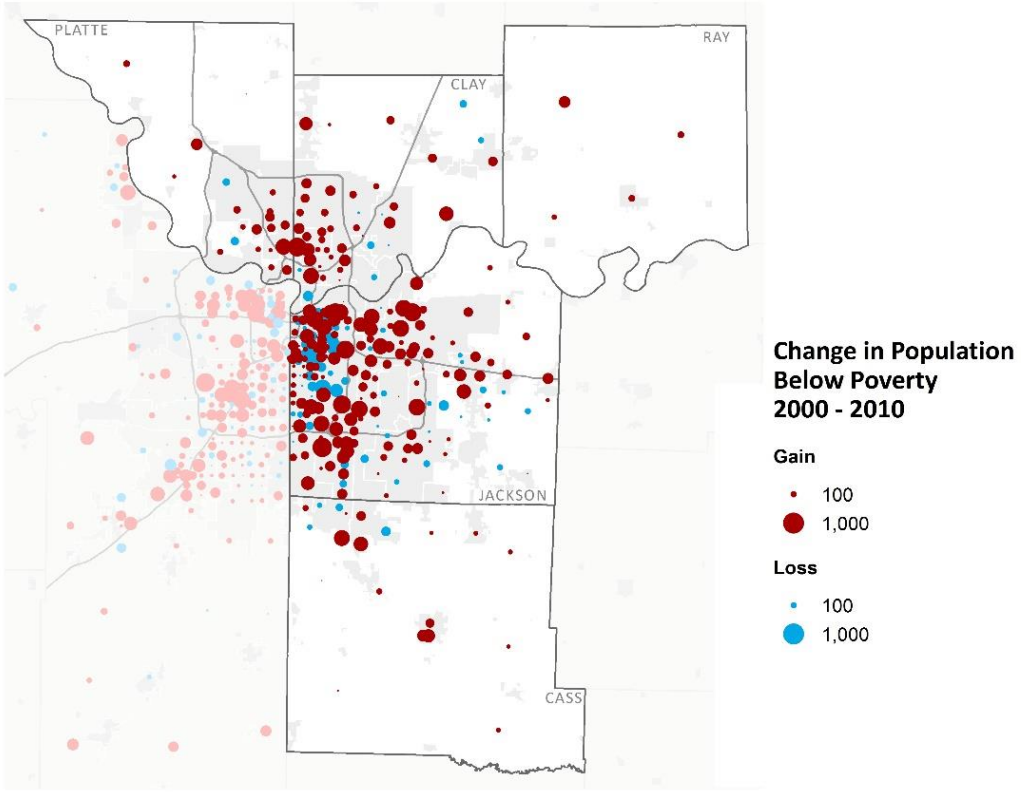
There is a strong correlation between concentrations of minorities and concentrations of poverty. In part, population loss is the result of the loss of families and an increase in the number of vacant dwellings in many urban core neighborhoods. This population loss has led to a disinvestment in properties and a loss of job opportunities for residents.



Source: 2017 American Community Survey, 5-year data

Figure 2.26: Population Below Poverty (%)

The region's poor households are found in almost every city and county in the Kansas City region, although greater concentrations of poor households are found in older, urban core neighborhoods. Many households on limited incomes live in homes that pose risks related to health due to particulate and lead exposures, as well inadequate or expensive heating and cooling systems.



Source: US Census Bureau, Decennial Census

Figure 2.27: Change in Population Below Poverty, 2000-2010

While poverty remains the most concentrated in the Jackson County portion of Kansas City, the growth of households in poverty has occurred throughout the Planning Area. Ray County has experienced an increase of 6.2 percent in the number of persons in poverty, the largest increase for any county

in the planning area. Cass and Clay both showed increases of persons in poverty by 2.3 percent and 1.1 percent, respectively, while Jackson and Platte had a modest 0.2 percent increase in poverty over the period.

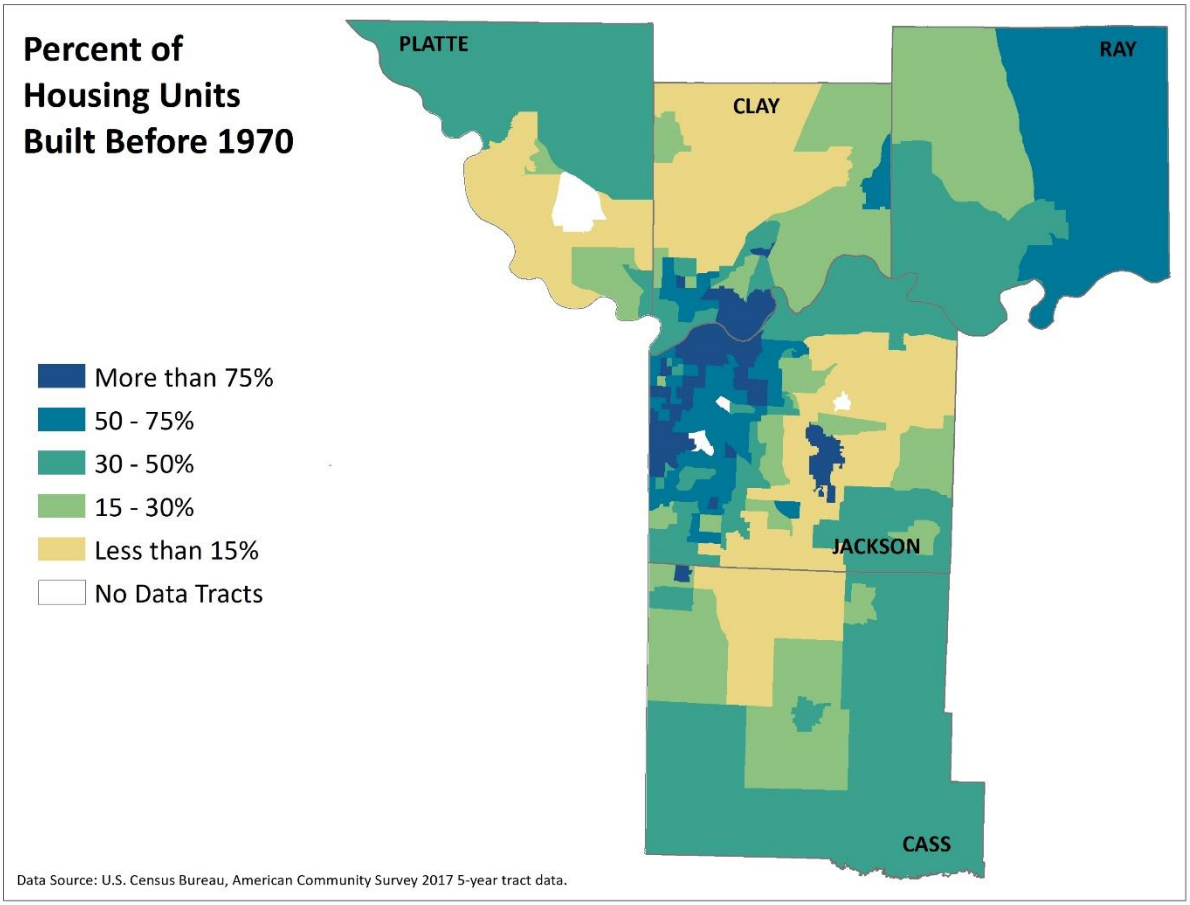


Figure 2.28: Housing Units Built before 1970 (%)

Households with limited incomes often reside in neighborhoods with older housing units. Figure 2.29 shows those areas with larger proportions of housing units that were built prior to 1970.

Table 2.2: Persons in Poverty

	2010			2017			Change		
	Total Population	Population Below Poverty	Poverty Rate	Total Population	Population Below Poverty	Poverty Rate	Total Population	Population Below Poverty	Poverty Rate
Cass	96,563	6,940	7.2%	100,427	9,492	9.5%	3,864	2,552	2.3%
Clay	211,853	16,585	7.8%	232,843	20,693	8.9%	20,990	4,108	1.1%
Jackson	657,567	103,423	15.7%	677,650	108,026	15.9%	20,083	4,603	0.2%
Platte	85,939	6,055	7.0%	95,707	6,936	7.2%	9,768	881	0.2%
Ray	23,405	2,196	9.4%	22,581	3,527	15.6%	(824)	1,331	6.2%
Planning Area	1,075,327	135,199	12.6%	1,129,208	148,674	13.2%	53,881	13,475	0.6%
Kansas City	433,743	80,072	18.5%	468,355	81,069	17.3%	34,612	997	-1.2%

Source: 2010 and 2017 ACS, 5-year data. Universe is persons for whom poverty data is available.

Many aspects of population vulnerability are highly correlated with poverty, including unemployment, low levels of education, living in households with no vehicles, and not having health insurance. Other vulnerable populations are more spread throughout the Planning Area, including the disabled and veterans. **Attachment Maps 2.1-2.6** showing the location of these vulnerable populations may be found in section **2.8 Attachments**.

2.4 Planning for the Future

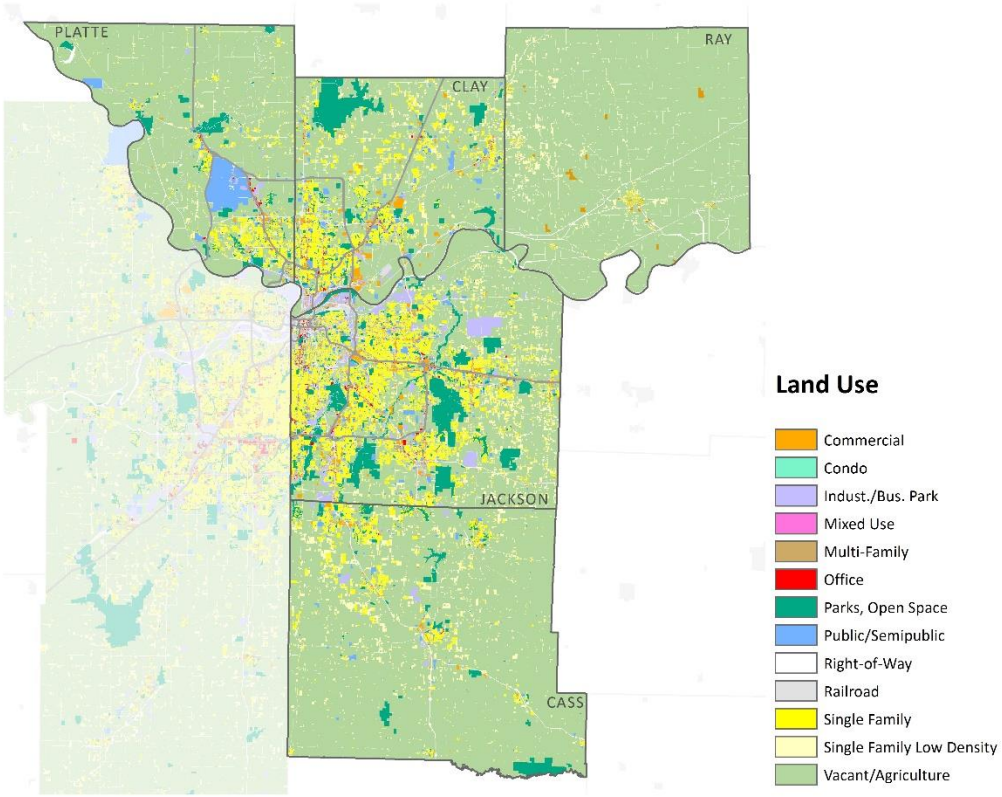
2.4.1 Land Use

As the Kansas City region's Metropolitan Planning Organization (MPO), MARC makes land use forecasts as an input into the region's long-range transportation plan. MARC forecasts population and employment growth by first forecasting land use change, then applying planned densities to those changes. This process begins with the distribution of activity as given by the region's current land use (Source: MARC).

Table 2.3: Existing Land Use by Major Type, in acres

Land Use	Cass	Clay	Jackson	Platte	Ray	Total
Single Family	15,963	27,942	61,856	12,018	1,668	119,446
Single Family (low density)	23,372	11,527	21,609	5,298	11,269	73,075
Multi-Family	339	1,443	5,276	672	-	7,730
Mixed use	-	-	11	-	-	11
Commercial	2,047	6,483	9,993	1,135	1,716	21,374
Office	36	764	2,306	441	-	3,546
Industrial/Business Park	1,878	2,418	17,014	1,821	-	23,132
Public/Semipublic	3,087	7,022	10,354	13,452	9	33,924
ROW	9,333	21,106	45,554	16,133	-	92,127
Parks and Open Space	11,683	21,941	38,056	9,392	-	81,073
Vacant or Agricultural	381,775	159,114	182,986	212,112	337,837	1,273,854
Total	**449,514**	**259,789**	**395,015**	**272,474**	**352,499**	**1,729,292**

Source: County Assessors Offices and GIS departments, as compiled and tabulated by MARC



Source: County Assessors Offices and GIS departments, as compiled and tabulated by MARC

Figure 2.29: Area Land Use

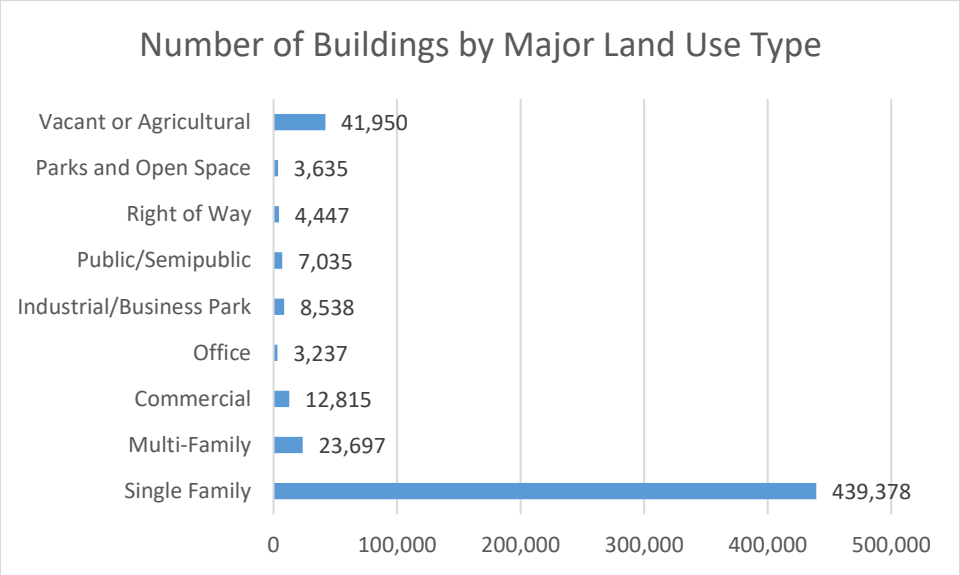
Vacant or agricultural land is still the dominant land use in the Planning Area, comprising two-thirds of the total land area. Adding parks and open space to this total, more than three-quarters (78 percent) of the Planning area is undeveloped. This varies by county, from Ray and Cass counties, with 96 percent and 88 percent undeveloped, respectively, to Jackson County, with 56 percent undeveloped.

Among the land devoted to developed uses in the Planning Area, single-family residential areas comprise half of it, and right-of-way—principally for roads—make up another quarter. Public/semi-public facilities, such as Kansas City International Airport (KCIA), city halls, schools and churches, sit on nine percent of the developed land, while commercial areas consume six percent, as do office/warehouse parks and industrial areas. The highest density uses take up the least amount of land, as multifamily and office uses comprise only two percent and one percent of the developed land area, respectively.

Given its relative share of developed land uses, single-family homes dominate the structure count, comprising 81 percent of the total structures in the Planning Area **(See Table 2.4).**

Table 2.4: Building Counts by Major Land Use Type					
Land Use Type	**Cass**	**Clay**	**Jackson**	**Platte**	**Total**
Single Family	41,060	88,812	277,991	31,515	439,378
Multi-Family	1,695	3,003	17,620	1,379	23,697
Commercial	1,521	2,418	8,162	714	12,815
Office	20	614	2,366	237	3,237
Industrial/Business Park	299	1,214	6,450	575	8,538
Public/Semipublic	846	1,498	3,814	877	7,035
Right-of-Way	323	768	3,037	319	4,447
Parks and Open Space	250	1,031	1,991	363	3,635
Vacant or Agricultural	12,450	8,281	14,516	6,703	41,950
Total	**58,464**	**107,639**	**335,947**	**42,682**	**544,732**

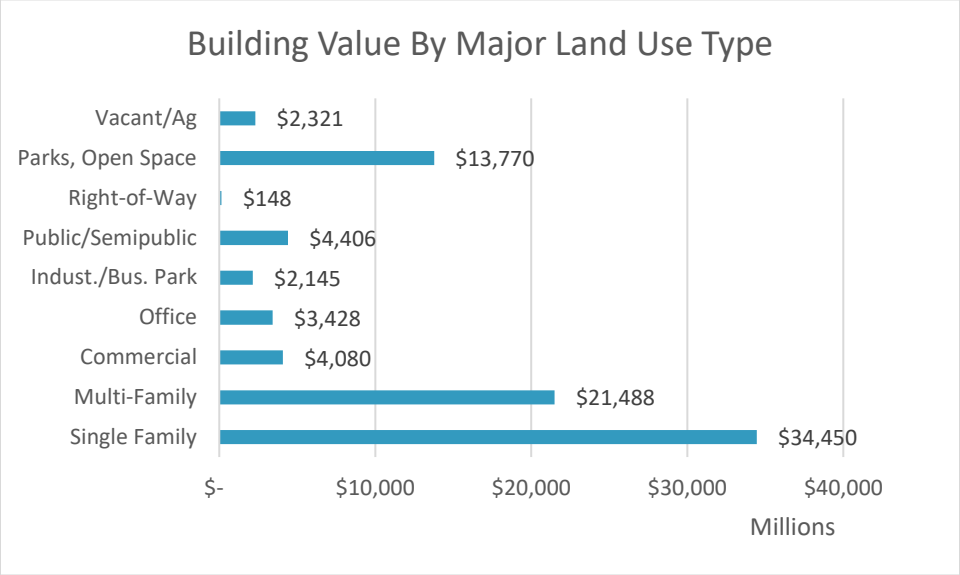
Source: City and County GIS departments and MARC. Ray County data not available.



Source: City and County GIS departments and MARC

Figure 2.30: Number of Buildings by Major Land Use Type

A different picture emerges when considering the value of the buildings in the planning area by land use type. **See Figure 2.30 Number of Buildings by Major Land Use Type.** The share of total building value attributed to single family structures drops to 40 percent, which is half its share of building counts. Multi-family buildings comprise one quarter of the building value in the planning area. This is followed by the value of buildings in public parks. That 16 percent of the total building value of the planning area is located in parks likely reflects recent investments in the Kansas City Zoo. Public/semi-public buildings such as schools and churches, as well as commercial buildings, each account for five percent of the planning area's building value, while industrial buildings account for four percent. (**See Figure 2.31 and Table 2.5).**



Source: County assessors, city and county Planning and GIS departments, as compiled and tabulated by MARC. Ray County data not available.

Figure 2.31: Building Value by Major Land Use Type

Table 2.5: Value of Buildings by Major Land Use

Land Use	Cass	Clay	Jackson	Platte	Total
Single Family	$ 3,325,998,111	$ 8,110,982,200	$ 18,934,960,384	$ 4,078,456,625	$ 34,450,397,320
Multi-Family	$ 178,858,860	$ 717,891,400	$ 20,135,850,790	$ 455,837,064	$ 21,488,438,114
Commercial	$ 274,966,390	$ 1,335,636,800	$ 1,869,600,550	$ 600,171,176	$ 4,080,374,916
Office	$ 10,452,940	$ 342,355,200	$ 2,797,491,554	$ 277,492,272	$ 3,427,791,966
Industr./Bus. Park	$ 47,728,970	$ 411,122,320	$ 1,387,706,985	$ 298,828,690	$ 2,145,386,965
Public/Semipublic	$ 20,762,520	$ 965,717,555	$ 2,705,674,554	$ 714,317,378	$ 4,406,472,007
Right-of-Way	$ 1,145,180	$ 2,403,600	$ 142,432,839	$ 1,695,872	$ 147,677,491
Parks, Open Space	$ 11,183,620	$ 50,737,400	$ 13,693,093,231	$ 15,179,567	$ 13,770,193,818
Vacant/Ag	$ 432,878,262	$ 297,358,604	$ 1,329,394,183	$ 261,774,696	$ 2,321,405,745
Total	**$ 4,303,974,853**	**$ 12,234,205,079**	**$ 62,996,205,070**	**$ 6,703,753,340**	**$ 86,238,138,342**

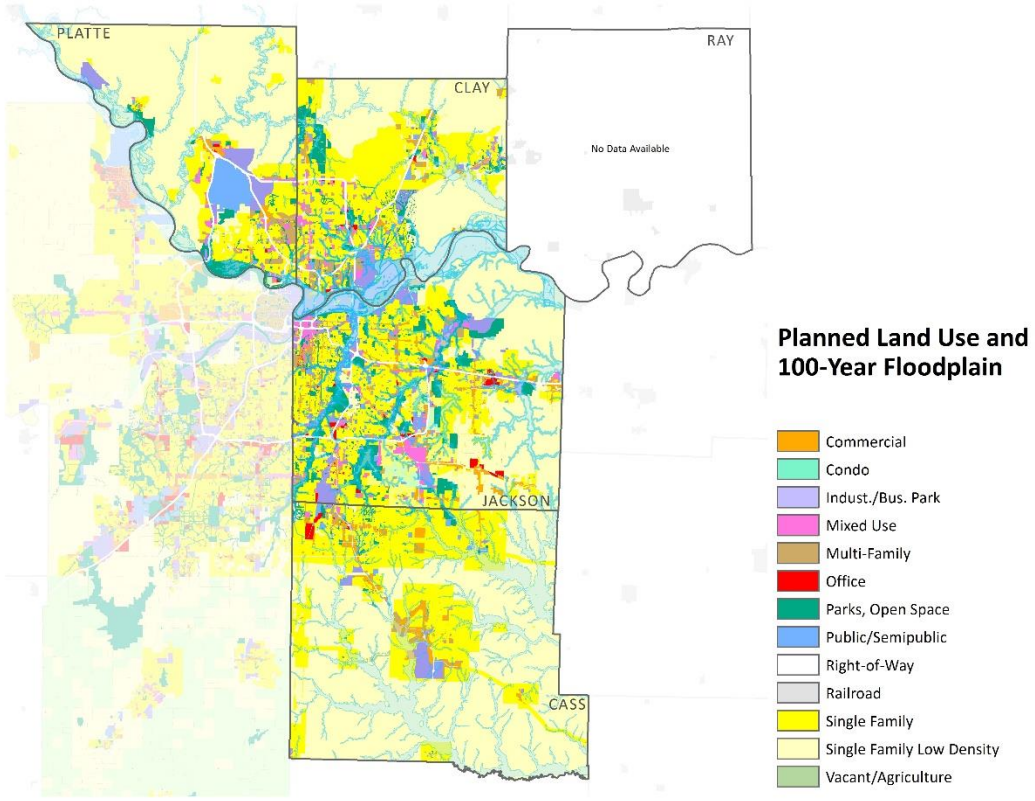
Source: County assessors, city and county Planning and GIS departments, as compiled and tabulated by MARC. Ray County data not available.

2.4.1a Planned Land Use

After collecting existing land use, MARC surveys cities and counties to obtain their future land use plans. Typically, these plans are designed to visualize what the jurisdiction will look like once it is fully built-out or, in older areas, when anticipated redevelopment is completed. As such, these plans provide guidance for MARC's forecast concerning what kinds of development will occur and where, provided there is sufficient demand to make the development economically feasible **(See Table 2.6).**

Table 2.6: Planned Land Use by Major Type, in acres					
Land Use (in acres)	**Cass**	**Clay**	**Jackson**	**Platte**	**Total**
Single Family	127,985	92,455	166,281	43,538	430,259
Single Family (low density)	279,118	99,746	92,374	180,870	652,108
Multi-Family	3,093	10,078	13,022	5,707	31,900
Mixed use	315	5,936	13,455	3,592	23,298
Commercial	10,789	4,261	13,070	2,508	30,629
Office	1,172	876	3,684	308	6,040
Industrial/Business Park	6,237	13,244	23,459	10,929	53,869
Public/Semipublic	2,700	4,026	7,583	11,190	25,498
Right-of-Way	5,074	7,506	13,405	3,480	29,466
Parks and Open Space	4,619	21,229	40,937	9,930	76,715
Vacant or Agricultural	8,412	432	7,746	422	17,011
Total	**449,514**	**259,789**	**395,015**	**272,473**	**1,376,793**

Source: City and County Planning and GIS departments, as compiled and tabulated by MARC.
Ray County data not available.

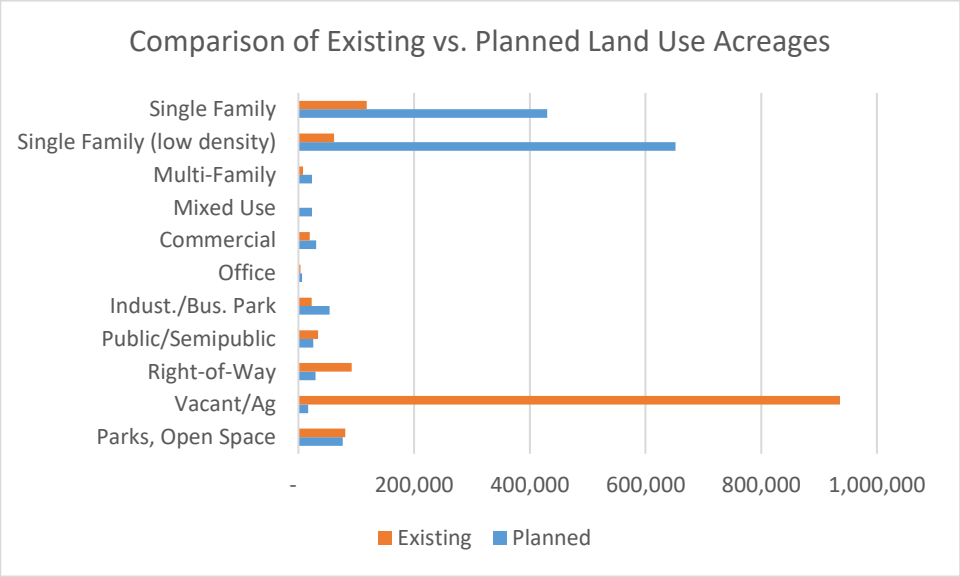


Source: City and County Planning and GIS departments, as compiled and tabulated by MARC.

Figure 2.32: Planned Land Use and 100-Year Floodplain

Planned land use maps in local land use plans are not as precise as the data for existing land use, so most of the land in right-of-way is classified according to its surrounding land use. The planned land use map above **(Figure 2.32)** shows that local governments expect most of the planning area's vacant and

agricultural land to be developed as single-family housing at some point in the future. This represents an increase in developed land of 257 percent (Source: MARC information taken from local land use plans**).** Given that the population in the Kansas City region as a whole is only projected to grow by 31 percent between 2010 and 2040 implies that suburbanization trends are expected to continue with new development on green field sites during the 30-year planning horizon.

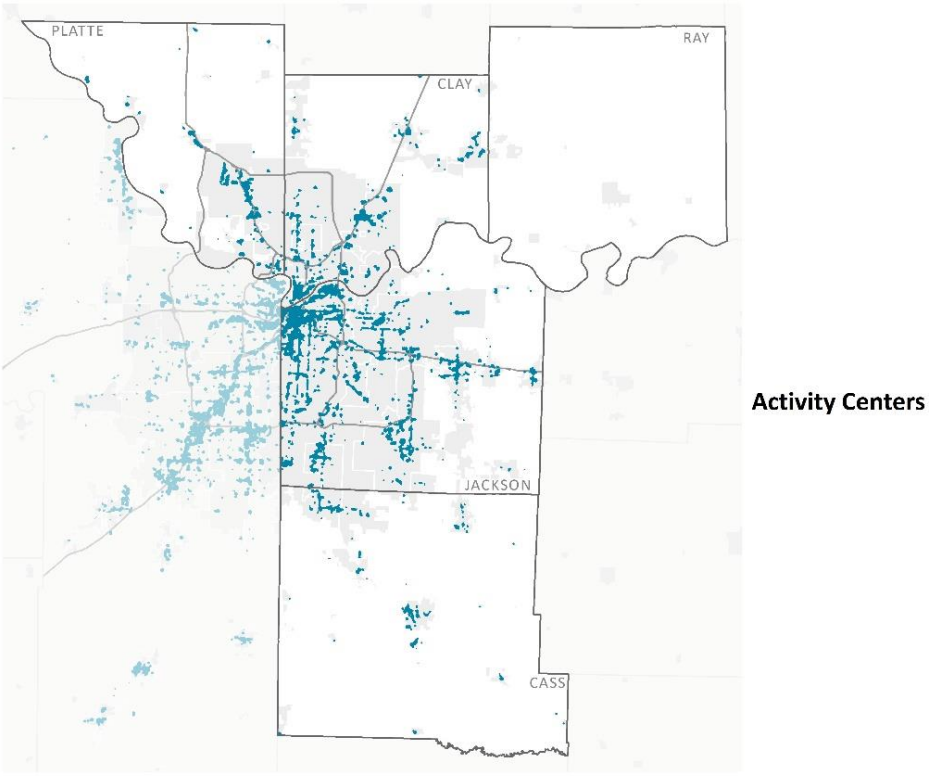


Source: City and County Planning and GIS departments, as compiled and tabulated by MARC.

Figure 2.33: Comparison of Existing vs. Planned Land Use

To forecast where development is expected to occur between 2010 and 2040, given the vast quantity of land where growth could theoretically occur, MARC uses a series of statistical models to estimate the land most likely to develop. These history-based probabilities are augmented with information concerning local priorities for development that jurisdictions are encouraging with policies, investments and incentives. In general, local plans exclude future development from flood plains, so no new growth is forecast there.

Additionally, most local governments plan to focus future development in activity centers along transportation corridors to increase walkability, better serve growing senior population, and make growth more affordable by limiting infrastructure extensions (Source: MARC information from local land use plans).



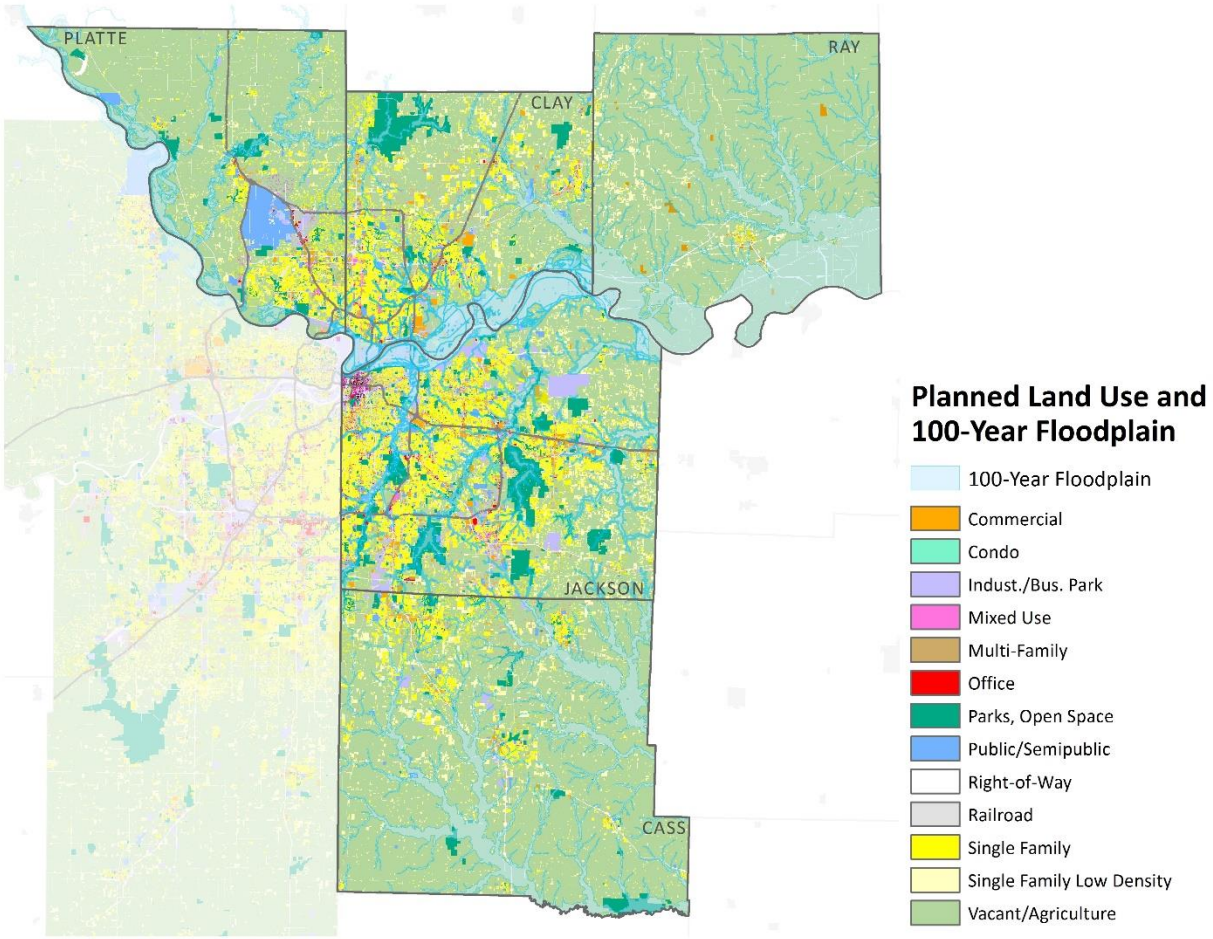
Source: MARC

Figure 2.34: Planning Area Activity Centers

2.4.1b Land Use Forecast

Future land use is forecast based on 1) the expected growth in total population and employment, 2) the probability a given parcel of land will newly develop, redevelop, or decline based on existing land use and historical trends, and 3) current local land use policy and public investments designed to focus growth where it can be most efficiently and successfully accommodated. These forecasts also include as a policy that no new development will occur in floodplains (Source: MARC).

As a result, most new development is projected to occur adjacent to or near existing development, especially along existing transportation corridors and in existing or planned activity centers.



Source: MARC

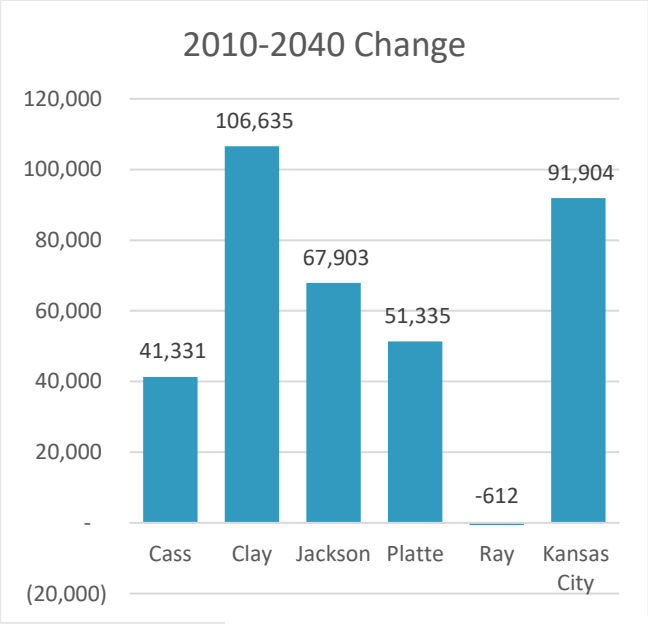
Figure 2.35: Forecast Future Land Use with 100-Year Floodplain

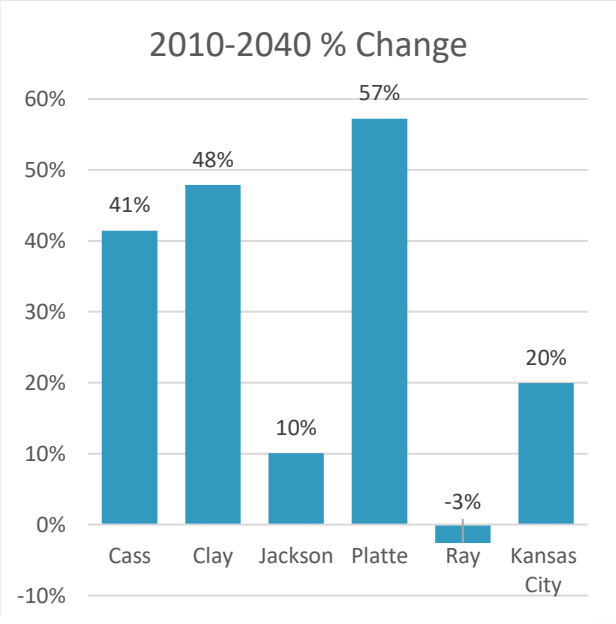
2.4.2 Population Forecasts

This future land use forecast is then converted to a population and employment forecast by applying the planned densities, along with expected persons per household and employees per square foot, to the forecast land use. When aggregated to a county level, Clay County is forecast to experience the greatest population growth, adding more than 106,000 people between 2010 and 2040, while Platte County is expected to grow the fastest, increasing its population by 57 percent over the period, a gain of some 51,000 people. Jackson County will remain the planning area's largest county, adding about 68,000 people—second most in the planning area—to reach 742,000 by 2040, a 10 percent increase over 2010 levels. Cass County is expected to add 41,000 people during the 30-year period, an increase of 41 percent. Population forecasts were not available for Ray County in the MARC 2040 Forecast and American Community Survey sources. The 2020 forecast listed for Ray County is the current 2018 population to show change over a period. Combined, the planning area's population is forecast to grow by more than one-quarter million by 2040, a 24 percent increase over its population in 2010. **(See Table 2.7)**

Table 2.7: Population Forecast						
County/Area	2010	2020	2030	2040	2010-2040 Change	2010-2040 % Change
Cass	99,757	114,438	128,303	141,088	41,331	41%
Clay	222,683	262,177	297,196	329,318	106,635	48%
Jackson	674,824	692,865	715,386	742,727	67,903	10%
Platte	89,700	105,148	122,493	141,035	51,335	57%
Ray	23,495	22,883*	-	-	-612	-3%
Planning Area	1,110,459	1,197,511	1,286,262	1,377,051	266,592	24%
MARC Region	1,925,165	2,127,176	2,325,772	2,522,111	596,946	31%
Planning Area Share	58%	56%	55%	55%	45%	-13%
Kansas City	460,737	484,791	516,342	552,641	91,904	20%

Source: Census Bureau, MARC.
*2018 population data





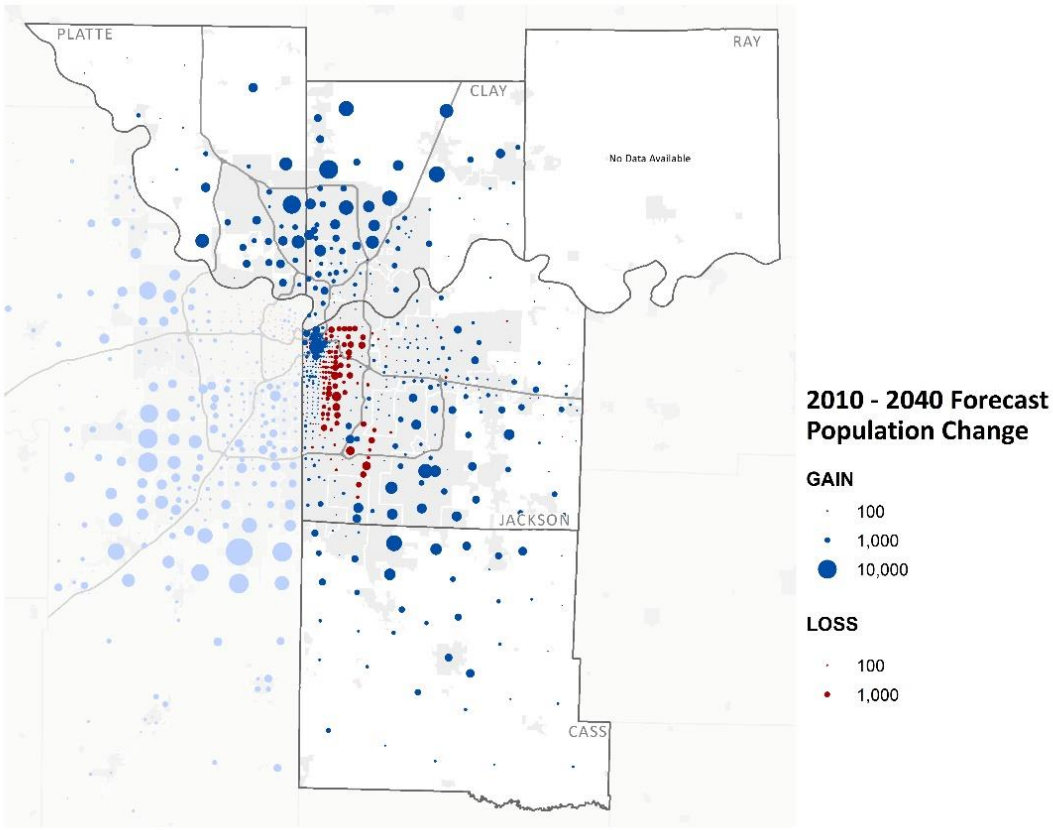
Source: MARC 2040 Forecast, American Community Survey
*The change is Ray county only from 2010-2018

Figure 2.36: Population Change, 2010-2040

Figure 2.37: Population Change, 2010-2040 (%)

The city of Kansas City is expected to grow by around 92,000 people between 2010 and 2040, a 20 percent increase **(See Figure 2.36 - Figure 2.37).** Most of its growth will be concentrated in the Northland—i.e., the portions in Clay and Platte counties, which lie north of the Missouri River. Besides Kansas City, Liberty, Kearney, Smithville, Gladstone and Parkville are expected to experience substantial

population growth over the period. In Jackson County, the urban core portions of Kansas City are forecast to continue to decline, albeit at reduced rates compared to historical trends. This decline is partially offset by the continued redevelopment in around Downtown. Most of the growth in Jackson County, however, is concentrated in the eastern portions, particularly in Independence, Lee's Summit and Blue Springs and, to a lesser extent, Grandview. In Cass County, population growth is expected to continue to be concentrated in its northern tier of cities – Belton, Raymore, Peculiar and Pleasant Hill. However, Harrisonville is also expected to see significant population growth between 2010 and 2040 **(Figure 2.38)**.

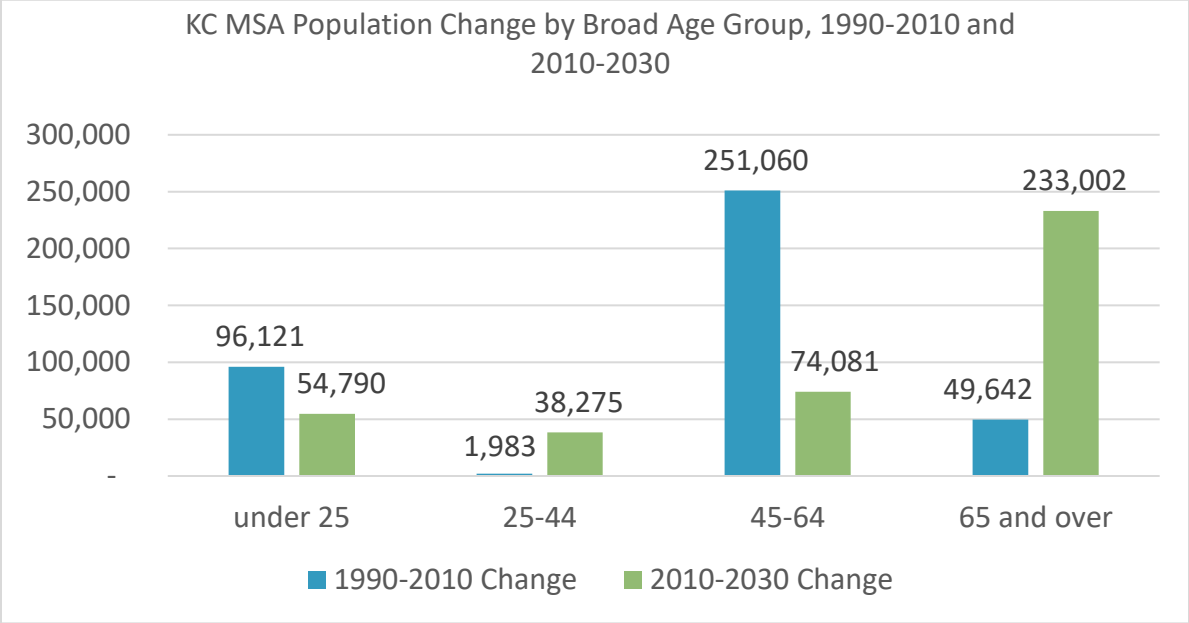


Source: MARC

Figure 2.38: 2010-2040 Forecast Population Change

Perhaps the biggest demographic change expected in the future is the aging of the population. The number of older adults—defined as those 65 years old and above—in the Kansas City metropolitan area is expected to increase by 233,000 between 2010 and 2030 **(Figure 2.39).**

In large part, this is because the post-World War II baby boom (those who were born from 1946 to 1964) began to reach retirement age in 2010. This, plus medical advances, will result in a 2030 population where the number of older adults roughly equals the number of people in other broad age groups in the community.



Source: Census Bureau, 1990 and 2010 Census, MARC

Figure 2.39: Kansas City MSA Population Change by Broad Age Group, 1990-2010 and 2010-2030

In 2010, older adults were 12 percent of the Kansas City region's population, a percentage that was unchanged from 1990. With the 2017 population estimates from the American Community Survey, older adults over 65 years old make up 14 percent of the five-county planning area. The aging of the baby boom generation means the senior share of the region's population is expected to increase to 20 percent by 2030. As a result, the population 65 and older will approximately double between 2010 and 2030 bringing their total to nearly one-half million. In fact, fully 58 percent of the Kansas City metropolitan area's total population growth between 2010 and 2030 is expected to be as a result of the increase in adults 65 years of age and older.

Conversely, the younger adult share of the population will decline from 28 percent to 24 percent, while the middle-aged adult share will decline from 27 percent to 24 percent between 2010 and 2030. (See Figure 2.49) Because the region's overall population is expected to grow by some 600,000, however, these age groups are still projected to increase in numbers despite their declining share.

These changes in the age structure of the population have implications for how the region accommodates its population growth in terms of its land use. Compared to the prior 20 years, most of the growth in the future will be from households seeking who may seek a smaller rather than a larger home in which to live, with amenities near-by and accessible by multiple means—walking, transit, ride sharing—rather than only by way of driving a private motor vehicle.

2.4.3 Employment Forecasts

Employment growth is expected to be more equally spread throughout the Planning Area than population. Jackson County is projected to add the most jobs between 2010 and 2040 at about 46,000, a 14 percent increase. The Platte County job forecast is a close second, at 40,000 additional jobs by 2040 due to expected development near the KCI airport. This represents close to twice as much as Platte County's 2010 employment, making it the fastest growing job generator in the Planning Area. Clay County's job growth is expected to be the next fastest, as it is forecast to increase its 2010 employment levels by 26 percent.

Cass County's job growth is expected to be the next fastest, as it is forecast to increase its 2010 employment levels by almost a quarter in 2020, resulting in a gain of 11,000 jobs. Meanwhile, Ray County's jobs will remain stable over the period. Overall, the Planning Area will add about 127,000 jobs between 2010 and 2040, a 25 percent increase. **(See Table 2.8 and Figure 2.40-2.41)**

Table 2.8: Employment Forecast by County

County	2010	2020	2030	2040	2010-2040 Change	2010-2040 % Change
Cass	48,500	52,931	56,889	59,767	11,268	23%
Clay	112,512	123,657	133,826	141,697	29,185	26%
Jackson	323,029	337,681	353,545	369,429	46,400	14%
Platte	46,307	61,631	75,654	86,402	40,095	87%
Ray	11,149	11,786	11,786	11,786	637	6%
Planning Area	541,497	587,049	631,062	668,445	126,948	23%
MARC Region	946,117	1,066,199	1,178,193	1,268,290	322,174	34%
Planning Area Share	57%	55%	54%	53%	-5%	-8%
Kansas City	222,762	241,012	260,878	283,817	61,056	27%

Source: Bureau of Labor Statistics, Census Bureau, MARC. Ray County projection not officially adopted.

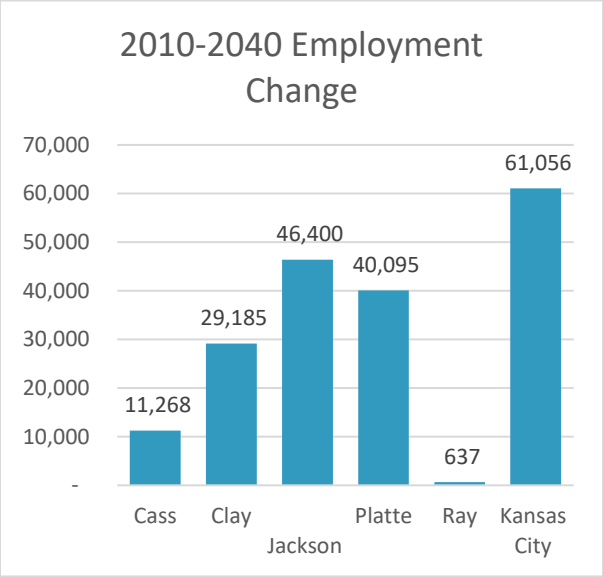
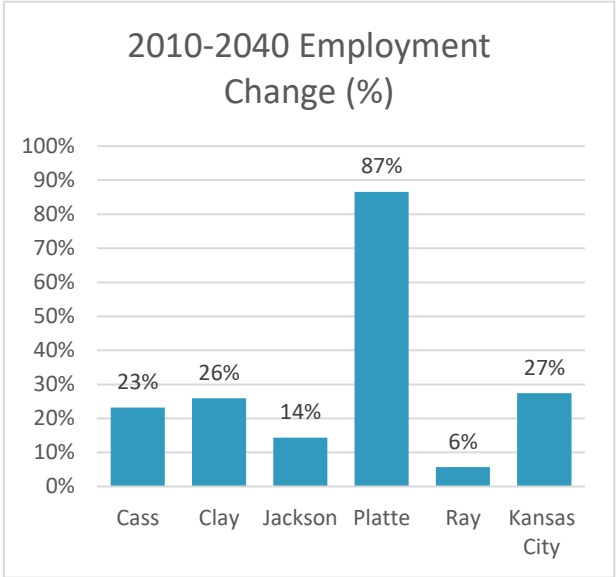


Figure 2.41: Employment Change, 2010-2040

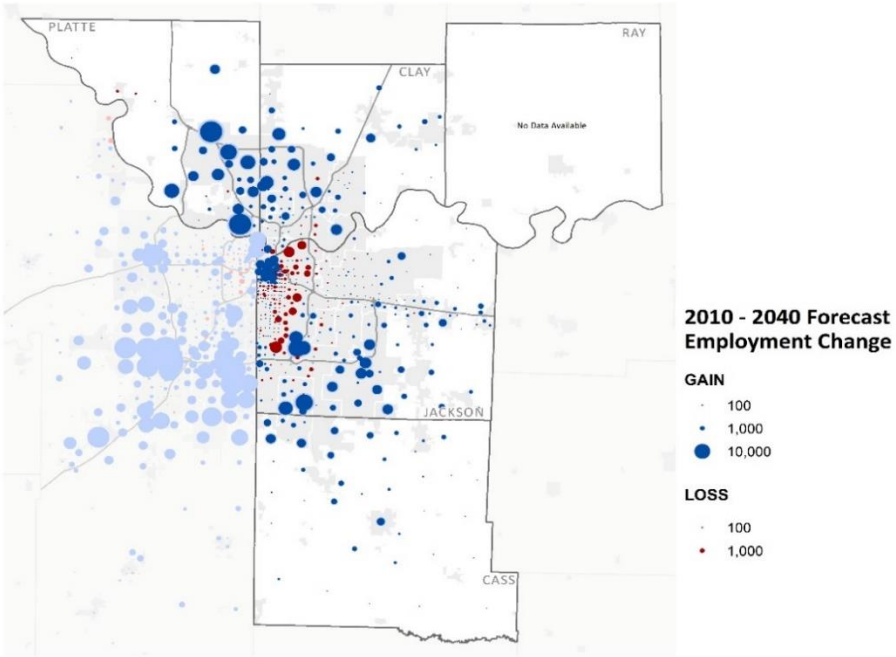


Source: Bureau of Labor Statistics, Census Bureau, MARC

Figure 2.40: Employment Change, 2010-2040 (%)

The city of Kansas City accounts for just under half the Planning Area's projected employment growth. In addition to the area near KCI, significant employment increases are expected in and around Downtown, at I-435 and Bannister Road due to the newly built Cerner campus, and in south Kansas City as a result of moving the National Nuclear Security Administration's (NNSA) National Security Campus in Kansas City.

Other cities in the Planning Area expecting to add a significant number of jobs include Belton and Raymore in Cass County; Gladstone and Liberty in Clay County; Blue Springs, Grandview, Independence and Lee's Summit in Jackson County; and Parkville and Riverside in Platte County.

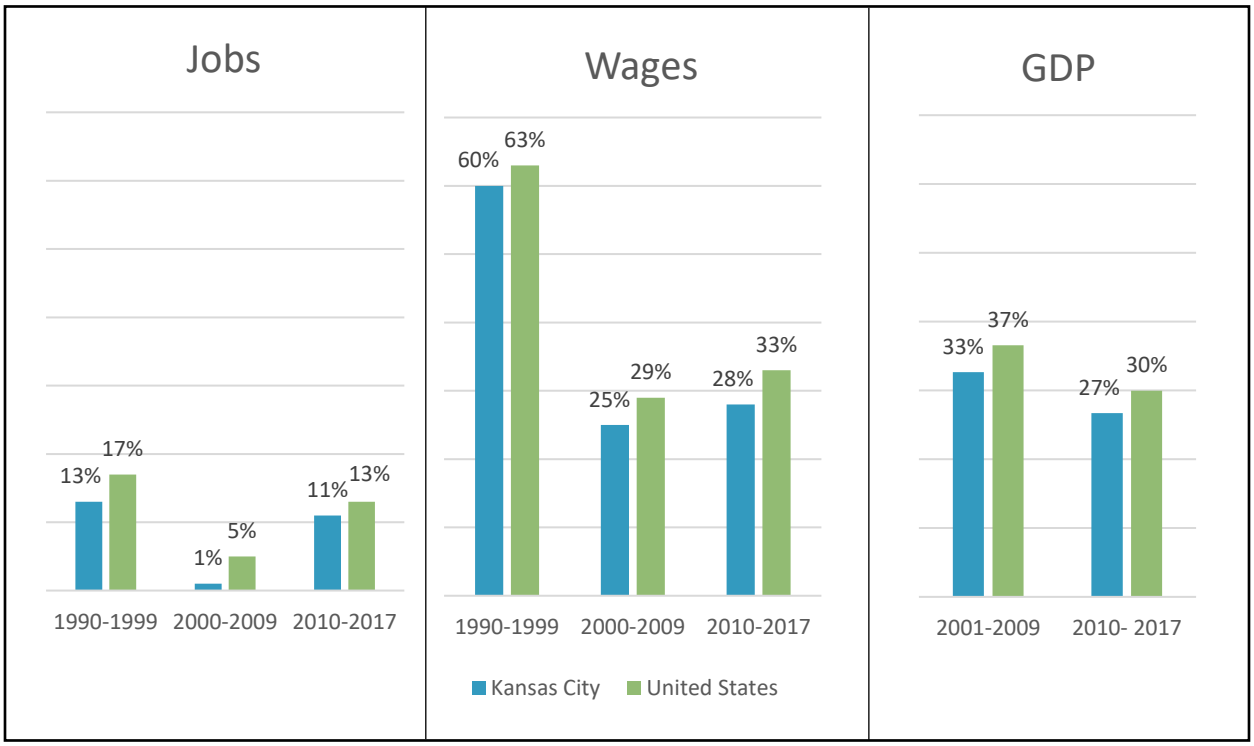


Source: MARC

Figure 2.42: Forecast Employment Change

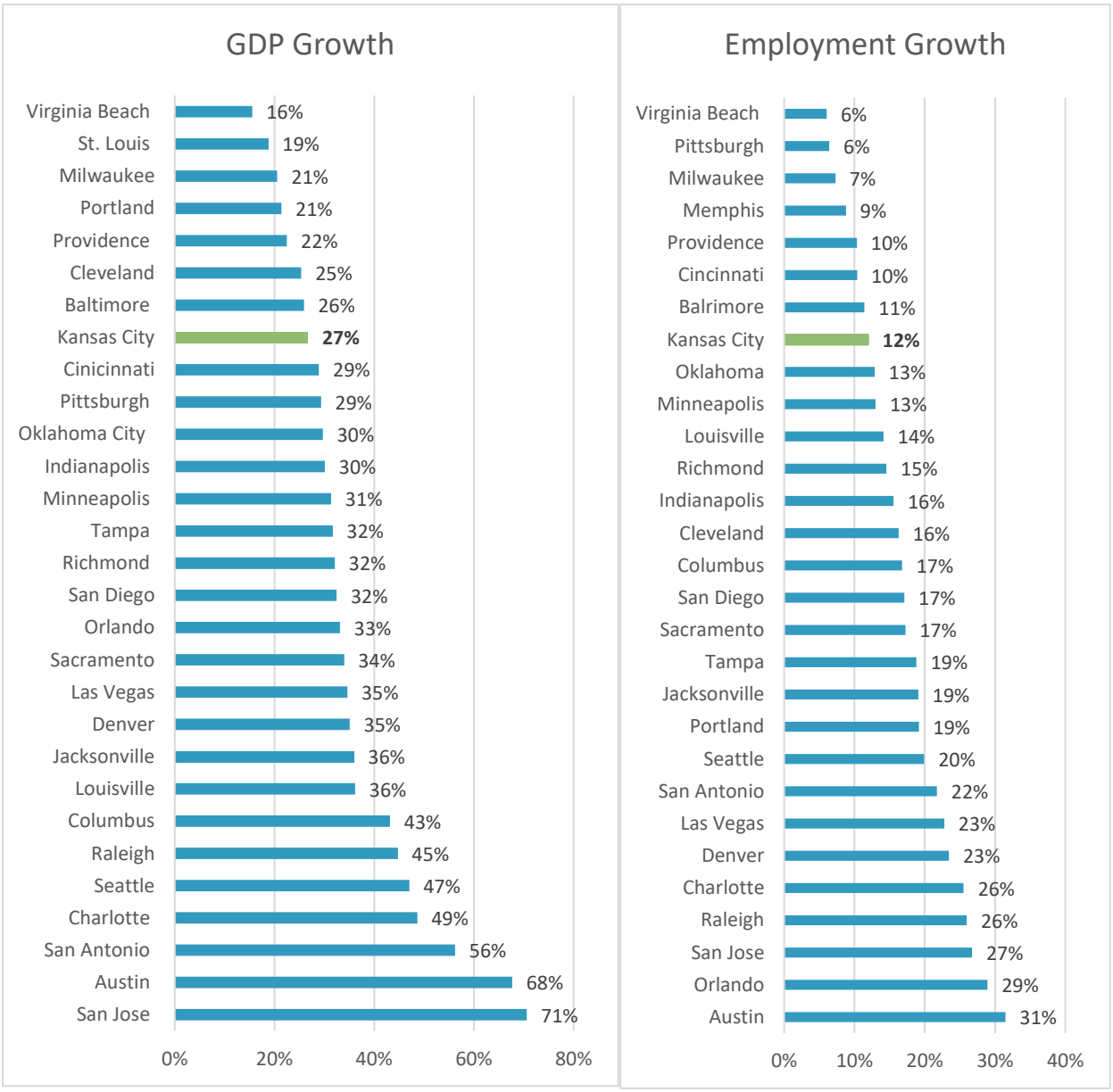
2.5 Kansas City Regional Economy

The 2015 Plan update used data and graphics from the *Prosperity at a Crossroads* report created by the Brookings Institution and the Mid-America Regional Council in 2014 to analyze the Kansas City area economy. The report analyzed the region's economic progression after the Great Recession. *Prosperity at a Crossroads* is not a recurring report. However, each year KC Rising measures Kansas City's progress against peer metro areas. The KC Rising initiative is sponsored by the Civic Council of Greater Kansas City, KC Chamber, the Mid-America Regional Council and the Kansas City Area Development Council. Peer metro areas were decided by KC Rising, as the 15 metros immediately larger and immediately smaller than Kansas City by population. To analyze the planning area economy for this Plan, information and data from KC Rising metrics and the Bureau of Economic Analysis were used. **Figure 2.43** uses data from the Bureau of Economic Analysis, to analyze the change in jobs, wages, and gross domestic product (GDP) over periods of time. In the period of 2010 to 2017, Kansas City's regional economy grew slower than the average rate of the United States. While growth rates were behind the national averages, Kansas City followed these growth trends very closely.



Source: Bureau of Economic Analysis

Figure 2.43: Growth in GDP, Jabs, and Wages

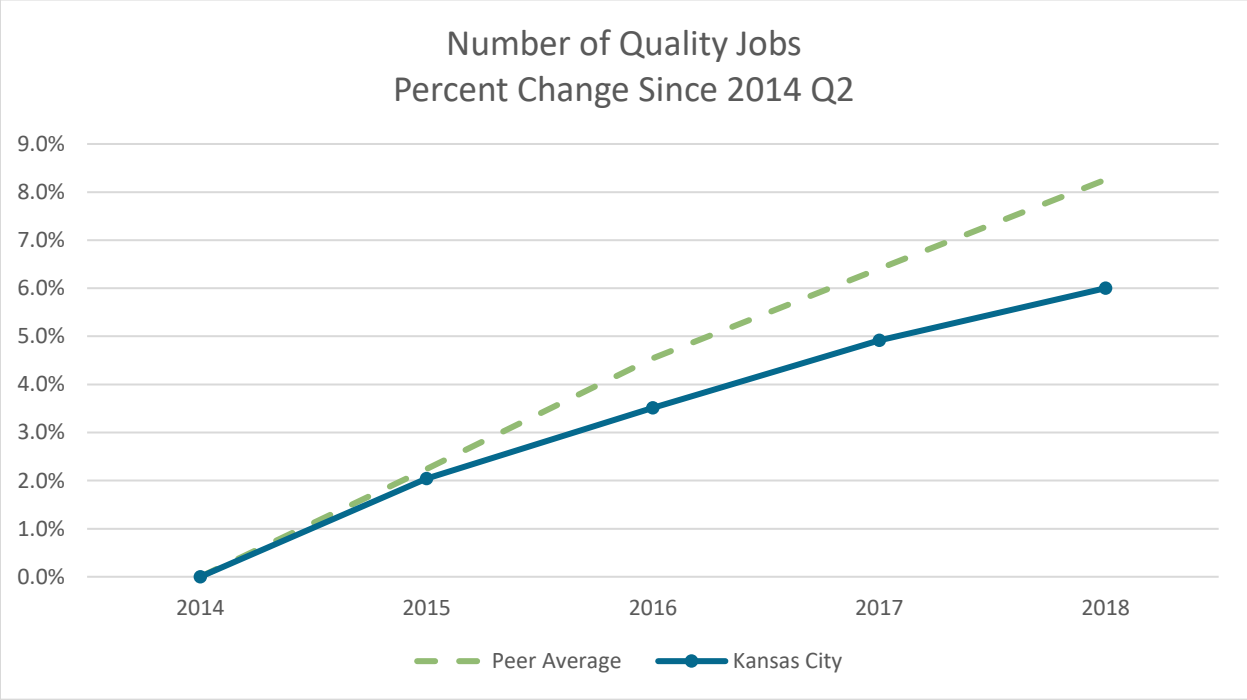


Source: Bureau of Economic Analysis; Prepared by MARC

Figure 2.44: Kansas City Compared to the Peer Metro Areas - Percent Change from 2010-2017

Figure 2.44 shows the percent change in GDP and employment in each peer metro area. The Kansas City region's GDP has increased by 27 percent from 2010 to 2017, yet it remains behind the peer metro growth average of 34 percent. Similarly, Kansas City had an employment growth rate percentage at 12 percent and the peer metro average is 15 percent.

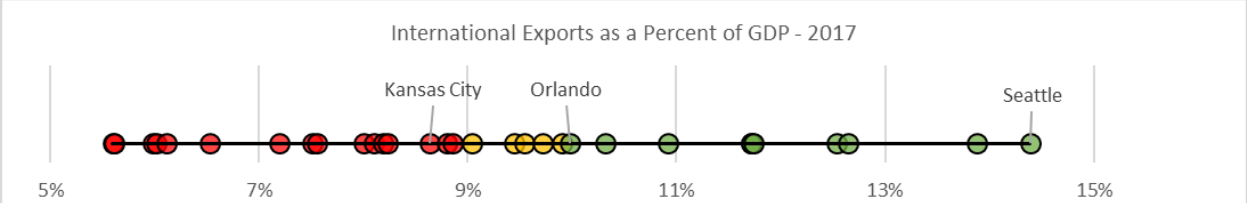
Figure 2.45 shows Kansas City ranked as 13th among the peer metros in the number of "Quality Jobs" available in the region. Quality jobs are characterized as occupations that require at least a postsecondary degree or certification or pay more than the U.S. median earnings of $21.05 an hour, or $43,784 per year.[i] Kansas City's quality job growth in 2017 was only 6.0 percent compared to a much higher average, 8.3 percent by peer metros.[ii]



Source: KC Rising Metrics

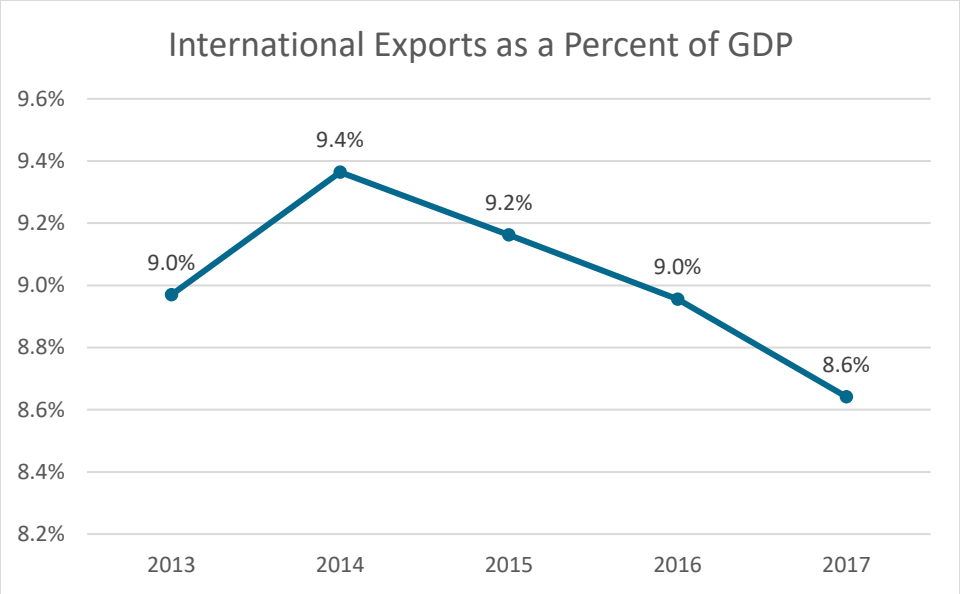
Figure 2.45: Kansas City Compared to Peer Metro Average in Quality Jobs - Percent

One reason for the region's recently sagging economic performance relative to peers and the rest of the U.S. has been its lackluster exports. Regional economies thrive when they produce goods and services of value for the rest of the world outside their borders. However, metropolitan Kansas City's net exports – i.e., the value of what it exports minus the cost of what it imports – has been declining as a share of the region's overall economic output **(**Source: MARC, KC Rising metrics), as measured by its contribution to Gross Domestic Product (GDP). This drop has been particularly rapid since 2014. In relation to the peer metros, from 2016 to 2017, the Kansas City region went from 15th to 18th in International Exports.



Sources: KC Rising, Trade-Strategies

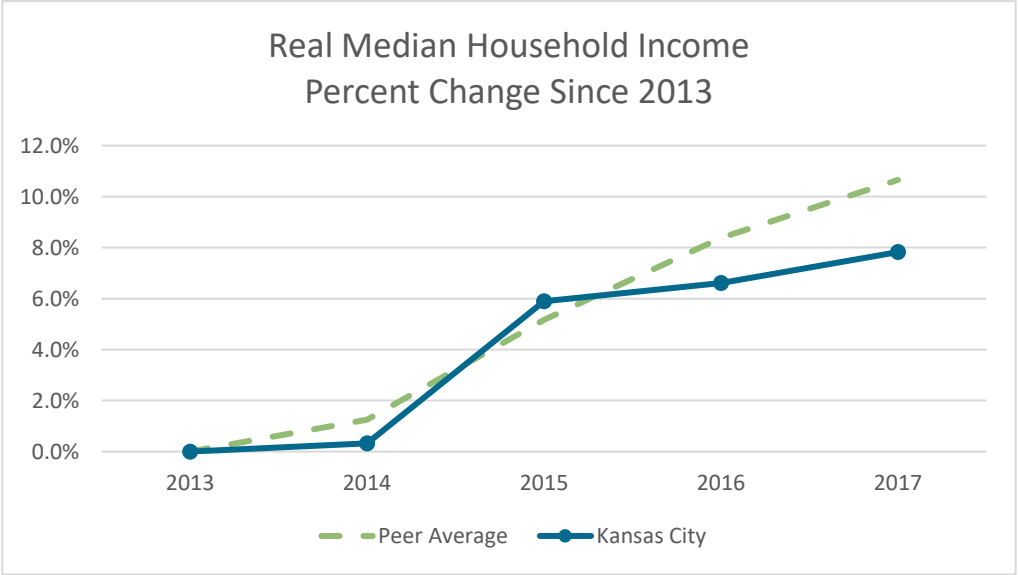
Figure 2.46: International Exports as a Percent of GDP, 2017



Source: KC Rising

Figure 2.47. International Exports as a Percent of GDP

Figure 2.48 shows the percent change in the median household income for Kansas City each year over a four-year period, 2013-2017. The Real Median Household Income was $58,804 in 2013 and $63,404 in 2017. The Kansas City area is not progressing as fast as the peer metro average incomes of $59,651 in 2013 and $66,006 in 2017. The 2015 Plan mentioned concerns about real incomes declining faster here than elsewhere. Unfortunately, years after the economic crisis, Kansas City continues to lag other peer metros in terms of growth in real median household income.



Source: KC Rising

Figure 2.48: Greater Kansas City's Real Median Household Income Percent Change, 2013-2017

2.5.1 Planning Area Economy

Jackson County comprises two-thirds the Planning Area economy, with over 475,000 jobs of its total job count of just over three-quarters of a million. Clay and Platte counties form the next largest portion of the Planning Area economy with about one-quarter of its jobs, combined. Clay County's 140,000 jobs account for 19 percent of the area job total, while Platte County's 63,000 jobs contribute another 9 percent. The remaining 7 percent of the Planning Area's jobs are mostly in Cass County, with Ray County contributing one percent. (Source: BEA)

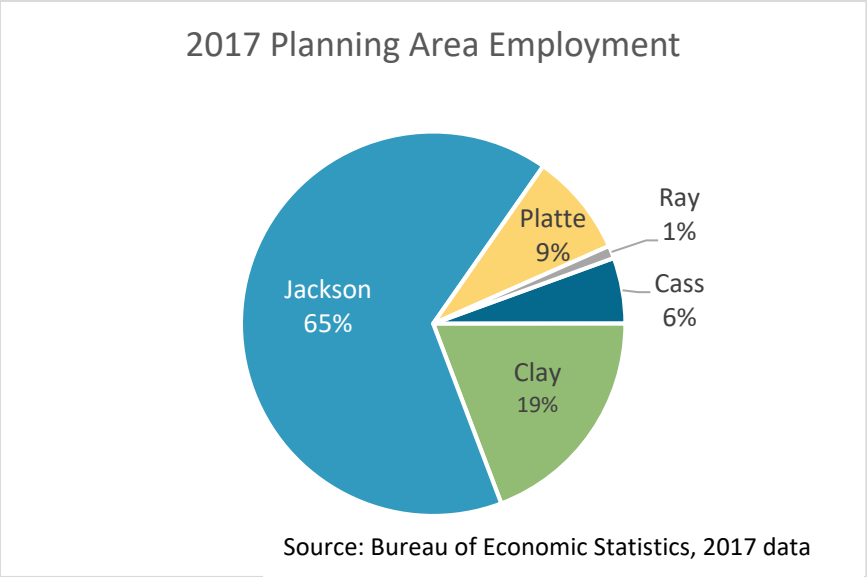
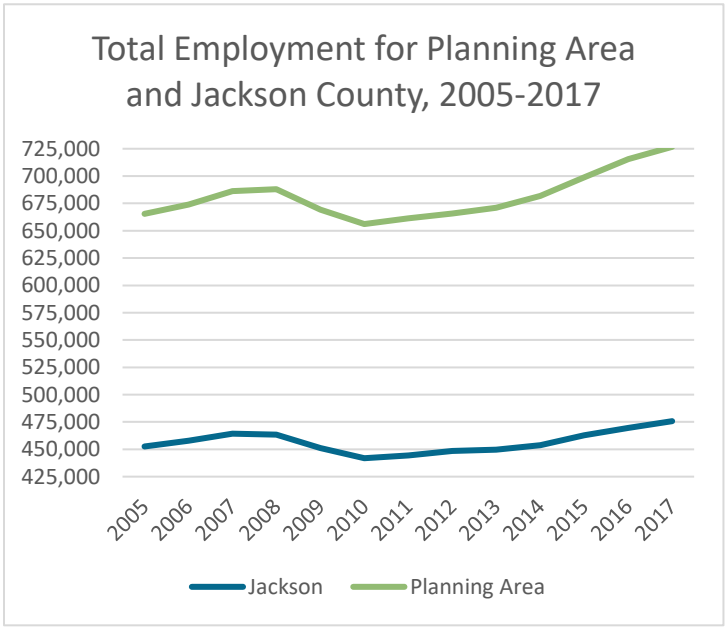


Figure 2.49: Planning Area Employment, 2017

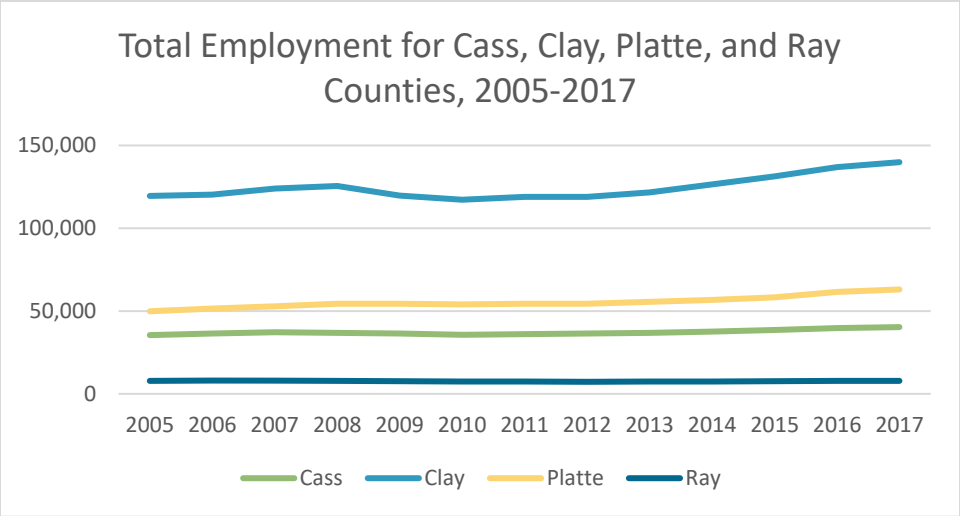
The 2015 Plan update characterized the Planning area as struggling to regain the jobs lost because of the Great Recession. During that period, 2008- 2011, employment declined by some 32,000 jobs. Since the last plan update, the planning area has gained about 45,000 jobs in the three years, 2014-2017.



Source: Bureau of Economic Analysis

Figure 2.50: Total Employment for Planning Area and Jackson County, 2005-2017

During the Great Recession, more than 90 percent of the job loss occurred in Jackson County, which saw an employment decline of 30,000 during the 2008-2011 period. With 2017 data from the Bureau of Economic Analysis, all counties in the planning area have recovered to the pre-recession employment numbers or higher, except for Ray County.



Source: Bureau of Economic Analysis.

Figure 2.51: Total Employment for Cass, Clay, Platte, and Ray Counties, 2005-2017

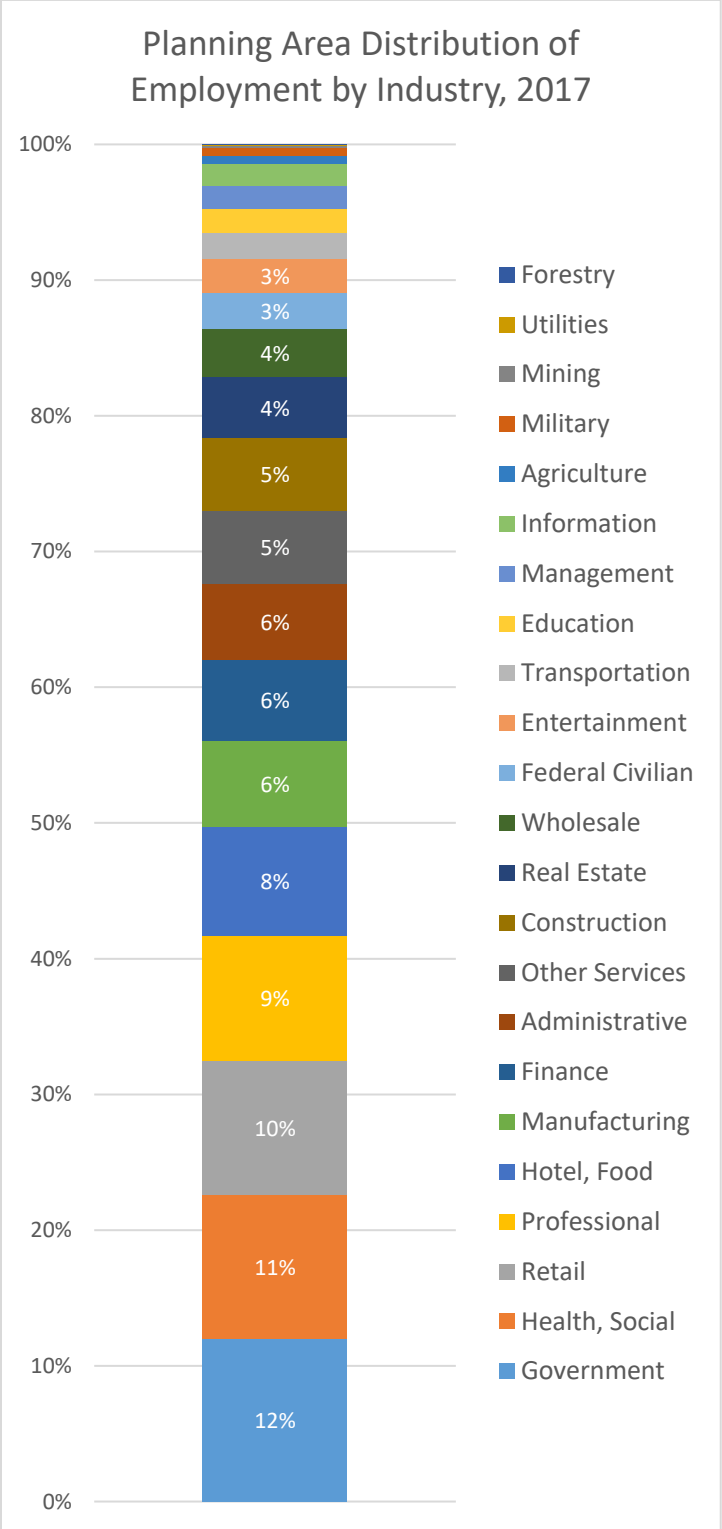
2.5.2 Employment by Industry

Government is the largest industry in the Planning Area, compromising 12 percent of its total employment. The vast majority of government is local government, and within that sub-sector, public schools make up the largest component.

The next largest industry is health and social services, with 11 percent of the area's employment, followed by retail and the professional services industry with 10 percent and nine percent of the planning area's overall employment.

The accommodations and food services industries are next with eight percent. Retail, hotel and food workers tend to have wages that are lower than average. The next three largest industries, however—manufacturing, finance and insurance, and administrative —employ people making above average wages. Manufacturing accounts for about six percent of the jobs in the planning area, finance and insurance accounts for six percent, and administration accounts for six percent of the planning area as well. (Source: EMSI 2017**)**

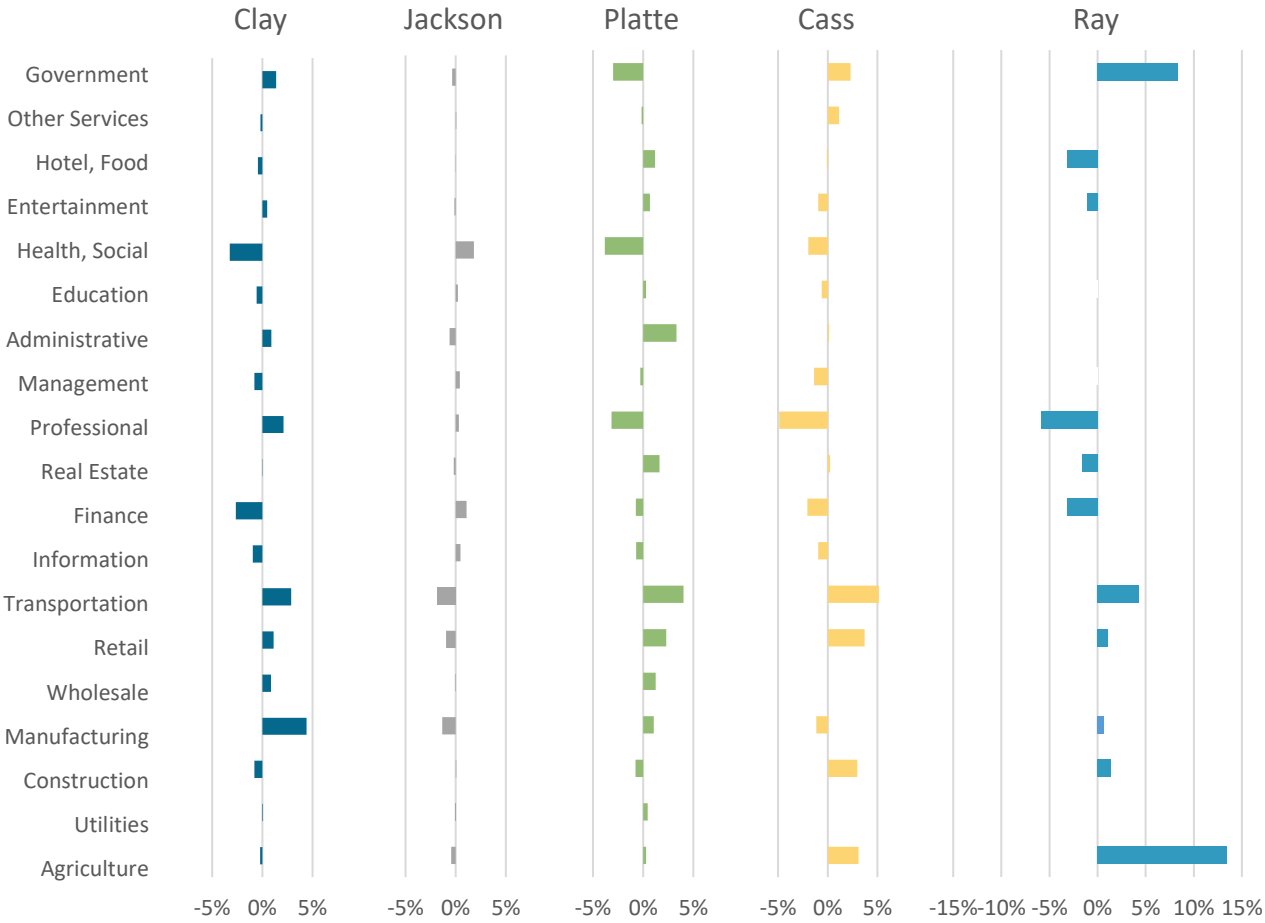
Different counties specialize in different industries, however, so it is useful to compare their distribution of employment with the Planning Area overall.



Source: Economic Modeling Specialists International (EMSI), 2017.

Figure 2.52: Planning Area Distribution of Employment by Industry

See Figure 2.53: Difference between County and Planning Area Percent Distributions of Employment by Industry 2017 below for county comparisons. Industries in certain counties are not shown to avoid disclosure of confidential information; however, the estimates are included in higher-level totals (Bureau of Economic Analysis).



Source: Bureau of Economic Analysis

Figure 2.53: Difference between County and Planning Area Percent Distributions of Employment by Industry, 2017

Because Jackson County makes up two-thirds of the planning area economy, each industry category shows little deviation from the planning area average. Still, Jackson County does specialize in Health and Finance when compared to the other counties.

Cass, being more rural, specializes in agriculture and transportation compared the area average. It also has a higher concentration of government and retail trade employment.

Clay County specializes in manufacturing and transportation, in part due to the presence of Ford, as well as professional services, largely due to the presence of Cerner's headquarters.

Platte County has a more diverse employment base. Due to the presence of KCI airport, there is a concentration of hotel and food employment and wholesale trade along the I-29 corridor. A large proportion of the office space near the airport is being used as satellite campuses for post-secondary

institutions, resulting in a concentration of education and administrative support employment as well. It has also become a center for retail trade. Finally, some manufacturers have found the airport location to be advantageous, creating a concentration in that sector. Platte County has a significantly lower percentage than average for the planning area in the number of government, health and professional services' jobs.

Unlike the other counties that show values between +/- 5, Ray County shows values between +/- 15. Its economy differs the most from the Planning Area average because it is the most rural. As a result, it specializes in Agriculture, contributing over 13 percent more than the planning area average. In contrast, its second largest concentration of employment is found in the government sector.

2.5.3 Employment location

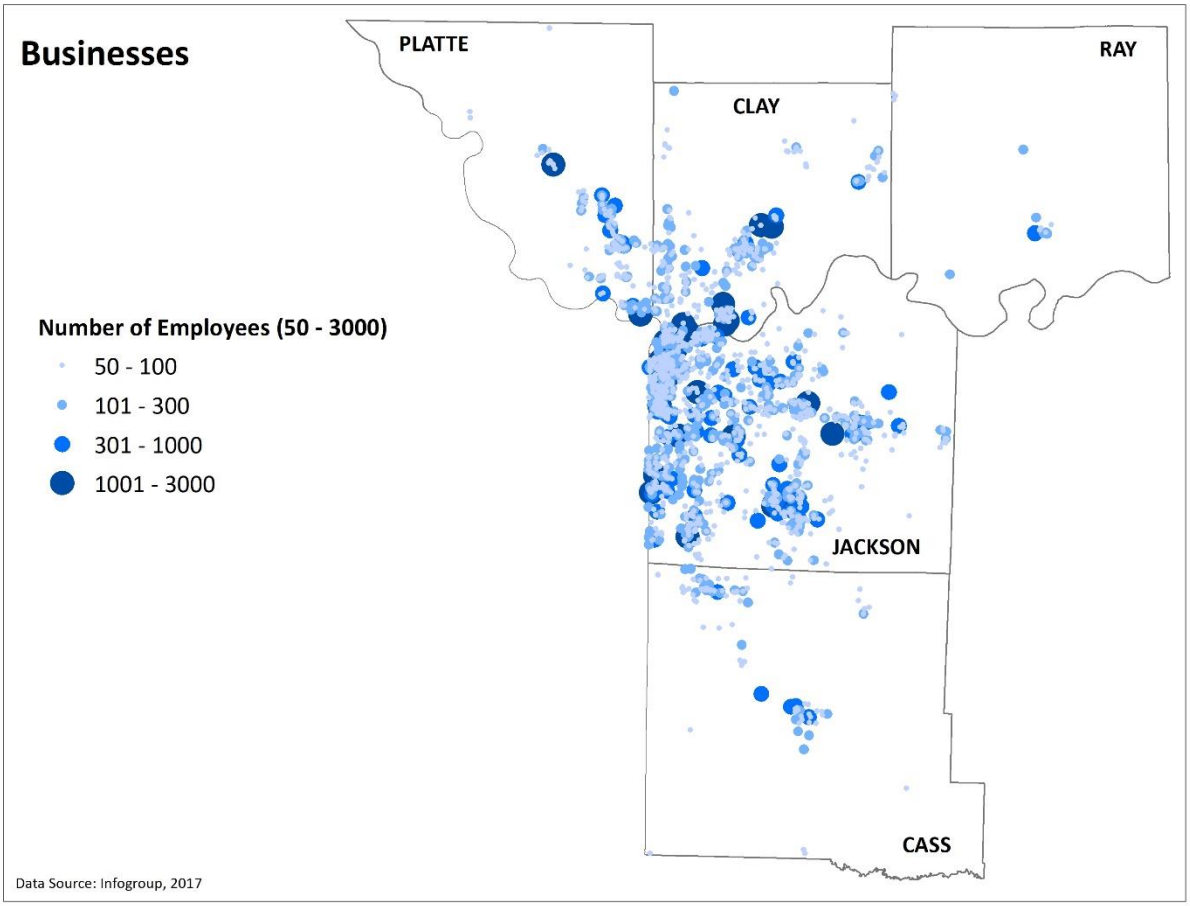


Figure 2.54: Areas of Business by Number of Employees

Businesses tend to locate where there is a combination of high demand in terms of population and income and good access to a talented workforce. As a result, businesses tend to cluster along major roadway facilities in areas with significant population density. Exceptions are industrial and warehouse facilities, where access to large tracts of land with good rail access is more important than access to population.

Shopping centers locate near major arterials and highway interchanges to maximize their access to the biggest possible consumer market. This is especially apparent when examining some of the Planning area's largest shopping areas (See Figure 2.55: Area Shopping Centers.). For example, Independence Center, with 1.4 million square feet of space, is located at the intersection of I-70 and U.S. 291. Zona Rosa, Tiffany Springs Market Center, and Boardwalk Square all sit at in different quadrants of the I-29/M-152 Interchange while Barry Towne is near the intersection of U.S. 169 and M-152 in Clay County, and Summit Fair and Summit Woods Crossing in Lee's Summit are located at the intersection of I-470 and U.S. 50.

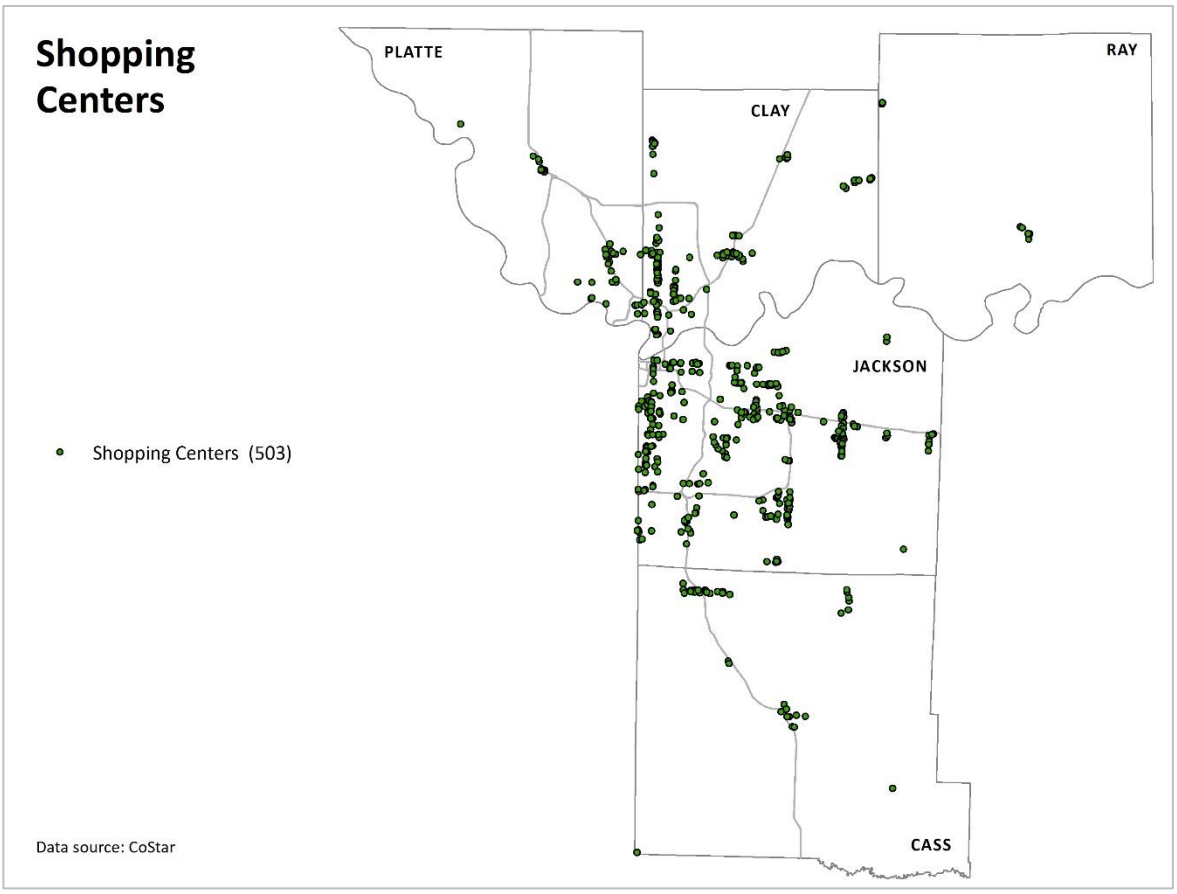
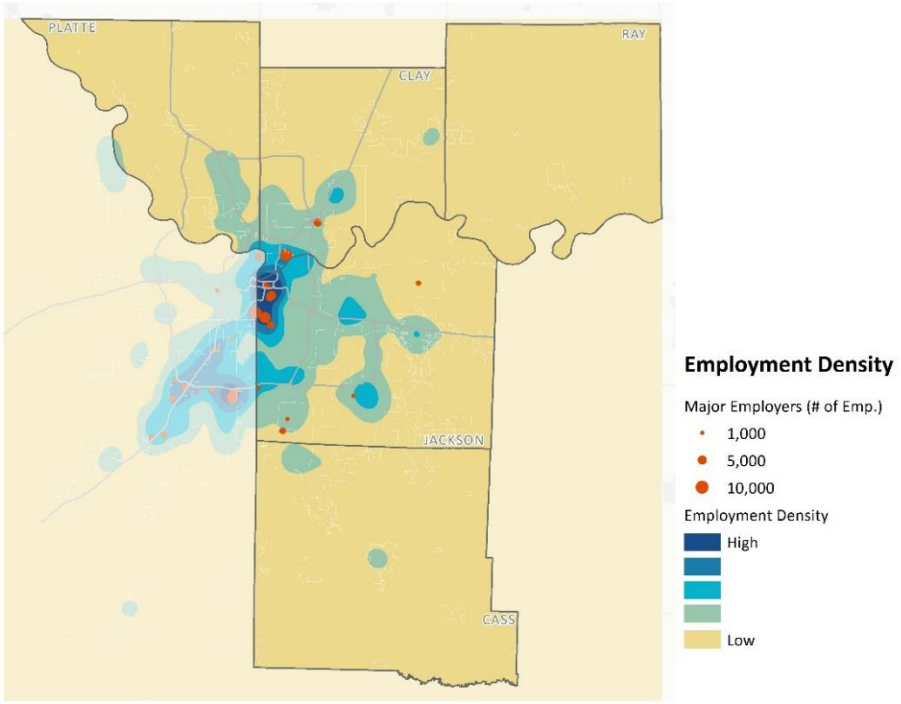


Figure 2.55: Area Shopping Centers

The nation's oldest shopping center, and still one of the region's most successful, the Country Club Plaza, is located along Ward Parkway near Broadway and Main, all principal arterials. It anchors the south end of the region's densest cluster of employment, which stretches from the River Market area, through Downtown, the Crossroads and Crown Center to the Plaza.

Downtown has seen a remarkable economic turnaround, with the opening of the Sprint Center and Power and Light District in 2007. Considerable conversions of older buildings to loft spaces and significant new multifamily and hotel construction is occurring throughout the downtown from the City Market through the Crossroads area, especially along the KC Streetcar line that opened in 2016. Due to overwhelming success of the first phase of the transit system, planning is underway for an extension from Union Station/Crown Center to the Country Club Plaza and University of Missouri-Kansas City. Additionally, a new 800-room convention hotel mentioned in the last plan will be opening in Spring 2020.

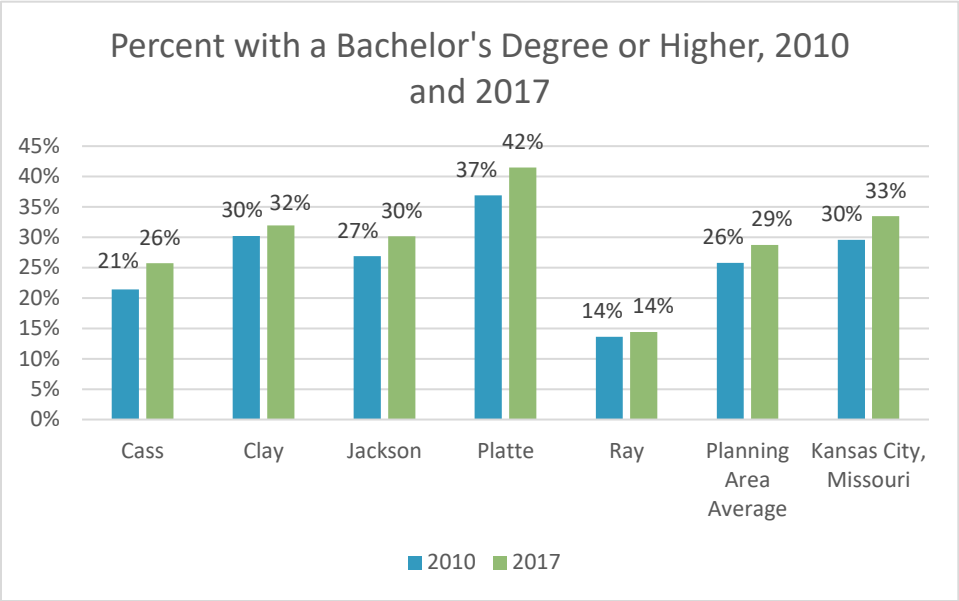
Major employers located principally or headquartered in the planning area include Cerner and North Kansas City Hospital in Clay County; HCA Midwest Health System, Saint Luke's and Children's Mercy Hospitals, Hallmark Cards, DST (State Street), Truman Medical Centers, Honeywell, Burns & McDonnell, and Commerce and UMB Banks in Jackson County; and Farmland and Citi Cards in Platte County. Several plant closings, including the Harley-Davidson plant in Platte County, will impact employment. (MARC)



Source: Census Bureau, Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES), 2011

Figure 2.56: Area Employment Density

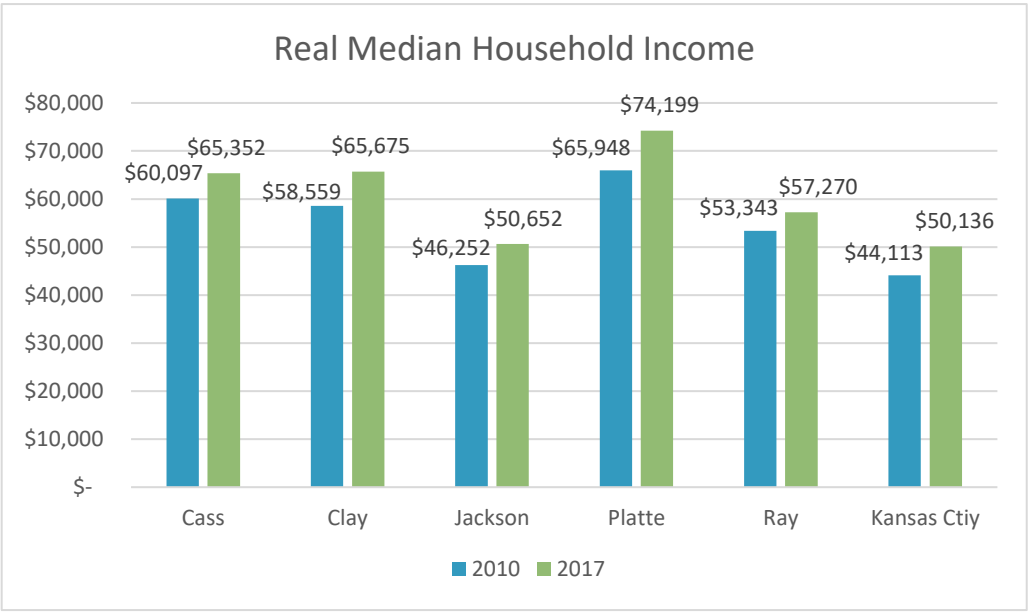
2.5.4 Education & Income



Source: 2010 Census and American Community Survey, 5-year data, 2013-2017

Figure 2.57: Bachelor's Degree or Higher, 2010 and 2017 (%)

In recent years, all counties in the planning area have seen significant increases in adult educational attainment, as measured by the percentage of their residents 25 years and older who have earned a bachelor's degree or higher. The planning area saw a three percent increase in the overall educational attainment average between 2010 and 2017. It was led by Platte County, whose residents' attainment of a bachelor's degree increased five percentage points over the period, to 42 percent. Clay County has the second highest average level of educational attainment in the planning area, with 32 percent of its residents earning at least a bachelor's degree. In the 2010-2017 period, Ray County has increased the slowest, at 0.08 percent. **(Figure 2.57)**



Source: 2010 Census and 2017 American Community Survey, 5-year data

Figure 2.58: Real Median Household Income

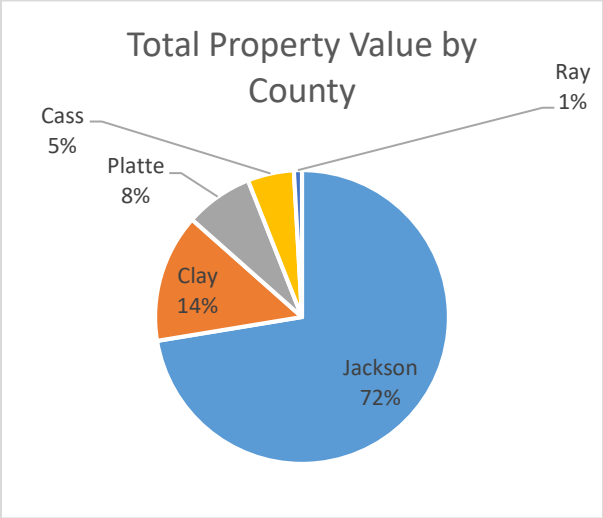
Like educational attainment, the real median household income increased in every county in the planning area. The real median household income annual income of the household right in the middle – half the area's households earn more, and half earn less.[iii] Real incomes are those after adjusting for inflation and so

measure the purchasing power of households. The data in 2010 and 2017 is based on inflation adjusted dollars for that year. Because the consumer price index increased 13 percent in the Kansas City metropolitan area over this period[iv], nominal incomes would have needed to increase 13 percent simply to keep up. Unfortunately, none of the planning area counties were able to increase their incomes by 13 percent. Platte County was the closest, needing a little over $300 more to reach an increase of 13 percent.

Platte County has the highest median household income of all planning area counties with $74,199 in 2017. Households residing in Clay and Cass counties have the next highest incomes, with their median households earning around $65,000. Jackson County has the lowest median household income of any county in the planning area, at $50,652. This is largely due to the concentrated poverty in the city of Kansas City, which itself has a median household income of $50,136.

2.6 Property Value

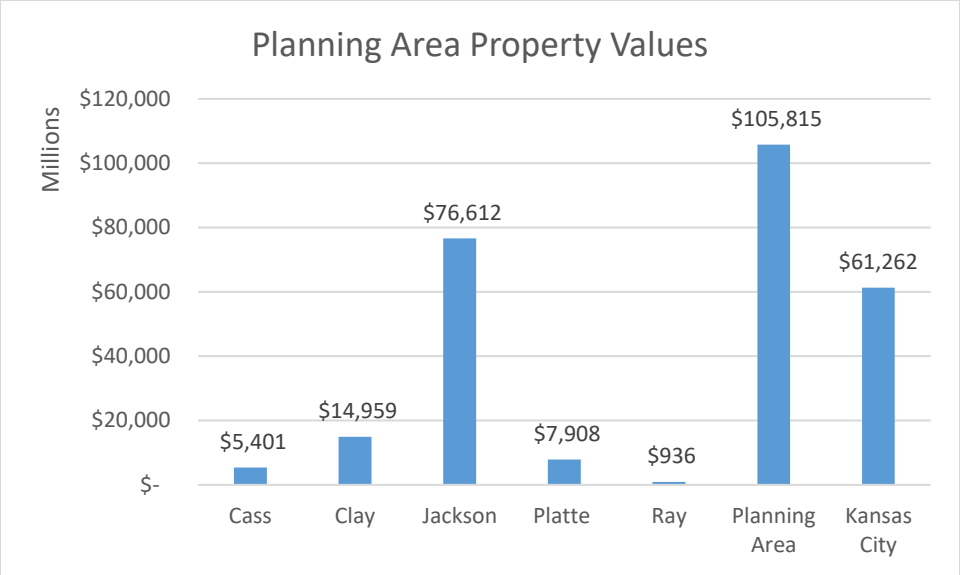
Despite having the lowest household incomes among the counties in the planning area, Jackson County contains a significant majority of real estate value due to its relative size and its function as an employment center. Jackson County is home to 60 percent of the planning area's population, and 72 percent of its property value, approximately the same as its percentage of the planning area employment. Clay County contains 14 percent of the real estate property value in the planning area and Platte County contains eight percent, both of which are also about the same as their share of the area's employment. (See Figure 2.59)



Source: County Assessors, 2012

Figure 2.59: Total Property Value by County

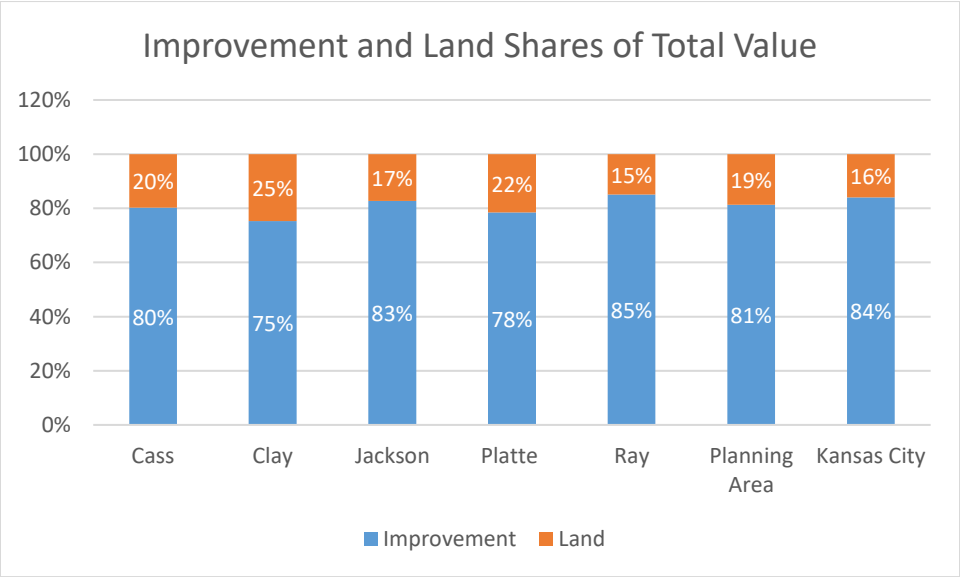
The total value of real estate property in the planning area in 2012 was approximately $105.8 billion. Jackson County accounted for $76.6 billion of that, followed by Clay with $15.0 billion, Platte with $7.9 billion, Cass with $5.4 billion, and Ray with $0.9 billion. The city of Kansas City alone accounted for over half (58 percent) of the property value in the planning area with $61.3 billion. **(See Figure 2.60: Planning Area Property)**



Source: County Assessors, 2012

Figure 2.60: Planning Area Property Values

Improvements, principally buildings, comprise 81 percent of the total property value in the planning area, with land value accounting for the remaining 19 percent. These shares are remarkably stable across the counties in the area. Land's share of total property value ranges from a low of 15 percent in Ray County to a high of 25 percent in Clay County. **(Figure 2.61)**



Source: County Assessors, 2012

Figure 2.61: Improvement and Land Shares of Total Property Value

Table 2.9: Improvement, Land, and Total Property Value			
County/Area	**Improvement**	**Land**	**Total**
Cass	$ 4,331,361,133	$ 1,069,542,390	$ 5,400,903,523
Clay	$ 11,264,257,389	$ 3,694,354,650	$ 14,958,612,039
Jackson	$ 63,397,277,836	$ 13,214,964,272	$ 76,612,242,108
Platte	$ 6,200,789,371	$ 1,706,797,920	$ 7,907,587,291
Ray	$ 796,236,331	$ 139,604,114	$ 935,840,445
Planning Area	**$ 85,989,922,060**	**$ 19,825,263,346**	**$ 105,815,185,406**
Kansas City	$ 51,463,280,508	$ 9,798,273,172	$ 61,261,553,680
Source: County Assessor, 2012			

2.7 Critical Infrastructure

2.7.1 Transportation

The Kansas City region, a major transportation hub, sits at the intersection of four interstate highways — Interstates 70, 35, 29 and 49 — which connect the region to both coasts, Canada and Mexico. In addition, the region is served by numerous interstate beltways, U.S., and state highways.

Major trucking companies, including YRC Freight, operate out of the Kansas City area. Air transportation, including considerable air freight operations and general aviation activity, is served by Kansas City International Airport and a number of smaller airports. Kansas City is the second busiest railroad center in the nation, with major rail yards for Union Pacific, Burlington Northern, and Canadian Pacific. The region is also served by barge transportation, with about a dozen regulated barge lines transporting goods through the metropolitan area on the Missouri River (MARC Transportation Plan).

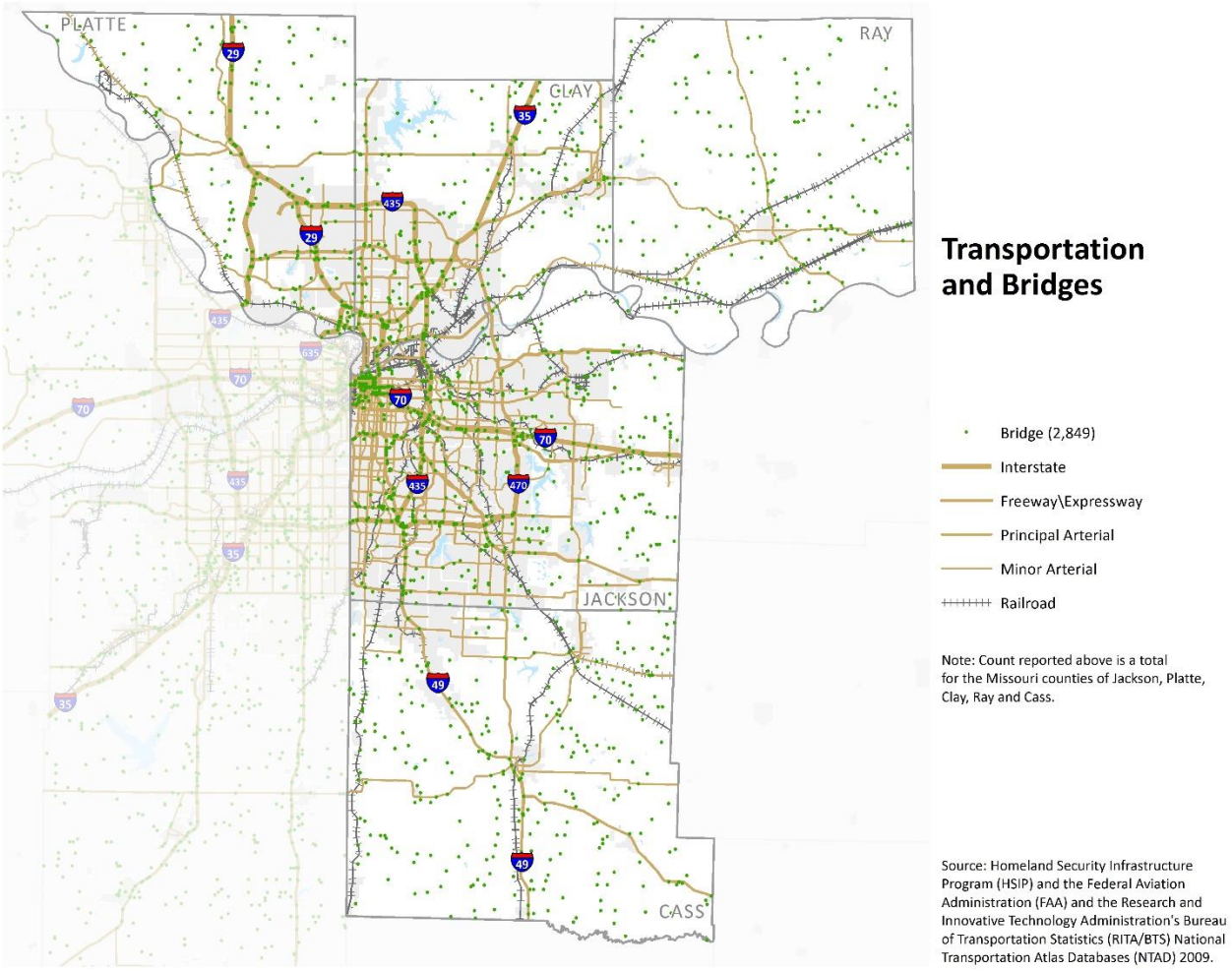
2.7.2 Roadway System Infrastructure

Kansas City's system of roadways is among the most extensive in the nation. According to Federal Highway Administration statistics, the Kansas City region has the most freeway miles per person of all urbanized areas with populations greater than 500,000. The Kansas City metro area also has the fourth highest total roadway miles per person and the eleventh highest daily vehicle miles traveled (DMVT) per capita. [v]

These rankings are due in large part to the extensive highway projects implemented in the Kansas City region during the 1970s and 1980s, such as the construction of the Interstate 435 loop. **Table 2.10** shows the functional class miles for major freeways and roadways in the Kansas City Area. Data was collected by the MARC transportation department, no data reported for Ray County.

Table 2.10: Transportation Facilities by Functional Class Miles					
Roadway Type	**Cass**	**Clay**	**Jackson**	**Platte**	**Planning Area**
Interstate	60	93	177	99	429
Freeway / Expressway	0	109	119	25	254
Principal Arterial	49	60	189	34	332
Minor Arterial	100	145	507	90	842
Major Collector	249	197	310	160	915
Minor Collector	45	11	2	8	66
Total	**503**	**616**	**1,305**	**415**	**2,839**

Source: MARC



Source: Homeland Security Infrastructure Program, Research and Innovative Technology Administration's Bureau of Transportation Statistics (RITA/BTS), MARC

Figure 2.62: Planning Area Major Roads, Bridges, and Rail Lines

2.7.3 Roadway System Condition

According to The Road Information Program's (TRIP) report *Missouri Transportation by the Numbers: meeting the State's Need for Safe, Smooth, and Efficient Mobility*, one-third of the nation's major urban roads are rated in poor condition.[vi] In the 2018 report, Kansas City's average pavement conditions showed significant increase in the percentage of roads with "poor" conditions in comparison to the 2013 Bumpy Roads Ahead research report.

In the 2013, only 15 percent of Kansas City's roads were classified as "poor" pavement conditions. In 2018, 26 percent of the roads were classified as "poor". The report found 27 percent of the Kansas City region's roads to be in mediocre condition; 17 percent fair; and 30 percent good.[vii] The Bumpy Road Ahead report also breaks down the hidden costs of deficient roads. In Kansas City, drivers should expect to pay $667 in additional vehicle operating cost, $334 in traffic crashes, and $988 in lost time and wasted fuel due to congestion.[viii] TRIP's report uses FHWA data for its analysis.

2.7.4 Bicycle/Pedestrian Trails

Bicycle and pedestrian trails in the Kansas City metropolitan area are being developed at an increasing rate as local communities hear from their residents about desires for safe facilities to walk and bicycle. Many of the local trail facilities are part of MetroGreen®, a plan for a 1,100-mile, area-wide, interconnected system of public and private open spaces, greenways and trails that will link seven counties in the Kansas City metropolitan area. Error! Reference source not found. MARC's Long-Range T ransportation Plan shows Bicycle and Pedestrian Trails and on-road facilities in the MARC area (Cass, Clay, Jackson, Johnson, Leavenworth, Miami, Platte, Ray, Wyandotte) and the Hazard Mitigation planning area (Cass, Clay, Jackson, Platte, Ray). Category *Cycle Track* has been added since the last Plan update. *The Share-the-Road Bikeways* category has also changed. The mile values are significantly less than the 2015 Plan values due to changing paths. Some paths are designations with no signs, or the paths have moved into bike routes or bike lanes. Additionally, many communities in the region have adopted local plans for both on-road and off-road facilities.

Table 2.11: Bicycle and Pedestrian Trails (Miles)

	MARC Region	Planning Area
Bike Lanes	104.46	37.48
Cycle Track	0.89	0.89
Mountain Bike Trails	117.76	71.4
Walking/Hiking Trails	241.64	144.86
Bike Routes	220.43	220.43
Share-the-Road Bikeways	506.92	147.93
Paved Trails	755.09	397.24

Source: MARC

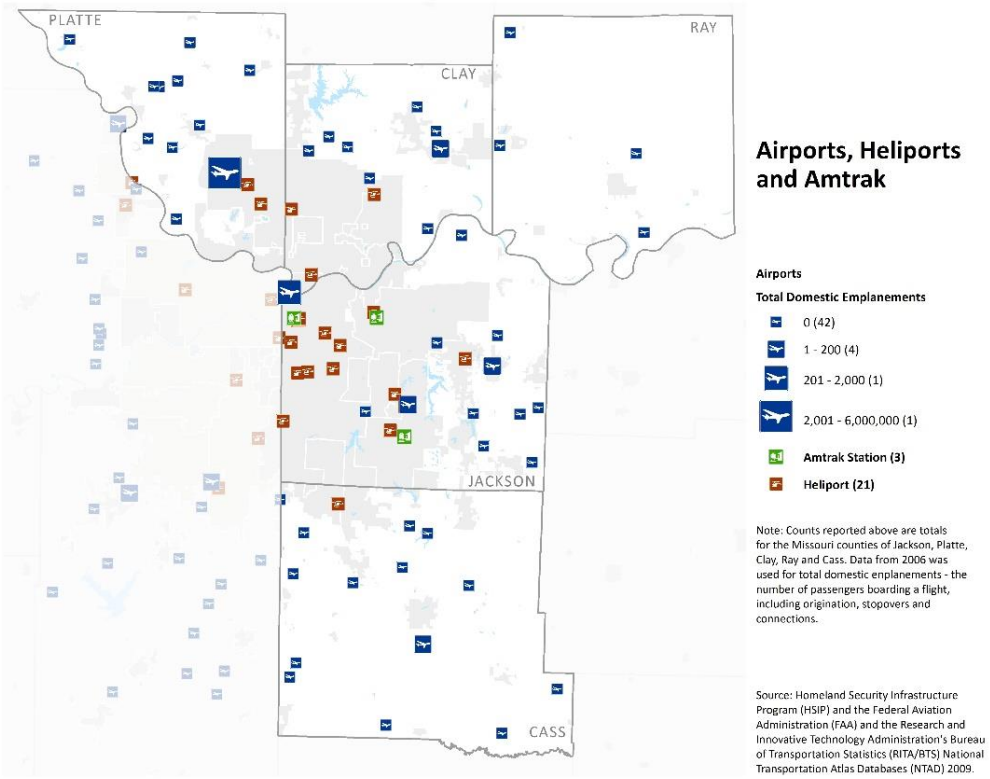
2.7.5 Freight and Goods Movement Facilities

Kansas City's rail system consists of five Class I railroads and several regional or short line carriers. The extensive rail network throughout the region serves local industry with major intermodal yards and provides connection to international markets. BNSF Railway's Transcontinental Route runs diagonally through the region from the southwest to the northeast. The "Transcon" connects the Ports of Los

Angeles and Long Beach to Chicago via Kansas City with 80 to 90 trains per day. The Union Pacific (UP) Railroad's major coal route runs east-west through the region from Topeka into Missouri where it parallels the Missouri River. This route carries upwards of 80 trains per day of loaded unit coal trains. (A unit train is typically one mile long.) Other significant routes in the region include Kansas City Southern (KCS) north-south route that connects to Mexico at Laredo, Texas and Norfolk Southern (NS) east-west route that ends in Kansas City. Canadian Pacific now serves Kansas City over the ICE route.

There are currently five intermodal yards in Kansas City. BNSF, KCS and NS each have one facility and UP has two facilities in the region. Along with intermodal activity there are numerous switching yards, classification yards, transload facilities and other rail operations that occur in the region. Kansas City Southern recently moved its intermodal operations to the former Richards Gebaur Airport site, which allows for more opportunities for complimentary development at the CenterPoint Intermodal Center – Kansas City. BNSF is moving its intermodal operations to Logistics Park KC in southern Johnson County, Kan., where significant warehouse space is also under development.

Kansas City International Airport (KCI) is home to the region's air cargo terminal, one of the highest-volume air freight hubs in the six-state region. KCI has plans to expand service capabilities and enhance the attractiveness of aviation facilities associated with manufacturing and industrial operations. An initial phase includes a 800-acre master planned site, the KCI Intermodal Business Centre, which could include more than 5 million square feet of distribution, air cargo and on-ramp, airport-related logistics buildings.



Source: Homeland Security Infrastructure Program, Federal Aviation Administration (FAA) Research and Innovative Technology Administration's Bureau of Transportation Statistics (RITA/BTS), National Transportation Atlas Databases (NTAD) 2009.

Figure 2.63: Airports, Heliports, and Amtrak

Other airports in the region with runways of sufficient length to support large aircraft for air cargo operations include Kansas City's Charles B. Wheeler downtown airport, and New Century Air Center in Johnson County (Source: MARC).

The Kansas City Port Authority operates the area's only public port, located along the Missouri River near the confluence of the Kansas and Missouri Rivers. The port is an intermodal facility, transferring freight between barge, truck, and rail. In addition, the Kansas City region benefits from numerous private ports, which are used by companies shipping commodities that include grains, sand and gravel, fertilizer, chemicals, coal and coke. Currently, river flows are managed by the U.S. Corps of Engineers' Missouri River Master Manual which limits the navigation season to approximately six months each year.

The Kansas City area is also one of the nation's top five trucking centers. Truck volumes in the region are heavily concentrated on interstates and U.S. highways. I-70 in Missouri is the most heavily traveled truck route in the region with some segments exceeding 12,000 trucks per day. The region's national freight corridors are estimated to carry approximately 70 percent of truck vehicle miles traveled **(**Center for Transportation Analysis), with historic trends indicating a high rate of growth which is likely to continue.

Table 2.12: Freight Weight in Tons

	KC Exports (Thousands)		% Change in Exports	KC Imports (Thousands)		% Change in Imports
	2012	2017		2012	2017	
Truck	33,119.79	35,737.96	8%	33,195.77	36,795	11%
Rail	6,963.91	8,381.86	20%	14,670.55	12,656	-14%
Water	0.95	0.17	-82%	76.89	52	-32%
Air (include truck-air)	28.33	15.39	-46%	16.28	11	-35%
Multiple Modes and Mail	1,376.72	1,353.84	-2%	1,731.73	1,810	5%
Pipeline	6,143.02	4,100.77	-33%	7,858.30	6,296	-20%
Other and Unknown	37.14	29.89	-20%	6.75	33	392%

Table 2.13: Monetary Value of Freight

	KC Exports (Millions of Dollars)		% Change in Exports	KC Imports (Millions of Dollars)		% Change in Imports
	2012	2017		2012	2017	
Truck	$ 50,019.46	$ 51,472.08	3%	$ 54,569.56	$ 58,126.34	7%
Rail	$ 2,917.54	$ 3,429.90	18%	$ 3,000.68	$ 3,134.03	4%
Water	$ 0.61	$ 0.06	-90%	$ 42.94	$ 29.15	-32%
Air (include truck-air)	$ 2,356.85	$ 1,444.06	-39%	$ 944.41	$ 800.12	-15%
Multiple Modes and Mail	$ 8,056.61	$ 7,477.80	-7%	$ 9,277.72	$ 8,985.33	-3%
Pipeline	$ 1,389.80	$ 927.78	-33%	$ 2,277.41	$ 1,840.14	-19%
Other and Unknown	$ 280.93	$ 415.96	48%	$ 62.79	$ 1,473.21	2246%

Source: Center for Transportation Analysis, Freight Analysis Framework Data Tabulation Tool (FAF4)

2.7.6 Transit Service

The five transit agencies in the Kansas City region — KCATA, Johnson County Transit, Unified Government Transit, IndeBus and the KC Streetcar — are working together to coordinate services, creating a seamless system from the rider's perspective. In October 2015, the agencies adopted the RideKC brand and create a single transit website for the entire region: RideKC.org. Since then, the agencies have coordinated in other ways as well:

- Created one regional fare ($1.50)1and standard monthly fare pass.
- Made the system free to ride for all qualified paratransit users.2
- Expanded the U-Pass program from serving only University of Missouri–Kansas City students to include Metropolitan Community College and Kansas City Art Institute students.3
- Made the RideKC system free for veterans.
- Began branding buses and bus stops with the RideKC colors and logo.
- Created a new RideKC system map.
- Initiated a route renumbering plan to make route numbers correspond geographically.

Fixed-route transit is made up of buses, streetcars and other vehicles that follow prescribed routes and stop at regular, scheduled intervals. There are currently 87 bus routes and one streetcar route in the RideKC system. Each fixed-route bus belongs to one of four network categories: Fast and Frequent, 30-Minute, Express, or Other Local.

Currently, there are six existing bus routes and a streetcar line that can be considered Fast and Frequent service. These are the two bus rapid transit (BRT) routes, Main and Troost MAX, the KC Streetcar and the following bus routes:

- 71 (which runs on Prospect and will be partially replaced by the Prospect MAX BRT route that will start operating in 2019)
- 39 (which runs on 39th Street)
- 31 (which runs on 31st Street)
- 24 (which runs on Independence Avenue)

(Source: MARC Smart Moves 3.0 Plan)

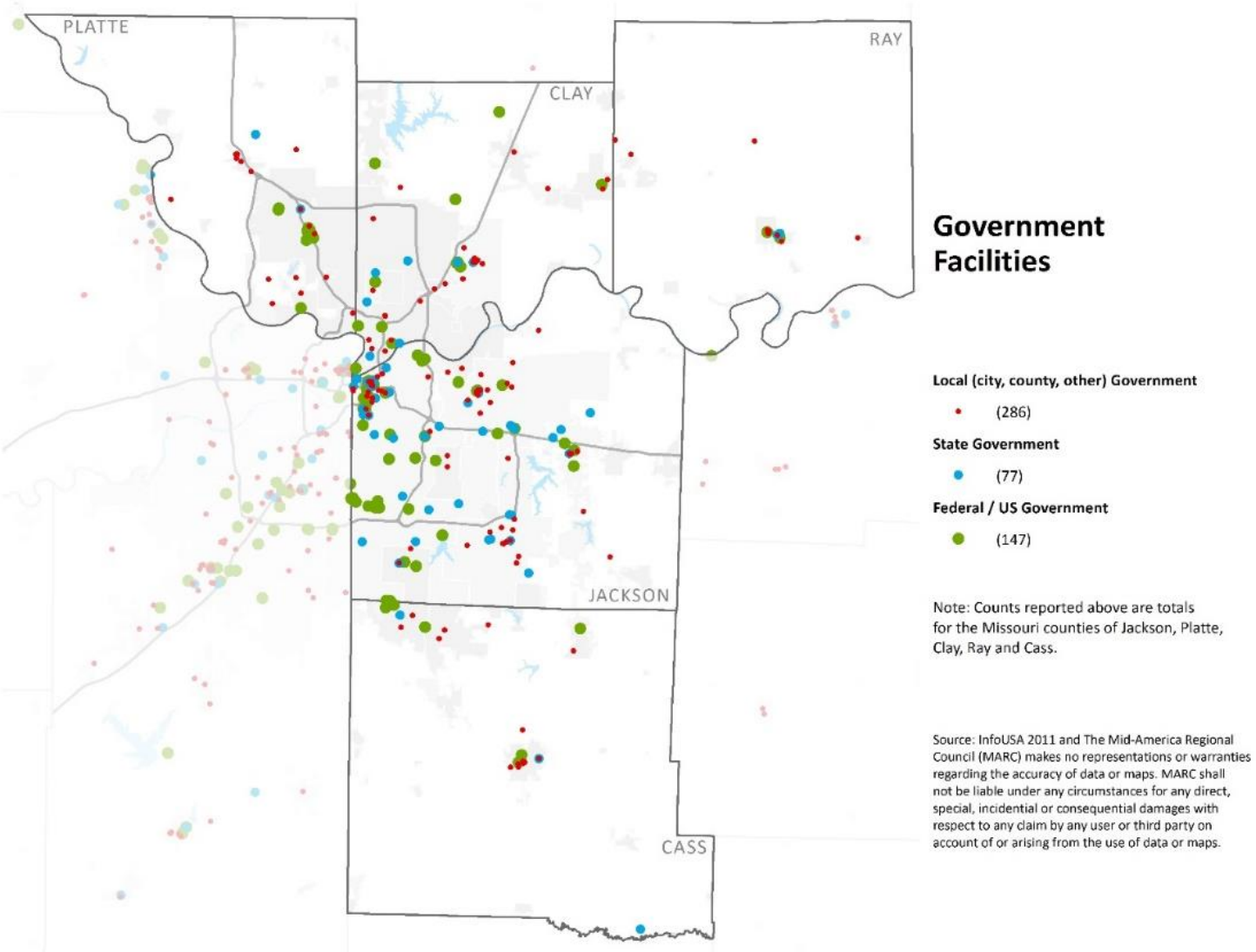
2.7.7 Other Critical Infrastructure

In addition to transportation infrastructure, other community facilities make up important components of the region's critical infrastructure. Some of these are critical to responding in times of emergencies, including the locations of first responders and medical centers. Others are places where large numbers of people typically congregate and therefore represent locations of high population vulnerability, such as schools, day care, nursing homes, apartments and public housing. Still others are locations where hazardous materials are stored.

The table below includes the number of each type of facility for each county in the Planning Area, as well as Kansas City. After the table, maps of the facilities follow compiled from city and county databases. Each color grouping in the table represents a different map. The maps of critical infrastructure provide important input into the assessment of risk and vulnerability for each hazard.

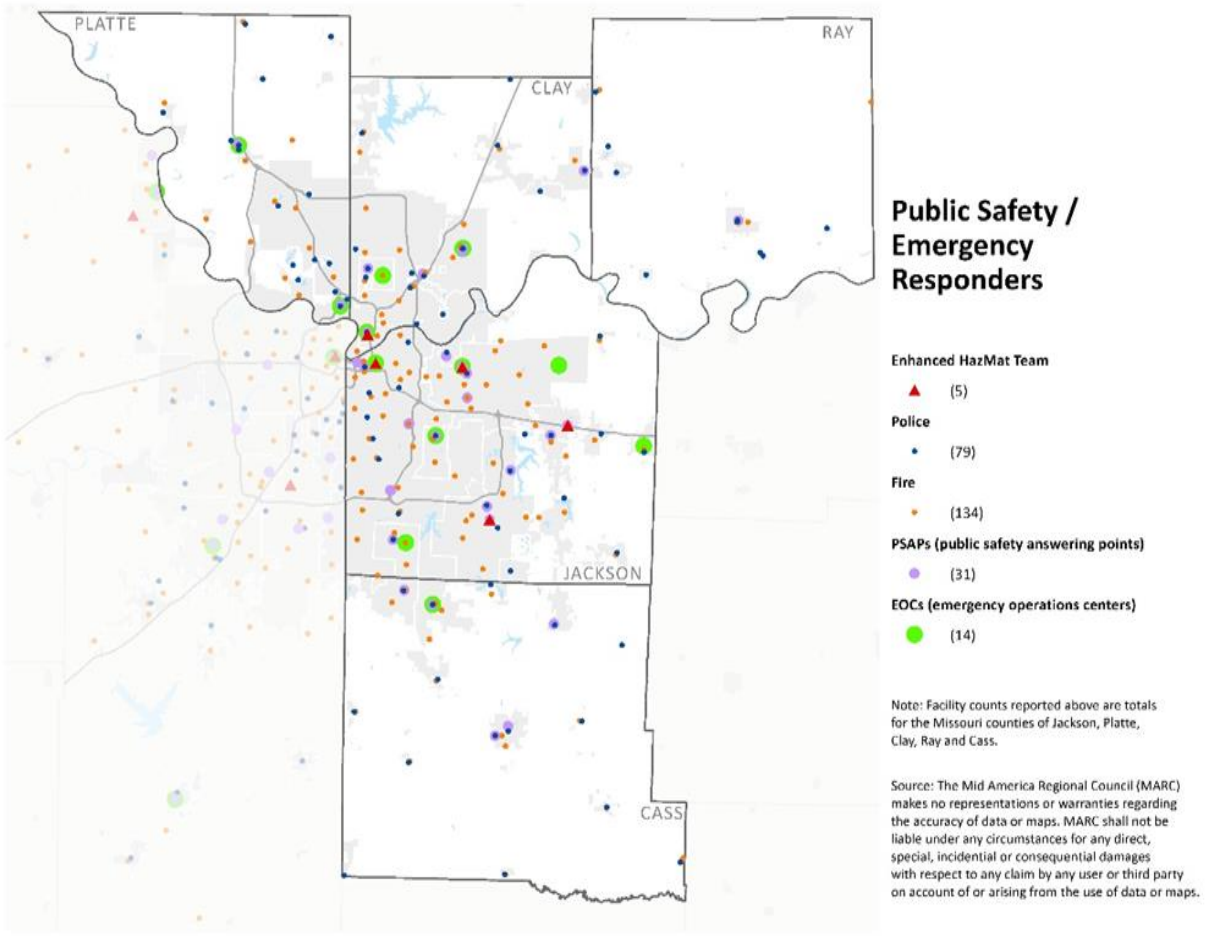
Table 2.14: Critical Facility Types							
Asset (critical facility)	**Cass**	**Clay**	**Jackson**	**Platte**	**Ray**	**Planning Area**	**Kansas City**
Day Care	49	92	331	29	6	**507**	231
Nursing Home	10	21	85	12	0	**128**	72
Public Housing	0	145	574	31	84	**834**	587
School	47	84	276	37	12	**456**	193
College	1	6	53	7	0	**67**	48
Hospital	2	6	17	1	1	**27**	15
Other Health Facility	23	41	153	14	7	**238**	98
Police	15	16	25	17	9	**82**	13
Fire	17	26	67	17	7	**134**	37
PSAP	5	6	15	2	1	**29**	5
Local (city, county, other) Government	13	12	13	13	6	**57**	1
Shopping Center	38	117	303	36	8	**502**	186
Grocery (large, small, farmers)	13	42	142	12	1	**210**	110
Airport	13	8	10	10	4	**45**	3
Amtrak	0	0	2	0	0	**2**	1
Heliport	1	3	15	2	0	**21**	14
Hotels	8	40	133	39	0	**220**	136
Apartments	51	192	1727	101	9	**2080**	1524
Trailer Parks	5	6	10	2	0	**23**	8
NFL stadium	0	0	1	0	0	**1**	1
MLB Stadium	0	0	1	0	0	**1**	1
Arena or Convention Center	0	0	3	0	0	**3**	2
Tier II	110	213	584	116	41	**1064**	451
RMP	6	3	9	4	4	**26**	8
Waste Water Treatment	16	13	19	16	9	**73**	7
Total	**443**	**1092**	**4568**	**518**	**209**	**6830**	**3752**

Source: MARC from City and county governments data.



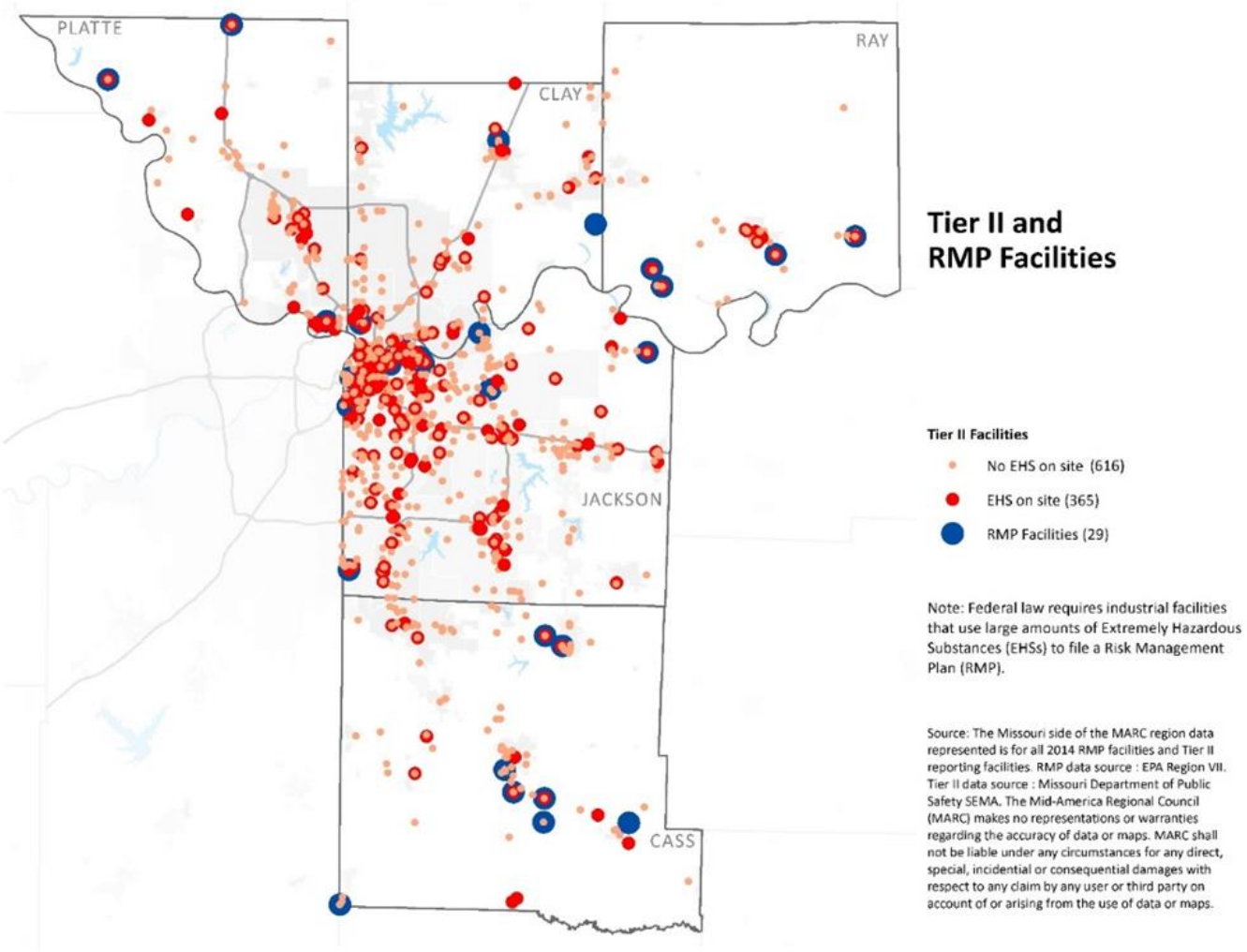
Source: City and county governments

Figure 2.64: Government Facilities



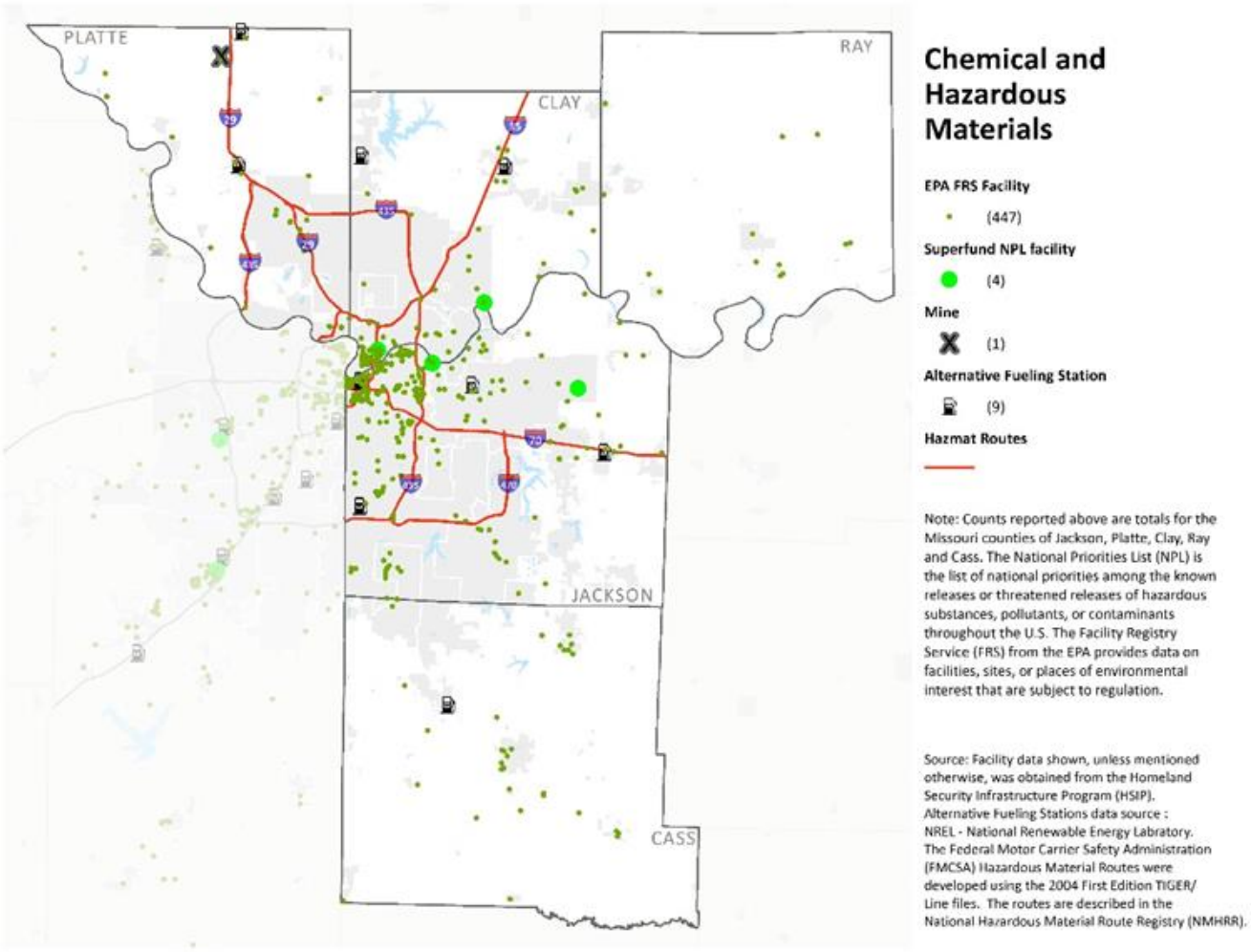
Source: City and county governments

Figure 2.65: Public Safety/Emergency Responders



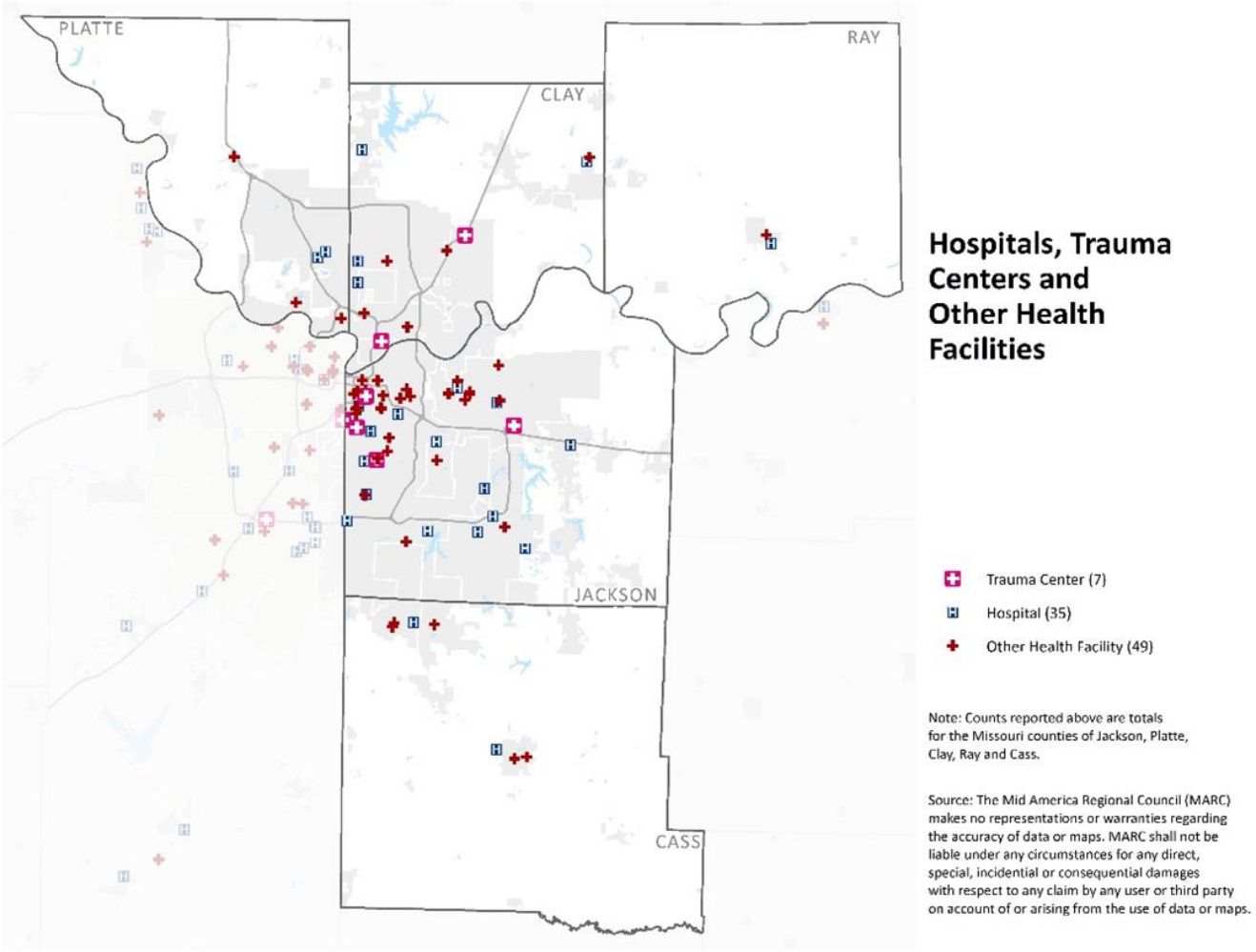
Source: City and county governments

Figure 2.66: Tier II and RMP Facilities



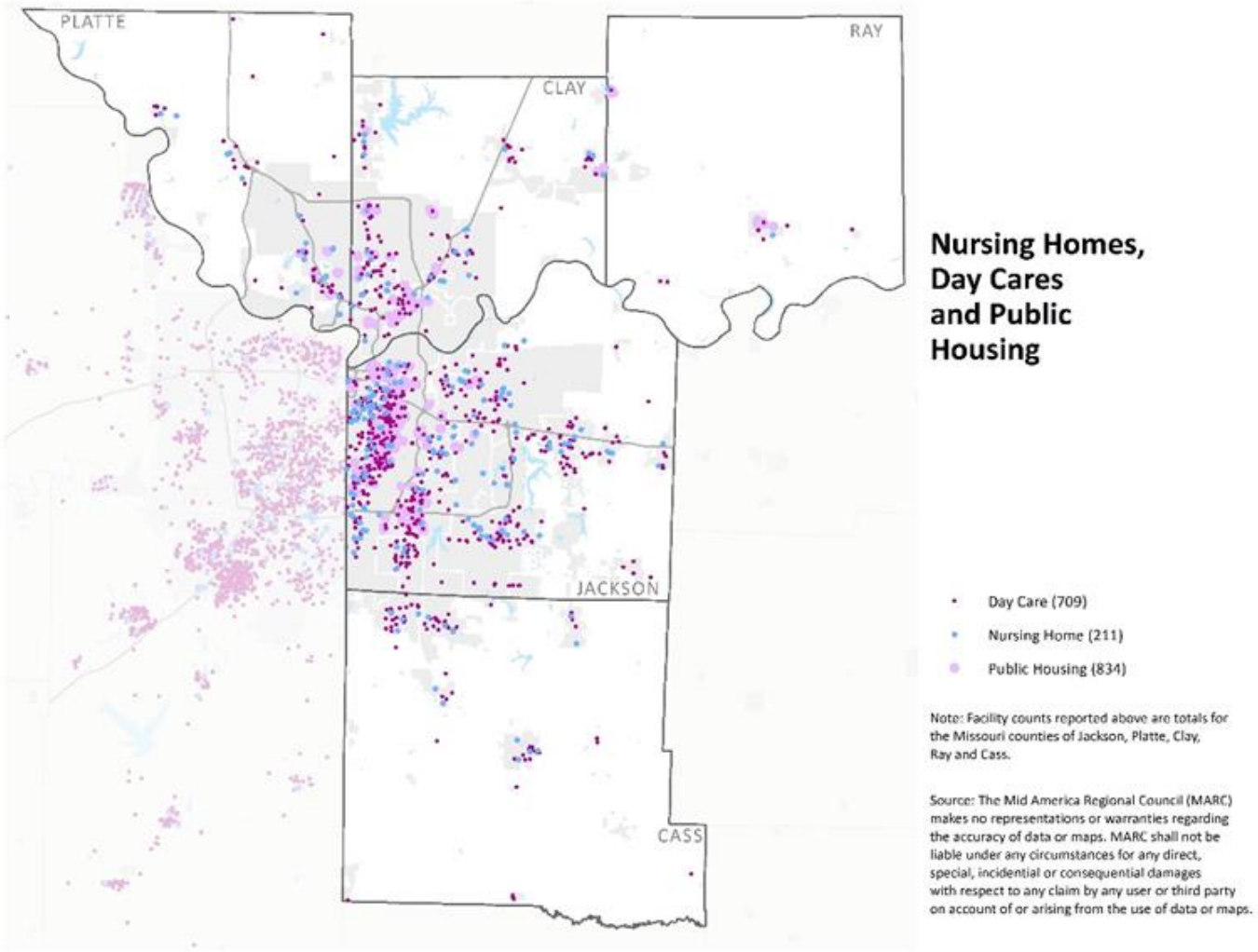
Source: City and county governments

Figure 2.67: Chemical and Hazardous Materials



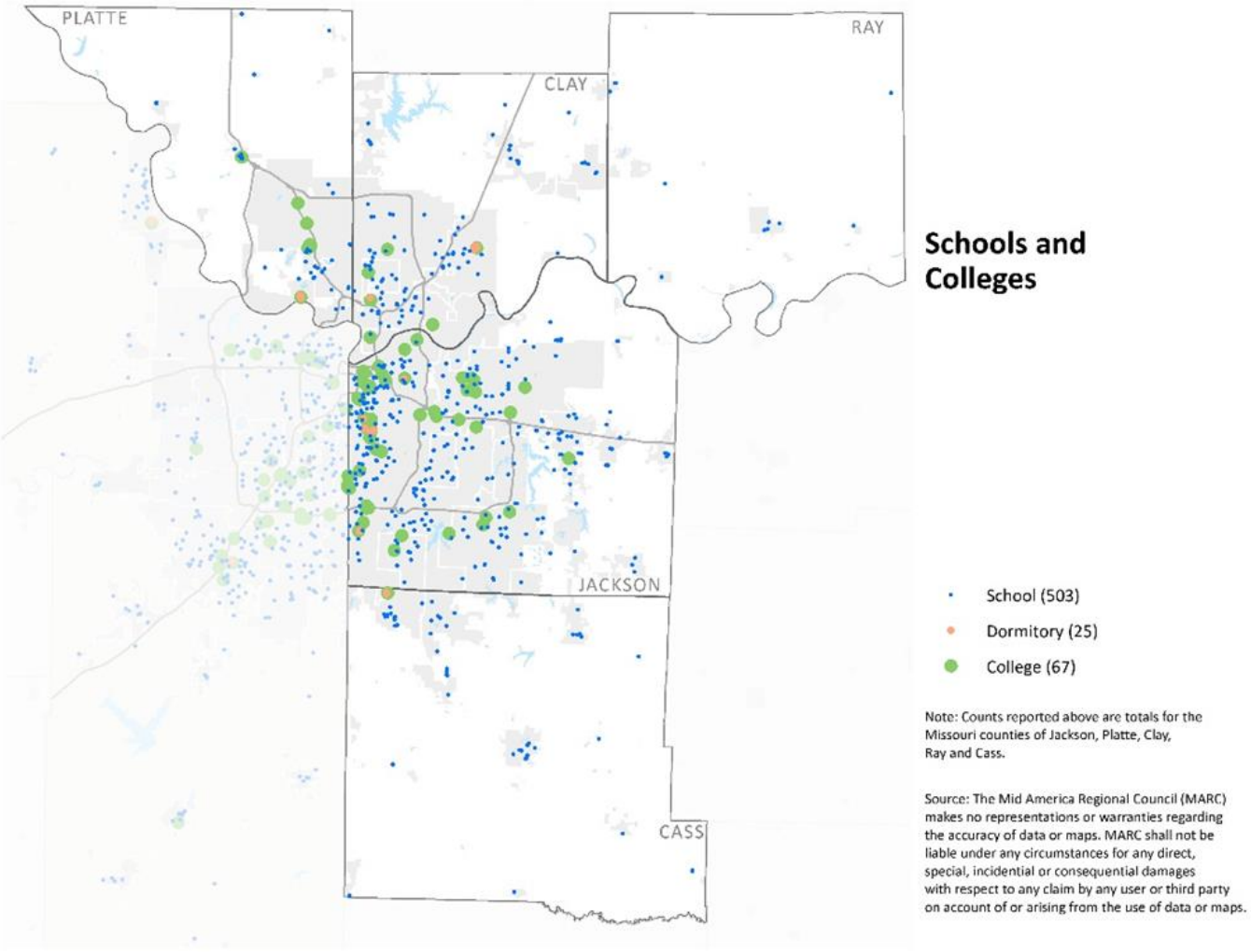
Source: City and county governments

Figure 2.68: Hospitals, Trauma Centers, and Other Health Facilities



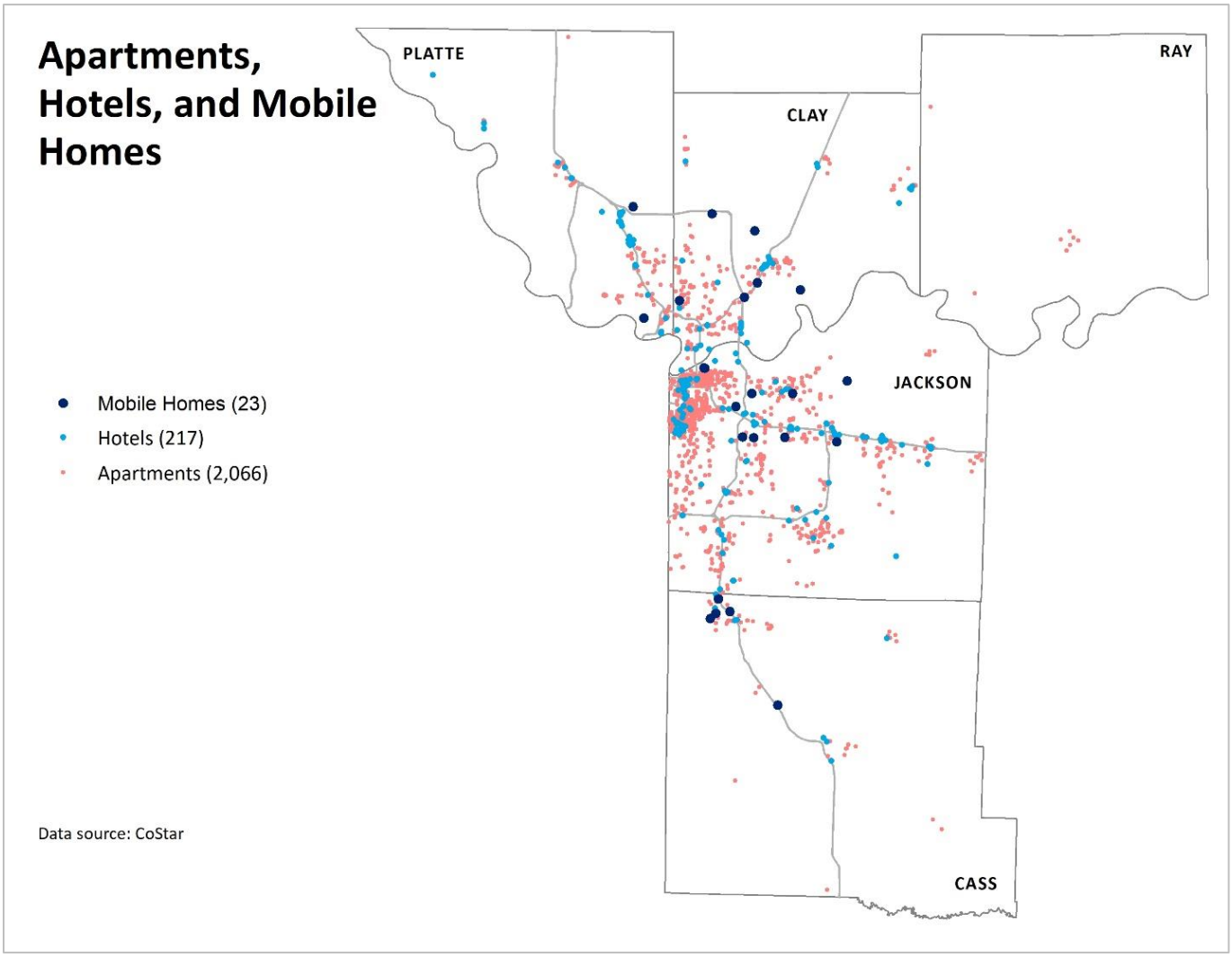
Source: City and county governments

Figure 2.69: Nursing Homes, Day Cares, and Public Housing



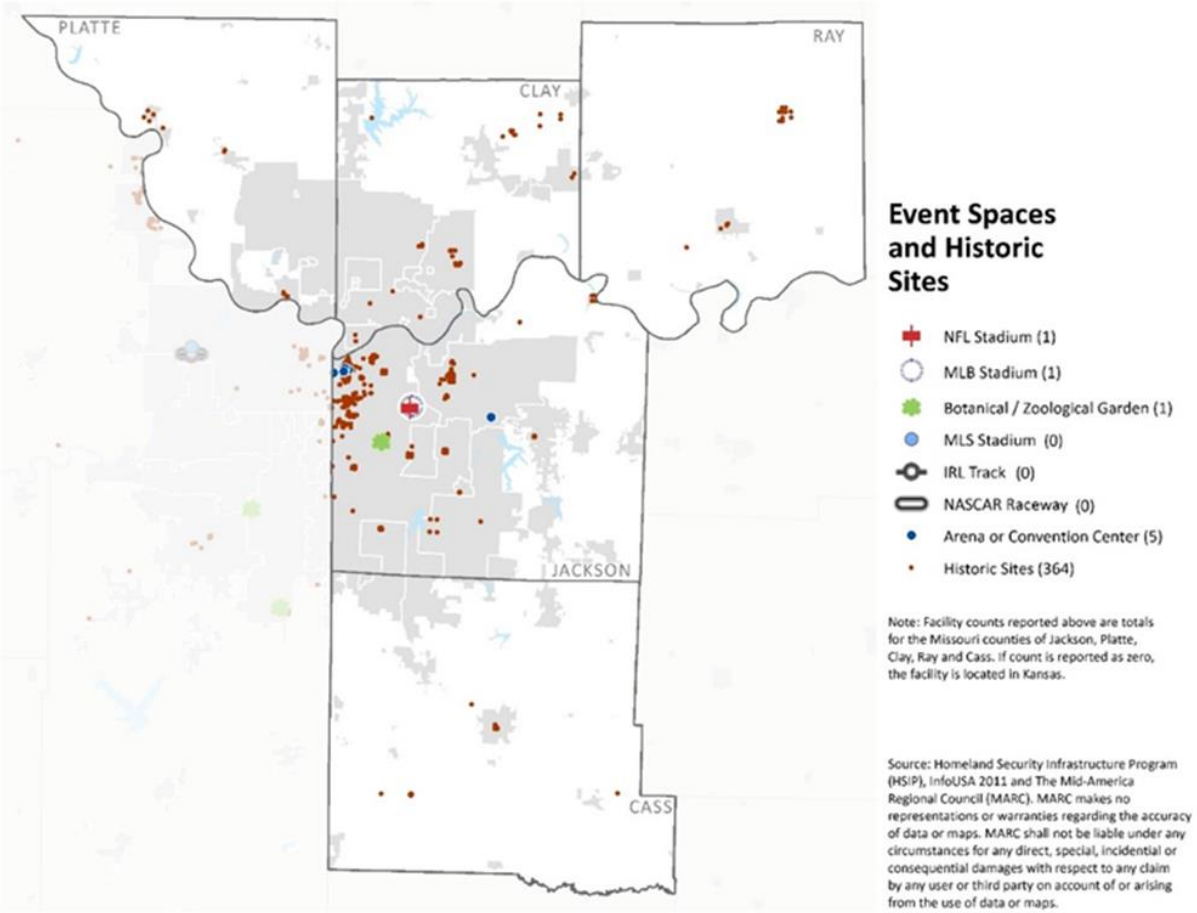
Source: City and county governments

Figure 2.70: Schools and Colleges



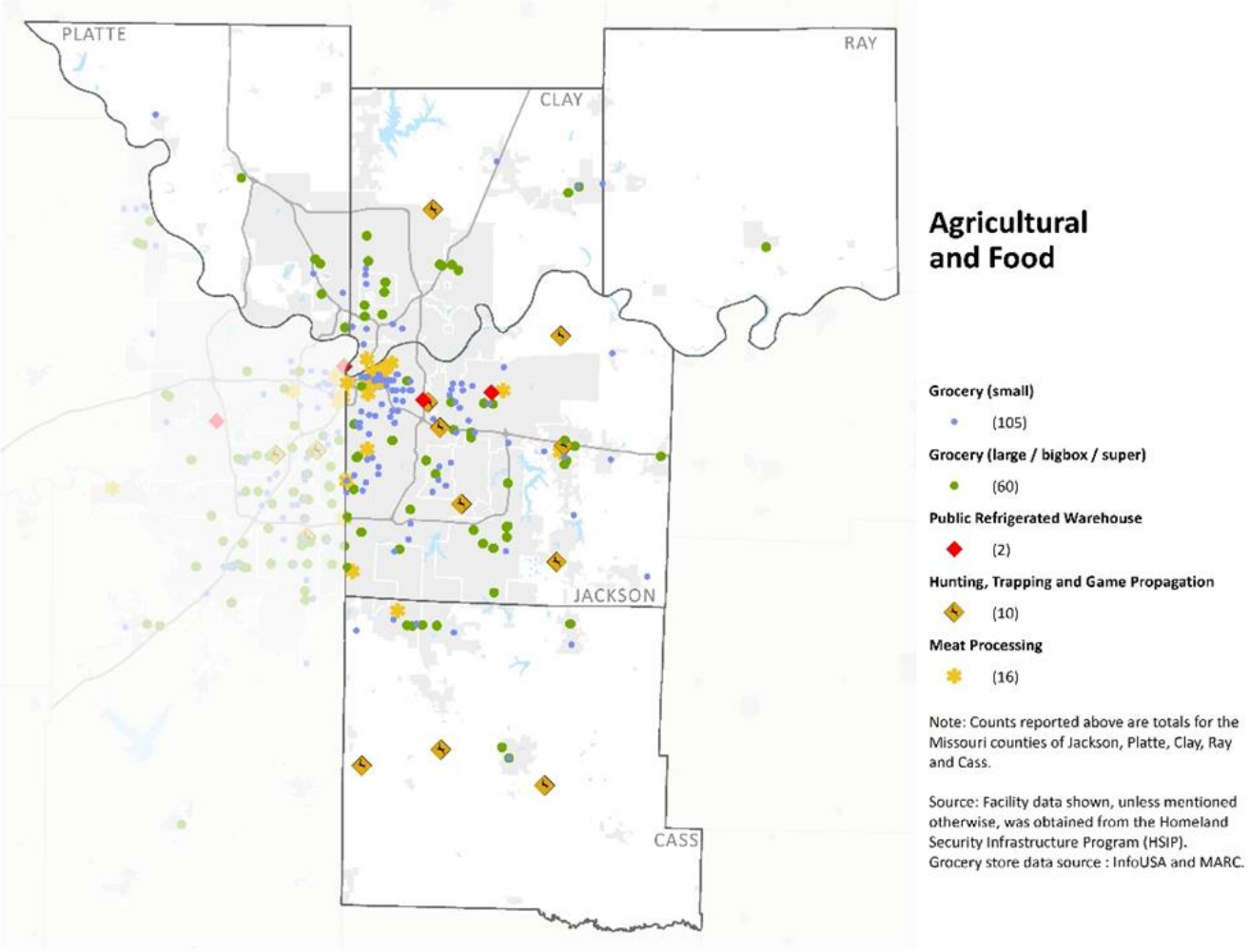
Source: City and county governments

Figure 2.71: Apartments, Hotels, and Mobile Homes



Source: City and county governments

Figure 2.72: Event Spaces and Historic Sites



Source: City and county governments

Figure 2.73: Agricultural and Food

2.8 Attachments

Attachment Table 2.1: Population by Age
Attachment Table 2.2: 2017 Population by Race/Ethnicity

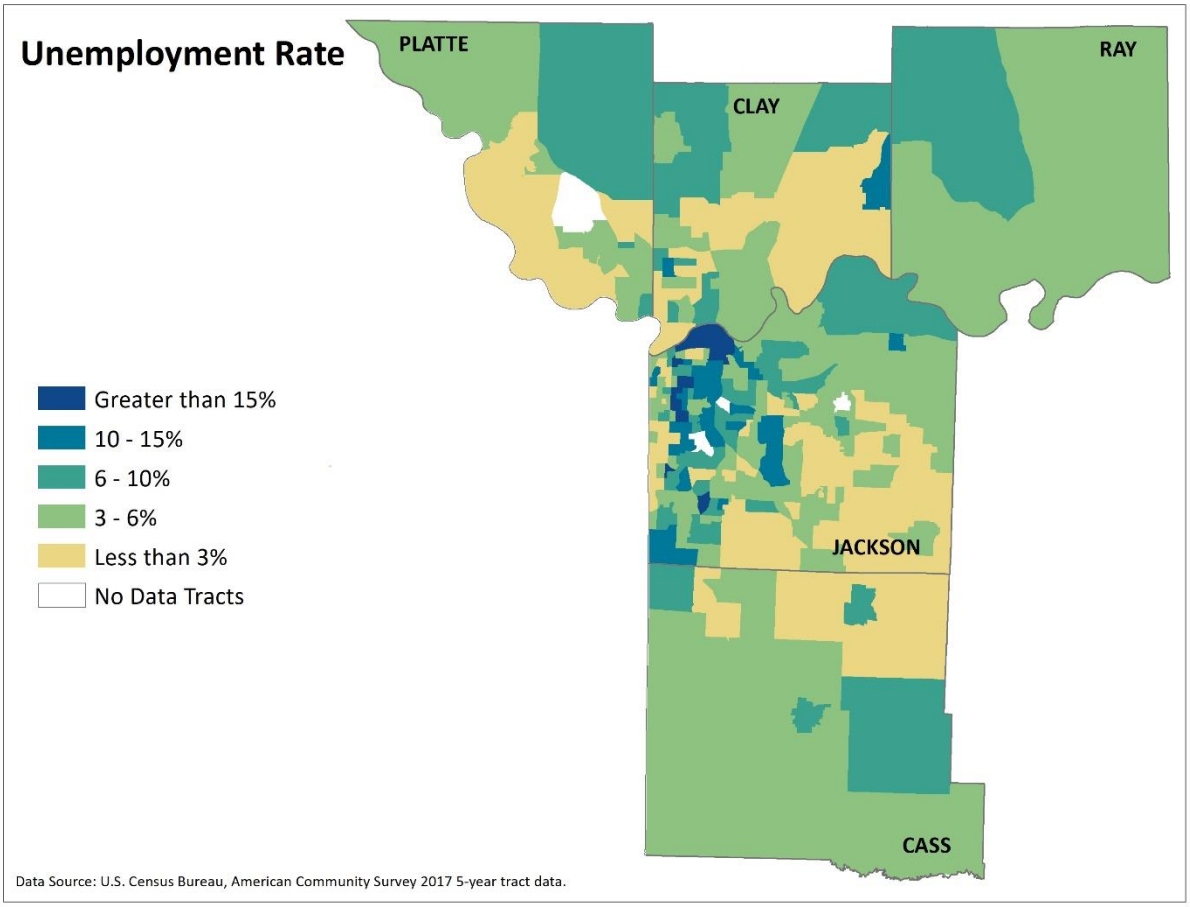
Attachment Map 2.1: Unemployment (%)
Attachment Map 2.2: Population with High School Education or Less (%)
Attachment Map 2.3: Zero-Vehicle Households (%)
Attachment Map 2.4: Uninsured Population (%)
Attachment Map 2.5: Disabled Population (%)
Attachment Map 2.6: Veteran Population (%)

[i] KC Rising , http://www.kcrisingmetrics.org/jobs.htm
[ii] KC Rising, http://www.kcrisingmetrics.org/jobs.htm
[iii] KC Rising, Big Dots, *Real Median Household Income (2016 dollars)*, http://www.kcrisingmetrics.org/MHI.htm
[iv] Bureau of Labor Statistics, Annual Averages U.S. Denver, Kansas City, and St. Louis, Consumer Price Indexes for All Urban consumers, https://www.bls.gov/regions/mountain-plains/data/consumerpriceindexhistorical_selectedareas_table.htm
[v] Federal Highway Administration, Highway Statistics 2015, <https://www.fhwa.dot.gov/policyinformation/statistics/2015/hm72.cfm>
[vi] Missouri Transportation by the Numbers Report, 2018 <http://www.tripnet.org/Missouri_State_Info.php>
[vii] Missouri Transportation by the Numbers Report, 2018 <http://www.tripnet.org/Missouri_State_Info.php>
[viii] Missouri Transportation by the Numbers Report, 2018 <http://www.tripnet.org/Missouri_State_Info.php>

Attachment Table 2.1: Population by Age									
	2010			2017			Change, 2010-2017		
County	Median Age	% < 5 years	% 65+	Median Age	% < 5 years	% 65+	Median Age	< 5 years	65+ years
Cass	37.4	6.8%	13.1%	39.5	6.0%	15.7%	2.1	-0.8%	2.6%
Clay	36.0	7.4%	11.0%	36.8	6.6%	13.2%	0.8	-0.8%	2.2%
Jackson	36.1	7.2%	12.3%	36.6	6.8%	14.0%	0.5	-0.4%	1.7%
Platte	38.2	6.5%	10.8%	38.2	6.2%	13.5%	0	-0.3%	2.7%
Ray	39.6	6.4%	14.1%	41.8	5.8%	17.2%	2.2	-0.6%	3.1%
Planning Area	N/A	7.1%	12.0%	N/A	6.6%	14.0%	N/A	-0.5%	2.0%
Kansas City	34.9	7.5%	9%	35.2	7.0%	12%	N/A	-0.5%	3%

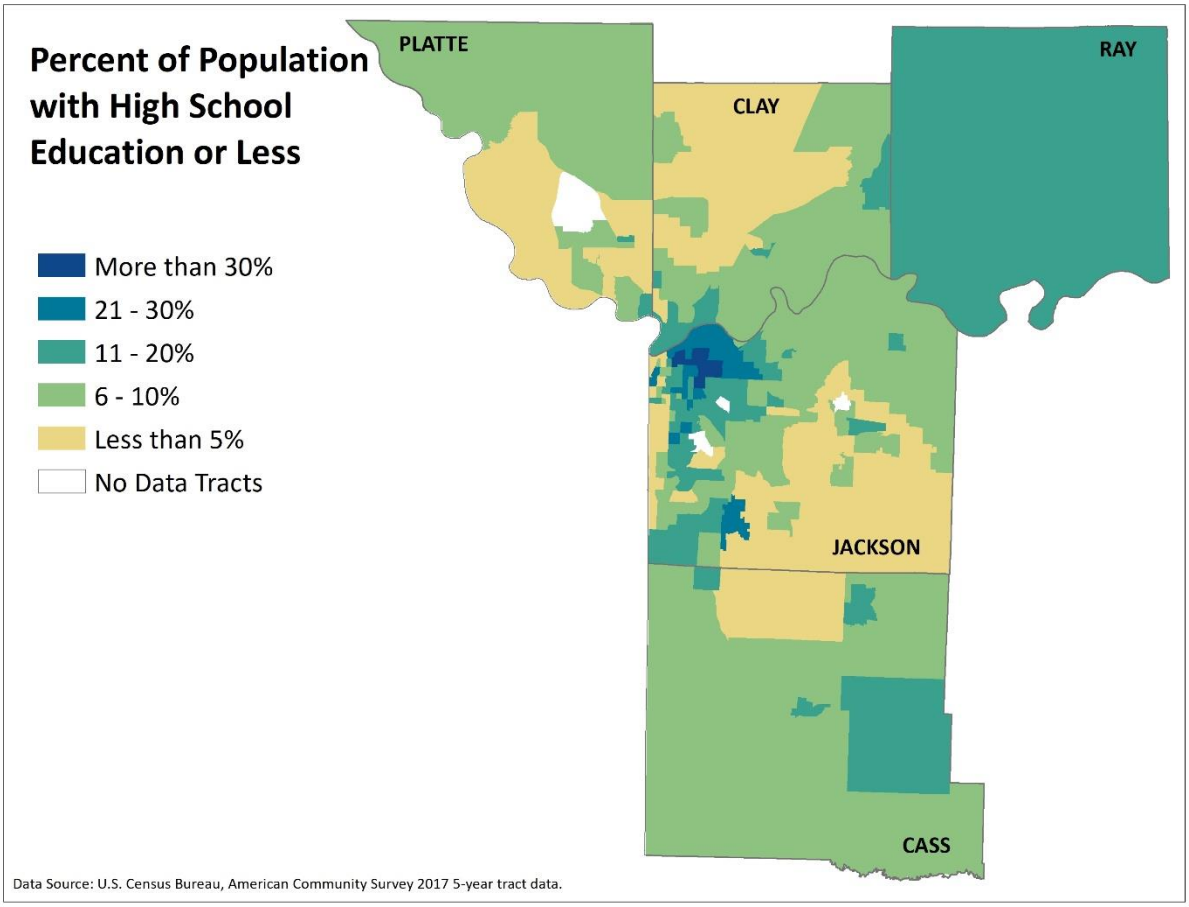
Attachment Table 2.2: 2017 Population by Race/Ethnicity								
		Cass	Clay	Jackson	Platte	Ray	Planning Area	Kansas City
2010	Total	97,598	215,015	666,997	86,894	23,667	1,090,171	454,876
	White	87,894	182,831	426,329	74,171	22,555	793,780	251,177
	All Minorities	9,704	32,184	240,668	12,723	1,112	296,391	203,973
	Black/ African American	3,007	7,430	159,309	4,512	299	174,557	135,169
	Hispanic/Latino (any race)	3,700	12,026	52,461	4,101	417	72,705	44,292
2017	Total	101,888	236,068	688,554	96,899	22,859	1,146,268	476,974
	White	90,204	193,763	430,411	79,450	21,478	815,306	264,602
	All Minorities	11,684	42,305	258,143	17,449	1,381	330,962	212,582
	Black/ African American	3,793	13,210	161,236	6,347	351	184,937	135,703
	Hispanic/Latino (any race)	4,302	15,590	60,846	5,601	534	86,873	48,521

Source: Census Bureau, American Community Survey 2017 5-year data



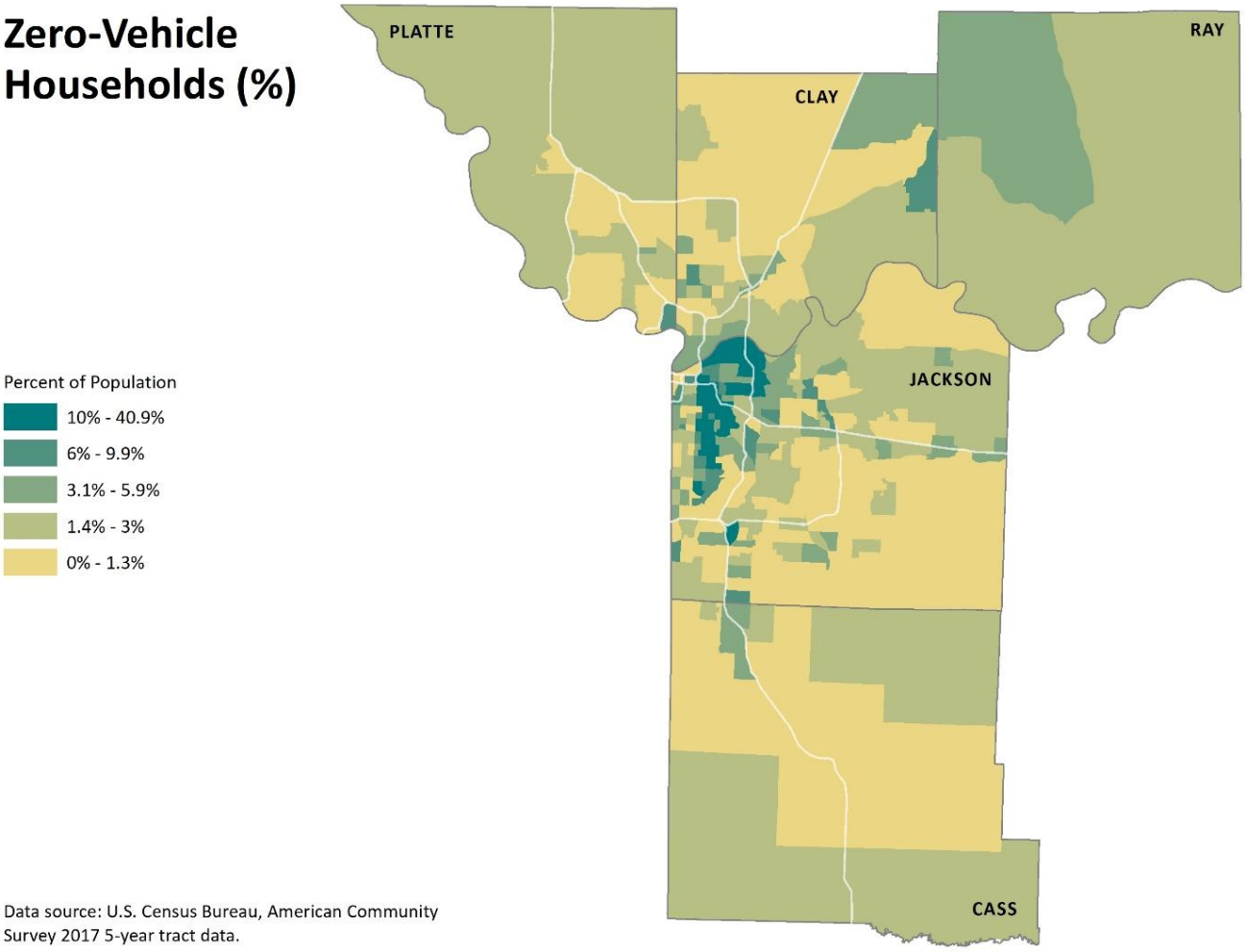
Source: Census Bureau, 2017 American Community Survey, 5-year data

Attachment Map 2.1: Unemployment (%)



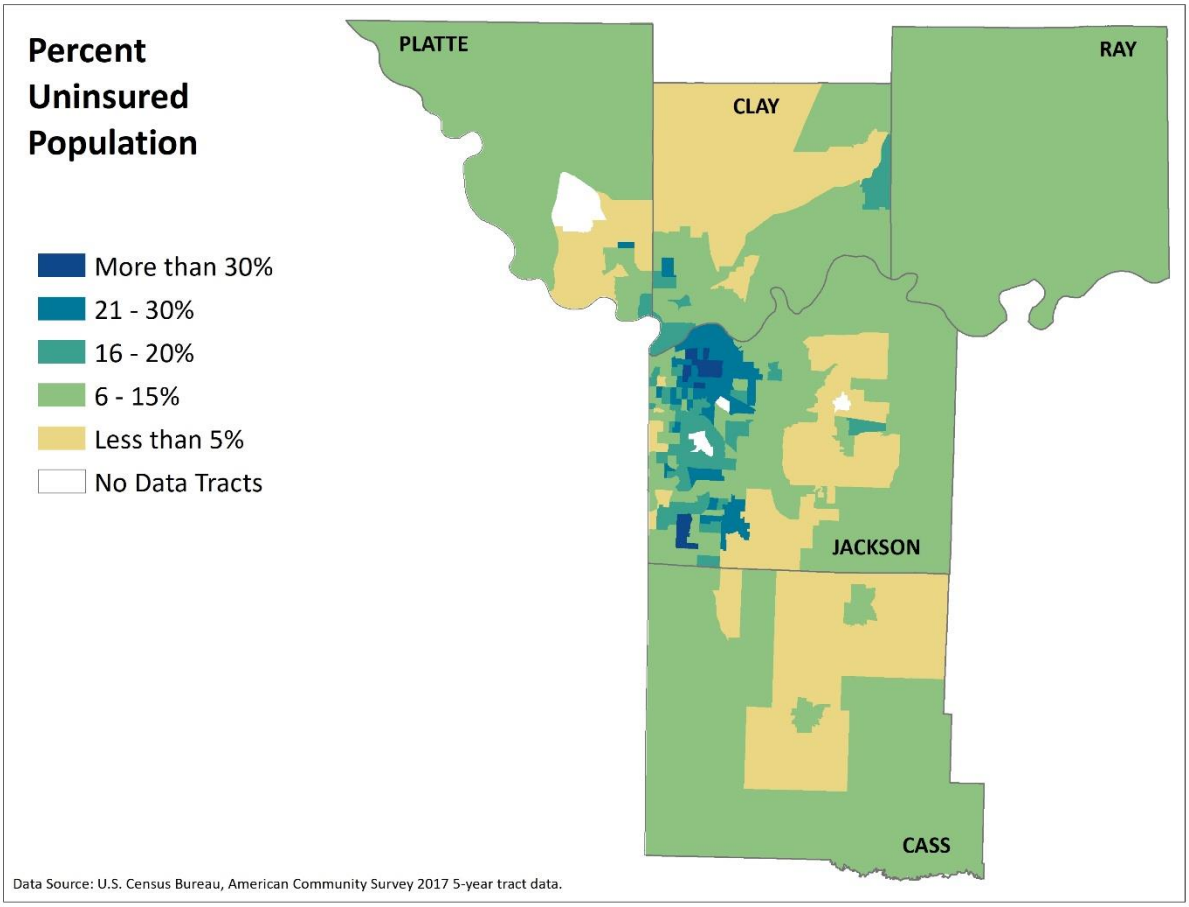
Source: Census Bureau, 2017 American Community Survey, 5-year data

Attachment Map 2.2: Population with High School Education or Less (%)



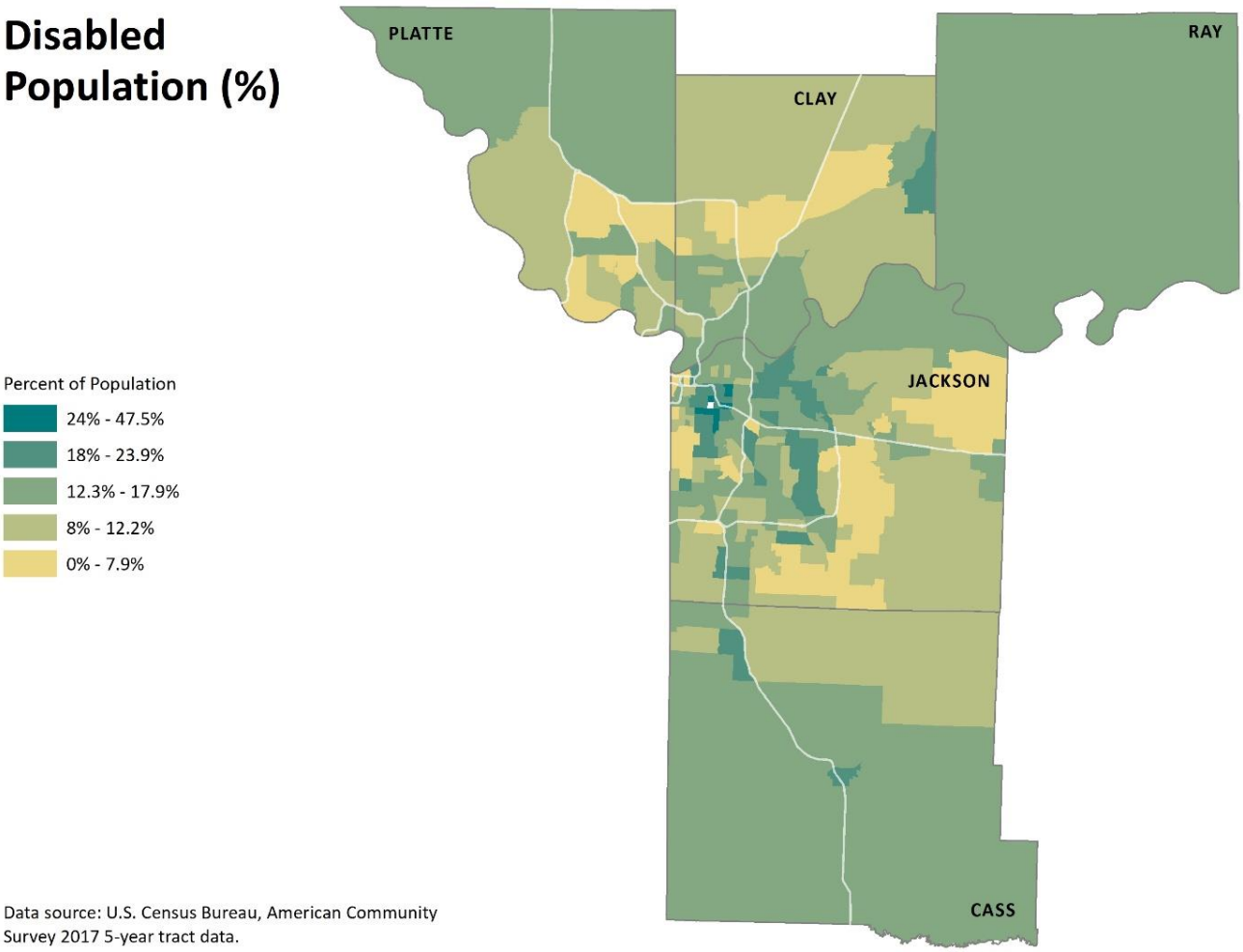
Source: Census Bureau, 2017 American Community Survey, 5-year data

Attachment Map 2.3: Zero-Vehicle Households (%)



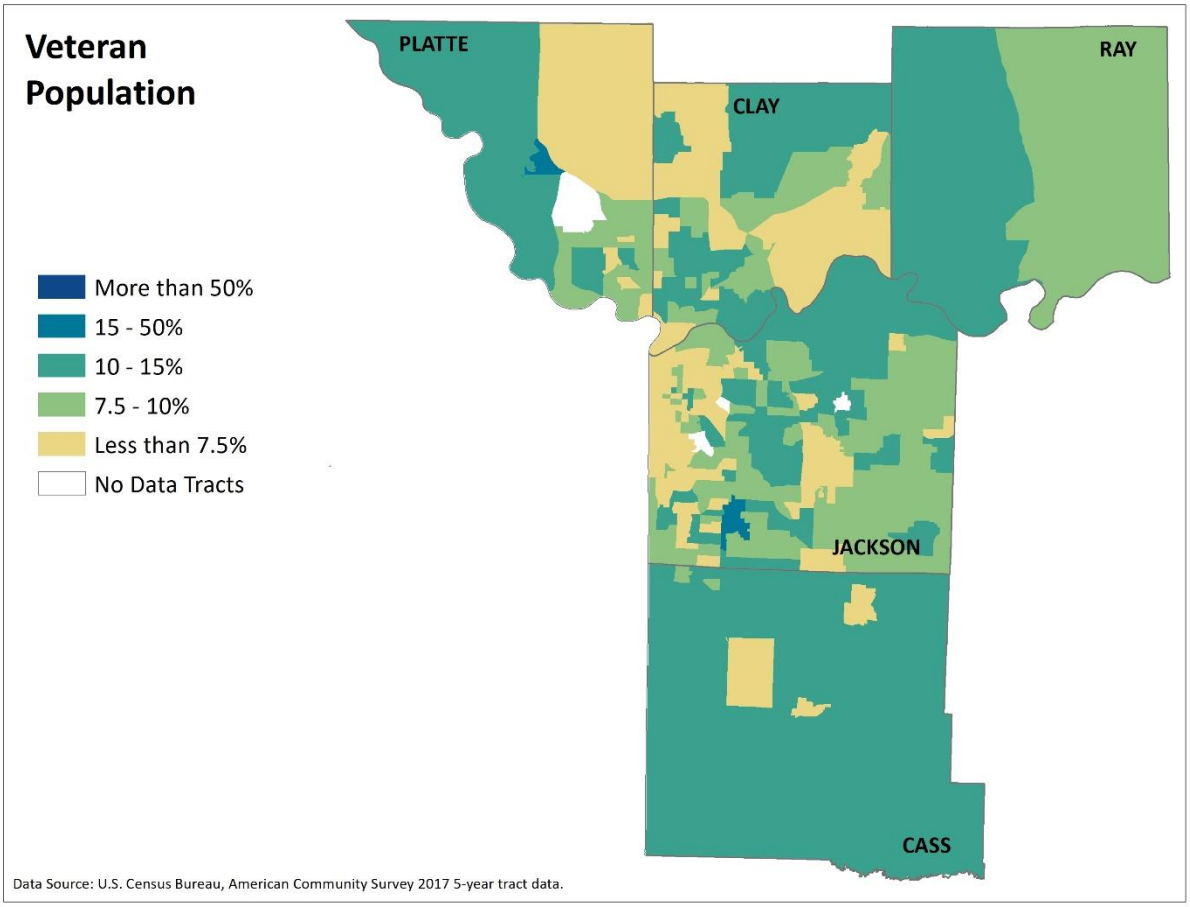
Source: Census Bureau, 2017 American Community Survey, 5-year data

Attachment Map 2.4: Uninsured Population (%)



Source: Census Bureau, 2017 American Community Survey, 5-year data

Attachment Map 2.5: Disabled Population (%)



Source: Census Bureau, 2017 American Community Survey, 5-year data

Attachment Map 2.6: Veteran Population (%)