What is the market and need for transit?
Indicators of Market and Need

This chapter presents an overview of maps displaying key measures of the market and need for public transit service in Kansas City. It’s important to distinguish between measures of transit demand and measures of transit need, since focusing on one or the other means focusing on different transit objectives.

**Measures of transit demand focus on identifying the strongest overall ridership markets.** This means focusing the most useful service on areas with high population and employment densities. Similar to how retail businesses seek locations with many potential customers nearby, ridership-oriented transit seeks to offer useful service in as places where many potential customers live and work.

**Measures of transit need focus on identifying and locating disadvantaged populations, such as households without vehicles, people in poverty, and seniors.** Many people in these categories will have a higher-than-average need for transit (or paratransit) service. Understanding where those populations are located makes it possible to see whether a transit system is providing coverage equitably.

Locating disadvantaged populations is also useful from a civil-rights perspective. Low-income and minority populations are specifically protected by Title VI of the Civil Rights Act of 1964. KCATA and other transit agencies are required to ensure that their services do not discriminate on the basis of race, and that service changes do not disproportionately impact or burden minority and low-income populations.

**Residential Density**

Anyone who travels makes at least one round-trip from their home each day. This makes residential density an essential consideration when designing transit service for high ridership.

Figure 18 (at right) is a map of residential density in the Kansas City region. Figure 19 on the next page is a map of the same data, but zoomed into KCMO south of the Missouri River.

It’s important to understand that these maps only represent one side of the overall travel market. The other half is where people go once they leave their home, such as offices, schools, universities, retail, industries, recreational areas, houses of worship and other gathering places.

Nonetheless, we can observe that the largest area of continuous mid-to high residential densities more or less located between the Missouri River to the north, 80th Street to the south, State Line Road to the west, and Indiana Avenue to the east. North of I-70, this area of continuous density extends as far east as Bennington Ave. In these parts of KCMO,
KCATA could send buses down fairly direct paths and to get close to many residents, without bearing the costs of crossing large empty gaps.

Other parts of the region on the Missouri side, including the Northland, far southern KCMO, outer KCK, Raytown, Lee’s Summit, Blue Springs and Independence are generally developed less continuously and at lower densities. Although some individual block groups may house more people than others, there are very few concentrations of high-density housing. What pockets of density do exist in these areas are neither contiguous nor linear.

On the Kansas side of the region, the only continuous concentration of residential density comprises the parts of KCK south of State Ave and east of 18th Street. Johnson County features many pockets (but few contiguous areas) of high residential density. Where dense residential areas appear linear and continuous in Johnson County, they are often either arranged along a freeway (which cannot be served by transit) or divided by freeways.
Job Density

Job density helps us see many of the most important destinations people travel to: where they work, but also where they go for services, shopping, social life and other activities. Civic and service destinations like hospitals and universities also appear on job density maps because they have so many employees.

The maps in Figure 20 (at right) and Figure 21 on the next page show job density in the Kansas City region.

The single largest concentration of jobs is in Downtown KCMO between I-35/70 and I-670. Job densities are middling to high throughout the entire 1/2-mile corridor around Main Street, from Downtown KCMO to the University of Missouri-KC (at 51st Street); on Hospital Hill just south of Downtown; and around KU Medical Center around 39th St & Rainbow Blvd.

On the Kansas side, Johnson County has a continuous strip of mid-density employment along I-35 from Shawnee Mission Parkway to 119th Street (but freeway-oriented development is nearly impossible to serve with useful transit). There are also several square miles of high-density employment near Overland Park Plaza and Sprint World Headquarters (near I-435 and Metcalf Ave).

There is less employment in KCK than in Johnson County, and the only high-density pocket is the very heart of Downtown KCK, a few hundred feet on either side of Minnesota Avenue between 4th and 10th Streets.

Employment areas in the rest of the region tend to have fewer jobs within them. Many have been developed near freeway interchanges. Some of the larger ones are:

- Most of North Kansas City, built around the BNSF and Norfolk Southern rail yards.
- The vicinity of I-29 between Barry Road (Zona Rosa) and Kansas City International Airport.
- Vicinity of the Liberty Triangle (jct. of I-35, Hwy 152 and Hwy 129).
- The area south of the junction between Highway 350 and I-470 in Lee’s Summit.
- Blenheim Square - Research Medical Center, near the intersection of 63rd Street and Hwy 71 in south KCMO.
- The vicinity of Ward Parkway between 79th Street and Bannister Road.

Figure 20: Job density in the Kansas City region.
Figure 21: Job density in the central part of the Kansas City region.
Activity Density

The maps in Figure 22 (at right) and Figure 23 and on the next page show the combination of residential and job density in the Kansas City region. This gives us a more comprehensive view of travel demand in the metro area and on any given corridor.

On these maps, places that are predominately residential are shown in increasingly saturated shades of blue. Employment is shown in yellow. Purple and red show places with varying degrees of mixed residential and jobs density.

Most trips people make are between residences, workplaces, and major destinations and commercial areas. As a result, travel demand is greatest where high residential and employment densities are found in combination.

Though it is not one of the four major factors named in the Ridership Recipe, the mix of uses along a corridor affects how much ridership transit can achieve, relative to cost. This is because a mix of uses tends to generate demand for transit in both directions, at many times of day.

Transit lines connecting purely residential neighborhoods to employment tend to be used in mostly one direction and mostly during rush hours—away from the residential neighborhood, towards jobs and services. More generally, buses serving single-use areas tend to be empty in one direction, and empty during many hours of the day. Buses serving a mix of uses can be full in both directions, all day and all week.

This activity density map gives us the best snapshot of the region’s transit disoriented development pattern. Specifically:

- Different land uses are separated—there is very little red or purple on the map.
  - This means that KCATA must run longer and more circuitous routes to connect residents to jobs and services.
  - Longer routes are expensive and therefore less frequent. As a result, not very many people find them useful.

Land use and development choices outside of KCATA’s control therefore affect transit’s usefulness and transit ridership relative to cost.

Overall, we can see that most of the Kansas City area is purely low-density residential, and there are a small number of commercial and employment areas.

Figure 22: Activity density (residents and jobs) in the Kansas City region.
There are very few mixed use areas in the region, as shown on the map on the previous page. The largest of them is in midtown KCMO, around Country Club Plaza and Westport, visible on the map at right. Some dense, linear and continuous corridors with a limited mix of uses are also visible on Figure 23, in particular Independence Ave and Troost Ave.

Figure 23: Activity density (residents and jobs) in the central part of the Kansas City region.
Zero-Vehicle Households

Figure 24 (at right) and Figure 25 on the next page show where large numbers of people with severe needs are living. The Census data shown on these maps is collected based on residential address, not based on workplace or shopping place or place of worship. This data thus shows us where people live, but not where they wish to go.

Not everybody has ready access to a personal automobile. People who have little or no access depend on other modes when they need to travel. This might include walking, cycling, getting a ride from a friend or family member, using a ride-hailing service, or transit.

People without cars at their home have a great incentive to use transit, which means that information about where they live helps us see the market for high ridership transit. People without cars may also have a severe need for transit. But if transit does not present a realistic travel option, perhaps because it does run when or where someone needs it, then many people will find other ways to travel.

The highest densities of households with no vehicles in the Kansas City region are found in the core areas of KCMO, bordered on the north by the Missouri River, on the south by 47th Street, to the east by I-435 and to the west by State Line Road.

There are also many zero-vehicle households in south KCMO between 47th and 85th Streets; and in the inner parts of Kansas City, KS, especially east of 10th Street and north of Minnesota Ave.

Outside these areas, there are many other households with no vehicles, but they tend to be scattered throughout the region, or concentrated in smaller pockets located mostly in Independence, Overland Park and Lee’s Summit.

Figure 24: Density of households with no vehicles in the Kansas City region.
Figure 25: Density of households with no vehicles in the central part of the Kansas City region.
Transit can be an attractive option for people with low incomes due to its low price and low barrier to entry. In medium to high density areas, with walkable street networks, this can be a powerful ridership generator. Providing affordable transportation for lower-income people, no matter where they live, is also a common motivation for providing coverage service.

Maps of poverty density, like the ones in Figure 26 (at right) and Figure 27 on the next page, help us think about where transit ridership potential is high and where transit coverage would be valuable. Furthermore, civil rights laws require that transit agencies consider where low-income people live and travel when planning transit service.

If transit isn’t useful for the trips low-income people need to make, in a reasonable amount of time, many of them will make other choices. Very few transit riders are totally “dependent” on transit service. If service is bad enough, or if their lives change in ways that make it harder to use transit, they will find other options, even if those other options cause financial stress.1

Comparing the map of poverty density the map of zero-vehicle household density on page 26 shows a correlation. Two particularly large areas that are dense with both zero-vehicle households and people living in poverty are:

- KCK west of 18th Street
- KCMO between the Missouri River and 47th Street.

In addition, there is a large contiguous area with moderate densities of zero-vehicle households and people in poverty in south KCMO, roughly bounded by Troost Ave, Cleveland Ave/Swope Parkway, 47th and 85th Streets.

Outside these areas, the highest densities of people in poverty are found in or near:

- Independence neighborhoods west of River Boulevard between Highway 24 and 23rd Street.
- South KCMO, east of I-435 between Raytown and Grandview.
- NE Parvin Road in the Northland.
- Quivira Road and 75th Street in Overland Park.

1 One of the reasons transit ridership has declined in the U.S. over the past five years is that more lower-income households have been buying or leasing cars than in the past.
Figure 27: Residents living on incomes that are less than 125% of the federal poverty line in the center of the Kansas City region.
Seniors

A motivation for providing wide transit coverage is getting service close to people who cannot drive, no matter where they live. This need can particularly acute among seniors. The map at right shows the density of senior residents in the Kansas City region.

As of 2017, seniors constitute nearly 14% of the total population in the Kansas City metro area. This is up from 11.5% in 2009, and is expected to continue growing as the Baby Boomer generation ages.

Seniors are less likely to own cars than the general population, and so they tend to be vocal advocates for transit. Seniors’ needs and preferences are also, on average, different from people in earlier stages of life:

- Seniors are more likely to be discouraged by long walks, because of limits on their physical ability, or concerns for their personal safety.
- Seniors are less likely to be discouraged by long waits for transit, because many seniors have more free or unstructured time, and are not commuting on a daily basis.
- For the same reasons, seniors are less likely to be discouraged by slow or indirect routes that take them out of their way.

Because of these factors, transit service designed primarily to meet the needs of seniors rarely attracts high overall ridership. Most people are busy, and most people therefore find long waits for service or slow and circuitous routes to be intolerable.

Thus, the amount of focus that transit agencies place on meeting the needs of seniors should be carefully balanced with the needs and desires of the general population.

Seniors tend to live in lower-density areas than the general population. In some cases, this is because people seek lower rents and costs of living during a time of life when they have lower incomes. For others, it is a reflection of aging in place: many seniors live in homes they chose a long time ago, and do not wish to move. This means that many seniors live in places where it is difficult or expensive to provide useful transit service.

Significant numbers of seniors live in nearly all parts of the Kansas City region, but there are larger numbers in the following areas:

- Overland Park, especially south of I-35
- South KCMO between 47th and 85th Streets.
- Far south KCMO, immediately east of State Line Road between I-435 and Blue Ridge Boulevard.

Figure 28: Density of residents over the age of 65 in the Kansas City region.
• Downtown Independence, and southern Independence west of Noland Road between 23rd Street and I-70.
• East Gladstone (near Antioch Road) in the Northland.
• Lee’s Summit.

Figure 29: Density of residents over the age of 65 within the central part of the Kansas City region.
Minority Residents

The maps in Figure 30 (at right) and Figure 31 on the next page show where people live in the Kansas City region, highlighting their race or ethnicity. Each dot represents 35 residents. Where dots of a single color predominate, people of a particular race or ethnicity make up most of that area’s residents.

While information about people’s income tells us something about their potential interest in or need for transit, information about ethnicity or race do not alone tell us how likely someone is to use transit. However, avoiding placing disproportionate burdens on people of color, through transportation decisions, is essential to the transit planning process.

Transit agency policies that protect non-white people from negative impacts are one type of coverage goal. Such policies might state, for example, that service to high-density and high-minority neighborhoods should be prioritized even if such service would not maximize ridership.

In addition to local policies, federal civil rights law\(^1\) protects people from discrimination in the provision of transit service on the basis of their race or ethnicity. It is important to understand where large numbers of minority people live, so that we can be sure any service changes respect their civil rights.

As of 2017, approximately 27% of the population of the Kansas City metro area (and 45% of the population of KCMO) identified as a member of a minority race or ethnic group. The largest non-white group is African-Americans, who make up 13% of the metro area population and nearly 30% of the population of KCMO. Hispanics and Latinos make up 9% of the metro area population and 10% of the KCMO population.

These maps show concentrations of both African American (shown in green) and Hispanic/Latino (shown in orange) populations, especially in KCMO and KCK. In many cases, these concentrations arise from past housing discrimination and segregation.

- The East Side of KCMO (east of Troost Ave) is almost exclusively African-American. The only exception to this are areas along Independence Avenue that are majority-Hispanic but are home to many different racial and ethnic groups.
- North KCK is majority African-American, while south and central KCK have a majority of Hispanic residents.

\(^1\) Specifically, Title VI of the Civil Rights Act of 1964, and its associated regulations.

Figure 30: Residents of the Kansas City region, color-coded based on their race or ethnicity.
Kansas City’s transportation and planning history, like that of most American cities, has been fraught with outright racial discrimination by public and private actors. Particularly in the era before the Civil Rights Act of 1964, segregation and discrimination were nearly-explicit goals of transportation planning and government policy. Many decisions from that time have left a trail of continuing problems for U.S. cities like Kansas City, such as freeways or “urban renewal” areas that cut through low income neighborhoods.

In addition to direct public actions, there have been private discriminatory actions in the past, like red-lining, that reinforced racial segregation. Through the latter half of the 20th Century and into the present day the more subtle effects of “white flight” from the city have continued to make it difficult for minority residents in the Kansas City region to use transit to access jobs and housing.

It is important in this process that we acknowledge the role that race and discrimination have played in past decisions; the harm those decisions has caused to black and low-income residents of the Kansas City region; and the way those decisions have undermined the usefulness of the transit network itself.

Given that history, it is somewhat encouraging to observe the lack of racial disparity present in the existing distribution of service in Kansas City. The bar charts on page 42 show how many people live near any transit, or frequent transit. A greater percentage of minority residents are close to transit than are white residents. The same is true for low-income residents.

This may be attributable to the fact that low-income and minority residents are still concentrated in the part of the region that best embodies the Ridership Recipe: central KCMO. Central KCMO offers continuous density, along linear corridors, with decent walkability. It is a place where KCATA can offer high levels of service that are useful to large numbers of people.

This map is a static image of race and ethnicity in the region as of the mid-2010s. People move, not always in ways that improve their opportunity and mobility. KCATA’s ability to provide useful service to minority residents depends largely on where they live, which depends in part on land use and development decisions outside of KCATA’s control.

Figure 31: Residents of the central part of the Kansas City region, color-coded based on their race or ethnicity.