Table of Contents

1 Introduction and Summary ........................................... 3
   RideKC Next is a comprehensive review and redesign of transit service in Kansas City, Mo. ........... 4
   Where does transit fit in our region’s transportation system? ................................................................. 5
   Existing Transit Network and Ridership – Kansas City, Mo. ................................................................. 6
   Existing Transit Network and Population Density - Kansas City, Mo. .................................................. 7
   How much access to opportunity does the existing transit network provide? ....................................... 8
   What choices does the existing network reflect? ......................................................................................... 9
   What choices can we make in the short term? ............................................................................................ 10

2 What makes transit useful? ............................................. 11
   Transit can serve many purposes; which purposes it should serve depends on your values. .................... 12
   Frequent transit is useful to more people and for more trips. ................................................................. 14
   The built environment determines how useful transit can become. ....................................................... 15
   Examples from Kansas City: Density and Walkability ............................................................................ 16
   Examples from Kansas City: Linearity and Continuity ........................................................................... 17
   How does on-demand or “flexible” service compare to fixed routes? ..................................................... 18

3 What is the market and need for transit? ......................... 19
   Residential Density ............................................................. 20
   Job Density ...................................................................... 22
   Activity Density ................................................................ 24
   Zero-Vehicle Households ..................................................... 26
   People Living in Poverty ....................................................... 28
   Seniors .......................................................................... 30
   Minority Residents ............................................................ 32

4 How does the fixed-route network perform? ..................... 34
   Description of the RideKC Transit Network ............................................................................................. 35
   Service levels are highest on weekdays until 7 PM. They are lower on evenings and weekends. .................. 39
   Service levels are much lower outside KCMO, reflecting low levels of investment. ................................. 40
   Service levels are higher in places more likely to generate high ridership. ............................................. 41
   Nevertheless, most people live and work far from a frequent transit line. ............................................... 42
   Ridership responds strongly to frequency. ................................................................................................ 43
   There is evidence of unmet weekend demand. .......................................................................................... 45
   Cross-town routes that create a frequent grid make the network useful and attract high ridership. ............. 46
   Routes that are spaced very closely duplicate each other and compete for the same riders. ...................... 47
   Should MAX routes feature a local overlay? ............................................................................................... 48
   Nearly half of bus service in KCMO is being provided for purposes other than ridership. ....................... 49

5 How about on-demand services? .................................... 50
   What is on-demand public transportation? ................................................................................................. 51
   On-demand service can mean many things; it’s rarely a direct replacement of a fixed route. ..................... 52
   Prior experience suggests high per-trip costs that limit how many people can be served. ......................... 53
   What lessons can be learned from other places? ......................................................................................... 56
   Where would it make sense to consider on-demand service? ................................................................... 57

6 Key Choices ................................................................... 58
   Should we focus more on increasing ridership, or on extending coverage to more places? ....................... 59
   Ridership vs. Coverage: a visual example ................................................................................................. 60
   When we run coverage service, what should our priorities be? ............................................................... 62

Glossary ........................................................................... 63
1 Introduction and Summary
RideKC Next is a comprehensive review and redesign of transit service in Kansas City, Mo.

What is RideKC?
Since 2016, all public transit services in and near Kansas City have come under the regional RideKC brand. But service is still funded and operated by several entities:

- The Kansas City Area Transportation Authority (KCATA) directly operates 47 fixed bus routes, mostly in Kansas City, MO (KCMO).
- KCATA also manages:
  - Johnson County Transit, a network of 14 bus routes funded by Johnson County, KS. These are operated under contract by First Transit.
  - IndeBus, a network of six bus routes operated under contract by First Transit in Independence, MO.
- Several on-demand and flexible services in KCMO and other communities.
- RideKC Bike, a micromobility partnership with BikeWalkKC and Drop Mobility to place shared pedal bikes, electric bikes and electric scooters in the urban core.
- Unified Government Transit (UGT) funds and manages 10 bus routes in Kansas City, KS. Six of those routes are operated directly by UGT, while the other four are operated by KCATA.
- The Kansas City Streetcar Authority (KCSCA) is a non-profit organization that manages the KC Streetcar in downtown Kansas City, Mo.

Why focus on KCMO?
Transportation issues in Kansas City are regional, and go beyond the scope of any one jurisdiction. The Kansas City Area Transportation Authority was established in this vein in 1966, to provide transit service in seven counties spanning Kansas and Missouri. And the RideKC regional network brand follows in this spirit as well.

But regional transit funding does not reflect this reality. In fact, sales taxes collected in Kansas City, Mo. (KCMO) contribute nearly 80% of the region’s local transit funds. As a result, the overwhelming majority of service is provided within KCMO, and bus routes from other jurisdictions are often designed around the best places to connect to the KCMO network.

Long-term regional transportation plans like SmartMoves 3.0 recognize the need for a dedicated regional funding source for transit, and intend to develop a network of fast and frequent bus routes that go far beyond the core of KCMO. And KCATA’s 2019-2021 Strategic Plan has identified specific actions within the transit agency to help move in this direction.

But even in the best case scenario it will take several years before any new funding sources become available. Recognizing this, RideKC Next is looking for meaningful improvements that can be made in the next two years.

Those changes may include changing the routing, hours of service and frequencies of bus routes. In some locations, it may also make sense to switch from traditional fixed-route service to a more flexible or on-demand service model.¹

What’s in this report?
RideKC Next starts with this Transit Choices Report. We are examining the transit network not only from the point of view of its efficiency and effectiveness, but also how well it can be expected to perform given land-use and development patterns. This report includes:

- Chapter 2: What makes transit useful? explains the many possible purposes of transit, and how land use, neighborhood design and street design all contribute to how useful a bus network can be.
- Chapter 3: What is the market for transit? describes how the location of population, jobs, and other major destinations like medical centers and universities in and around Kansas City influence the demand for transit service.
- Chapter 4: How does the transit network perform? is a detailed look at the existing network of fixed bus and streetcar routes. This includes facts, analysis and discussion on topics like the following:
  - How bus routes combine to form a network, and the ways in which different routes complement and conflict with each other.
  - How well the existing network does (or doesn’t) facilitate access to jobs and opportunity.
  - The relationship between ridership and service levels, at different times and in different places.
- Chapter 5: How about on-demand services? examines the purpose and performance of non-traditional transit services such as the FLEX routes and RideKC Freedom On-Demand.
- Chapter 6: What choices are available for change? summarizes the most important trade-offs to consider in making changes to the transit network.

This report is the beginning of a public conversation. KCATA is soliciting feedback on the key choices through a combination of an online survey and appearances at public events through the end of July 2019. The community feedback we receive will inform the choices we make in designing an updated network that better reflects the values of this community. More information and an online survey are available at ridekcnxt.org.

¹ RideKC Next is not focusing on the performance or design of complementary paratransit services required by the Americans with Disabilities Act and provided through Ride KC Freedom. However, KCATA recognizes that changes to fixed routes and general public on-demand services may impact the areas where ADA paratransit service is required by law. KCATA is committed to proceeding with caution to minimize any potential impact of network changes on paratransit customers.
At first glance, public transit may not seem an important part of life in Kansas City. On a typical weekday, about 20,000 people ride the bus, about 1% of the metro region’s population. Ridership has been declining, and the region is crisscrossed with largely uncongested freeways that make driving the fastest option for most trips. Why does transit matter?

Transit increases access to opportunity
Transit extends how far people can go on foot or by bicycle/scooter, providing some of the benefits of access to a private vehicle. Transit can't efficiently serve every trip, but it has many personal and community benefits, such as:

- **Transit is inexpensive to ride.** RideKC’s unlimited day pass costs $3. It costs on average $15 per day to own and operate a car in America. Transit can improve individuals' economic freedom by reducing the amount they spend on transportation.

- **Transit can move many people.** Most buses in KCMO carry 20 to 25 passengers per hour; they can be in service for up to 20 hours per day. Most cars carry one person, and sit parked over 90% of the time.

- **Transit requires very little space.** A typical car requires 70 square feet of road space. A bus can fit up to 60 people on 400 square feet of road space. That’s up to ten times less road space per person!

- **Transit requires less fuel and produces fewer emissions than driving.** A diesel bus gets 4 to 8 miles per gallon. It only takes 5 passengers on board to make a bus more fuel efficient than most cars.

- **Nearly everyone can use transit.** Not everyone can drive, and not everyone wants to. Transit allows people in all different life situations freedom to travel on their own.

Transit matters more in certain places
Transit is more useful when the next bus is coming soon. But providing frequent all-day service is expensive, so it’s only available in a few places.

**KCATA provides more service in the parts of KCMO with the most people and jobs, and in those areas more people ride the bus.** As a result, the average person in Kansas City, MO boards the bus or streetcar about 20 times per year. In contrast, the average person in Johnson County boards the bus just once per year.

---

1 As of Oct. 2018, average weekday ridership on KCATA bus routes was just over 42,000. But many trips require more than one boarding (transfers), most riders will make a return trip, and some riders will use transit several times in one day.
Existing Transit Network and Ridership – Kansas City, Mo.

Figure 2: Existing transit routes and ridership in the central part of the Kansas City region. This has historically been KCATA’s core service area, and features the most frequent service. Ridership is highest north of 47th Street, and west of Indiana Avenue.

Figure 3: Existing transit routes and ridership in the Northland. Service is much less frequent north of the Missouri River, and population and job densities are much lower on average. As a result, transit ridership is very low.
Existing Transit Network and Population Density - Kansas City, Mo.

Figure 4: Existing transit routes and residential density in the central part of the region. Frequent service is mostly provided in places with continuous, linear density, which are mostly in KCMO. An exception is the frequent Route 31, which traverses low-density areas on the way to Blue Ridge Crossing.

Figure 5: Existing transit routes and residential density in the Northland. Areas of mid-to-high density in the Northland are few, far from each other, and often freeway-oriented. As a result, there aren’t any streets or neighborhoods where deploying frequent service is likely to generate high ridership. The existing network has focused on getting a minimum level of service near as many mid-density places as possible.
How much access to opportunity does the existing transit network provide?

Figure 6: Jobs accessible within 60 minutes by transit (including walking + waiting) in the central part of the Kansas City region. Because of the combination of frequent routes and major activity centers like Downtown, KU Medical Center and Country Club Plaza, the transit network connects residents in this area to a lot of opportunities. Areas with the highest levels of job access tend to generate the highest ridership.

Figure 7: Jobs accessible within 60 minutes by transit (including walking + waiting) in the Northland. Because service is less frequent and jobs are much more dispersed north of the Missouri River, the transit network does not provide a high level of access to opportunity.
Public transportation networks are not facts of nature. They change over time in response to demand, political choices, and even individual requests and complaints.

Transit service in Kansas City today reflects the region’s choices about where and how to invest (or not invest) tax dollars and public resources. Four choices stand out:

1. **Low Levels of Investment, Especially Outside of KCMO**

As shown in Figure 8, investment in public transit service in the Kansas City region is low. It should not come as a surprise, then, that ridership is also low. **Other large and spread-out mid-American cities invest more in service, and achieve higher ridership** (as shown in the table at right).

There is also a huge disparity between operating funds provided by Kansas City, MO, and other jurisdictions. KCMO is the only jurisdiction with a dedicated funding source for transit, and receives far more service from KCATA as a result.

A study by the Mid-America Regional Council (MARC) found that as of 2017, **Kansas City, MO contributed $115 per resident per year for transit. In contrast, the regional average is $25 per resident per year. Every jurisdiction other than KCMO, KCK and North Kansas City invests less than $10 per resident per year.**

2. **Fast and Frequent Service on Selected Corridors**

Since the early 2000s, KCATA has been upgrading the speed, frequency, quality and reliability of service on several of its highest-ridership corridors. This has resulted most visibly in the Main Street MAX and Troost MAX, as well as the upcoming Prospect MAX and Independence MAX lines.

There have also been frequency improvements to certain cross-town bus routes like Route 31, which now operates every 15 minutes on weekdays, improving access to key destinations like MCC-Penn Valley and the VA Medical Center.

Nonetheless, **only 18% of residents and 32% of jobs in KC are located near a frequent transit route** (as shown in the bar chart at right).

3. **Service to Places with Few People**

KCATA provides service on many routes where ridership has been low. The most extreme examples are Route 231 (Riverside-Antioch) and Route 234 (Boardwalk-Antioch) in the Northland. Each of these routes carries fewer than 60 passengers per day, and fewer than 5 per hour per vehicle.

Low ridership on such routes is partly due to low service levels. But even if better service were available, there are few potential customers near each bus stop, and the bus ride to major destinations is very long. In other places, low ridership can be explained in different ways, such as the presence of a low-frequency route (like Route 10- Woodland-Brooklyn) near a high-frequency route (like Route 71- Prospect).

Nearly 50% of transit service resources in KCMO are being spent in ways that are unlikely to generate significant ridership. This is not inherently a bad thing: low-ridership services often provide a vital lifeline social service for people who would otherwise have no transportation.

4. **Experiments with On-Demand Services**

Most public transit is provided as fixed routes. Fixed-routes make it possible for many different people to benefit from a single vehicle, usually a bus, at a low cost. The trade-off for users is that the bus won’t change its route, even if it’s not taking you to precisely where you want to go.

On-demand service offers something different: a vehicle that can be summoned to go exactly where and when you need. In a place like Kansas City, where transit often doesn’t provide timely access to opportunities, the appeal of an on-demand solution at the cost of a bus ride is obvious.

This has spawned several generations of KCATA on-demand mobility solutions, such as FLEX routes, RideKC Freedom On-Demand, the ongoing Johnson County Micromobility microtransit service, and the 2016-2017 Bridj pilots. Though some of the services tested have provided a degree of public transportation to places and people who would otherwise be unserved, **all on-demand mobility solutions tested to date have been much less efficient in ridership and dollar terms than fixed routes.**

- On-demand services average 2 to 5 rides per hour, compared to an average of 25 rides per hour on fixed routes in KCMO.

- Most on-demand services cost $15-20 per ride. In contrast, the cost per ride on a fixed route averages about $7.

---

### Figure 8: Cities that invest more in transit have more useful networks, and as a result more people ride relative to their population.

<table>
<thead>
<tr>
<th>Urban Area</th>
<th>Population</th>
<th>Investment (annual service hours per person)</th>
<th>Ridership (annual boardings per person)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt Lake City</td>
<td>1.0 million</td>
<td>1.7</td>
<td>43</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>2.7 million</td>
<td>1.1</td>
<td>35</td>
</tr>
<tr>
<td>Milwaukee</td>
<td>1.4 million</td>
<td>1.0</td>
<td>26</td>
</tr>
<tr>
<td>Columbus</td>
<td>1.4 million</td>
<td>0.8</td>
<td>13</td>
</tr>
<tr>
<td>St. Louis</td>
<td>2.2 million</td>
<td>0.8</td>
<td>19</td>
</tr>
<tr>
<td>Cincinnati</td>
<td>1.6 million</td>
<td>0.5</td>
<td>10</td>
</tr>
<tr>
<td>Kansas City</td>
<td>1.5 million</td>
<td>0.5</td>
<td>11</td>
</tr>
<tr>
<td>Indianapolis</td>
<td>1.5 million</td>
<td>0.4</td>
<td>6</td>
</tr>
<tr>
<td>Memphis</td>
<td>1.1 million</td>
<td>0.3</td>
<td>7</td>
</tr>
</tbody>
</table>

**Figure 9: Nearly two thirds of residents (64%) and three quarters of jobs (74%) in KCMO are near transit, but far fewer are near a frequent service.**

*Includes City of Kansas City, Mo. and adjacent Northland communities.

---

1. Along with bikeshare, electric scooters and ridehailing, these types of services are sometimes collectively called “new mobility.”

2. Excluding Bridj, for which the average cost per ride was much higher.
RideKC Next is about the improvements that can be made in the next two years. That means some bigger picture decisions may need to wait.

For example, we can’t assume a significant change in the funding environment, so any changes that come out of this effort can’t require new revenue sources. Similarly, although KCATA is actively working on improving the efficiency of service delivery, it’s unlikely that the basic costs of providing transit will change drastically in the next two years.

That means this effort is budget- and cost-neutral. We have to assume that the resources available are the ones available today. This is important, because it means any decision to start investing more in one type of service is a decision to invest less in another type of service.

This will require KCATA to make difficult decisions, and those decisions must reflect the community’s priorities. This also means that these decisions should be framed in terms of trade-offs.

RideKC Next

Ridership vs. Coverage

The most basic trade-off is the degree to which the transit system should be pursuing ridership or coverage. Pursuing higher ridership or better coverage will lead to substantially different outcomes.

Pursuing higher ridership means focusing service on places where many people go, and designing service so the bus is always coming soon. Pursuing service focused primarily on ridership:

- Expands the economic and other opportunities available by transit.
- Limits growth in car traffic, congestion and pollution.
- Reduces the amount of public subsidy required for transit.
- Reaches fewer outlying and isolated neighborhoods.
- Often takes the form of frequent bus routes, mainly in core areas of the city. But those routes may be spaced up to a 1/2-mile or 1 mile apart (e.g. from Troost Ave to Prospect Ave).

Pursuing high coverage means reaching as many places as possible with a small amount of service. Service focused primarily on coverage:

- Ensures every neighborhood has access to the transit system.
- Provides lifeline access to critical services for all.
- Doesn’t provide a viable transportation option for most people.
- May take different forms, including:
  - In core areas, low-frequency bus routes spaced every 1/4-mile or less (e.g. from 9th to 12th Street).
  - In suburban areas, low-frequency bus routes extending far into low-density areas.
  - On-demand or flexible services in areas where demand is too low to justify a bus route.

Coverage services are not about ridership, they are about availability. For example, we might measure coverage as the percentage of the population that’s within 1/2-mile of some service. The goal of coverage service is to make that number high, even if ridership is low.

Even so, there is more than one reason to provide coverage service, and the goals for coverage service inform what KCATA should provide. When people ask for coverage service, it tends to be for two main reasons:

- **Service for people who depend on it.** Coverage-oriented transit provides an option to people with few other choices, and who are located in places where high-ridership service would not go. This includes places like:
  - Isolated lower-income communities where vehicle ownership rates are low;
  - Senior living communities in suburban areas; and
  - Destinations like employers, schools or social service agencies located in environments that are difficult for transit to serve efficiently.

- **Service for everyone who pays taxes.** Everyone in KCMO pays service for people who depend on it. Coverage-oriented transit provides an option to people with few other choices, and who are located in places where high-ridership service would not go. This includes places like:
  - Isolated lower-income communities where vehicle ownership rates are low;
  - Senior living communities in suburban areas; and
  - Destinations like employers, schools or social service agencies located in environments that are difficult for transit to serve efficiently.

Coverage: Fixed Routes vs. On-Demand

Coverage: for what purpose?

Coverage services are not about ridership, they are about availability. For example, we might measure coverage as the percentage of the population that’s within 1/2-mile of some service. The goal of coverage service is to make that number high, even if ridership is low.

Even so, there is more than one reason to provide coverage service, and the goals for coverage service inform what KCATA should provide. When people ask for coverage service, it tends to be for two main reasons:

- **Service for people who depend on it.** Coverage-oriented transit provides an option to people with few other choices, and who are located in places where high-ridership service would not go. This includes places like:
  - Isolated lower-income communities where vehicle ownership rates are low;
  - Senior living communities in suburban areas; and
  - Destinations like employers, schools or social service agencies located in environments that are difficult for transit to serve efficiently.

- **Service for everyone who pays taxes.** Everyone in KCMO pays sales taxes dedicated to transit service, so one can argue that every neighborhood in KCMO deserves some service, regardless of the level of need, and regardless of whether many people might ride.

Key Choice: How much of our transit resources should be spent on useful service in places with the most potential riders? How much should be spent on getting a little bit of service close to everyone?

Evidence from Kansas City and other regions suggests that there are very few situations where a bus route could be replaced with an on-demand service at a similar cost per trip. Almost all of these situations are in very low-density outer suburban areas.

This poses a peculiar dilemma: in designing coverage-oriented services, KCATA could choose to prioritize on-demand options over infrequent fixed routes. But because the cost per trip of on-demand service is usually higher than on fixed routes, that means the resulting service would likely end up carrying fewer people. At the same time, it’s likely that the people benefitting from on-demand service would find it more satisfying than a long walk to a bus that comes very infrequently.

Key Choice: To provide coverage, should KCATA prioritize on-demand services over fixed bus routes, even when the higher cost per trip of on-demand service means that fewer people would be served?