



# TECHNICAL MEMORANDUM #1: Existing Conditions and Market Analysis

## Lawrence Transit COA

Lawrence-Douglas County MPO

August 2016



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# 1 OVERVIEW OF LAWRENCE TRANSIT

The Lawrence Transit System, sometimes referred to as “T” service, began operating in its current form in December 2000. A turning point for the system occurred eight years later in 2008/2009. At that time, voters in Lawrence approved a ten-year sales tax to support transit in Lawrence, and the City entered into an agreement with the University of Kansas (KU) to coordinate Lawrence Transit System service with the University’s KU on Wheels (KUOW) service.

Dedicated funding and service coordination have allowed the transit system in Lawrence to make incremental service improvements, resulting in a 157 percent ridership growth between 2008 and 2014. However, a comprehensive assessment of the system’s ridership and productivity has not been conducted since service began over 15 years ago. This study aims to provide that assessment.

Understanding the strengths and weaknesses of the current transit network will allow the transit system to present voters with a vision for future growth as they consider the reauthorization of dedicated transit funding in 2018. In addition, the City of Lawrence and the University of Kansas have recently submitted a federal grant application to fund the development of a new transit center on the southern edge of the KU campus. This study will provide the transit system a clear understanding of current ridership patterns, as well as detailed recommendations for a restructured network built around the proposed transit center.

City of Lawrence residents have traditionally referred to the City’s bus system as “Lawrence Transit” or the “Lawrence Transit System” and the university system as “KU on Wheels” or “KUOW.” Similarly, in this document, the term “Lawrence Transit” will primarily refer to the bus routes serving the general city population and “KUOW” to the bus routes serving students. However, there will necessarily be some overlap in terms because the two systems are now operated jointly and some coordinated routes serve both populations. “Lawrence Transit” has in some ways become an umbrella term to refer to the coordinated system. However, City and University officials have not completed a formal rebranding effort. This document will use terms such as the “Coordinated System” when necessary to provide specificity and reduce confusion.

## FIXED-ROUTE SERVICE

The Coordinated System (CS) of Lawrence Transit and KU on Wheels (KUOW) at the University of Kansas offers 17 fixed-route bus routes serving areas throughout the City of Lawrence (see Figure 1). In general, Routes 1 through 10, 15, and 27 provide transit coverage to the general Lawrence community as part of Lawrence Transit. Routes 30 through 43 are considered KUOW routes and primarily serve students at KU. Routes 11 and 29 are fully coordinated and provide service to students and the general public.

Route 3, a curb-to-curb “flex” service in northern Lawrence, has designated timepoints at the system’s current transit hub (W. 7<sup>th</sup> and Vermont Streets) but flexible routing in between those timepoints. Riders can be picked-up and dropped-off at any safe place within the flex service area, but pick-ups must be scheduled by telephone between one hour and five days in advance. Due to

low ridership, the City will convert Route 3 to a fully fixed-route service in August 2016. The service area will be similar, though service will not extend further west than Kasold Drive.

All routes that primarily serve the City of Lawrence operate at a frequency of 30 or 60 minutes, and most run from approximately 6:00 AM to 8:00 PM, Monday through Saturday. KUOW service operates at a frequency of 30 minutes or better, Monday through Friday, with more variable service spans (see Figure 2). CS's goal is to operate every fixed-route at a frequency of 30-minutes or better; however, funding must first be available for the greater number of revenue hours and vehicles required to support that goal.

Figure 1 | 2015 Transit System Map in Lawrence, KS

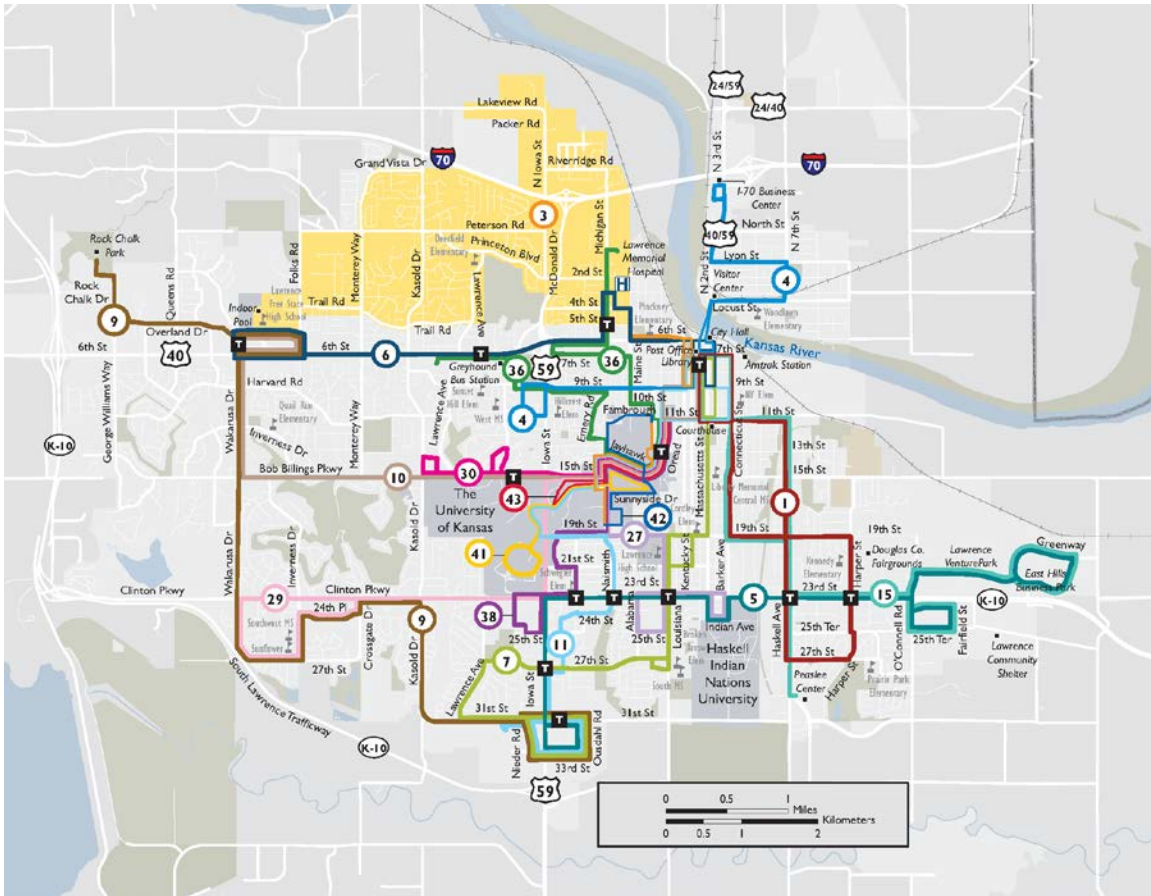


Figure 2 | City of Lawrence and University of Kansas Public Transit Service Characteristics

Lawrence Transit (City)		
Service Name	Service Span	Service Frequency
Route 1 – Downtown to Prairie Park	Monday – Friday: 6:03 AM – 7:59 PM Saturday: 6:03 AM – 7:59 PM	30 minutes
Route 3 – North Flex Service	Monday – Friday: 6:03 AM – 7:57 PM Saturday: 6:03 AM – 7:57 PM	60 minutes
Route 4 – North Lawrence to 9th & Iowa	Monday – Friday: 6:03 AM – 7:45 PM	60 minutes



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	Saturday: 6:03 AM – 7:45 PM	
Route 5 – 31 <sup>st</sup> & Iowa to East Hills Business Park	Monday – Friday: 6:30 AM – 7:58 PM Saturday: 6:30 AM – 7:58 PM	60 minutes
Route 6 – Downtown to 6 <sup>th</sup> & Wakarusa	Monday – Friday: 6:03 AM – 7:57 PM Saturday: 6:03 AM – 7:57 PM	30 minutes
Route 7 – Downtown to 31 <sup>st</sup> & Iowa	Monday – Friday: 6:02 AM – 8:00 PM Saturday: 6:02 AM – 8:00 PM	30 minutes
Route 9 – 31 <sup>st</sup> & Iowa to 6 <sup>th</sup> & Wakarusa	Monday – Friday: 6:05 AM – 8:00 PM Saturday: 6:05 AM – 8:00 PM	60 minutes
Route 10 – Downtown to 6 <sup>th</sup> & Wakarusa	Monday – Friday: 6:03 AM – 8:00 PM Saturday: 6:03 AM – 8:00 PM	60 minutes
Route 15 – Downtown to Peaslee Center	Monday – Friday: 6:34 AM – 7:55 PM Saturday: 6:34 AM – 7:55 PM	60 minutes
Route 27 – KU to Haskell University	Monday – Friday: 7:05 AM – 6:22 PM Saturday: No service	30 minutes
Night Line – Demand Response	Monday – Saturday: 8:00 PM – 6:00 AM	30-minute pickup window
<b>KU on Wheels (University)</b>		
<b>Service Name</b>	<b>Service Span</b>	<b>Service Frequency</b>
Route 30 – Bob Billings & Kasold to KU	Monday – Friday: 7:10 AM – 5:57 PM Saturday: No service	20 minutes
Route 36 – 6 <sup>th</sup> via Emery to KU	Monday – Friday: 7:02 AM – 6:27 PM Saturday: No service	30 minutes
Route 38 – 25 <sup>th</sup> & Melrose to KU	Monday – Friday: 7:15 AM – 6:53 PM Saturday: No service	20-30 minutes
Route 41 – Campus Circulator (Yellow)	Monday – Thursday (KU in session): 6:30 AM – 10:30 PM Friday (KU in session): 6:30 AM – 6:50 PM Monday – Friday (KU out): 6:30 AM – 6:50 PM Saturday: No service	Monday – Thursday (KU in session): 8 – 30 minutes Friday (KU in session): 8 – 20 minutes Monday – Friday (KU out): 30 minutes
Route 42 – Campus Circulator (Blue/Orange)	Monday – Thursday: 7:10 AM – 10:26 PM Friday: 7:10 AM – 5:55 PM Saturday: No service	Monday – Thursday: 15-30 minutes Friday: 15 minutes
Route 43 – Campus Circulator (Red)	Monday – Friday: 7:20 AM – 5:30 PM Saturday: No service	6-9 minutes
SafeBus (students only)	Thursday – Saturday (Fall/Spring): 9:00 PM – 3:00 AM	20-30 minutes

**Coordinated Routes (City and University)**

Service Name	Service Span	Service Frequency
Route 11 – 31 <sup>st</sup> & Iowa to KU to Downtown and Downtown to KU to 31 <sup>st</sup> & Iowa	Monday – Friday: 6:03 AM – 8:03 PM Saturday: 6:31 AM – 7:52 PM	Monday – Friday: 30 minutes Saturday: 30 – 60 minutes
Route 29 – 27 <sup>th</sup> & Wakarusa to KU	Monday – Friday: 7:00 AM – 6:32 PM Saturday: 7:20 AM – 6:22 PM	Monday – Friday: 20 minutes Saturday: 40 – 60 minutes

Paratransit Services (City and University)		
Service Name	Service Span	Service Frequency
JayLift (KU on Wheels) – Campus of KU (students only)	Monday – Friday (Fall/Spring): 6:30 AM – 7:30 PM Monday – Friday (Summer): 6:30 AM – 6:30 PM	Scheduled 24-hours in advance
T Lift (Lawrence Transit) – City of Lawrence	Monday – Saturday: 6:00 AM – 8:00 PM	Scheduled in advance; 30-minute pickup window

## Passenger Facilities

Bus stops in the City of Lawrence are designated with blue and white bus stop signs. Shelters, benches, system maps, and other amenities are available at some stops. However, the presence of these passenger amenities do not always indicate a high-ridership stop. In many cases, the locations for passenger amenities were chosen around the time service began in 2000 and before clear ridership patterns developed. Some transit riders in the eastern part of the city have recently started a grassroots effort to place chairs, benches, and other personal amenities at their stops, which has created concern for the public image of transit in Lawrence and liability issues with amenities being placed in the public right-of-way.

CS has one primary transit hub at W 7<sup>th</sup> and Vermont Streets, though this location is temporary, having moved from E 9<sup>th</sup> and New Hampshire Streets in the summer of 2013. Due to major construction projects, events, and disruptions of service, as well as the lack of available space in the downtown, CS began looking for a more centralized location for their hub that would serve the community better and improve their ability to operate more efficiently and effectively. A proposal to locate the hub at W 21<sup>st</sup> and Iowa Streets was turned down by city commissioners, who asked that the City and KU explore a transit center as part of KU’s Central District Development. The City and KU have worked collaboratively to find a location close to campus and downtown to build a multimodal transportation center and parking deck that meets both university and city needs. Current concepts locate the new center on a parking lot (Lot 90) east of Allen Fieldhouse and Hoglund Ballpark on Naismith Drive between Schwegler Drive and W 18<sup>th</sup> Street.

In April 2016, the City and KU jointly submitted a TIGER (Transportation Investment Generating Economic Recovery) grant application to receive funding for the new multimodal transportation center, which would include a transit hub, parking decks, and pedestrian and biking amenities.

Figure 3 | Bus Stop Sign, Lawrence, KS





Project costs are currently estimated at around \$30 million, with \$11 million to come from the university, \$4 million from the city with funds set aside from the 0.05 percent sales tax, and \$15 million from the U.S. Department of Transportation as a result of the TIGER grant application. The federal government awards TIGER grants in the fall. If the TIGER grant is awarded to the City, final design of the transit center will occur in 2017 with construction in 2018.

## Multimodal Connections & Amenities

CS issued an Amenities Guidelines and Policies report in July 2015. The report outlines specific purposes, thresholds, location factors, and design factors for bus passenger amenities, including bus stop signs, bus stop pads, benches, shelters, information displays, landscaping, shelter lighting, leaning rails, trash receptacles, bollards, and bike racks. Presently, all buses in Lawrence are equipped with bike racks that can hold up to two bikes. Bus stop signs and route designations are required for all stops; benches, shelters, information displays, and trash receptacles are required for stops featuring more than 25 daily boardings; lighting, bicycle racks, landscaping, leaning rails, and bollards are required for stops featuring more than 50 daily boardings.

A [2010 inventory of bicycle parking in downtown Lawrence](#) identified 304 bicycle parking spaces. The City was recently awarded a grant that will finance the installation of three bicycle corrals in downtown Lawrence and add a total of 30 on-street bicycle parking spaces. The three proposed locations for the pilot project are: 8th Street and Massachusetts Street, 100 East 9th Street, and 707 Vermont Street.

## DEMAND-RESPONSE SERVICE

Lawrence Transit and KUOW operate three demand-response services, all contracted to MV Transportation:

- **T Lift:** Operated by Lawrence Transit, T Lift provides door-to-door service in the City of Lawrence to riders who cannot use fixed-route service because of a disability. Service operates Monday through Saturday from 6:00 AM to 8:00 PM; trips are scheduled in advance (as early as five days) and passengers are assigned a designated 30-minute pickup window.
- **Night Line:** Operated by Lawrence Transit, Night Line provides curb-to-curb service in the City of Lawrence for the general public. Service operates Monday through Saturday from 8:00 PM to 6:00 AM, with a designated 30-minute pickup window. Reservations are placed by phone and can be scheduled up to five days in advance.
- **JayLift:** Operated by KUOW, JayLift provides curb-to-curb service for KU students with disabilities. Service operates Monday through Thursday from 6:30 AM to 10:30 PM and from 6:30 AM to 7:00 PM on Fridays. Trips must be scheduled 24-hours in advance, and can be placed as early as seven days in advance. JayLift is free to use but service is limited to on-campus destinations and off-campus housing.

Ridership for Lawrence paratransit services has steadily increased in the past decade. In 2015, T Lift ridership totaled 63,406 trips, up from 61,444 trips in 2014 (a 3.19 percent increase). Between 2007 and 2015, ridership on T Lift increased 10.2 percent, an average of 1.23 percent per year. Ridership for Night Line is only available for the past two years: from 2014 to 2015, ridership grew by 10.3 percent from 14,462 to 15,958 trips. In 2015, ridership on JayLift totaled 3,382 trips.

MV Transportation, CS's contractor, employs approximately 35 staff members to operate paratransit services in Lawrence, including call center staff (managers, reservationists, and schedulers/dispatchers), drivers, and road supervisors dedicated to both fixed-route and paratransit. Real-time scheduling is done on Trapeze (for T Lift and Night Line) to give riders their confirmed scheduled pick-up time and to manage trip time negotiations. For JayLift, requests are manually booked and immediately scheduled using a Google spreadsheet during the call. Twenty-four accessible vehicles (23 Ford E450's and one Ford E350) are used to operate Lawrence's coordinated paratransit services.

## FARES AND MARKETING

### Fare Structure

Lawrence Transit and KUOW have a unified fare structure. The regular cash fare on the fixed routes of both systems is \$1.00, which also allows free transfers. KU students, staff, and faculty ride fare-free on all routes when showing KU identification. Service is fare-free for all riders within the KU campus zone. Fare-free service for KU affiliates is funded through a student fee and pre-paid by KU. Although the fare-free service extends to KU staff and faculty, these affiliates do not currently contribute funding for the privilege. All children aged 5 and under also ride free.

For riders who would otherwise pay the \$1.00 cash fare per trip, there are one-day passes available for \$2.75, 10-ride cards for \$10.00 (no discount from single-ride price but eliminates the need to carry cash for each trip), and monthly passes for \$34.00. These products are sold at City Hall and at participating grocery stores.

A 50 percent discount is given to certain individuals for both fares and passes. Individuals who pay a reduced fare must show proof of eligibility when boarding the bus or when purchasing a reduced price pass. Individuals who are eligible to receive the 50 percent discount include:

- Students in grades K-12; students in grades K-9 do not need to show ID, while students in grades 10-12 show a student ID
- Haskell Indian Nations University students, who show University ID
- People aged 60 and over, who show either a Medicare card or state-issued ID
- Persons with disabilities, who can show either a Medicare card or a card from Lawrence Transit, which indicates their eligibility for the ADA paratransit service called T Lift

T Lift service costs \$2.00 per trip, or \$20.00 for a 10-ride card. Monthly passes on T Lift cost \$68.00. In order to be eligible for T Lift, a medical provider must certify that the person is unable to use the fixed-route system. JayLift paratransit service is available to those who are affiliated as students, staff, or faculty of KU at no cost. The Night Line demand-response service available after standard working hours costs \$2.00 per trip, with no passes being accepted.

There are no agreements with other regional transit providers in Douglas County to honor passes or transfers between systems.

A large percentage of riders on CS either receive the 50 percent discount or ride fare-free as affiliates of KU, so the amount of fares collected is lower than many comparable transit systems. The full fare of \$1.00 is also lower than Lawrence Transit and KUOW peers. (The comprehensive fare analysis conducted later in this study will include a peer-to-peer comparison.) The City and

KU must develop future funding options, including a rational fare structure, that can sustain the service currently offered and increase service as warranted by growth in demand.

Many of the fixed-route riders receiving the 50 percent fare discount are certified eligible to use ADA complementary paratransit services due to a disability that prevents them from using fixed-route services some or all of the time. The fixed-route discount is offered to those individuals in order to encourage the use of fixed-route services when possible. However, the City and KU may need to review their process for ADA paratransit eligibility screening to ensure that only people who truly require ADA-mandated paratransit services are being certified to use it.

## Marketing

Lawrence Transit and KUOW are separately branded, though most of the community understands that the two systems are operated jointly and that users can board any Lawrence Transit or KUOW bus. Lawrence Transit branded buses typically operate on routes that provide coverage in the City of Lawrence, while KUOW branded buses typically operate on the university routes and shuttles. However, buses are used interchangeably when the need arises.

The Lawrence Transit logo is a capital “T” in a warm red color contained within two concentric yellow and turquoise circles. The turquoise circle contains the words “Lawrence Transit System” in yellow and white. The KUOW logo is the KU Jawhawk used university-wide. The joint logo is these two logos side-by-side and the city and university name on the right-hand side in dark blue text (see Figure 4). Printed materials for the system utilize a light blue and dark blue color scheme on the booklet cover, with each route given its own color inside.

Figure 4 | Lawrence Transit/KU on Wheels Joint System Logo



The website for CS is operated under the Lawrence Transit name, [lawrencetransit.org](http://lawrencetransit.org), and gives the route times, map, and calendar for each route. A downloadable version of this information is also available for the system and each route. The online route maps are zoomable and can be viewed in a larger window via a pop-out map viewer. An online trip planner powered by Google Transit allows users to easily find the best transit route for their specific origin and destination. KUOW has its own website, [kuonwheels.ku.edu](http://kuonwheels.ku.edu), which provides announcements, such as route changes or alerts, some trip planning information, and a service calendar. However, most links or menus on the KUOW website take online users to the [lawrencetransit.org](http://lawrencetransit.org) website.

Finally, for transit users with a cell phone or smartphone, CS also has a texting service and mobile app for real-time bus tracking. Most bus stop signs include a stop number, so transit users can text the stop and route number (optional) to a phone number and receive the next arrival times of their bus. The mobile app, called “Where’s My Bus?”, is powered by MV Transportation and is available for iPhone and Android.

The marketing for Lawrence Transit and KUOW, including (but not limited to) two logos, two websites, and differently branded buses, causes some confusion and hinders efforts by CS to operate seamlessly and efficiently throughout the City of Lawrence and KU. Current and potential

users can still become confused about what bus they can board, the amount of fare to pay, and where they should go for information. While printed materials are mostly integrated, people today are increasingly finding out information through online resources and social media. A comprehensive rebranding effort would benefit current and potential users, operators, administrative staff, and contractors alike.

## GOVERNANCE STRUCTURE

Lawrence Transit is one of the department functions of the City Manager's Office. The Public Transit Administrator is responsible for the overall management of the system. Policies for Lawrence Transit are set by the Lawrence City Commission. A nine member Public Transit Advisory Committee (PTAC) provides advice on all matters regarding the system including service changes, ridership policies, fare structure, funding, and budgets. The nine members serve three year terms and are comprised of volunteers appointed by the Mayor.

KUOW is a function of the University's Department of Parking and Transit. The Associate Director of Parking and Transit serves as the administrator of KUOW. A ten member Transit Commission appointed by the Provost oversees KUOW and advises the Provost on transit matters. Recommendations to the Provost for membership on the commission are made by the Student Senate (7 seats); Staff Governance Committee (2 seats) and Faculty Governance Committee (1 seat). Typically the Provost accepts Transit Commission recommendations; however, the Provost makes the final decision.

For the past eight years, the City and University have created a unified system by coordinating services and functions. City and University leadership fully embrace this coordination. They recognize the many benefits that coordination provides including the elimination of overlapping services. This approach enables service hours to be deployed in a manner that provides better frequency and connection opportunities for both the University community and the city at large. Other benefits of the coordinated system include a unified fare structure for both services; efficiencies from having a single maintenance facility and service contractor; and the ability to submit joint grant applications.

One of the biggest challenges in communities that have both a local transit system (city, county or transit district) and a university run system is an overlapping of services that creates confusion, results in inferior service for both the general public and university markets, and sometimes creates a negative image in the community if it appears that resources are not being deployed efficiently. The coordinated efforts of Lawrence Transit and KUOW have eliminated these challenges. If there is overlapping service it appears to be intentional and designed to address market demands warranting the capacity that both services provide jointly.

Both Lawrence Transit and KUOW services are operated under contract by MV Transportation. While there are two separate contracts, MV operates out of one consolidated operations and dispatch center. Under a service contract arrangement, the day-to-day operations are provided by MV while the City of Lawrence and University of Kansas are responsible for administering the contracts, establishing policy, determining service levels, and providing funding. The MV General Manager oversees both Lawrence Transit and KUOW services.

While the coordinated system has been a success from both the customer perspective and organizationally, the City of Lawrence and the University of Kansas still need to approve all major decisions separately. This presents a challenge since the approval process is different for each entity. The City process is straightforward and the protocols at the staff and city commission level

are clearly articulated in advance. The University process is at times more complicated. For example, any matter regarding University property requires state legislative action, and issues not related to transit can complicate matters at times.

A recent example of how this can have implications over the direction of the unified system is the joint TIGER grant application to provide funding for the new multimodal transportation center near KU. Uncertainty existed up until the deadline that the necessary approval from the University of Kansas would be obtained in time. This was not due to lack of support for this project by the University, but rather due to the fact that it involved University owned property and legislative action was necessary.

Currently the City of Lawrence and Douglas County comprise a Metropolitan Planning Organization (MPO). The Kansas City MPO, called the Mid-America Regional Council (MARC), is located to the east, and the Topeka MPO to the west. The Lawrence-Douglas County MPO established a Regional Transit Advisory Committee (RTAC) in 2011. The RTAC consists of Lawrence Transit and KU staff, as well as representatives from other regional providers discussed in Section 3 of this report. RTAC is an official advisory committee for the MPO to provide technical support for regional transit planning throughout Douglas County, and to assist it in carrying out the [Coordinated Public Transit–Human Services Transportation Plan \(CPT-HSTP\)](#).

## FINANCIAL SUMMARY

Funding for the operation of Lawrence Transit is provided by passenger fares, student fees, a dedicated sales tax, FTA 5307 formula funds, and state assistance. In 2008, the voters of the City of Lawrence approved two sales taxes for transit. One was a 0.20 percent sales tax to sustain existing services, while the second was a 0.05 percent sale tax to fund new services. Both of these taxes are set to expire at the end of 2018. The City opted to hold the revenues from the 0.05 percent tax in reserve to fund the local match for a new transit center. However, in fiscal year 2015, the City began using funds from this tax to expand bus service.

Total Lawrence Transit operating costs increased 40 percent between 2009 and 2015, primarily driven by a 37 percent increase in revenue hours that accompanied a 114 percent increase in ridership (see Figure 5).

Fixed-route operating costs increased 18 percent over seven years on a 22 percent increase in revenue hours. Fixed-route operating costs increased 2 percent between 2014 and 2015 on a 10 percent increase in revenue hours. T Lift and Night Line costs declined despite an increase in revenue miles. Lower fuel costs are the primary reason for reduced operating costs in 2015.

KUOW operating costs have modestly declined over the past four years (see Figure 6). JayLift ridership fluctuates along with the number of short-term injuries among the student population. Recently, JayLift ridership has declined, resulting in lower operating costs. Lower fuel costs also reduced expenses. KU eliminated one of four SafeBus routes due to low ridership, and that cost reduction was only partially offset by a small increase in SafeRide use.

Figure 5 | Lawrence Transit Fixed-Route, T Lift, and Night Line Operating Costs

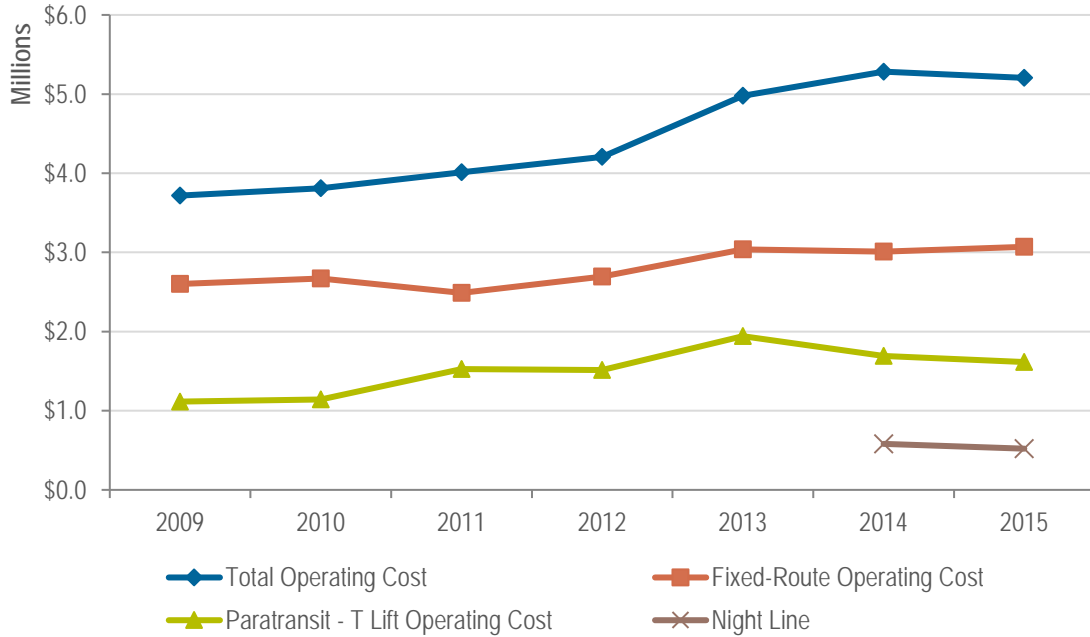
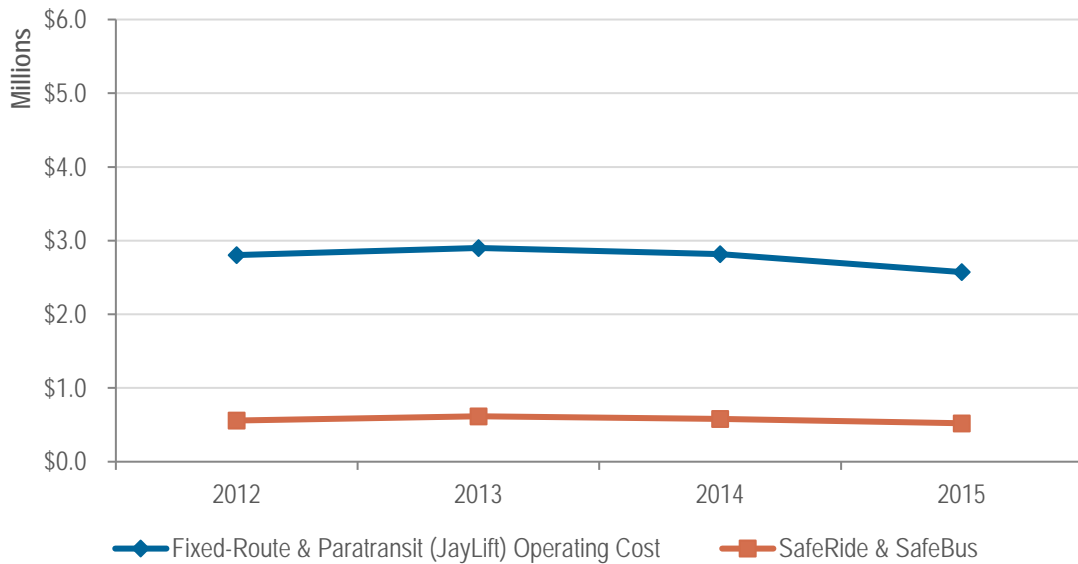


Figure 6 | KU on Wheels Fixed-Route, JayLift, SafeRide, and SafeBus Operating Costs



In the past, the City has used American Recovery and Reinvestment Act (ARRA) funds and FTA 5309 discretionary funds for fixed-route bus replacement and acquisition. However, ARRA was a one-time federal program passed in 2009 to stimulate the economy, and 5309 has been replaced by a smaller Bus and Bus Facilities program (5339) that generally does not provide sufficient funds for smaller systems like Lawrence Transit to replace vehicles when their useful life expires. The City has begun to set aside 5307 funds for future bus acquisitions.



The City and KU jointly receive over \$1 million per year in state transit assistance. These funds must be used within two years of receipt. The City uses about 50 percent for capital acquisitions. This is the usual source for paratransit vehicle acquisitions. The University uses all of their state funds for capital acquisitions. The City and University jointly plan capital expenditures. Many acquisitions benefit both entities.

There are three student fees that provide funding for the KU system. One fee supports the operation of KUOW and Jaylift complimentary paratransit service. Another fee is established to acquire vehicles. The third fee funds SafeRide and SafeBus services. These fees must be approved annually by the student council and changes to the fees need to be voted on by the student body.

The student fee covers 70 percent of the operating budget for KUOW. The other 30 percent is funded by parking revenues since KUOW provides service from distant parking lots not within walking distance of all campus facilities.

Overall, major funding challenges exist for coordinated transit in Lawrence:

- The first challenge is to fund the multimodal transportation center if the TIGER grant is denied. The City and KU would like to have the center completed or substantially built before going to the voters to renew the transit sales tax. The multimodal center is key to efficiently restructuring service so that a 0.20 percent sales tax would be sufficient to sustain operations.
- Another challenge is the possibility that state funds will cease. While these funds are safe for another year and it will take legislative action to terminate or significantly reduce these funds, fiscal challenges at the state level could threaten these funds in future years.
- The third and possibly most critical challenge is the expiration of both transit taxes at the end of 2018. It will require another vote of the residents of Lawrence to renew one or both taxes. One consideration is whether the tax should be limited to the City of Lawrence or if there should be a countywide tax to support a regional system.
- Student funding is also unstable. The University must seek approval from the student council each year and any increases in student fees to cover inflation or expansion in service requires a vote of the student body. With significant turnover on the student council each year, new council members need to be educated on the value and needs of the transit system annually as part of the budget process. Because fees are fixed, only an increase in enrollment can result in revenue growth to cover inflationary cost increases, unless the student body agrees to approve a higher fee.
- Some capital and operating costs can grow faster than the rate of inflation or tax revenue growth, which creates a funding shortfall. For example, new Buy American regulations are likely to significantly increase the cost of bus purchases. Fuel prices can also be very erratic. Recently fuel prices have decreased, but past drops have sometimes been followed by steep price hikes.

The City and University have made good use of the resources available to them and have effectively procured resources to build a joint transit system that resulted in an increase in ridership of over 150 percent since coordination began. The goal of this planning initiative is to sustain this success and address the forthcoming financial challenges.

## 2 MARKET ANALYSIS

Successful public transit systems typically serve dense population and employment centers, while also providing mobility for those who have no other means of transportation. As the City and KU looks towards the future, they must understand where existing and potential customers live and work, and align transit services and programs with those markets. The market analysis helps determine the need and potential for transit service by examining the following characteristics:

- **Population and Employment Density:** The market for transit is strongest in areas with greater numbers of people living and working in close proximity. Population and employment density are thus the strongest indicators of transit demand.
- **Socio-Economic Characteristics:** Factors such as income, auto availability, age, and disability status are often directly related to the likelihood that an individual will use transit.
- **The Location of Major Employment Centers:** Many riders rely on transit for commuting to work. Major employers may also act as partners for funding existing and additional transit services.

Transit ridership is further affected by urban form, land use, the pedestrian environment, and the convenience and price of other alternatives. Nearly all transit riders are also pedestrians at some point during their trip. Ridership is therefore directly affected by how safe and comfortable riders feel when walking between transit services and destinations. The analysis presented in this section broadly identifies neighborhoods, activity centers, and corridors that may be supportive of transit service. However, the analysis is not intended to provide enough detail or precision to lead to service recommendations on its own. Local knowledge and guidance, along with field work, will provide context and detail that data and maps cannot. All information sources will be considered together, and recommendations and final decisions will reflect a holistic view of the transit landscape throughout the City of Lawrence.

The population and socio-economic maps included in this section rely on Census and American Community Survey data. To collect and distribute data, the Census breaks up the United States into small geographic areas that have similar populations but can vary widely in area and shape. Though we use the smallest geographic unit available – blocks for population and employment, block groups for all other socio-economic data – people are distributed evenly across the geographic area regardless of where they are actually located. In addition, the employment data from the Census can lack locational accuracy for businesses with multiple locations. Often, employment locations will be reported at the headquarters when the employee actually travels to a satellite location, such as with school teachers and city government employees.

Data sources for this analysis include the 2010 U.S. Census, the 2010-2014 5-year American Community Survey, Lawrence Transit and KUOW data, and economic development data provided by the Economic Development Corporation of Lawrence & Douglas County.

## TRANSIT POTENTIAL

The market for transit is strongest in areas with a high concentration of people and businesses. Residential and employment density were used to develop a transit potential index. This index shows where the conditions are most suitable for transit service based on the number of people and jobs per acre.

### Population Density

As most riders must walk between their origin/destination and the nearest bus stop, population distribution and density is a key factor influencing transit service viability. Higher density communities have more people within walking distance of bus routes, and are thus strong markets for transit.

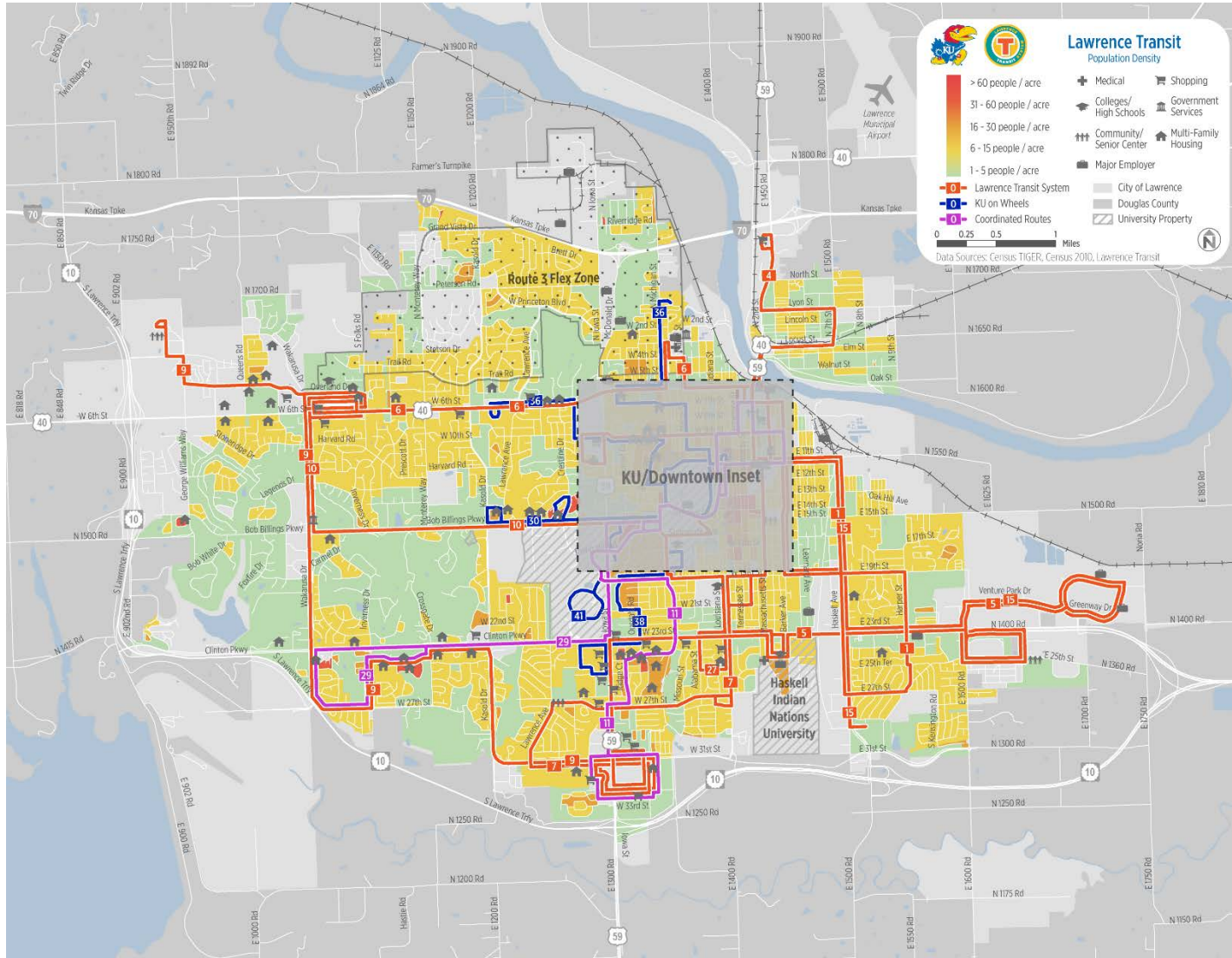
Most people are willing to walk up to 10 minutes, or between  $\frac{1}{4}$ - and  $\frac{1}{2}$ -mile, to access a transit service. The size of a transit market is therefore directly related to the population density within  $\frac{1}{2}$ -mile of a potential transit corridor. The density needed to support hourly fixed-route transit service is generally about 6-15 people per acre. Higher density areas can support higher service frequency, while lower density areas may only be able to support demand response service.

Figure 7 shows population density within the City of Lawrence. Figure 8 focuses specifically on the neighborhoods directly surrounding downtown Lawrence and the main KU campus. Key findings from the population density analysis include:

- About 92 percent of the population in the City of Lawrence lives within  $\frac{1}{2}$ -mile of existing transit routes. Note: Some individuals may in reality live slightly farther than  $\frac{1}{2}$ -mile from existing fixed-route service. The study team conducted this analysis using Census blocks, the smallest geographic unit for which population data is available. However, the edges of the blocks and the  $\frac{1}{2}$ -mile buffer “service area” around the routes often do not overlap. Thus, portions of the blocks are outside of the service area.
- The City of Lawrence contains large areas of moderate population density (5-15 people per acre) intermixed with both lower and higher density neighborhoods.
- Lawrence’s highest density neighborhoods are located directly adjacent to the KU campus, including Oread, Hill Crest, and West Hills. These neighborhoods contain a mix of single family housing and larger developments that are popular with KU students. Some parts of Oread have greater than 30 residents per acre and could therefore support higher frequency transit services.
- Apart from neighborhoods near KU, the highest density area in Lawrence is located southeast of the intersection of State Highway 10 and 23<sup>rd</sup> Street. Several apartment complexes in this neighborhood have more than 30 residents per acre.
- Lawrence’s lowest density neighborhoods are primarily located on the outskirts of the city, especially to the west of KU. These neighborhoods contain mostly single family homes, many of which have been constructed in the past few decades.

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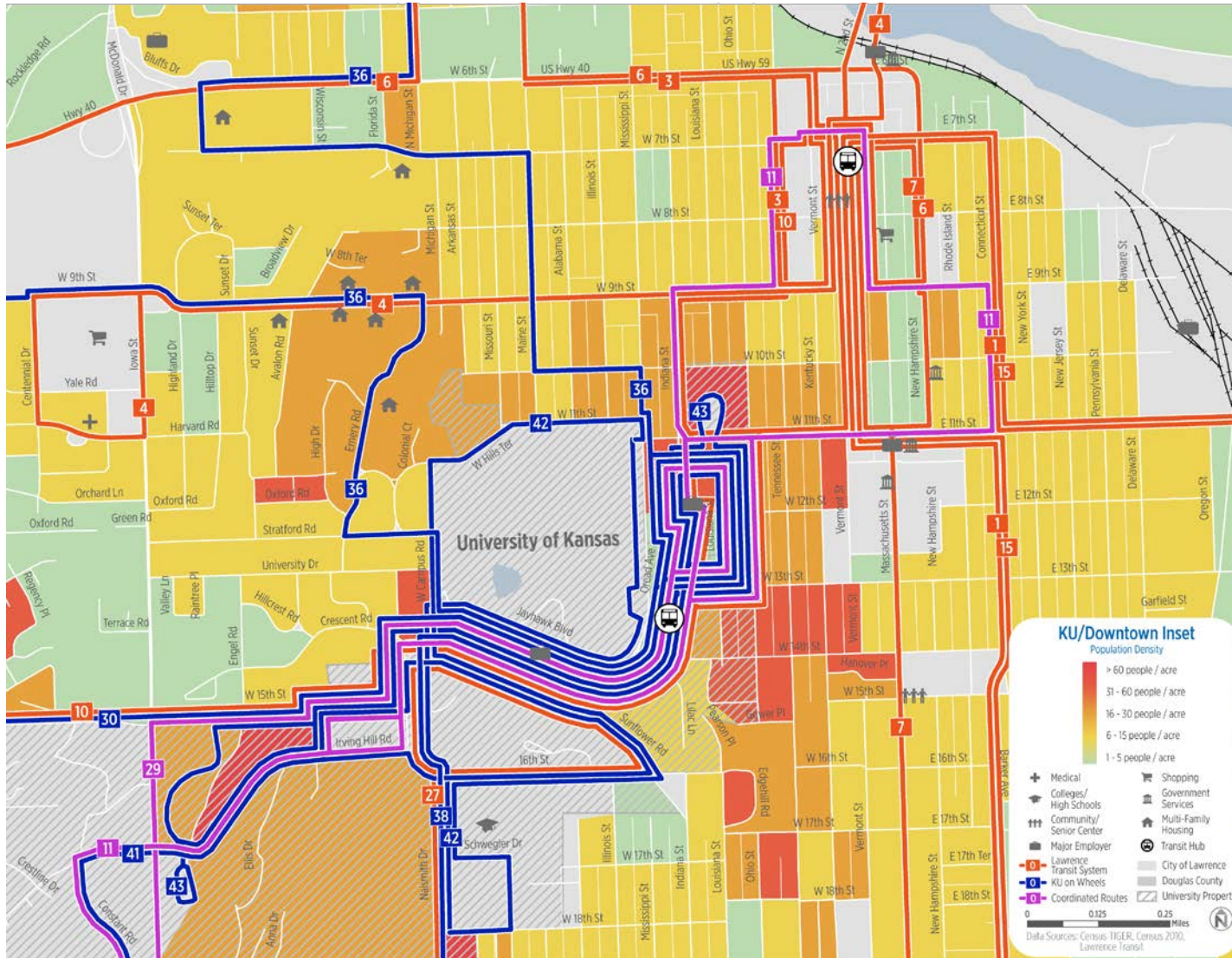
Figure 7 | Population Density Map





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Figure 8 | Population Density KU/Downtown Inset Map



## Employment Density

The location and density of jobs is another strong indicator of transit demand. In most markets, traveling to and from work is the single largest segment of transit trips. Commute trips are typically repetitive and predictable, often attracting riders who would otherwise not use transit. As with population density, areas with six or more employment positions per acre can usually support hourly fixed-route transit service. Places with higher employment densities may support greater frequency service.

Figure 9 shows employment densities within the City of Lawrence. Figure 10 focuses specifically on the neighborhoods directly surrounding downtown Lawrence and the main KU campus. Key findings from the employment density analysis include:

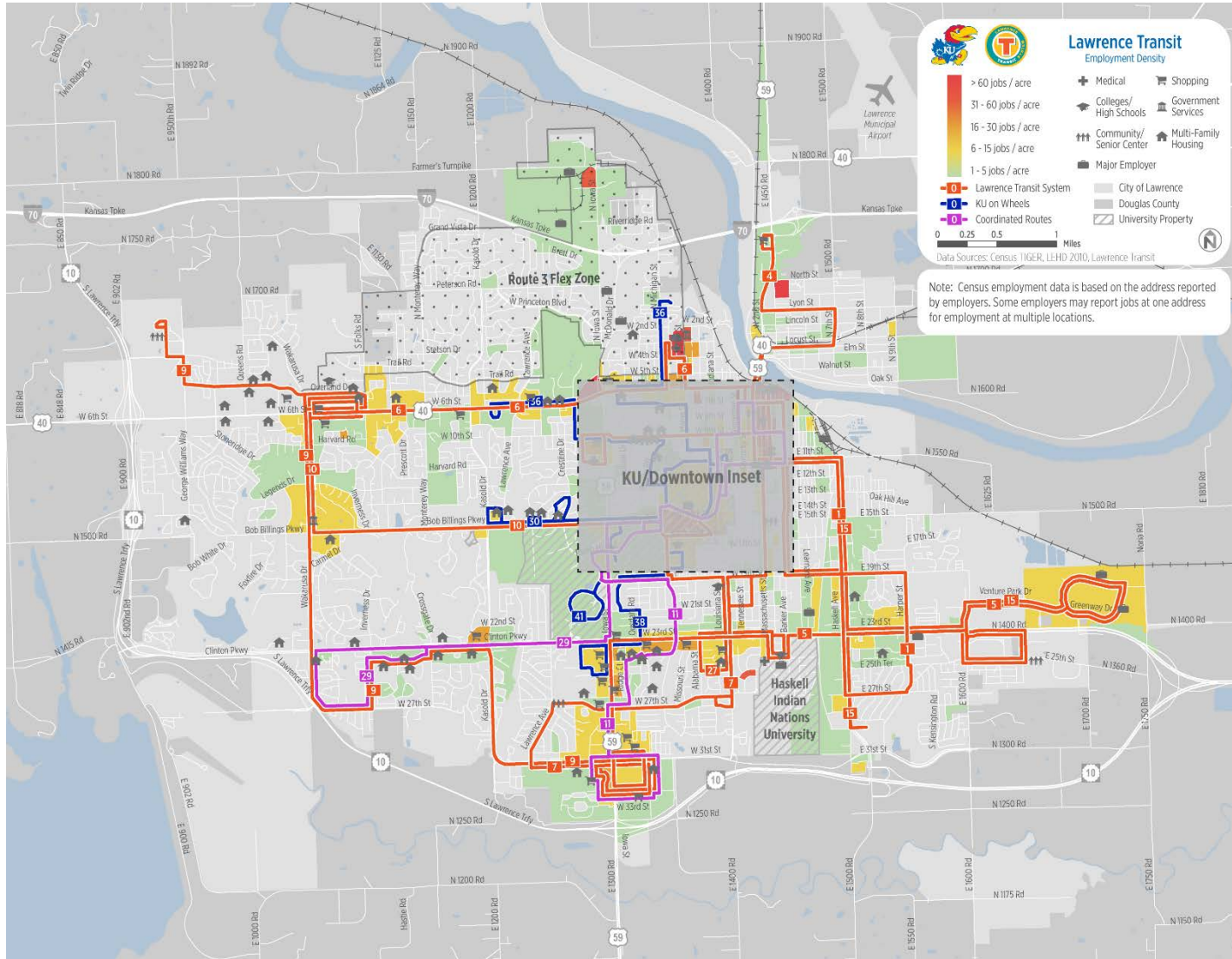
- The highest concentrations of employment in Lawrence are located downtown and at the University of Kansas, as well as along the corridors of West 6<sup>th</sup> Street, 23<sup>rd</sup> Street, and along Iowa Street below West 23<sup>rd</sup> Street. All of these areas are served either by Lawrence Transit or KUOW.
- Several institutional complexes are major employment centers, including the Lawrence Memorial Hospital. These locations are accessible using Lawrence Transit services.
- The 2010 Census typically assigns university employment data to a single block. Therefore, much of the KU and Haskell Indian Nations University campuses appear to have no employment despite relatively high employment density.

An analysis of several years of employment data and confirmation with local officials indicates that some anomalies exist in the employment data. For example, areas in north Lawrence and near West 6<sup>th</sup> Street and Iowa Street both show high concentrations of employment, but local knowledge suggests that this high concentration may not actually exist. The general trends and findings discussed here are correct, however, and the data anomalies will be considered in any recommendations developed involving these areas.



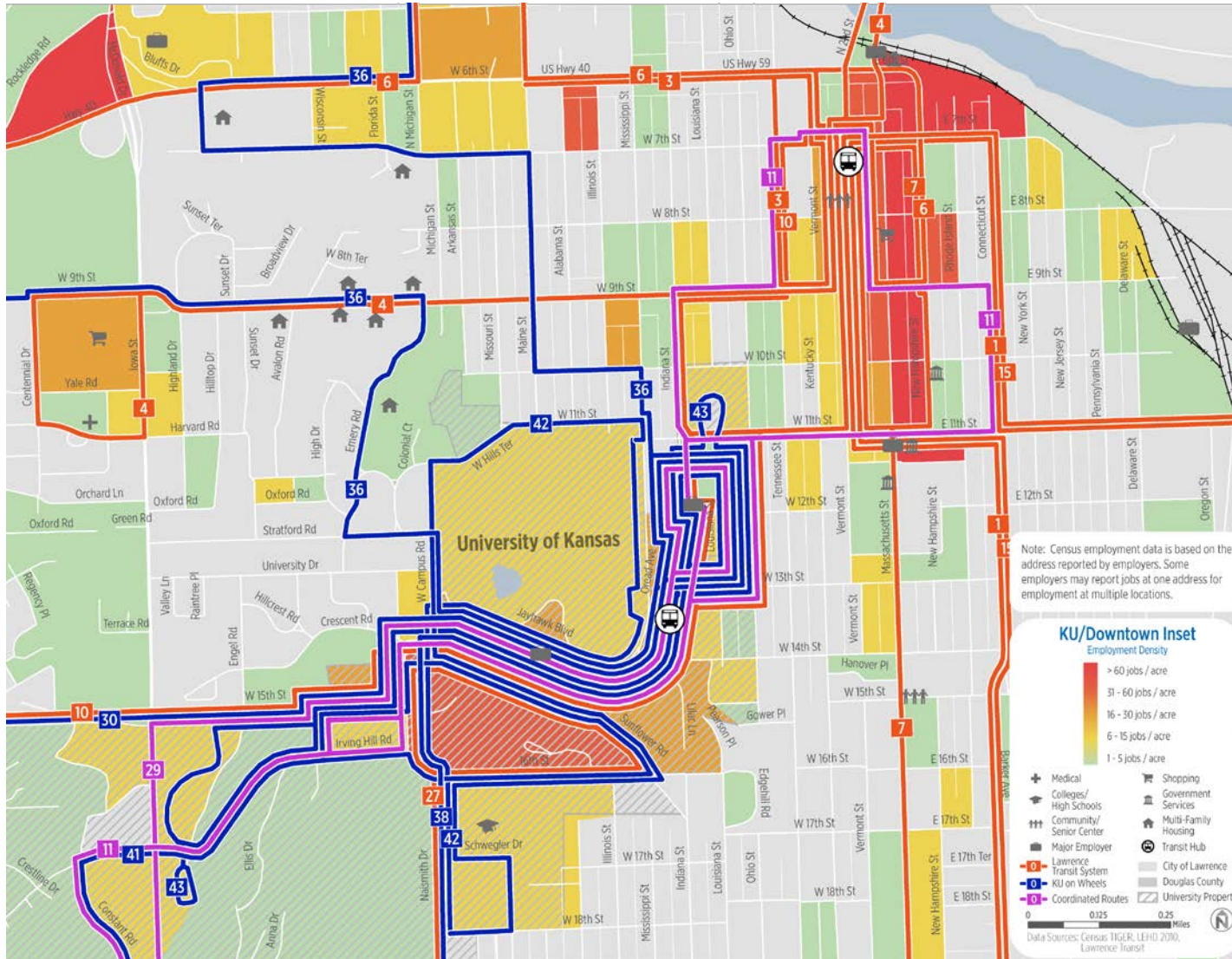
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Figure 9 | Employment Density Map



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Figure 10 | Employment Density KU/Downtown Inset Map



## Major Employers

Work trips often make up a significant percentage of all transit trips. An [APTA review in 2007](#) of 150 on-board surveys found that upwards of 60 percent of riders were traveling to or from work. Thus, detailed information on major employers in Lawrence is essential for understanding travel flows and origins and destinations within the city. Even in areas that may not otherwise support transit services, individual major employers can be significant drivers of transit demand. These employers are often located in buildings or campus environments with extremely high workforce concentrations. Workers in these facilities may also work similar hours, allowing for shift-specific transit services. Some major employers may be willing to subsidize service to their facilities, opening up new opportunities for workplace shuttles and other unconventional transit modes.

The largest employers in Lawrence are primarily educational institutions, as well as several major industrial corporations (see Figure 11). The University of Kansas, which employs over 9,500 staff, is the largest employer in the City. Haskell Indian Nations University employs 250 staff on its campus. Both universities are served by multiple Lawrence Transit and KUOW bus routes.

Other leading employers are primarily clustered in three locations. Several large employers, including the Lawrence Memorial Hospital and Lawrence Public Schools, are located north of the West 6<sup>th</sup> Street corridor. Vangent anchors a manufacturing employment cluster to the southeast of Lawrence. Both of these commercial districts are served by Lawrence Transit. Berry Plastics, K-Mart Distribution Center, and several other manufacturing and distribution facilities are located along Farmer’s Turnpike north of Interstate 70. This area is a growing employment center and is not served by public transit.

In addition to large individual employers, Lawrence has several major retail districts with significant concentrations of small employers. These districts include The Malls Shopping Center on West 23<sup>rd</sup> Street and the Hillcrest Shopping Center on Iowa Street. These retail districts are currently served by Lawrence Transit and KUOW.

Figure 11 | Largest Employers in Lawrence, KS (250+ Employees) and Transit Access within ½-mile

Employer	Employees	Transit Access	Employer	Employees	Transit Access
University of Kansas	9,881	Yes	Douglas County	435	Yes
Lawrence Public Schools	1,650	Yes	Boston Financial Data Services	394	Yes
Vangent	1,500	Yes	The Olivia Collection	320	Yes
City of Lawrence	1,455	Yes	K-Mart Distribution Center	320	Yes*
Lawrence Memorial Hospital	1,322	Yes	DCCA	295	Yes
Berry Plastics	739	Yes*	Allen Press	275	Yes
Hallmark Cards, Inc	525	Yes	Community Living Opportunities	263	Yes
Amarr Garage Doors	461	Yes	Haskell Indian Nations University	250	Yes

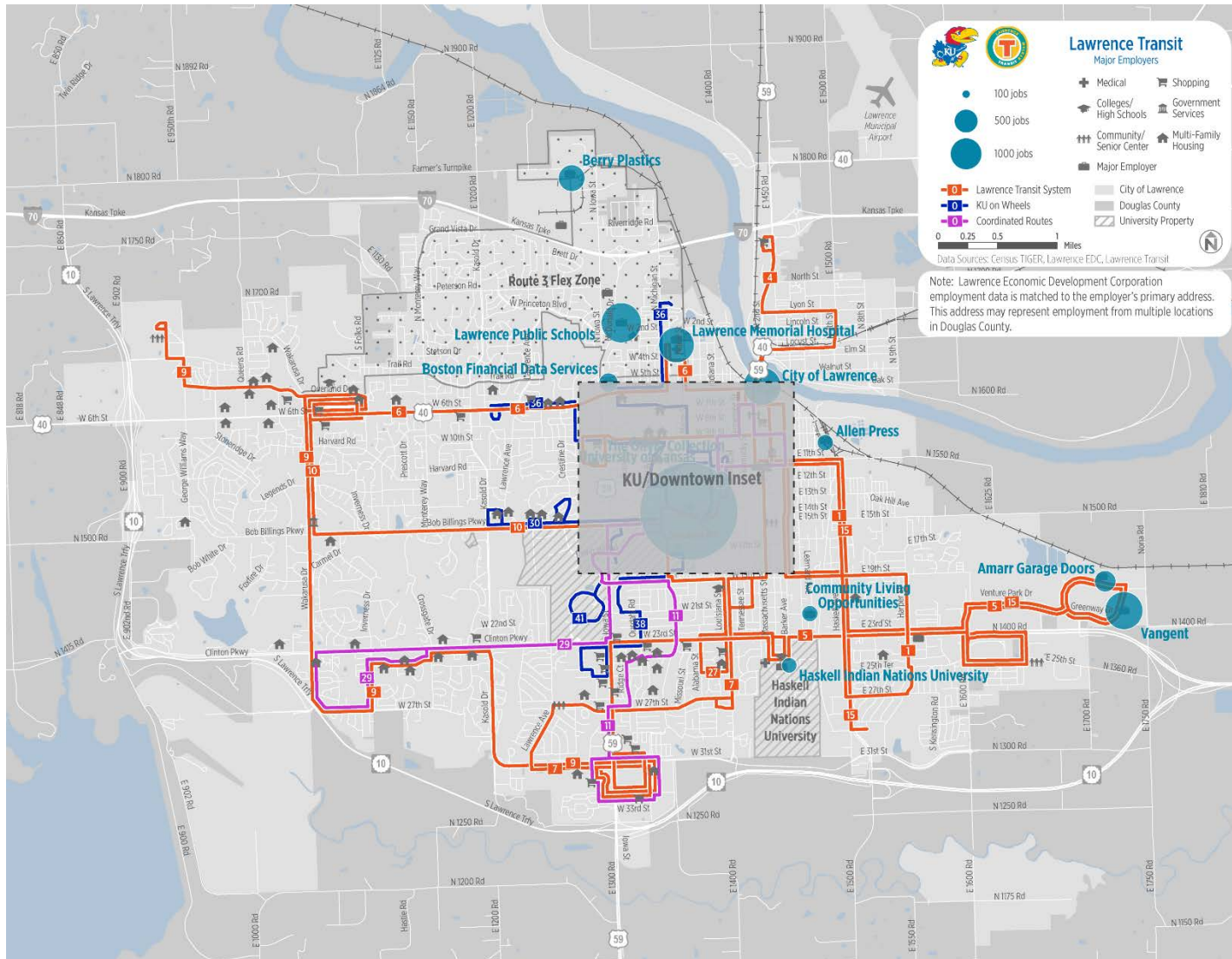
Source: EDC of Lawrence & Douglas County

\*These employers are not served by fixed-route service but are served by the Route 3 Flex Zone



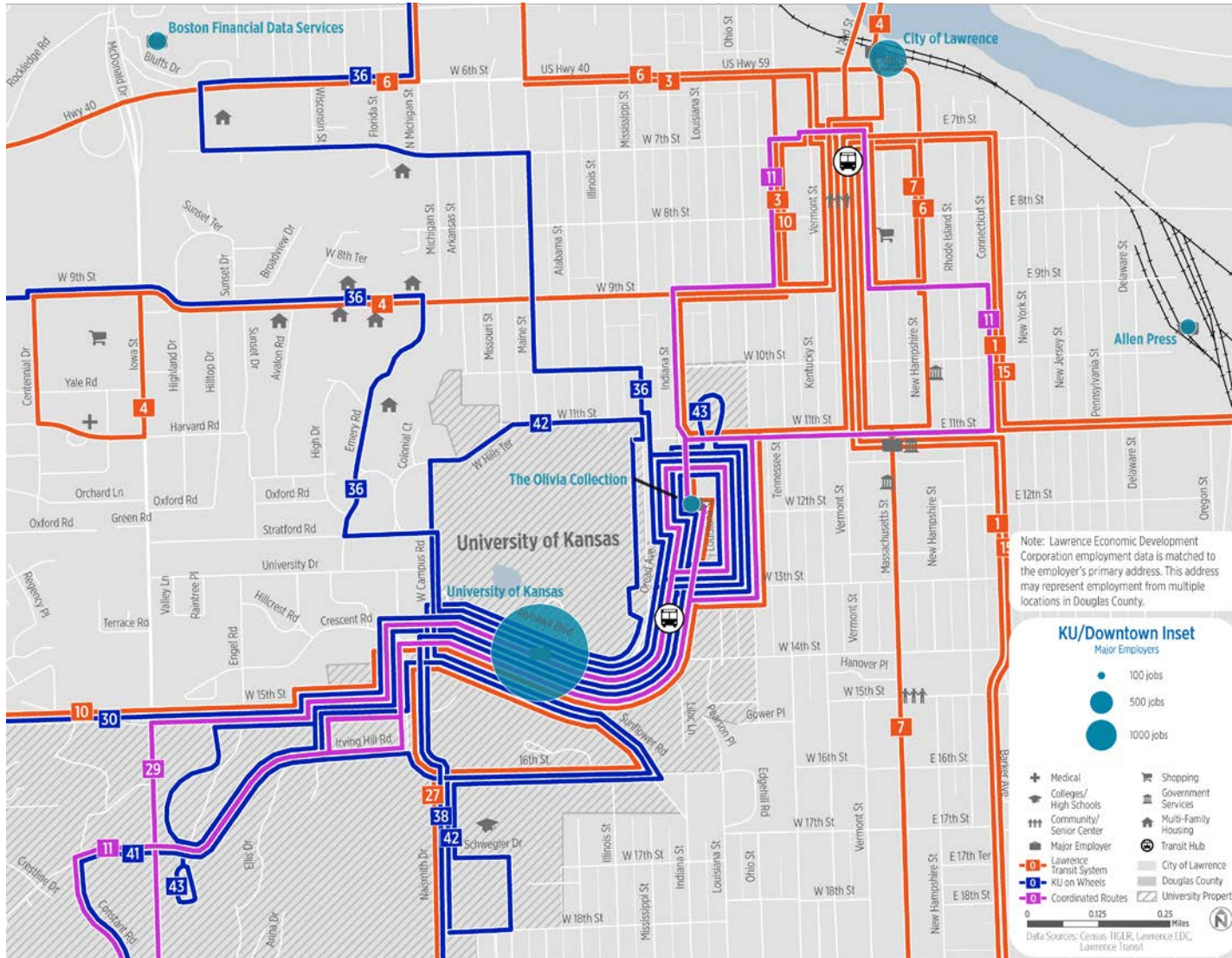
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Figure 12 | Major Employers Map



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Figure 13 | Major Employers KU/Downtown Inset Map



## Transit Potential Index

The Transit Potential Index is a composite of population and employment density that helps identify potential transit-supportive neighborhoods and corridors. Areas with higher Transit Potential Index scores are more likely to support fixed-route transit services. To reach their full potential, however, high-scoring areas must also have transit-supportive land uses and infrastructure.

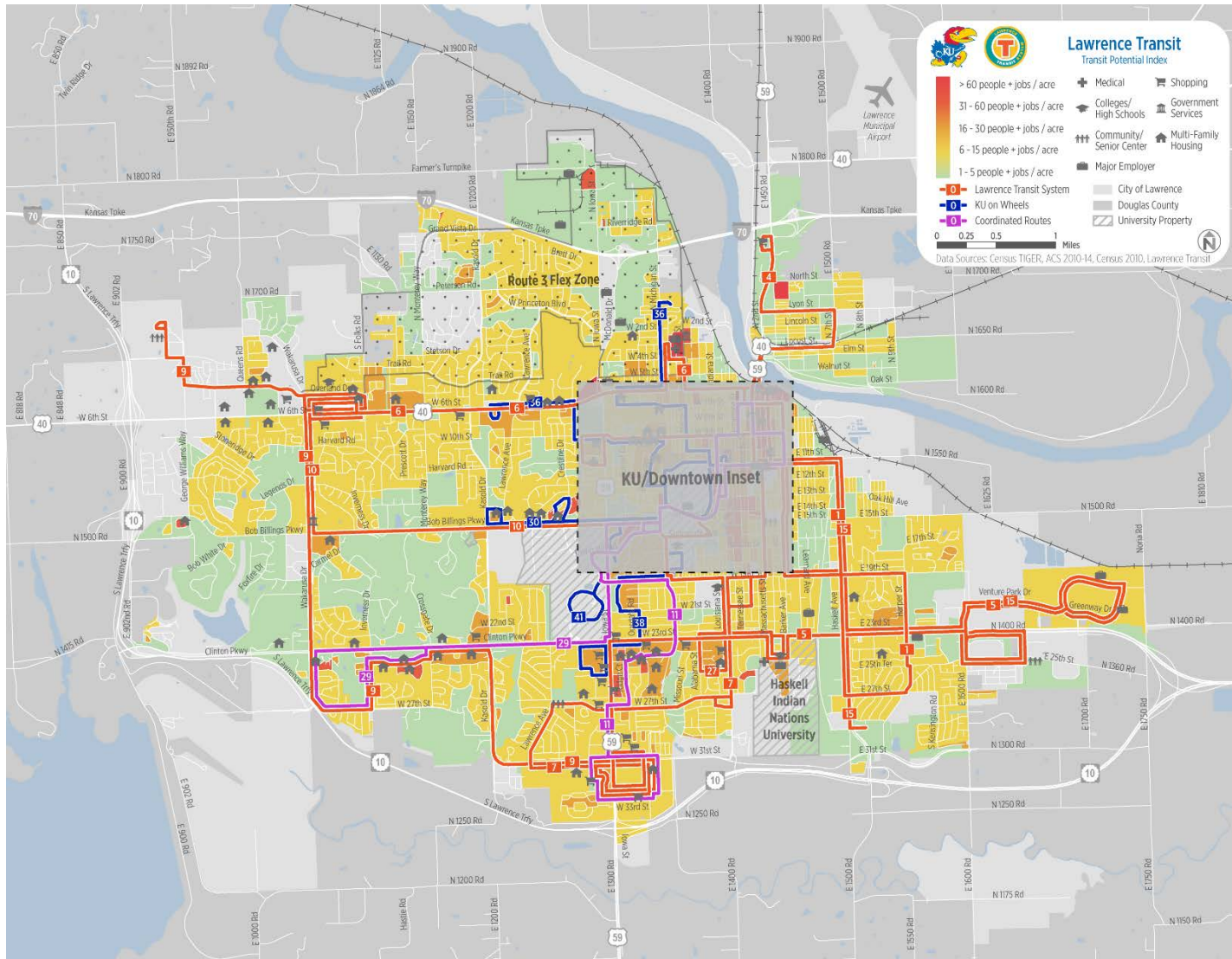
Figure 14 shows the Transit Potential Index scores for neighborhoods in Lawrence. Figure 15 focuses specifically on the neighborhoods directly surrounding downtown Lawrence and the main KU campus. Key findings from the Transit Potential Index analysis include:

- Transit potential in Lawrence is particularly high within downtown Lawrence, the Oread neighborhood, and adjacent to the University of Kansas.
- Other high transit potential areas in Lawrence include apartment and office complexes along the West 6<sup>th</sup> Street corridor as well as some apartments and retail areas south of KU near the intersection of West 23<sup>rd</sup> Street and Iowa Street.
- Many of the neighborhoods within Lawrence proper have low to moderate transit potential for fixed route service, including much of the area currently covered by the Route 3 North Flex Service.
- Underdeveloped areas on the outer reaches of Lawrence show some potential to support transit service. These areas primarily consist of single family housing on poorly connected roadways, which typically are difficult to serve with fixed-route transit.
- The area in the southeast of Lawrence is slated for significant residential and employment growth in part due to the expansion of K-10 South Lawrence Trafficway. The area surrounding Rock Chalk Park (RCP) to the northwest is also slated for growth. Currently, there is too little residential or employment density surrounding RCP to show any transit potential, but local knowledge suggests that development of the area is beginning. Future demand may warrant higher levels of service than provided today.



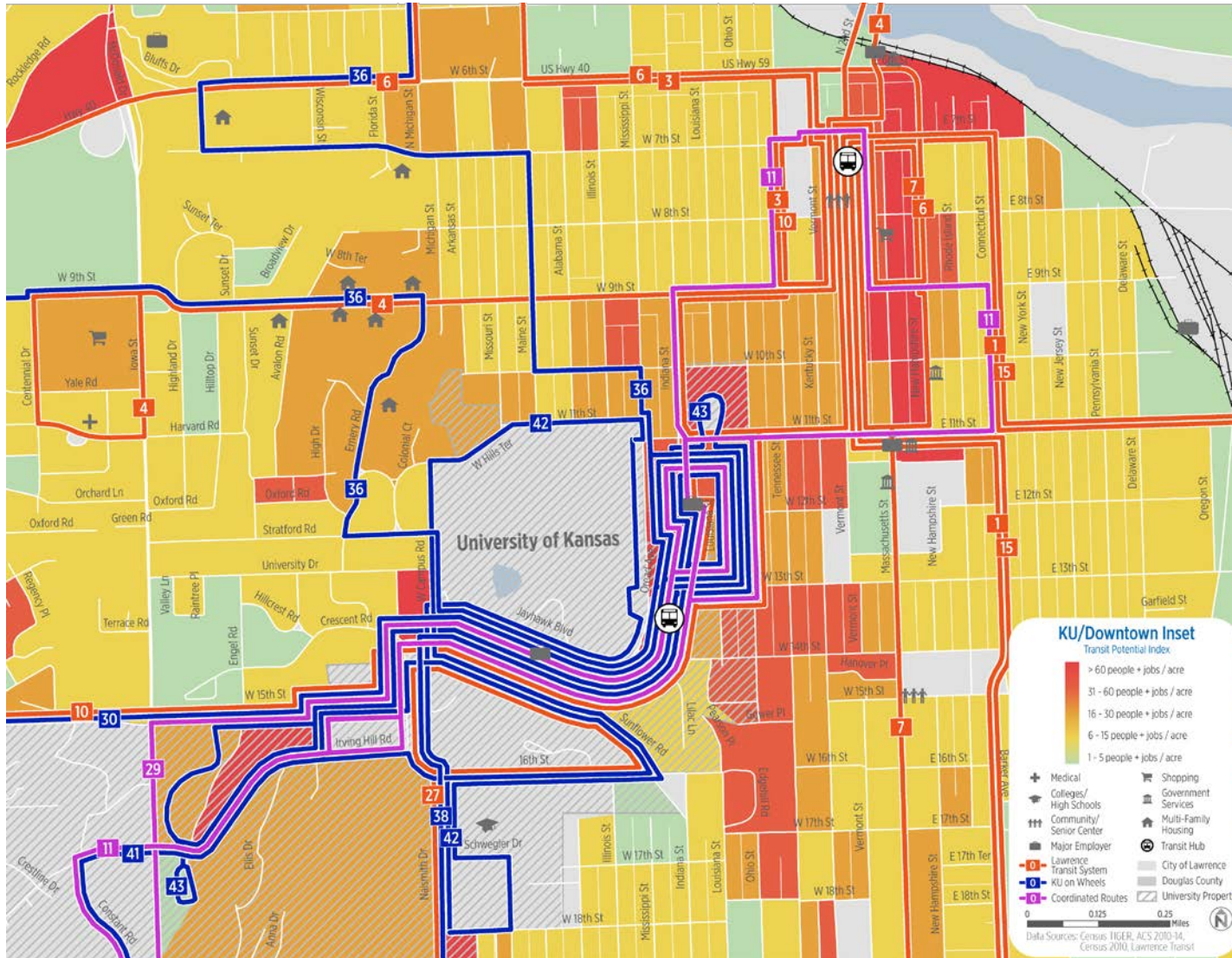
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Figure 14 | Transit Potential Index Map



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Figure 15 | Transit Potential Index KU/Downtown Inset Map



## TRANSIT NEED

Above all else, public transportation is a mobility tool. Certain population subgroups are more likely to rely on transit for mobility than the general population. These groups include:

- **Older Adults**, who often become less comfortable or less able to operate a vehicle as they age.
- **Individuals in Poverty**, who often rely on transit as a less expensive alternative to owning a car.
- **Persons with Disabilities**, who may not be able to drive or have difficulty driving.
- **Young Adults**, who in general have a significantly higher interest in using a range of transportation options, including transit, walking, and biking, rather than relying exclusively on driving.
- **Persons Living in Zero-Vehicle Households**, who often regularly or exclusively rely on transit for mobility.

Identifying areas with relatively high concentrations of these groups can help determine which neighborhoods and corridors have the greatest need for transit service. High transit need does not necessarily mean that traditional fixed-route services will work in a given area. Some locations have a high transit need, but low population or employment density. These areas might benefit from demand response or flex route service but cannot support fixed-route options. Ultimately, each community must set their own priorities for balancing service to transit-need and transit-supportive areas.

### Older Adults

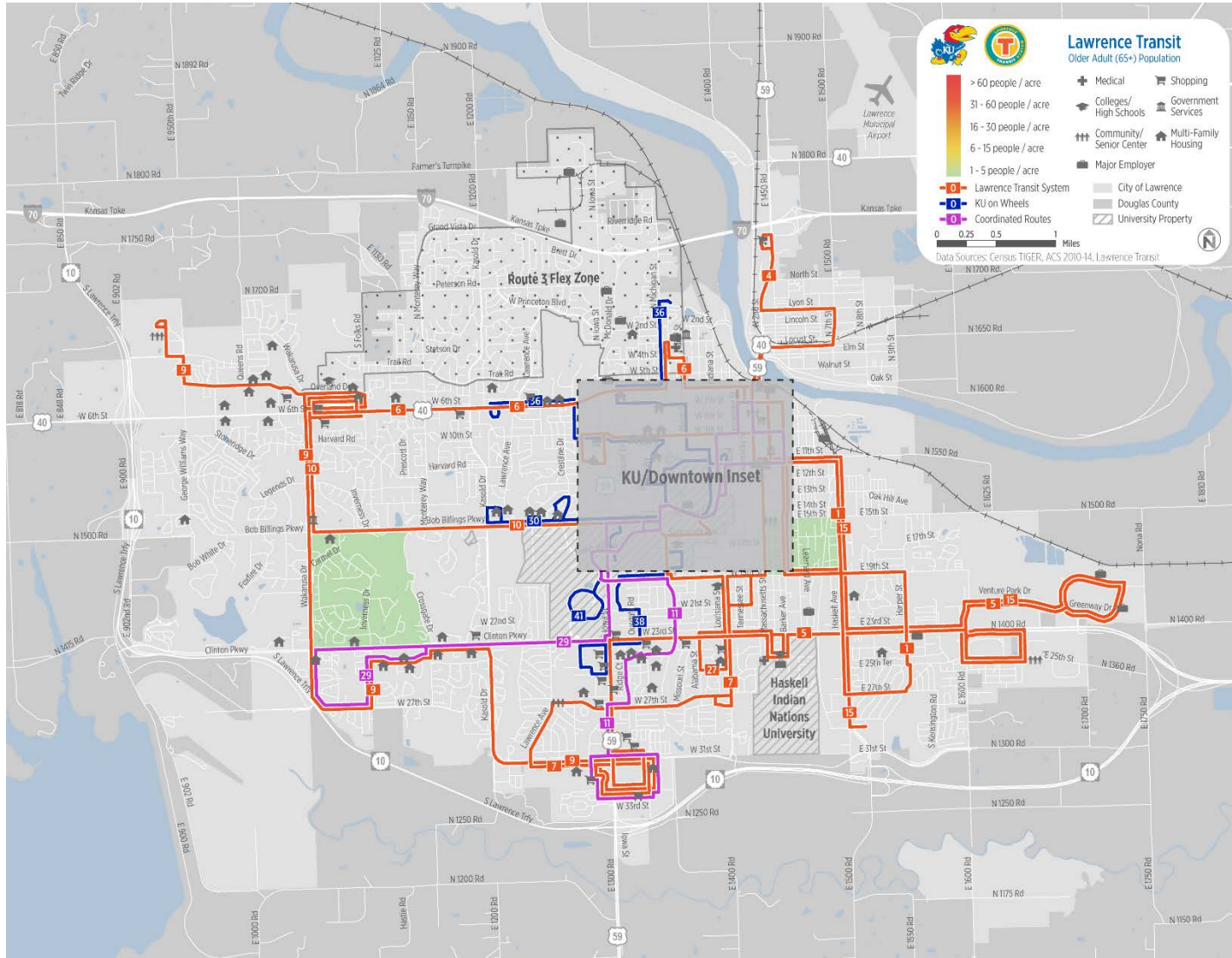
Older adults (65 and older) are more likely to use transit than the general population but also tend to use transit less frequently than a regular transit rider under 65. Many seniors are retirees, and as a result, take fewer daily trips. Some must, or choose to, stop driving due to health issues. Others simply prefer a car-free lifestyle. Transit provides an important means for older adults to remain as active and independent as possible, and to age in place.

Figure 16 and Figure 17 show older adult population density in Lawrence. Only two neighborhoods in Lawrence have greater than one older adult per acre. Both neighborhoods contain large senior living facilities that are directly served by Lawrence Transit bus routes.



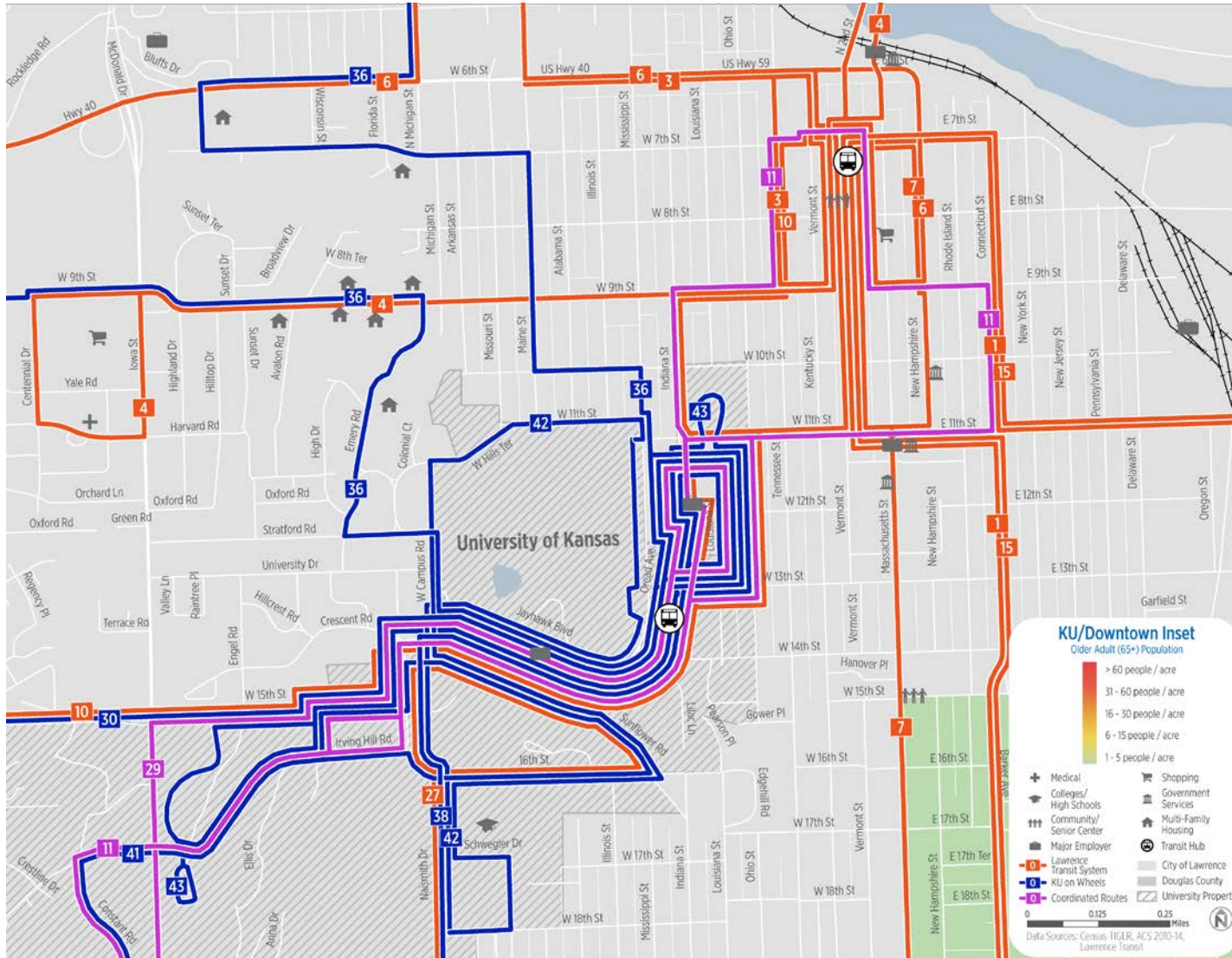
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Figure 16 | Older Adult Population Density Map



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Figure 17 | Older Adult Population Density KU/Downtown Inset Map





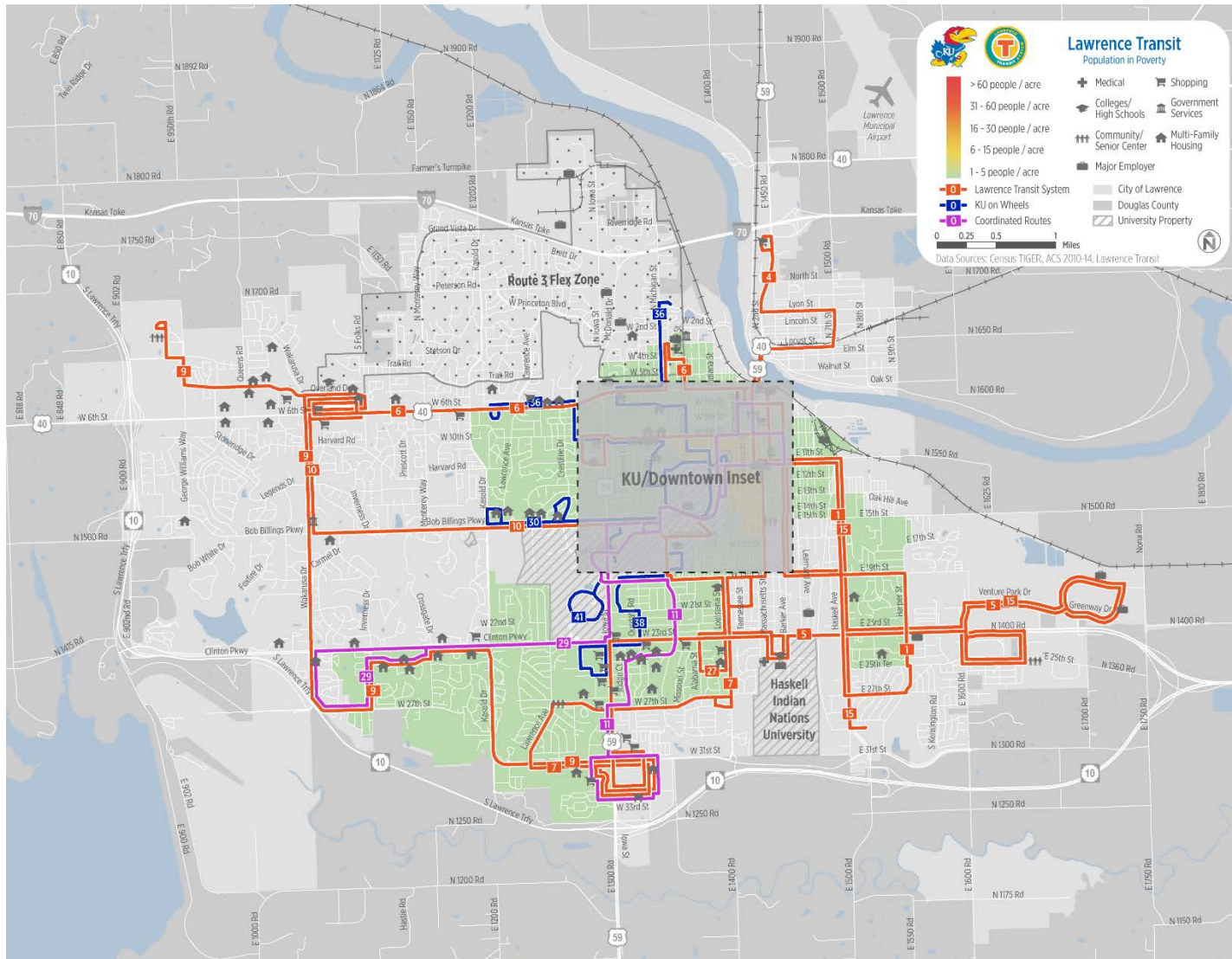
## Individuals in Poverty

Many individuals living in poverty do not have consistent access to a vehicle, often because they lack the financial resources to purchase, fuel, and maintain a car. Individuals with low incomes may also live in households with fewer cars than higher-income households. Public transportation can therefore significantly enhance mobility for persons living in poverty, and can be essential for ensuring reliable access to employment opportunities.

Figure 18 and Figure 19 show the density of individuals living in poverty in Lawrence. The Oread neighborhood, located between downtown and the KU campus, has the greatest density of low income individuals in Lawrence (5-15 per acre), largely due to a high student population. Students often do not have much income and do not report guardian support, stipends, or other financial aid, and so while they may have a low income, they are not truly living in poverty. The Oread neighborhood might also show different characteristics when school is not in session, but Census data is sampled throughout the year. Recommendations for transit service will consider these factors. Apart from Oread, residents living in poverty are lightly dispersed throughout Lawrence, especially in neighborhoods surrounding downtown and south of KU. All neighborhoods with greater than one person in poverty per acre are served by Lawrence Transit or KUOW.

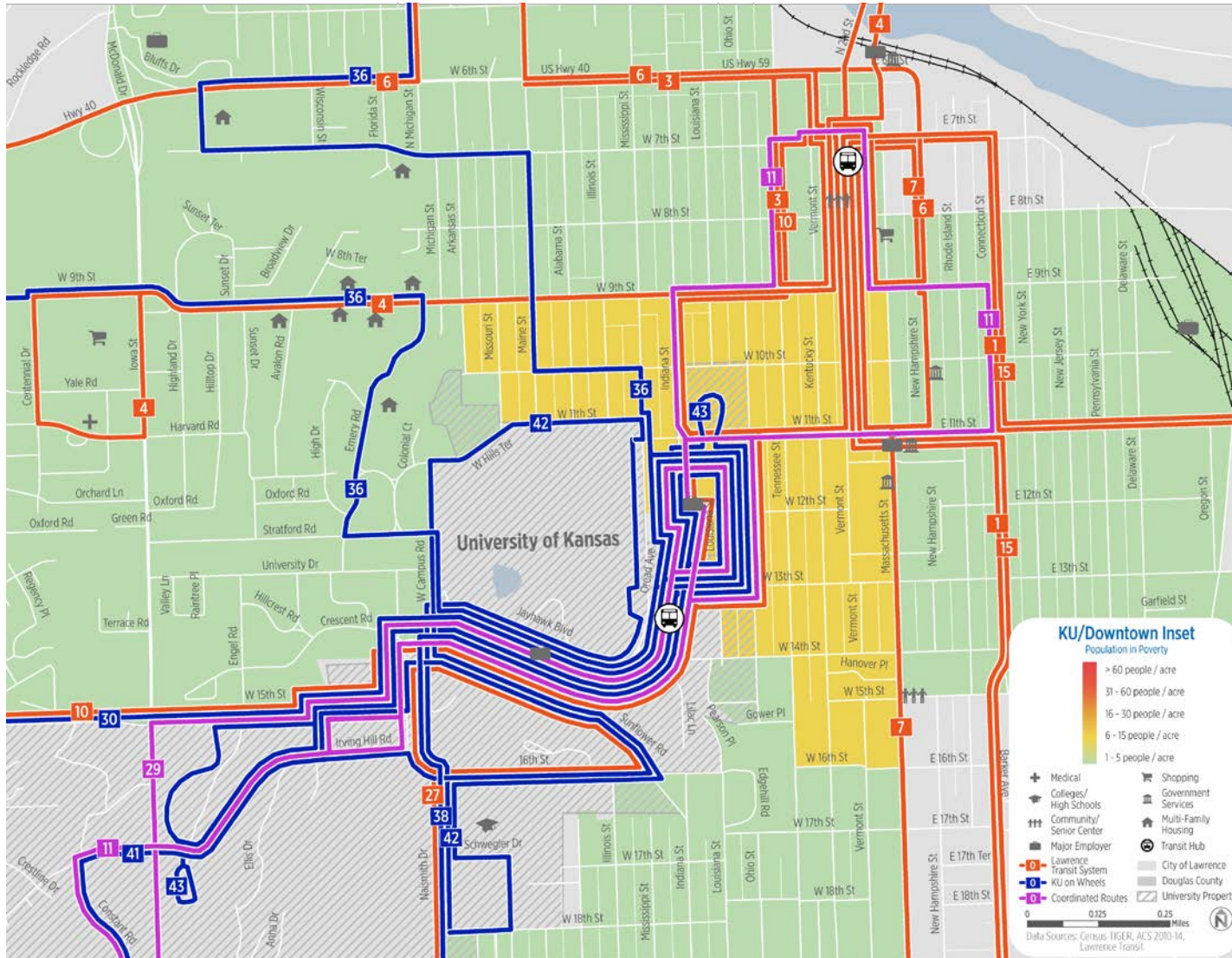
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Figure 18 | Individuals in Poverty Population Density Map



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Figure 19 | Individuals in Poverty Population Density KU/Downtown Inset Map



## Persons with Disabilities

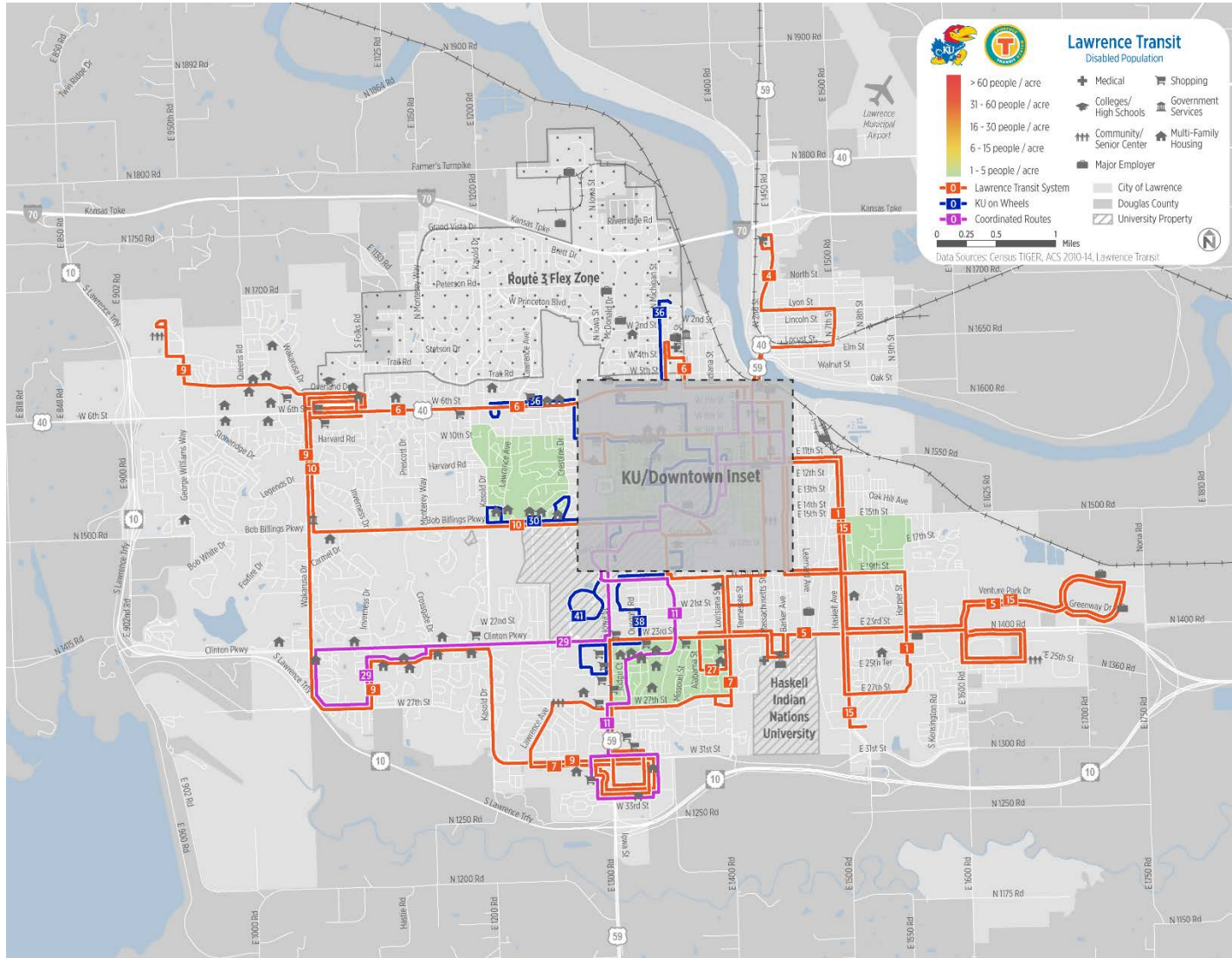
Persons with disabilities often primarily rely on public transit and other specialized transportation resources for mobility. Most individuals classified as disabled are eligible for T Lift, Lawrence Transit's paratransit service. In recent years, many transit agencies have worked to enhance the accessibility of fixed-route services for the disabled population, reducing reliance on paratransit services. Increased fixed-route accessibility allows disabled riders to travel more spontaneously, but also requires that they are able to navigate to a nearby bus stop and onto a transit vehicle. For transit operators, shifting more trips from paratransit to fixed-route services can reduce costs and increase service productivity. For these benefits to occur however, transit agencies must work to ensure that fixed-route services are both physically and geographically accessible to the disabled population.

Figure 20 and Figure 21 show the density of persons with disabilities in Lawrence. There are few neighborhoods within the city with greater than one person with disabilities per acre. Low concentrations of disabled individuals are located north of KU, near Edgewood Park, and south of 23<sup>rd</sup> Street between State Highway 10 and Louisiana Street. All neighborhoods with a notable disabled population are currently served by Lawrence Transit.



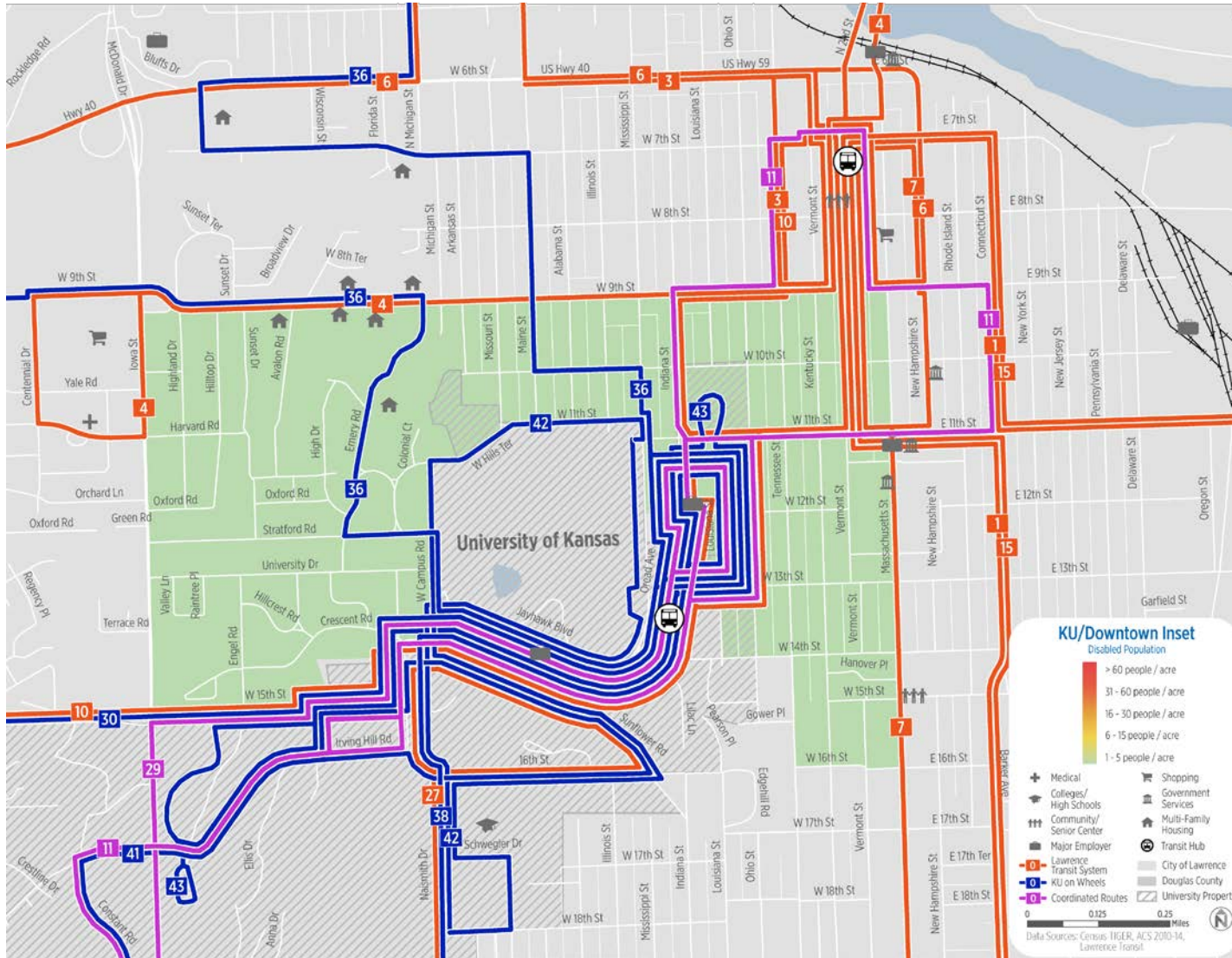
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Figure 20 | Persons with Disabilities Population Density Map



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Figure 21 | Persons with Disabilities Population Density KU/Downtown Inset Map



## Young Adults

Many young adults (15 to 21 years old) lack access to private vehicles and are therefore more likely to rely on public transportation. Some young adults are not legally able or choose not to acquire a driver's license. Young adults are also increasingly seeking alternative transportation options, such as walking, biking, and transit. [A recent survey by Transportation for America and the Rockefeller Foundation](#) (April 2014) reported that more than half of Millennials prefer to live in a place where they are not required to rely on cars to get around. Two-thirds of those polled said access to high quality transportation options will be one of their top three criteria when deciding where to live.

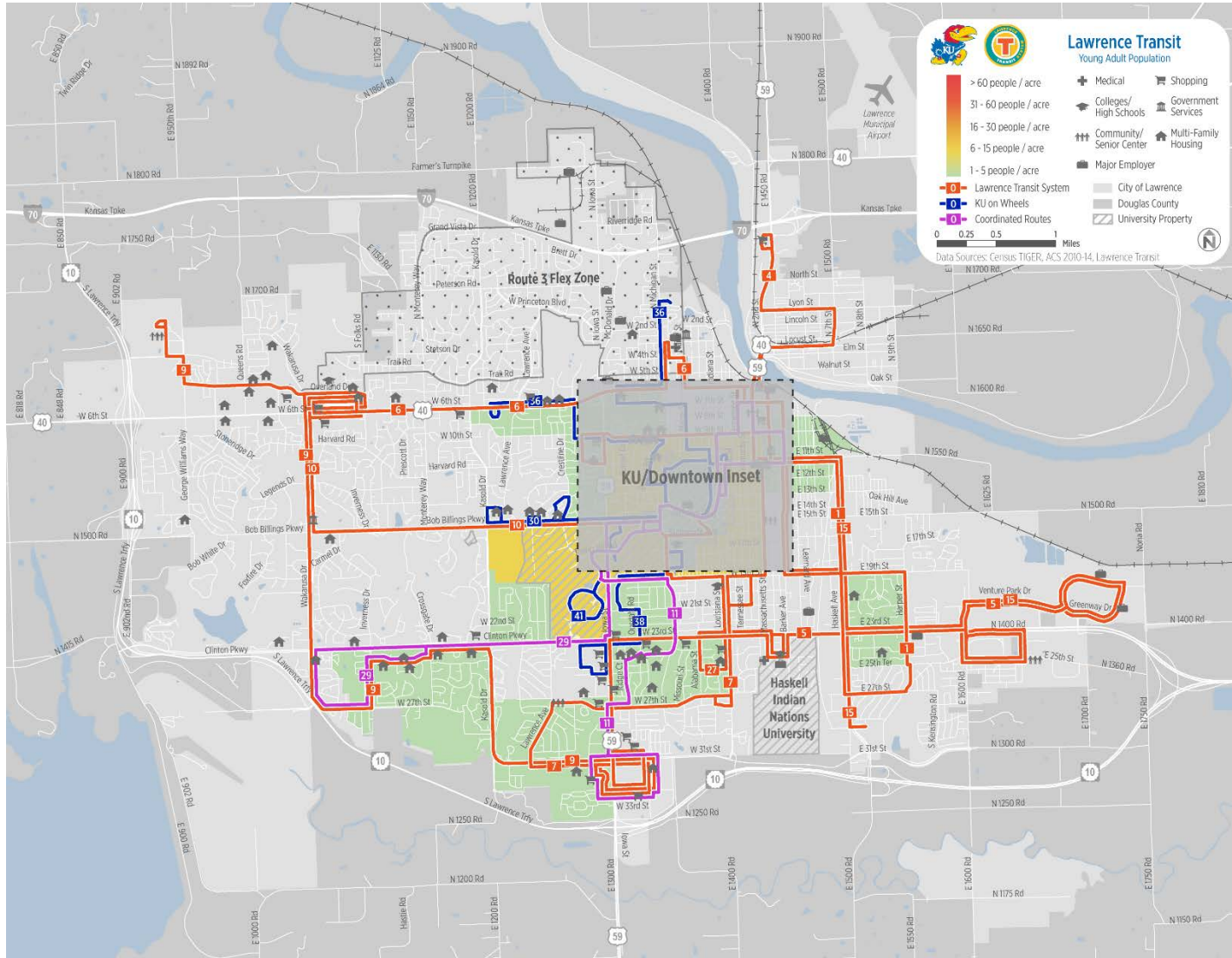
Figure 22 and Figure 23 show the density of young adults in Lawrence. The young adult population is primarily concentrated on the KU campus, as well as in residential neighborhoods directly surrounding campus. As many students do not declare residency when attending college, it is likely that the young adult population in these neighborhoods is greater than recorded in the US Census. Apart from these areas, the young adult population is lightly dispersed throughout the city, including in neighborhoods in southern Lawrence. All neighborhoods with a notable young adult population are served by Lawrence Transit or KUOW.

The concentration of young adults on Daisy Hill and West Campus at KU in Figure 22 and Figure 23 is an example of how Census data can be somewhat misleading. The Census block group is "T" shaped and straddles Iowa Street to cover both Daisy Hill and West Campus. The dorms are all located east of Iowa Street, however. The young adult population density of Daisy Hill is approximately 25 people per acre when West Campus is excluded, meaning that Daisy Hill would show as orange on the maps.



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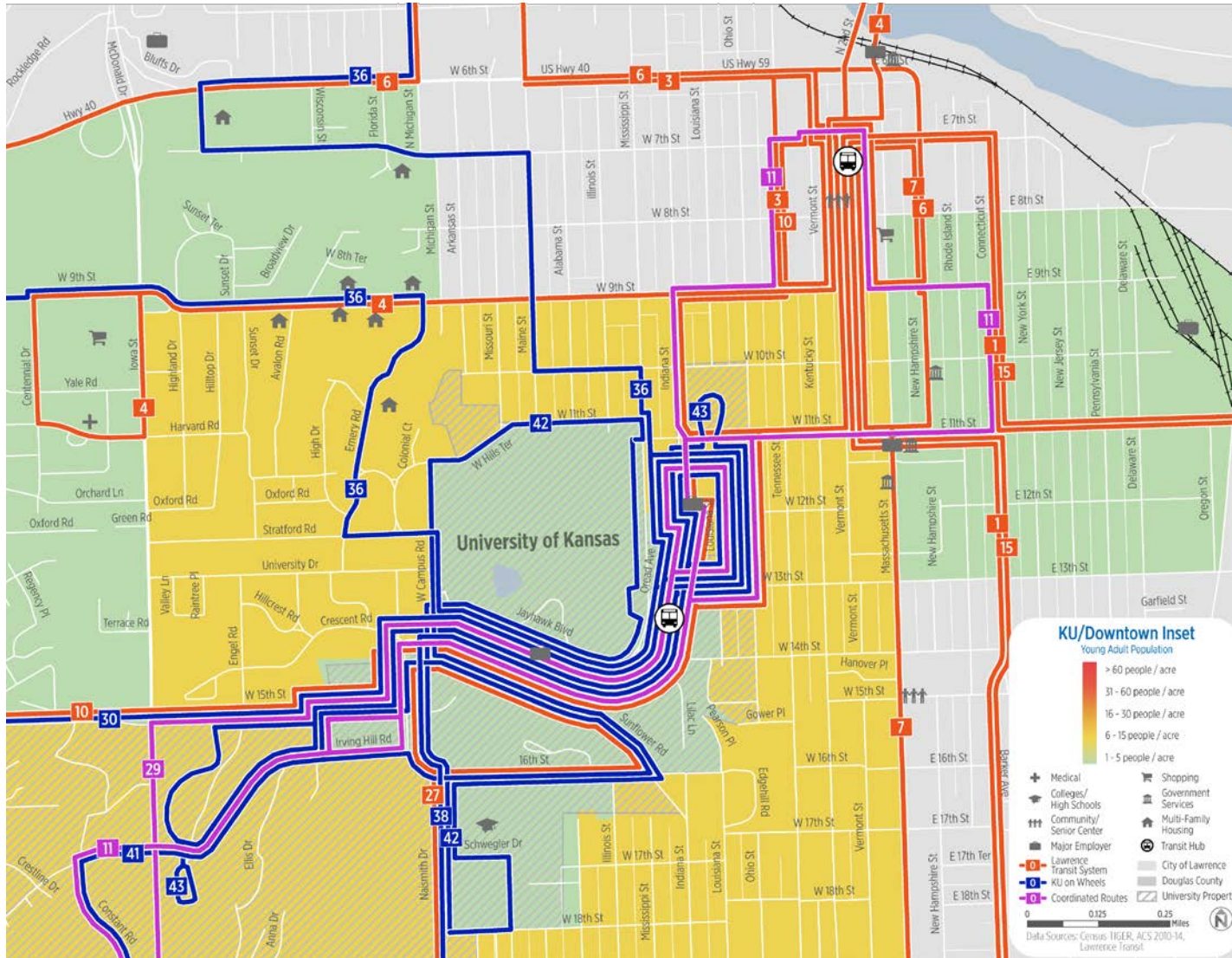
Figure 22 | Young Adult Population Density Map





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Figure 23 | Young Adult Population Density KU/Downtown Inset Map



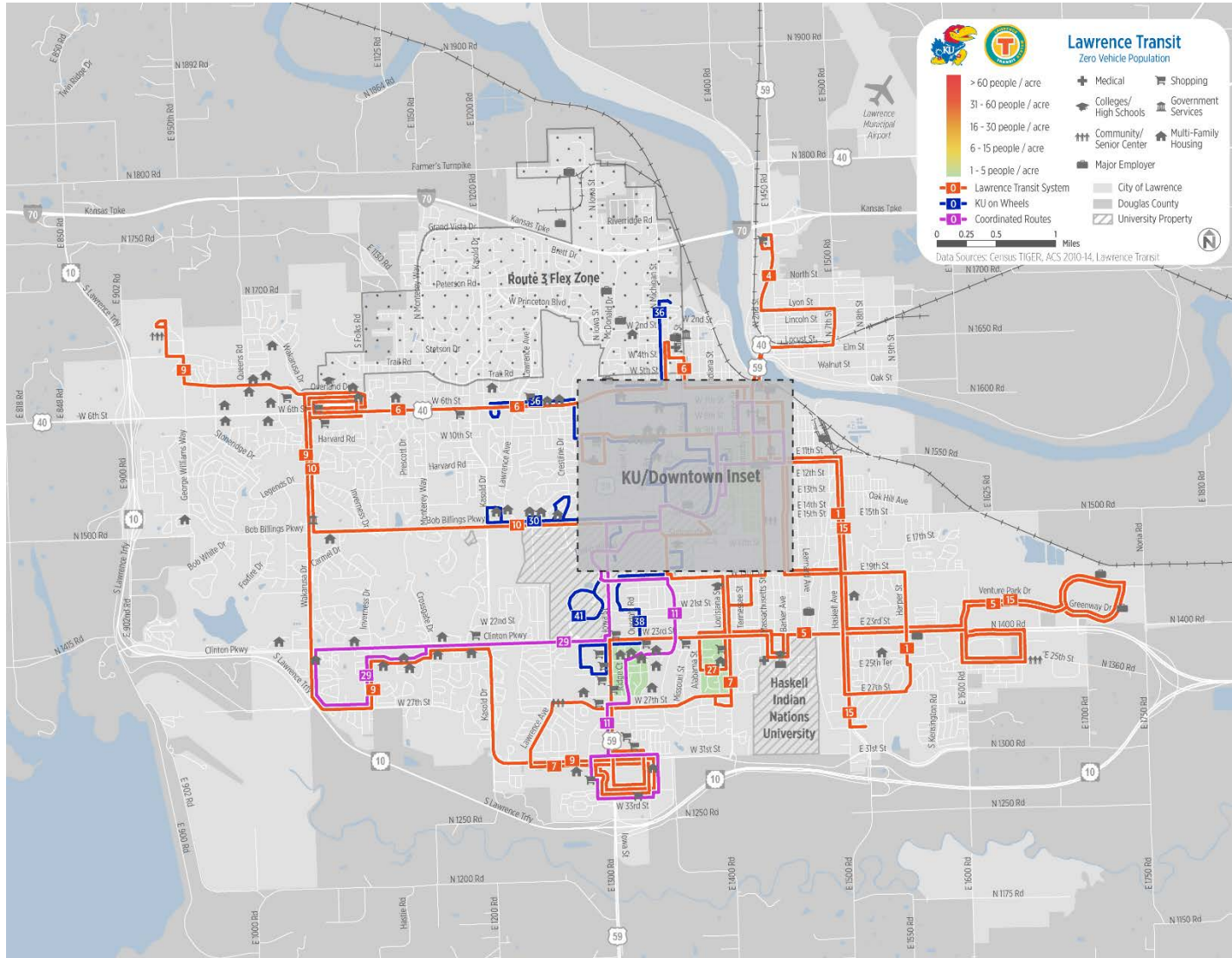
## Persons Living in Zero-Vehicle Households

Individuals living in a household that does not own a private vehicle have a high propensity to use transit services. While many of these individuals rely on borrowing a private vehicle or carpooling as their primary means of transportation, they also typically use transit for a significant proportion of trips. For individuals without consistent private vehicle access, nearby public transit services are frequently the only mobility option.

Figure 24 and Figure 25 show the density of persons living in a zero-vehicle household in Lawrence. Few areas within Lawrence have notable concentrations of persons living in a zero-vehicle household. The Oread neighborhood, as well as two residential areas near the intersection of State Route 10 and 23<sup>rd</sup> Street, are the only areas with greater than one zero vehicle household per acre. All of these neighborhoods are served by Lawrence Transit or KUOW.

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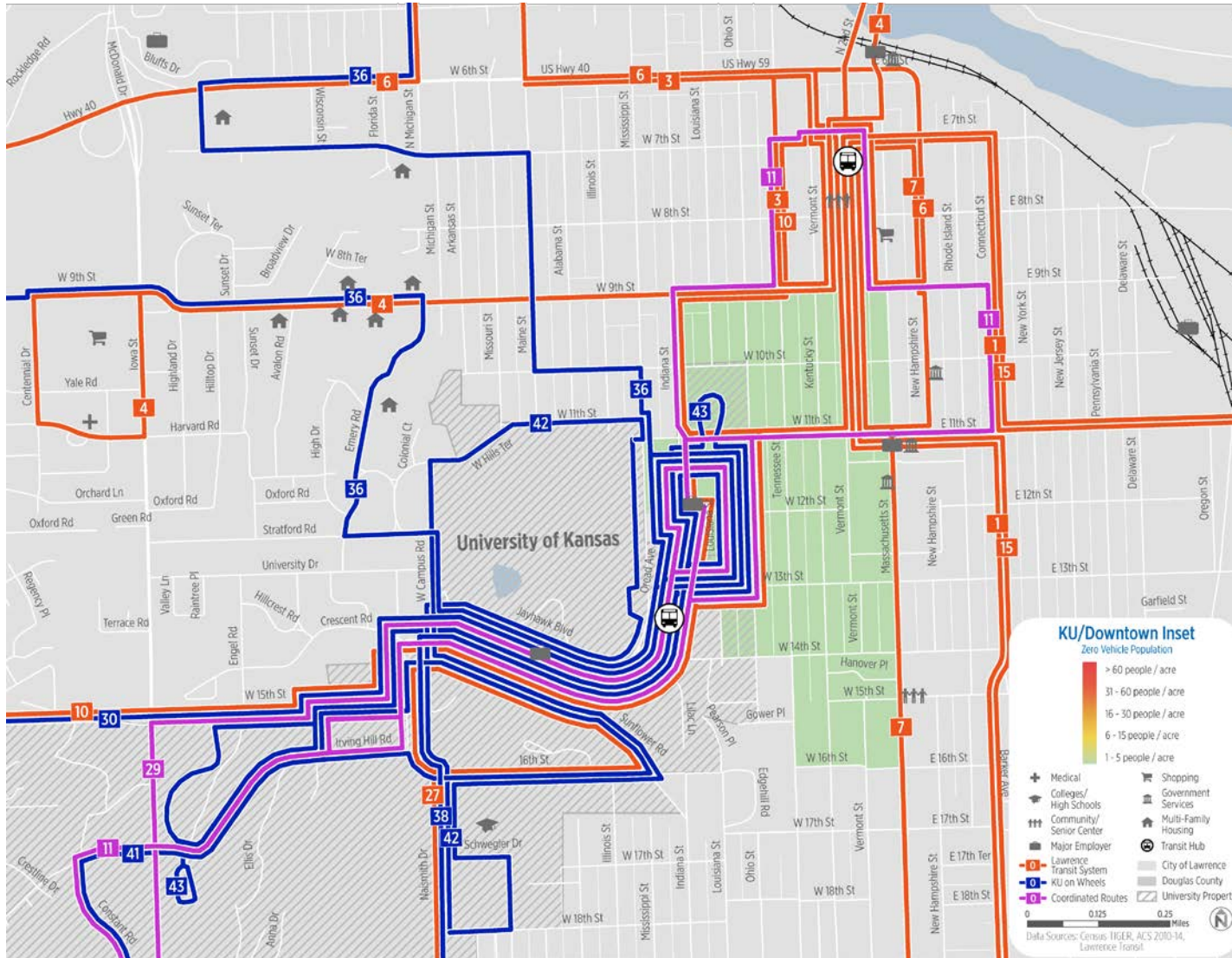
Figure 24 | Persons Living in Zero Vehicle Households Population Density Map





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Figure 25 | Persons Living in Zero Vehicle Households Population Density KU/Downtown Inset Map





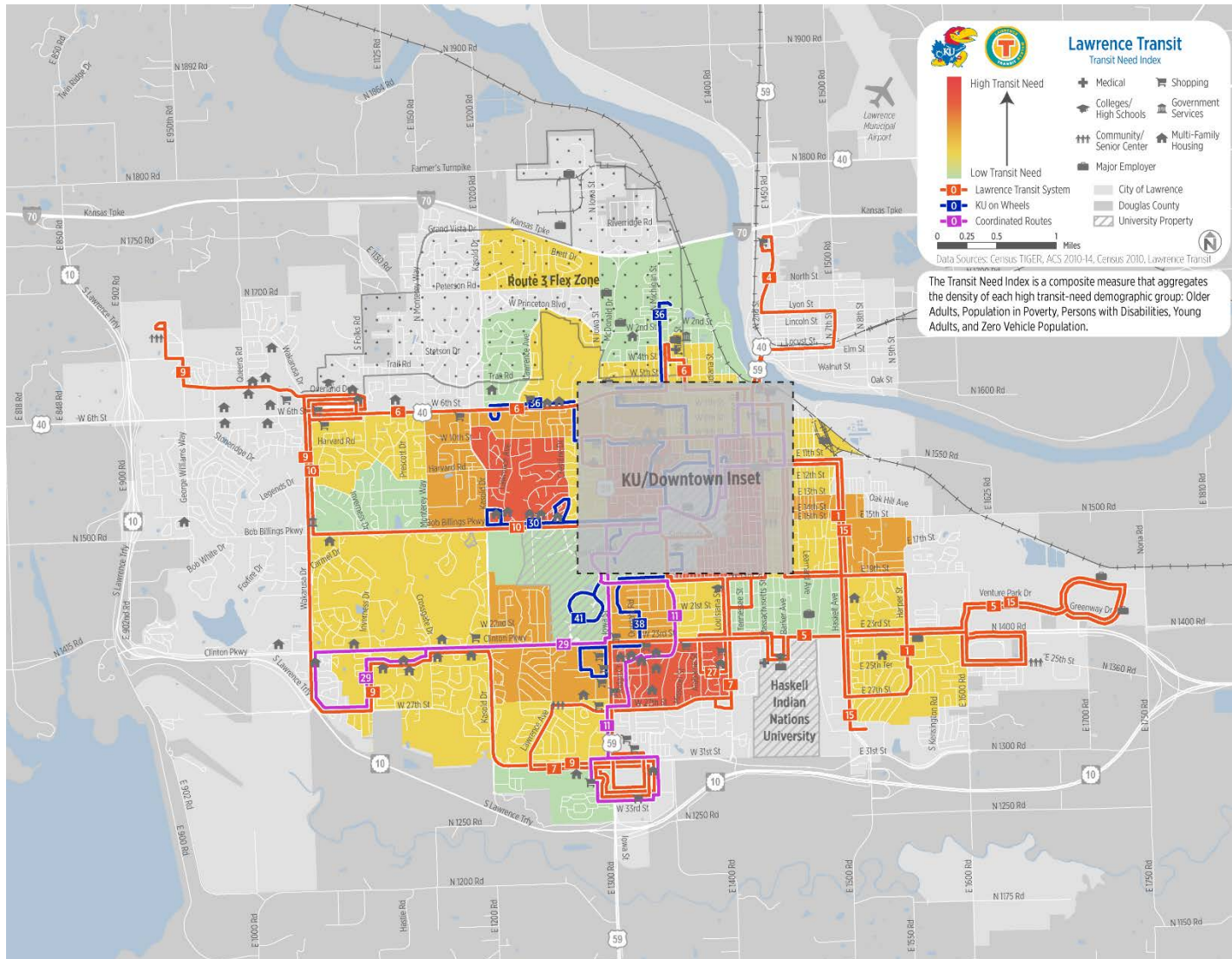
## Transit Need Index

The Transit Need Index is a composite measure that aggregates the density of each high transit-need demographic group discussed above. Areas with higher Transit Need Index scores have a greater density of individuals who are more likely to use transit. Transit need does not necessarily equate to transit demand, as areas with a high transit-need population may lack the population or employment density required to support fixed-route transit.

Figure 26 shows the Transit Need Index scores for neighborhoods in Lawrence. Figure 27 focuses specifically on the neighborhoods directly surrounding downtown Lawrence and the main KU campus. Most neighborhoods with notable transit-need populations are located within older established Lawrence neighborhoods surrounding downtown and KU campus. The highest transit need areas are primarily located near KU in the Oread neighborhood, Sunset Hills, and the neighborhood south of the University that contains numerous student apartment complexes. Nearly all neighborhoods with a high transit need population are served by Lawrence Transit and KUOW.

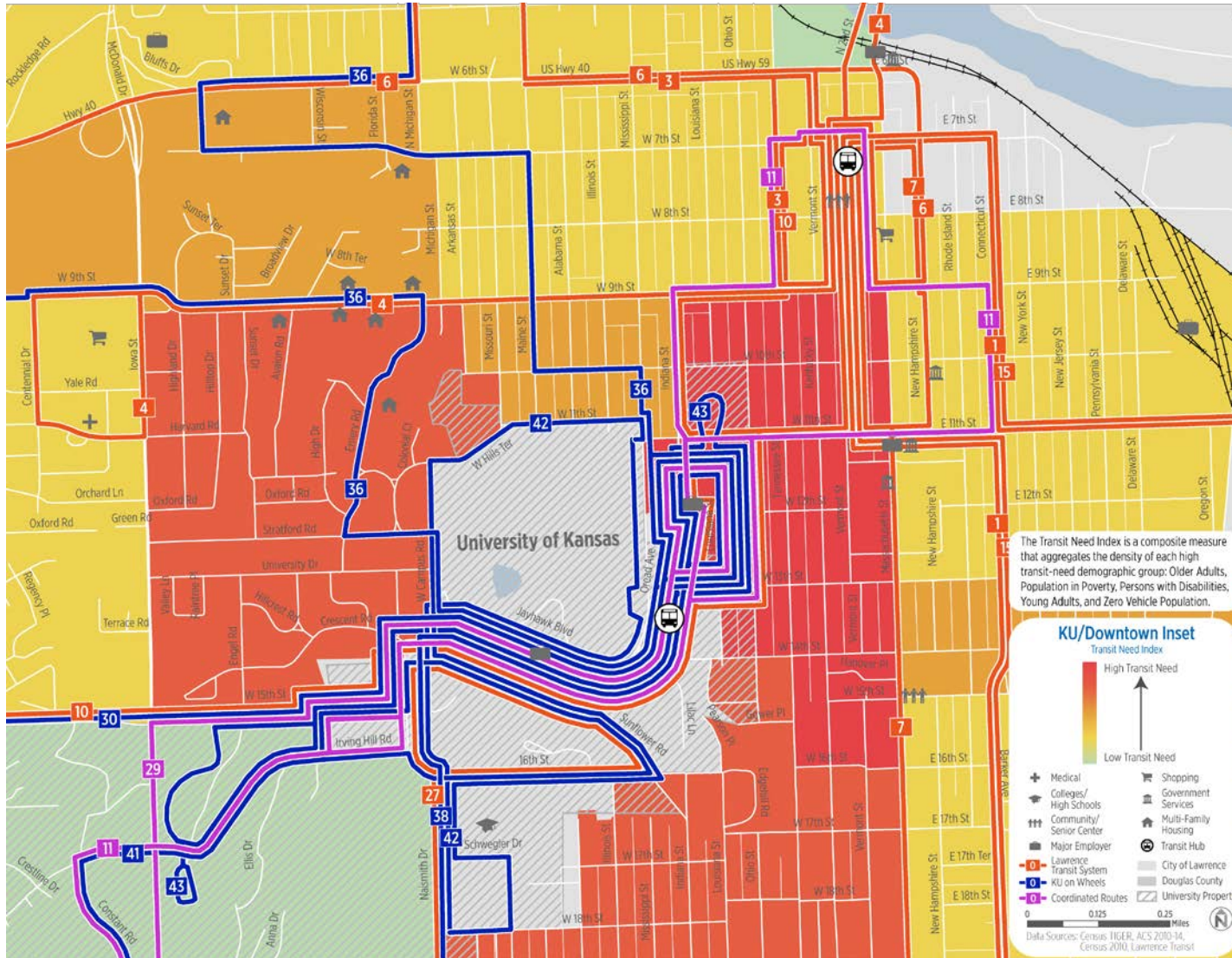
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Figure 26 | Transit Need Index Map



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Figure 27 | Transit Need Index KU/Downtown Inset Map





### 3 OVERVIEW OF OTHER REGIONAL TRANSIT PROVIDERS

In addition to Lawrence Transit and KUOW, multiple service providers operate public and restricted transit services in Douglas County and the City of Lawrence. In 2015, these services provided over 210,000 trips to Lawrence community members. These services are operated by public transit agencies, social services organizations, and non-profit organizations, and are detailed below:

#### **Babcock Bus**

Babcock Bus is operated by the Lawrence-Douglas County Housing Authority (LDCHA), and provides door-to-door demand-response service for elderly and disabled residents of Babcock Place and Peterson Acres. Service is limited to Lawrence's city limits, with service provided by one vehicle from 8:00 a.m. to 4:00 p.m. on Monday through Thursday. Reservations are required 24-hours in advance. Fares are donation based, with a \$3.00 round-trip fare suggested. In 2015, the Babcock Bus provided service to 2,247 passengers.

#### **Bert Nash Community Mental Health Center**

Bert Nash Community Mental Health Center operates free, door-to-door demand-response service for elderly and disabled Bert Nash clients for medical, shopping, and employment purposes. Service operates Monday – Saturday from 9:00 a.m. to 7:00 p.m., throughout Douglas County. Advanced reservations are not required, and service is based on staff availability. Funding is provided through capital assistance (Section 5310) and state operating funds. Service is provided by three vehicles, and the system registered 4,020 trips in 2015.

#### **Cottonwood, Inc.**

Cottonwood is a non-profit corporation that operates a modified door-to-door demand-response service to Cottonwood residents and clients with intellectual development disabilities in the City of Lawrence. Service is provided by three lift-enabled vehicles provided by the Kansas Department of Transportation and 38 vehicles operated independently by Cottonwood. Vehicles are assigned to individual group homes and retirement and work-enrichment programs. Service is available 24-hours, seven days a week, but trips are typically scheduled in advance, and closely coordinated by Cottonwood employees. Residents are charged a monthly \$50.00 transportation fee (fee can be waived). Funding is provided through capital assistance (Section 5310). In 2015, Cottonwood provided 2,948 passenger trips.



## Douglas County Senior Services

Douglas County Senior Services (DCSS) offers door-to-door demand-response service to older residents (age 60+) of Douglas County for medical, nutritional, and personal purposes. Service is operated within Douglas County (Lawrence, Eudora, Lecompton, and Baldwin City) with a fleet of six vehicles. The operating period is Monday through Friday from 8:00 a.m. to 4:30 p.m. and trips must be reserved 48-hours in advance by phone, email, or online. Trips within Lawrence's city limits are \$3.00 one-way and \$6.00 round-trip; trips outside Lawrence are \$5.00 one-way and \$10.00 round trip. Funding is provided through capital assistance (Section 5310) and state operating funds. In 2015, DCSS recorded 6,397 passenger trips.

## Independence, Inc.

Independence is a non-profit corporation that provides door-to-door demand-response service to elderly and disabled individuals in the City of Lawrence and Douglas County. Services operates Monday through Friday from 8:00 a.m. to 5:00 p.m. One-way trip fares are \$3.00 within the City of Lawrence and \$5.00 within Douglas County. Payment for trips within Lawrence and Douglas County can be made via punch cards (available in \$30.00 or \$50.00 increments). Limited rides to medical centers in Kansas City and Topeka are \$30.00; out-of-county rides must be purchased in advance, either by cash, electronic check, or credit card. Independence also accepts Medicaid for non-emergency medical transportation. Advance reservations are required: 24-hours for trips within Lawrence, one week for trips between locations in Douglas County and Lawrence, and 30 days' notice for medical trips to Kansas City or Topeka; reservations are accepted by phone Monday through Friday from 8:00 a.m. to 3:00 p.m. Funding is provided through state operating funds. In 2015, Independence completed 6,808 passenger trips.

## Johnson County Transit: K-10 Connector

The K-10 Connector is operated by Johnson County Transit and provides express, fixed-route bus service between the University of Kansas' Lawrence campus and the Edwards Campus in Overland Park. The route also serves stops at the Allen Fieldhouse Garage, the 19<sup>th</sup> and Haskell Park & Ride, and the Johnson County Community College (JCCC). Monday – Thursday the route operates from 6:00 a.m. to 10:20 p.m. (eastbound) and 11:21 p.m. (westbound). On Friday, the route operates from 6:00 a.m. to 7:20 p.m. Frequency is reduced during the University of Kansas' summer session and when KU and the JCCC are both on breaks. Fares for one-way trips is \$3.50; a 10-Ride Pass is available for \$31.50 and the 31-Day Pass costs \$117.60. Annual ridership on the K-10 Connector in 2015 reached 128,952 passengers.

## SafeRide & SafeBus

SafeRide is a demand-response service that provides KU students with a free ride home. Service operates every night from 10:30 p.m. to 2:30 a.m. during the fall and spring semesters. Reservations are made by phone, and service only operates within Lawrence. SafeBus is a fixed-route service that connects KU's campus to downtown Lawrence and off-campus student housing. SafeBus runs from 9:00 p.m. to 3:00 a.m. on Thursday, Friday, and Saturday nights during the fall and spring semesters. Service is free, and can be accessed at designated bus stops. Annual ridership on SafeRide reached 16,477 passengers and on SafeBus reached 41,894 passengers for the 2015-2016 academic year ending on June 30.

## Douglas County Private Sector Providers

Several private sector transit providers operate intercity connections between Lawrence and destinations throughout the Midwest and beyond. Greyhound Lines operates three daily trips that depart from City Hall. Direct service is available to Dallas, Kansas City, Oklahoma City, Topeka, and Wichita; additional destinations are accessible through transfer connections at Greyhound stations in Kansas City, Dallas, and Oklahoma City. Amtrak rail service is available at Lawrence Station in downtown Lawrence. Amtrak's Southwest Chief stops daily in Lawrence and provides service between Chicago, Kansas City, Albuquerque, Flagstaff, and Los Angeles.

## Midland Care Connection

Midland Care Connection is a non-profit organization that provides specialty senior and elder health services in northeast Kansas, including Lawrence and Douglas County. Midland Care began operating a Program of All-Inclusive Care for the Elderly (PACE) in 2007, which provides medical and social services to individuals that are eligible for Medicare and Medicaid. PACE services include transportation for the organization's Adult Day Health program, if needed. Midland Care's PACE program served 232 patients in 2015, and recently expanded service to Lyon, Nemaha, and Marshall Counties. According to Midland Care's [2015 Annual Report](#), PACE accounted for 54 percent of Midland Care's revenue in 2015.

## Assisted Living Centers Transit Provider

Five assisted living centers are solicited for comment and participation on the RTAC: Arbor Court, Brandon Woods at Alvarado, Arbor Court, Meadowlark Estates, Pioneer Ridge, and Presbyterian Manor. These centers provide daytime and non-emergency medical transportation to residents and provide scheduled transportation to a limited number of planned social activities. Residents also utilize Lawrence Transit or Douglas County Senior Services to access services, activities, and events in Lawrence but lack back-end transit services for their evening return trip at times.

**LAWRENCE TRANSIT COA | TECHNICAL MEMO 1**  
Lawrence-Douglas County MPO

Figure 28 | Lawrence-Douglas County Regional Provider Service Characteristics

Provider	Service Type	Eligibility	Schedule	Service Area/Coverage	Fare	Ridership (2015)
Babcock Bus (Lawrence-Douglas County Housing Authority)	Demand-response (door-to-door)	Elderly and disabled residents of Peterson Acres/Babcock Place	Monday – Thursday (8 am – 4 pm)	City of Lawrence	\$3 round-trip fare suggested	2,247
Bert Nash Community Mental Health Center	Demand-response (door-to-door)	Elderly and disabled patients	Monday – Saturday (9 am to 7 pm)	Douglas County	No charge	4,020
Cottonwood	Demand-response (door-to-door)	Adults with intellectual development disabilities	Monday – Sunday (7 am to 10 pm)	City of Lawrence	\$50 monthly transportation fee	2,948
Douglas County Senior Services	Demand-response (door-to-door)	Older residents (60+)	Monday – Friday (8 am – 4:30 pm)	Douglas County	One-way within Lawrence: \$3; round-trip within Lawrence: \$6; one-way outside Lawrence: \$5; round-trip outside Lawrence: \$10	6,397
Independence	Demand-response (door-to-door)	Elderly and disabled individuals	Monday – Friday (8 am – 5 pm)	City of Lawrence and Douglas County	One-way within Lawrence: \$3; one-way within Douglas County: \$5; \$30 to medical centers in KC and Topeka	6,808
Johnson County Transit (K-10 Connector)	Fixed-route	General Public	Monday – Thursday (6 am – 10:20 pm) Friday (6 am – 7:20 pm)	Operates between KU Lawrence and KU Edwards campus, and the JCCC	One-way: \$3.50	128,952
SafeRide	Demand-response (door-to-door)	KU Students	Fall and spring Every night (10:30 pm – 2:30 am)	City of Lawrence	No charge	16,477
SafeBus	Fixed-route	KU Students	Fall and spring Thursday – Saturday (9 pm – 3 am)	KU's campus to downtown Lawrence	No charge	41,894

## 4 EXISTING PLANS AND STUDIES

As part of the existing conditions analysis, Nelson\Nygaard reviewed three critical transportation plans that include proposed developments for public transit and multimodal transportation in Lawrence and Douglas County. An overview of the purpose of each document, key findings and an update on the implementation status is reported here. Based on these documents, the following initiatives are (or could) impact future transit services:

- Pedestrian and multimodal facility infrastructure enhancements
- New transit hub and multimodal transfer center development
- Fixed-route transit service changes

### Transportation 2040 (2013)

**Purpose:** Guide the development of transportation projects in Lawrence and Douglas County for the next 27 years by setting goals and objectives, identifying specific transit needs, recommending transportation system improvements, and addressing anticipated and potential funding sources. The plan also serves as the Metropolitan Transportation Plan (MTP) for the Lawrence-Douglas County region and meets the federal requirements for regional/transportation planning.

**Key Findings:** [Transportation 2040](#) recommends various transit projects that are important to improving mobility and accessibility throughout the Lawrence-Douglas County region. Roadway, bicycle, pedestrian, and transportation demand management (TDM) projects are also considered. Four goals guide the study's objectives and policies: improve safety and security, focus on system preservation and economic efficiency, maximize accessibility and mobility, and consider the environment and quality of life.

Within the public transit section, specific transit action steps are recommended:

- Continue coordinated monitoring and routing based on performance and service,
- Establish an off-street location for a regional and/or local transit hub and multimodal transfer center,
- Maintain and acquire vehicles to build a sustainable fleet,
- Develop a long-term transit funding strategy for operations and capital improvements,
- Coordinate marketing and education efforts to attract and retain choice riders,
- Encourage multimodal connections and ease of transition between modes,
- Increase the use of infrastructure and technology to improve navigation and reliability of transit service,



- Support current efforts to develop regional commuter routes and park-and-ride opportunities, including transit connections to smaller cities in Douglas County and I-70 service,
- Continue the coordination and communication that urban public transit and human services transportation providers have begun in 2011 and continue to work together to carry out the recommendations from the Coordinated Public Transit - Human Services Transportation Plan (CPT-HSTP),
- Review and assess the safety and security procedures and equipment in use on the region's transit system,

To promote and develop a balanced transit system, six performance indicators are recommended to measure progress and success of transit operations: riders per revenue vehicle hour, ridership on fixed route vs. paratransit services, transit accessibility, distance to transit stops, destinations accessible by transit, and revenue miles per accident.

**Status of Implementation:** The Transportation 2040 plan was approved in March 2013. Since the plan was approved, CS has progressed on several transit initiatives. Bike racks have been added to KUOW buses, completing the effort to add bike racks to all CS buses. Lawrence Transit began a one-year pilot of demand-response late-night service ("Night Line") in June 2013, which continues to operate. In early 2014, six new locations began selling 10-ride and monthly bus passes. Transit service changes went into effect on August 1, 2015, which impact Route 5, 9, 15, and 29. Additional service changes that affect Route 1, 3, 5, 6, 9, and 15 will go into effect on August 1, 2016. Aligning with the goal of building a sustainable fleet, Lawrence Transit introduced three new 30-foot buses in March 2015, and KUOW debuted three new buses with redesigned graphics in September 2015. In February 2016, frequency on Route 7 was increased from 60 minutes to 30 minutes to accommodate growing ridership. A new MTP will be developed and approved before T2040 expires on March 21, 2018.

## Multimodal Planning Studies: Fixed-Route Transit and Pedestrian Accessibility Study (2013)

**Purpose:** The [Fixed-Route Transit and Pedestrian Accessibility Study's](#) primary goals are to identify specific obstacles and issues that transit riders encounter when using the existing fixed-route system. These issues include accessibility improvements at transit facilities, non-functional pedestrian facilities, and bus turnout locations. Moreover, the study hopes that implementing these recommendations will result in air quality improvements and reduced traffic congestion.

**Key Findings:** The study targets four main corridors, identifies transit-pedestrian accessibility issues, and recommends transit user related improvements in each corridor: 6th Street Corridor, 23rd Street Corridor, 19th Street Corridor, and the Naismith Drive Corridor. Common transit-pedestrian accessibility issues identified include: sidewalk gaps, bus stops lacking amenities, unprotected mid-block crossings, poor crosswalk striping, and sidewalks and curb ramps in disrepair. Study recommendations are focused primarily on improving the following issues: bus stop boardings/alightings, connections to/from bus stops, and street crossings near bus stops.

In addition to corridor-specific enhancements, the study includes a range of policy recommendations to support the transition between pedestrians and transit users:

- Arterial roadways should include sidewalks on both sides of the street

- Enhance existing crosswalks and identify new crossing locations
- Strengthen the site development review process
- Adopt typical bus stop standards
- Identify locations for bus turnouts
- Evaluate relocating mid-block stops closer to marked pedestrian crosswalks
- Review sidewalk replacement policy
- Seek a dedicated funding source
- Incorporate pedestrian improvements into larger scale roadway projects
- Utilize its applications to enhance transit services
- Coordinate bus stop improvements to enhance multimodal connections

**Status of Implementation:** The Fixed Route Transit and Pedestrian Accessibility Study was approved by the Lawrence-Douglas County Metropolitan Planning Organization (MPO) in March of 2014. The MPO is working to coordinate those study results into the next MTP update, planned to begin winter 2016.

## Multimodal Planning Studies: Commuter Park & Ride Study (2013)

**Purpose:** The [Commuter Park & Ride Study's](#) primary goals were to identify opportunities to increase the effectiveness and functionality of commuter park & and ride facilities to serve Douglas County residents that work in Topeka and Kansas City and attendees of large special events in Lawrence. Integrating carpool opportunities with regional bus services is also a key objective. Expected study benefits are air quality improvements and traffic congestion reduction.

**Key Findings:** The study identified nine potential commuter park & ride site locations, including four in Lawrence, two in Douglas County, and one site each in Baldwin City, Eudora, and Lecompton. The potential commuter park & ride site locations were scored based on 13 criteria, including access to local highways (I-70, K-10, and US 59), connections to existing transit services, proximity to major activity centers, special event parking capacity, and feasibility of land acquisition. Based on the scoring criteria, the study produced the following recommendations for siting future commuter park & ride facilities:

- Develop a shared use park & ride facility in South Lawrence.
- Identify a Dedicated Park & Ride Facility along the I-70 Corridor.
- Develop a Park & Ride Facility with a Regional Transit Service Connection in Eudora.
- Develop a Park & Ride Facility with Local Transit Service Connections in West Lawrence.
- Develop a Park & Ride Facility in Baldwin City.
- Explore the Potential for a Park & Ride Facility in East Lawrence.

Policy recommendations include coordinating the park & ride development plans to enhance multimodal connections and to foster safe and accessible pedestrian circulation to and from the park & ride sites. Additionally, the study includes conceptual design options for shared use and dedicated park & ride facilities.

**Status of Implementation:** The Commuter Park & Ride Study was approved by the Lawrence-Douglas County Metropolitan Planning Organization (MPO) in March of 2014. The MPO is working to coordinate these results into the next MTP update, planned to begin winter 2016.

## Coordinated Public Transit-Human Service Transportation Plan (2016)

**Purpose:** The [Coordinated Public Transit-Human Service Transportation Plan \(CPT-HSTP\)](#) establishes a plan for the future coordination and improvement of transit services in Douglas County. The study's goal is to foster improved two-way communication and trust between the MPO, local paratransit and human services providers, and their customers.

**Key Findings:** The plan identifies demands and unmet transit needs based on spatial gaps, temporal gaps, frequency, connectivity, paratransit beyond ADA requirements, knowledge and information, pedestrian access to destinations and transit, service duplication, and worst case scenarios.

Six goals direct the implementation of strategies:

- Improve the coordination of public transit and human services transportation to maximize the efficient and effective use of funding.
- Providers and RTAC will (with MPO, KDOT, and FTA assistance) establish an education and training program to ensure that the community at large is aware of their transportation options.
- Work to facilitate and improve regional coordination opportunities with providers throughout the region and to coordinate available transportation alternatives.
- Encourage local governments to improve amenities and publications (e.g., shelters, stops, service maps and schedules, pass sales, signage, transfer points, ramps, and sidewalks) to promote accessibility and mobility.
- Promote land use and urban design plans and standards that support transportation alternatives and include transit friendly facilities, such as: shelters, stops, transfer points, ramps, sidewalks, and lighting.
- Providers will encourage MPO staff to incorporate the CPT-HSTP recommendations and policies into the MTP, and to coordinate the development of MTP updates with the CPT-HSTP and vice versa.

Specific implementation activities, short-term actions, and long-term actions are detailed that address the gaps and needs discovered through the planning process. Prominent actions include:

- RTAC should create a comprehensive directory of available community transportation services for residents and human service agencies. (Immediate)
- RTAC members will coordinate with planning partners and other governing bodies on behalf of RTAC providers and policies in order to carry out plan goals. (Short-term)
- Work with KDOT to develop a system to coordinate trips across multiple providers through coordinated dispatch and/or vehicle sharing, thereby improving the connectivity that is currently lacking. (Short-term)

- RTAC and the MPO shall update this plan every five years (prior to MTP development) and add action steps as they become relevant in the region's planning and programming process. (Short-term)
- RTAC should promote Transit Oriented Development (TOD) and possibly research parking maximums. (Long-term)

**Status of Implementation:** The public comment period for the CPT-HSTP ran from April 4, 2016 to May 4, 2016. The plan will go before the Lawrence-Douglas County MPO Policy Board for approval on July 21, 2016. The MPO is working to coordinate those study results into the next MTP update, planned to begin winter 2016.