

Chapter 7: Transit System Plan

There are two fixed-route transit services currently operating within the City of Lawrence: the Lawrence Transit System (the “T”) and the University of Kansas’ “KU on Wheels” system. In addition, there are a number of paratransit shuttle services in Lawrence and Douglas County. The “T,” the City’s public transportation system, began operation in January 2001 and provides fixed-route service throughout the city. In addition to providing services for transit dependent patrons, the “T” also offers services as an alternative to the automobile for non-transit dependent, or choice, riders.

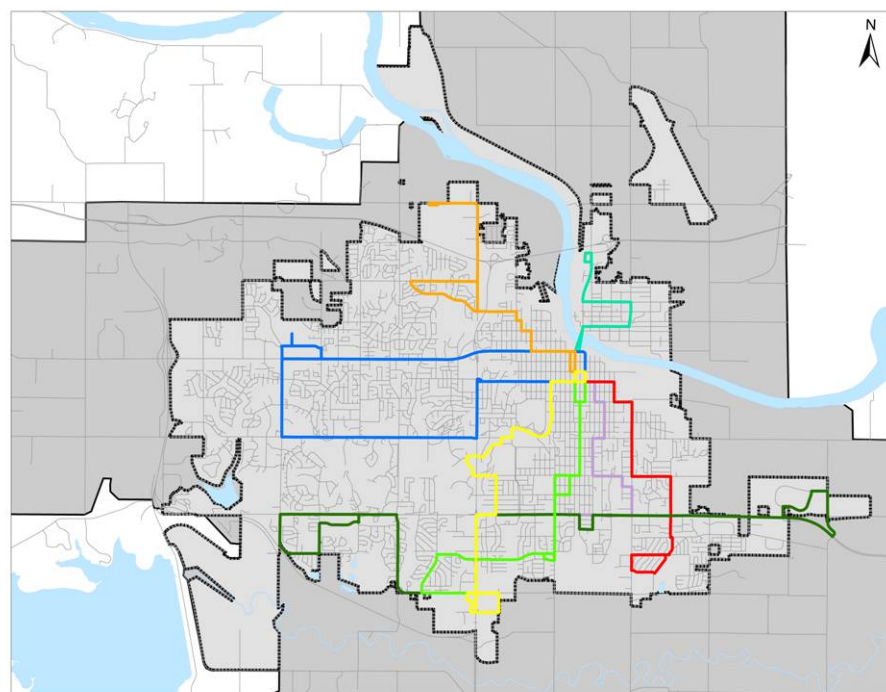
As a public service, the “T” system should be funded and supported similar to other public services. A public transit system of a size and quality commensurate with the future needs of the City of Lawrence and Douglas County residents and businesses is an important element of the region’s transportation system. The “T’s” existing system of bus routes is shown in Figure 7.1.

Transit service, whether fixed-route or demand-responsive, is intricately linked to many other governmental and planning actions. Lawrence Transit plays a key role in supporting emergency response activities. Transit is an important component in serving those with special needs during man-made or natural disasters.

Providing fixed-route transit service relies upon direct pedestrian connections between bus stops and origins and destinations. Transit service reacts to the density of development within the city, locations of transportation corridors and activity centers, and the design of developments along the corridors and centers it serves. Travel corridors and activity centers with a mix of uses and a large number of travelers provide the demand that can effectively support higher levels of transit service.

Figure 7.1
Lawrence Transit Service Bus Routes

Source: Lawrence/Douglas County MPO, Lawrence Transit Service
<http://www.lawrencetransit.org/routemap.shtml>



Lawrence’s recent citywide bus service offers fixed-route bus service six days a week on eight established routes.

Given the historical emphasis on roadways and automobiles, developing a balanced, multimodal transportation system sometimes requires shifts in public investment. To facilitate a higher level of transit service in the city, new developments and land use patterns should be planned in such a way as to support the non-automobile modes. In turn, the design of the City's infrastructure and roadway system must consider all transportation modes, including transit.

The evolution of Lawrence as an auto-oriented community has occurred over decades. It will similarly take time to restructure land use and development patterns to achieve an environment that can promote productive transit service.

Current and Future Conditions: Access to Transit

With the establishment of citywide, fixed-route bus service, the future of public transportation in Lawrence is much clearer now than in the past. However, several questions and considerations remain.

Future socioeconomic growth will add new people and jobs that will result in increased travel demand. In particular, anticipated development in the southern and western portions of Lawrence will increase demand for transit service and place greater pressure on the Lawrence Transit System. In addition, it is likely that desires for higher service levels (e.g., more routes, longer service hours, increased frequencies) in the existing bus service areas will increase as the system takes hold and ridership grows.

One of the measures used to indicate current service levels and future service needs is the amount of coverage provided by the bus system. Coverage is measured for three intervals: short-walk, medium-walk, and long-walk. Studies and other empirical evidence have indicated that people living within 1/8 mile of transit service have the highest propensity to use the service. The likelihood to walk to the bus falls off rather quickly after about 1/4 mile.



Recommended Transit System Plan

To achieve viable long-range transit service for the City of Lawrence and Douglas County in the year 2030, a number of policies and actions are needed to guide successful implementation and expansion of public transit. These policies and action items are described below.

Promote a Balanced Transit System

Finding balance in the transit system between the number of routes, the frequency of service, and the extent of service hours usually requires tradeoffs. As an example, if resources are expended on increasing the frequency of service or extending the service hours, less productive service routes may need to be eliminated and those resources reallocated to the higher-frequency and extended service-hour routes. Similarly, if additional routes are added, frequency of service and/or service hours for existing routes may need to be cut.

As development occurs and the City adds service to intensified existing development areas and newly developed areas, trade-offs between the number of routes, frequency of service, and service hours should be examined. To the extent possible, frequency of service should be increased on the higher-density transit route corridors to capture trips that might have traditionally used automobiles. As new development occurs, extended or new services should be considered when densities warrant.

Transit Action 1: Ongoing Monitoring of Transit Performance and Service

Monitor and modify transit service in response to future growth, changes in development patterns, and user needs. Consider a north-south transit route in the western portion of the City that would connect Bob Billings Parkway and Clinton Parkway.

Transit Action 2: Establish an off-street location for a regional transit hub.

Plan for a regional transit hub that would provide improved facilities for local transit riders and a convenient connection to regional transit service.

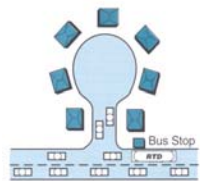
What we've heard...

Longer service hours and decreased times between buses are needed.

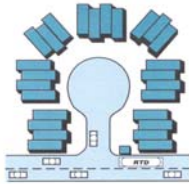


Transit-Friendly Land Use and Development Standards

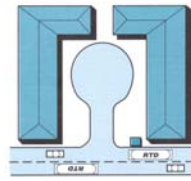
Transit service requires pedestrian connections to and from transit stops, a reasonable density of activities, and applicable development design standards. To achieve transit productivity, all three elements must be provided. Pedestrian connections to transit must be direct and the sidewalk system must have continuity. Street crossings to transit stops must be safe. Productive transit service requires high-density land development patterns which link residential areas and employment, retail, and service centers. Design of new developments needs to be transit friendly by providing convenient access to transit services.



4 du/ac can support transit every 60 minutes
7 du/ac can support transit every 30 minutes



20 to 30 du/ac can support transit every 10 minutes



50 du/ac can support more bus trips than auto trips and light rail

Transit use can be increased by site design and zoning actions that complement and encourage public transportation and other alternative modes. Such considerations include

- Site designs which facilitate pedestrian access;
- Higher residential and employment densities;
- Pedestrian improvements connecting new developments to other activity centers and neighborhoods;
- Mixed-use developments;
- Parking price, supply, and design strategies;
- Transit user amenities like bus shelters, benches, and information kiosks; and,
- Subdivision designs that facilitate the connection of residents to bus stops and allow for the efficient circulation within the neighborhood.



In most areas, local bus service threshold for business is approximately 50 to 60 employees per acre

It should be recognized that the typical transit user is also a pedestrian. Conventional commercial site designs often place barriers such as landscaping and parking lots between the buildings and the sidewalk. Residential development patterns tend to be automobile-oriented and make pedestrian access to bus stops difficult. Discontinuous or poorly maintained sidewalks contribute to the problem.

Abundant free parking is sometimes a deterrent to transit usage in large metro areas; however, that is not always an issue in smaller areas. If a joint city-university system is to become a reality, significant changes in current parking policies both

on and off campus should be reviewed. Parking policies in the Downtown and other activity centers should be reviewed as well. Parking that supports retail businesses should be studied carefully to maintain a balance of commercial interests and alternative mode opportunities.

Transit Action 3: Develop Pedestrian and Land Development Standards to Promote Productive Transit Service

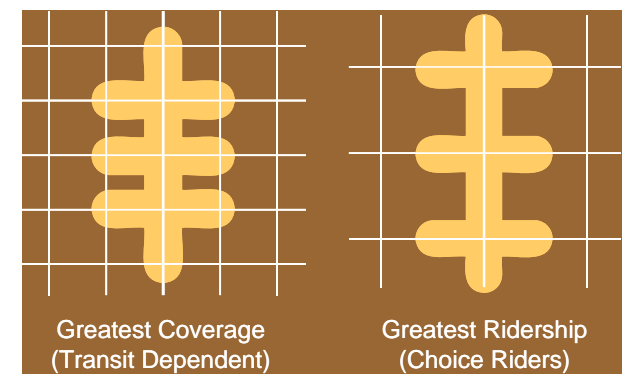
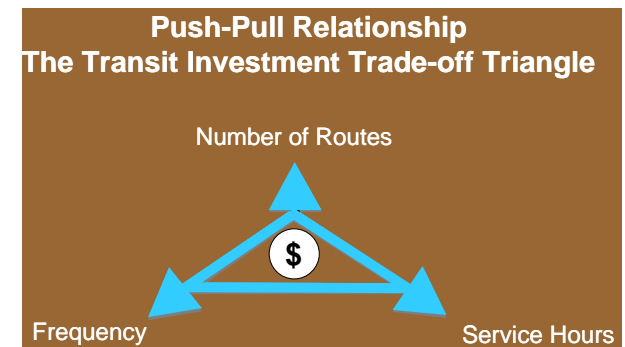
This includes:


- Developing pedestrian access standards for new development and redevelopment projects that provide direct and continuous access to transit stops;
- Promoting mixed-use, high-density activity centers and corridors integrating transit-oriented standards in project design; and,
- Developing and implementing transit-oriented design standards for new developments.

Multiple Approaches to Providing Transit Access

T2030 addresses both the coverage requirements for serving the transit dependent population as well as productive routes for capturing new riders and reducing congestion. Achieving more productive routes requires strategic planning efforts to direct growth patterns along transit corridors and concentrate activities into higher-density, mixed-use centers.

Maximum transit coverage and maximum transit productivity form the continuum of options for the transit provider. At one end of the continuum is the provision of transit service to as many homes and businesses as possible. This type of service extends coverage but sacrifices higher service standards along more productive routes. Whereas this type of service addresses the needs of the transit dependent, it does not promote competition among modes to capture new riders, especially choice riders. On the other hand, increasing service to high-demand corridors to capture new riders might mean reducing or eliminating low productivity routes.



- Coverage:**  **Productivity:**
- Majority of City
 - Less Frequent Service
 - Lower Ridership
 - Transit Dependent Riders
 - Lower Route Productivity
 - Less Competitive with Other Modes
- Higher Density Corridors and Activity Centers
 - More Frequent Service
 - Higher Ridership
 - Fewer Transit Dependent Riders, Adds Choice Riders
 - Higher Route Productivity
 - More Competitive with Other Modes

Transit Action 4: Study Transit Productivity and Coverage Issues

Review transit goals and objectives to determine an appropriate balance between coverage and productivity of transit services.

What we've heard...
There is a desire for bus transit connections to Topeka and the Kansas City metropolitan area.

Integrate Transit When Designing Roadway Improvements

Transit bus service depends on the roadways it travels. Transit productivity is impacted when roadways are congested; increasing transit travel time and requiring additional transit vehicles to provide the same transit level of service. Transit vehicles can also impact other vehicular travel and safety unless transit turnouts allow vehicles to pass. Typically, the turnouts are provided along the far side of an intersection to allow buses more opportunities to re-enter the travel lanes. "Near-side" turnouts can result in transit vehicles being blocked by vehicles queued at the intersection. Roadway design considerations also include the need for sidewalks to transit stops, safe street crossings, lighting for security, and bus stop benches and shelters.

Transit Action 5: Develop Transit-Friendly Roadway Design Standards

Develop transit-friendly roadway improvement standards that accommodate and promote far side intersection bus turnouts, efficient transit operations, and transit amenities. Require transit-friendly roadway design in construction of new roadways and reconstruction of existing roadways.

Transit Consolidation

The "T" and "KU on Wheels" transit systems have somewhat redundant services, different fare programs and different funding mechanisms. Consolidation of the two services would permit the development of an overall plan that could increase coverage, frequency, and service hours by pooling the resources of the two systems.

Consolidation of the transit services should build on the strengths of each system's operating and ridership characteristics. For example, the University's culture of bus transportation should be maintained to greatest extent possible by retaining historical KU on Wheels references, marketing directly to students, and including student leadership in the decision-making process. The consolidated system may wish to employ student drivers, further increasing exposure to students and possibly lowering labor costs. Student managers could assist the professional staff with planning and operations issues. Finally, the important activity centers served by both existing systems should be incorporated into the consolidated system.

Transit Action 6: Pursue Transit Consolidation Opportunities

Continue to pursue transit service coordination opportunities among the "T," KU on Wheels, and the local school bus system.

Transit Is an Integral Part of the Community's Transportation System

The "T" transit services accounts for a very small percentage of the current Lawrence budget. While this level of funding might be adequate to provide for the basic transit services for the disabled and transit dependent, the funding level is not sufficient to provide the frequency, route coverage, and structure to compete with the level of service offered by the automobile.

Public funds and policies subsidize parking in the downtown area and can make it more difficult for transit to compete. Currently, transit funding is not seriously considered as a way to provide mobility along congested corridors. There are significant fiscal, neighborhood, and environmental impacts when those corridors are widened. The long-term strategy to enhance mobility, though a range of alternative transportation modes, requires long-term funding commitments for the "T."

Independence Inc. provides general paratransit services, and Douglas County Senior Services, and Cottonwood provide paratransit services to elderly citizens and citizens with disabilities in Douglas County. Although separate agencies,

What we've heard...

There is a desire for transit connections to the smaller cities in Douglas County.

they coordinate with Lawrence Transit to provide transit services to the region. Were the services provided by one of these agencies to be scaled back, it would have an impact on all. Each is a member of Coordinated Transit District 1 that covers Douglas, Johnson, Wyandotte, and Leavenworth Counties. CTD 1 has developed a Coordinated Human Services Plan that has been approved by KDOT.

Transit Action 7: Develop a Long-Term Transit Funding Strategy

Conduct a funding and subsidy study to determine the trade-off costs and benefits of various transit funding levels. Establish a long-term funding commitment for the “T” to provide for transit service to existing and future developments within the city.

Transit Action 8: Develop a Long-Range Transit Plan

Develop a long-range transit plan that addresses future needs and opportunities, reviews the most appropriate fixed-route service types, establishes a framework for consolidation of transit services, and builds on recent transit services. Short-, medium-, and long-term actions should be included in the transit plan’s implementation discussion.

Provide Funds for Transit Vehicle Replacement and Facility Needs

Capital needs for the region include replacing buses and paratransit vehicles as they age and providing new transit passenger facilities and vehicle maintenance facilities.

The 12 fixed-route buses in the Lawrence Transit fleet and the 38 buses in the KU on Wheels fleet will need to be replaced twice before the year 2030; Lawrence Transit’s 14 paratransit and KU on Wheels 4 paratransit vehicles will need to be replaced four to five times by the year 2030; and there will be a need for new facilities for transit users and vehicle maintenance.

Transit Action 9: Develop a Long-Term Funding Strategy for Capital Improvements

Develop a long-term strategy to ensure the replacement of transit vehicles on a regular schedule and to enable the construction of transit facilities.

Regional Commuter Transit Needs and Options

Currently, only one intercity public commuter transit route serves Lawrence and Douglas County. The K-10 Connector bus service provides a route on K-10 between the KU campus and Johnson County. Eastbound and westbound buses provide express service on weekdays from 6:30 a.m. to 5:30 p.m. approximately once an hour. Limited late evening service is also provided. Consideration should be given to providing a stop at Eudora for at least some of the buses.

As commuter traffic has continued to increase between Lawrence and the Topeka and Kansas City Metropolitan Areas, there is an increased need to develop alternative modes of commuter transportation. The K-10 Johnson County Connector is the first step in providing this service. Intercity bus service along the Kansas Turnpike (I-70) to the east and west is a logical next step. The ultimate option would be a commuter rail system that serves the Topeka, Lawrence, and Kansas City areas.

The Mid-America Regional Council (MARC), the MPO for the Kansas City area, has conducted a regional commuter rail study to determine whether existing rail corridors or railroad rights-of-way could effectively serve commuter transportation needs of the Kansas City region. Three corridors, including the corridor connecting Kansas City, Lawrence and Topeka, have been recommended to move to the second, more detailed, phase of the study.

Several private firms, such as Kansas Transportation Services and KCI RoadRunner provide shuttle service on a contractual basis to private corporations or to KCI Airport from Lawrence to Topeka and the Kansas City Metro Area.

Transit Action 10: Investigate the Potential for Regional Transit Connections along I-70

The Lawrence/Douglas County MPO should work with the Metropolitan Topeka Planning Organization and the Mid-American Regional Council to explore the potential for intercity transit service.



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