



Transportation Access to Healthy Food

An Assessment of Douglas County and
Lawrence, KS

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University of Kansas
Urban Planning Department
Transportation Implementation 757
Jay Decker, Jon Moore, Sha, Yue Li, Lingling Li
Jdeck@KU.edu

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1.0 Purpose and Need

1.1 Background

Food is a sustaining and enduring necessity. Yet among the basic essentials for life- air, water, shelter, and food - only food has been absent over the years as a focus of serious professional planning interest. This study aims to address this issue by focusing on access to healthy food in the Lawrence, Douglas county area.

The Lawrence, Douglas County Office of Sustainability has recently identified access to food as a growing problem. The “*AHF Assessment Summary*” of June 2012 identified 2 issues: (1) a lack of transportation access to full service grocery stores and other food resources by residents without transportation, and (2) a lack of access to affordable, healthy foods in Lawrence. More acute access problems were identified in Lawrence, and particularly north Lawrence¹. Additionally, the “*Douglas County Community Health Assessment 2012*” documents the following findings:



- 7% of the population is classified as low-income and does not live within a reasonable proximity to a grocery store (food desert).
- 81.8% of county residents report consuming fewer than five servings of fruits and vegetables daily.
- Many residents interviewed confirmed the study findings: One citizen reported, “Getting food from the pantry is a problem for people who don’t have transportation²”

These local studies mirror similar findings referenced in studies from around the country. An increasing number of Americans are facing financial hardships and increased risk of food insecurity, defined as “the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.”

¹ AHF Assessment Summary

² Douglas County Community Health Assessment 2012

1.2 Purpose and Scope

This study is designed to identify the following:

- Existing conditions related to access to food (Chapter 2). This includes existing food resources, transportation resources, and related demographic data.
- Best practices related to access to healthy foods from around the nation (Chapter 3). This includes transportation to existing food resources and making food more available in local communities.
- Assessments of transportation resources in the study area and recommended next steps (Chapter 4)

2.0 Existing Conditions

2.1 Related Studies

This section describes the major findings of recent local studies concerning food access. This work provides a baseline for the study by highlighting the various food access issues in the Lawrence and Douglas County area.

2.1.1 AHF Assessment Summary (June 2012)

The AHF Assessment Study focus groups aimed to engage community members, including those who experience health disparities, in identifying community assets and conditions that contribute to health, as well as community perceptions of strengths, weaknesses, and priority health issues.

Barriers include:

- lack of transportation
- finances
- lack of nearby grocery stores
- cooking skills
- cooking and refrigeration facilities
- knowledge about available services
- Some people have the preference to other food



Assets include:

- mobile and local food pantry services
- local bus system
- free lunch sites for children and free bread
- community gardens
- information about local available resources

2.1.2 Interviews

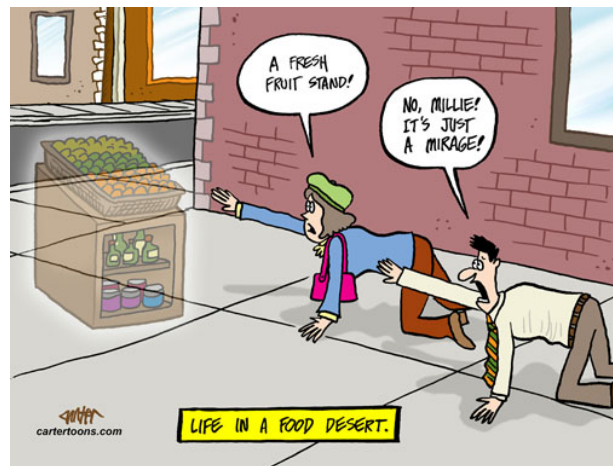
Interviews were conducted to gather information from community members in various leadership positions. The interviews helped identify community assets and conditions that contribute to healthy food access, as well as community perceptions of strengths, weaknesses, and priority health issues.

Barriers identified:

- food deserts
- restrictive local food handling requirements
- education, transportation and economic problems

Assets identified:

- healthy food movement
- local retail autonomy
- growth of farmers markets in popularity and participation

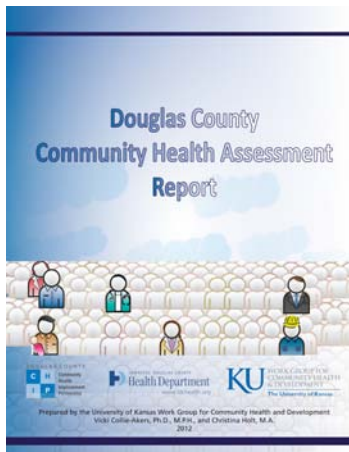


Data Results:

- 81.8% of county residents report consuming fewer than five servings of fruits and vegetables daily.
- 7% of the population is low-income and does not within close proximity to a grocery store.
- Total market value of agriculture products in Douglas County is \$41.2 million (92nd out of 105 Counties in Kansas) in 2007.
- Only 31% of U.S. households participate in food gardening in nation.
- Number of markets in Douglas County decreased from 4 to 3 from 2009 to 2010.
- Values of sales by commodity group (\$1000)-vegetables, melons, potatoes, and sweet potatoes in Douglas County are 9th out of 75 counties in Kansas.

- Values of sales by commodity group (\$1000)-free nuts, fruits and berries in Douglas County are 4th out of 56 counties in Kansas.
- Number of fast food restaurants in Douglas County increased from 78 to 86 from 2007 to 2008.

2.1.3 2012 Douglas County Community Health Assessment



Highlights:

- “There’s not much healthy food available and it’s not within our price range.”
- “In north Lawrence, the full-service grocery store went out of business 15 years ago. The biggest thing they have now is the (Dollar General)”
- Availability of healthy, affordable foods was identified as a top problem through the concerns survey.
- Teens participating in the Photovoice project indicated that the low cost, ease and appeal of fast food competes with making healthy choices.

Transportation was a prominent theme among focus group participants. Participants noted that the implications are widespread, including limiting employment opportunities and ability to access services and recreation facilities. There was a suggested need for a car:

- “It breaks your heart to see those who don’t have a car. If you don’t have a car to go out of town to get a job, it is hard to find employment.”
- “Youth [in Eudora] do not have a safe way to walk or ride bikes to school.”
- “There is only one bus line that goes to Haskell and it only goes down 23rd Street.
- “It’s really hard to get around when you don’t have a car.”

Walking and Bicycling:

- “There’s a lot of students that go up to KU [from Haskell], and there’s no easy way to get to KU. It takes two to three busses to get there, so it takes about an hour and a half to get to KU. It’s easier to walk even though it takes 45 minutes. That’s a huge issue.”
- “The bus system is an asset [in Lawrence], but may need longer hours to accommodate those who work nights.”
- “It takes a 1.5-hour bus ride to get from East Lawrence to the city’s indoor public pool.”
- “They took out the other bus line a few years ago. That tells you how disconnected they are from us... I work [downtown] until 10 p.m. and there’s no bus to take me [home]. So, I walk and much of the way it’s very dark and there are no sidewalks. It’s really creepy.”

- “There used to be a bus that took Lecompton residents to Lawrence. Not everybody is going to be comfortable, if it’s not a close friend or relative, asking for a ride to an appointment. We don’t have the same access to services that you do in Lawrence.”

Distance Issues:

- “That river [Kaw River] might as well be five miles wide [separating North Lawrence].”
- “I have to go to Sixth Street or 23rd Street to get groceries, which is a far distance for people in North Lawrence. North Lawrence has an especially tough time finding close, affordable and healthy food. Our only “grocery store” is Dollar General and they don’t sell fresh fruits and vegetables.”

2.2 Existing Transportation Services

This section highlights the major services offered in the Lawrence/Douglas County area as they pertain to transportation and food resources. It is important to note that this section is not comprehensive, and as such, some services may be lacking details. Services are distributed into three main categories: The Private Sector, The Public Sector, and The Non-Profit Sector.

2.2.1 The Private Sector

Hertz On Demand

Hertz on Demand is a self-service car rental program that can be rented hourly from various parking spot designated locations. Once a reservation for a vehicle is completed online or by using the Hertz iPhone app, a member can simply walk to the car, get in and go. There are four Hertz on Demand cars parked on the KU campus. Two are located across the street from the Kansas Union (lot 16), and two are located on Daisy Hill, across the street from Ekdahl Dining in Lewis Hall (lot 102)³.



³ <http://www.parking.ku.edu/hertzondemand/>

Hy-Vee online ordering

Hy-Vee offers an online ordering service where a store associate will collect your groceries and have them ready for store pick-up or even delivery to your home. The service is accessible 24 hours a day, 7 days a week and food can be ordered up to 7 days in advance. There is a \$10 service charge for online ordering and an additional \$10 fee for home delivery⁴.



Hy-Vee senior pickup

In addition to online ordering, Hy-Vee partners with nearby senior centers to coordinate enhanced service options. When a group of seniors plan a shopping trip to Hy-Vee, the store will coordinate its staff to provide shopping assistance for the seniors while they are in the store.

Community gardening

As of January 2013, the City of Lawrence has initiated an urban agriculture/community garden program, Common Ground. Applications to the program are intended to assist initiatives for the development of urban agriculture and community gardens in the City of Lawrence, increasing local food production, and providing community benefits. The program seeks to use currently vacant or underutilized municipally-owned properties with the goal of producing fresh healthy food for personal consumption and/or sale⁵.



⁴ <http://www.shopouraisles.com/kansascitylawrence.asp>

⁵ http://lawrenceks.org/common_ground

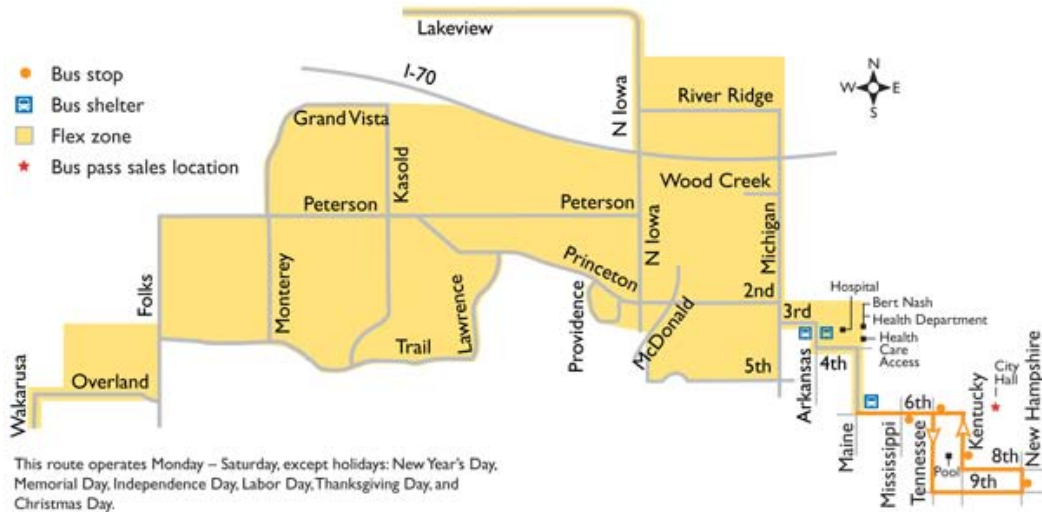
2.2.2 The Public Sector

The “T” – The City of Lawrence Transit System



The T has been designed to provide broad area fixed routes coverage but does so with wide headways that are typically not conducive to meeting a range of travel needs. There are 19 services: 17 fixed routes, one flex service, and a “T Lift” ride paratransit service for individuals with disabilities. The “T” has 14 fixed routes covering a majority of the city’s urbanized areas. The key destinations include: Lawrence Memorial Hospital, the downtown Massachusetts area, and all major grocery stores (Target and Wal-marts included). In locations where healthy food is available (i.e. downtown and 33rd St. Wal-Mart), there currently exists seven fixed routes providing connections to the downtown, and four fixed routes offering direct connections to the Wal-Mart on 33rd St.

For the areas that are not covered by the “T” service, the Flex service provides a paratransit styles curb-to-curb transit option. Riders have the option to schedule a pick up at any address in the Flex service area, where they will then be dropped off at 9th and Massachusetts that is the stop for various bus routes. For individuals with disabilities, the T-Lift service provides a door-to-door shared ride paratransit service within specified areas of Lawrence.



“T” Flex Service

Kansas University On Wheels (KUOW)

KUOW is a bus service primarily focused on student transportation across campus. The service has merged with Lawrence Public Transit, and as a result has recently broadened its operation to include safe evening transportation. There are currently three bus routes, including two campus circular loops. The fixed routes provide access to all the KU dining service locations and operate at a high frequency -- For example, the No. 43 bus runs every 6 minutes in the morning, every 7 minutes in the noon, and every 9 minutes in the afternoon.



It is important to note that bus patrons are allowed to bring groceries onboard, however the USDOT's policy is that the patron has to be "in control" of the bags. The policy was established as a safety and capacity precaution for the bus driver and other patrons. This bag limit policy may pose a problem for individuals whom are shopping for families or in large quantities.

2.2.3 The Non-Profit Sector

Several non-profit services exist in Lawrence, KS. These services provide transportation to various locations in town including to supermarkets, however they are bound to only provide these resources to their specific clientele. Cottonwood Inc., Burt & Nash, and the Lawrence senior center are examples of some of the non-profit organizations that provide transportation in Lawrence⁶.



⁶ Coordinated Public Transit- Human Services Transportation Plan

2.3 Existing Services and Conditions Data

2.3.1 Food Resources

According to the USDA, the location of a food deserts is derived from the following indicators of food access:

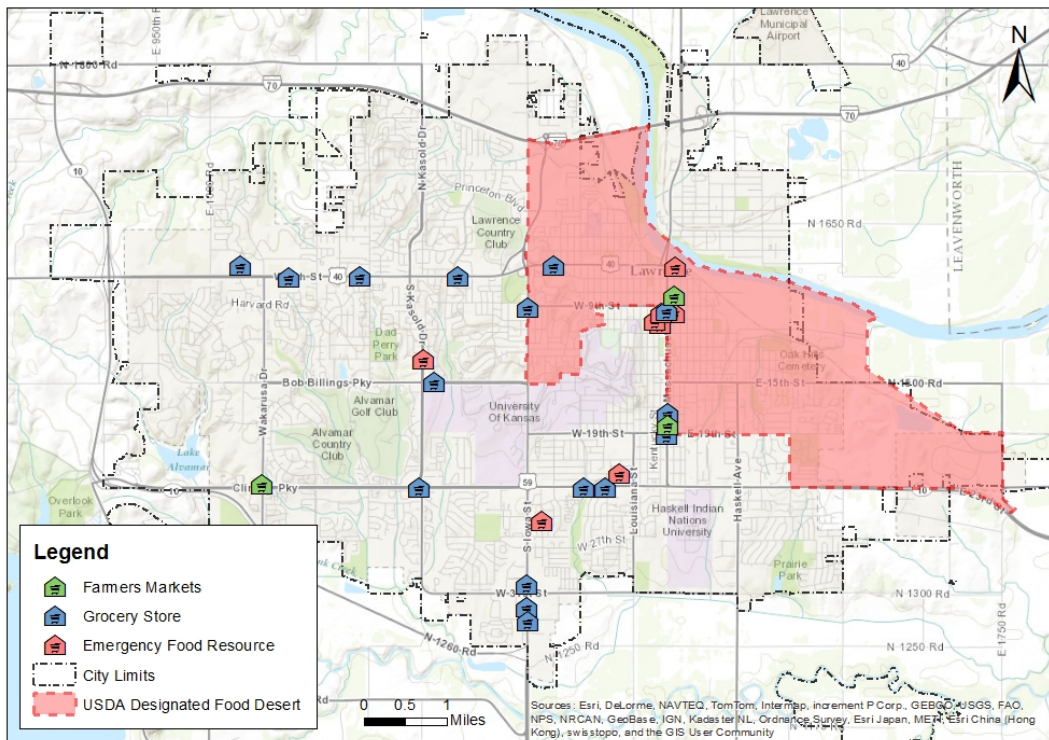
- Accessibility to sources of healthy food, as measured by distance to a store or by the number of stores in an area
- Individual-level resources that may affect accessibility, such as family income or vehicle availability
- Neighborhood-level indicators of resources, such as the average income of the neighborhood and the availability of public transportation.

The list of store locations that qualify as healthy food options is derived from the industry definition of a supermarket: These stores include any food retail outlet with the four major grocery departments – fresh/frozen fruit and veg, fresh/frozen meat, dry goods, and dairy – which also have at least \$2 million in annual sales. As a result, the USDA considers supermarkets, supercenters, large grocery stores, and smaller retail stores as proxies for sources of healthy and affordable food. Analysis is limited to these types of stores for multiple reasons: primarily, these stores typically carry a wide variety of foods at more affordable prices than smaller groceries, convenience stores, etc. These stores also tend to have consistent and reliable hours, unlike farmers’ markets or produce stands; and data on the locations of these stores are more readily available and comprehensive than other types of outlets.

Using the USDA preferred definition of a supermarket, this analysis has identified 16 food resources in the City of Lawrence. However unlike the USDA, this analysis has also identified three local farmers markets and 38 emergency food resources (i.e. food pantries and soup kitchens) for a total of 59 food resources. For the purpose of this report, only the major emergency food resources were included in the mapping analysis. The food resources and the USDA designated food desert for Lawrence is shown below:

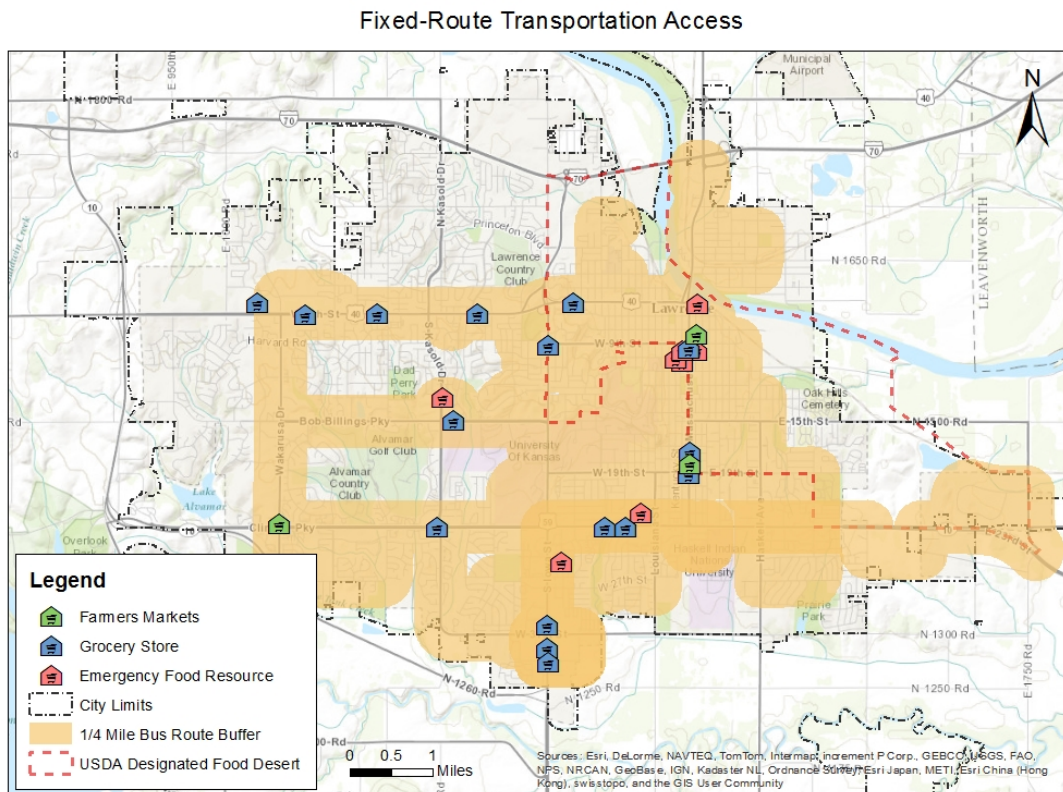


USDA Designated Food Desert



2.3.2 Transportation Resources

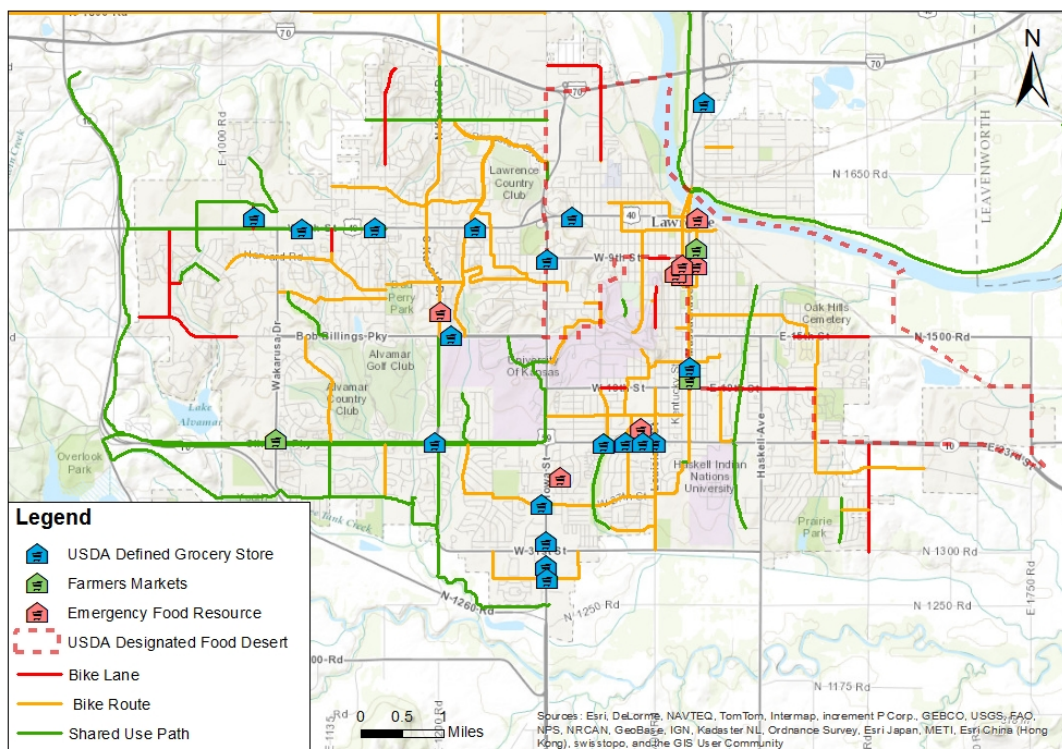
Aside from the personal automobile, the main source of transportation in Lawrence is the Lawrence Public Transit system. The “T” has 17 routes and one flex service, providing access to a large portion of Lawrence throughout the day. The following map creates a quarter-mile buffer around each transit route to establish the maximum coverage area of the “T”. The quarter-mile buffer was utilized because it the standard measure for how far a typical American will walk to a location.





Often overlooked, bicycle transportation is vital component to any transportation system for both commuter and recreational transportation. The bicycle is increasingly being utilized as a viable mode of transportation, and as such, many municipalities have worked towards increasing their bicycle infrastructure. This is apart in Lawrence as the city has been recognized as a Bicycle Friendly Community at the Bronze level since 2004⁷. A Bicycle-Friendly Community provides safe accommodation for cycling and encourages its residents to bike for transportation and recreation. Shown below, the bicycle network in Lawrence is composed of bicycle lanes, routes, and shared use paths. Many of the major transportation routes have existing infrastructure and additions to the network have been planned for the future.

Bikability



⁷ http://www.lawrenceks.org/mpo/bicycle_planning

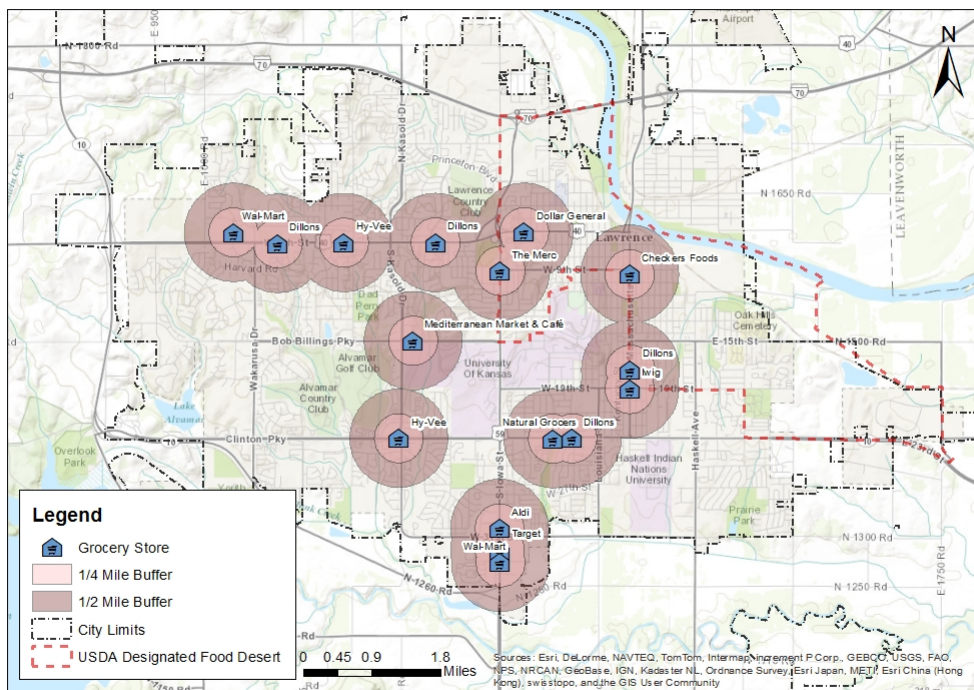
2.3.3 Analysis of Healthy Food Access

The following analysis of healthy food access only considers the 16 supermarkets and consisted of two modes: walking and public transportation. While other food resources were located, only supermarkets were analyzed to stay consistent with the USDA standards. Additionally, the two transportation modes were chosen because of their accessibility, available data, and their uniform nature when predicting routes. Car ownership was not considered because the USDA already assesses this statistic when creating their food desert, and bicycling was not analyzed in part to a lower level of accessibility and the difficult to predictable nature of bicycle route travel without the appropriate data. The analysis also only considered the

The following map analyzes the walking distance to each supermarket based on quarter-mile and half-mile Euclidean distance. The quarter-mile analysis is the standard measure for how far a typical American will walk. It is appropriate to assume that a majority of pedestrians will originate from within this circle. The half-mile measurement is used as both a reference and as an area where outlier cases may originate from.

The analysis shows that only a small portion of Lawrence has access to a supermarket utilizing walking as their primary mode.

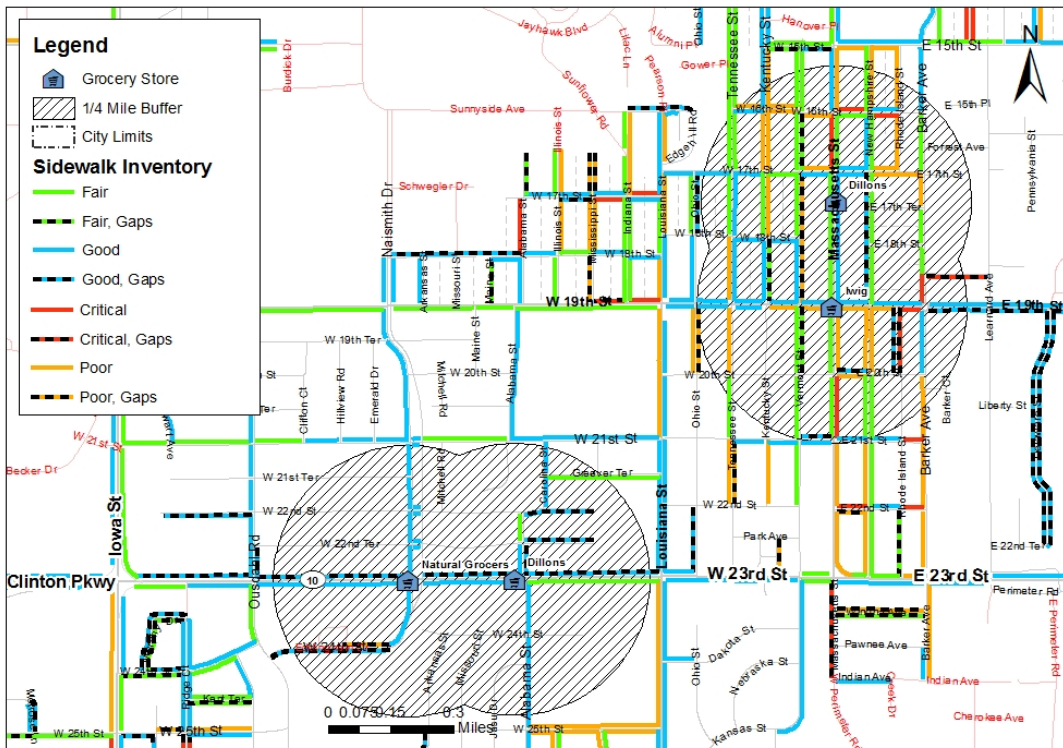
Walkability





Each supermarket was then analyzed based upon the sidewalk quality within the quarter-mile walking standard. The results show that a majority of the surrounding sidewalks were categorized as fair to good, however several tracts of sidewalk are categorized as poor or critical. As such, an individual that intends to walk to a supermarket may want to plan their route accordingly to maximize sidewalk quality.

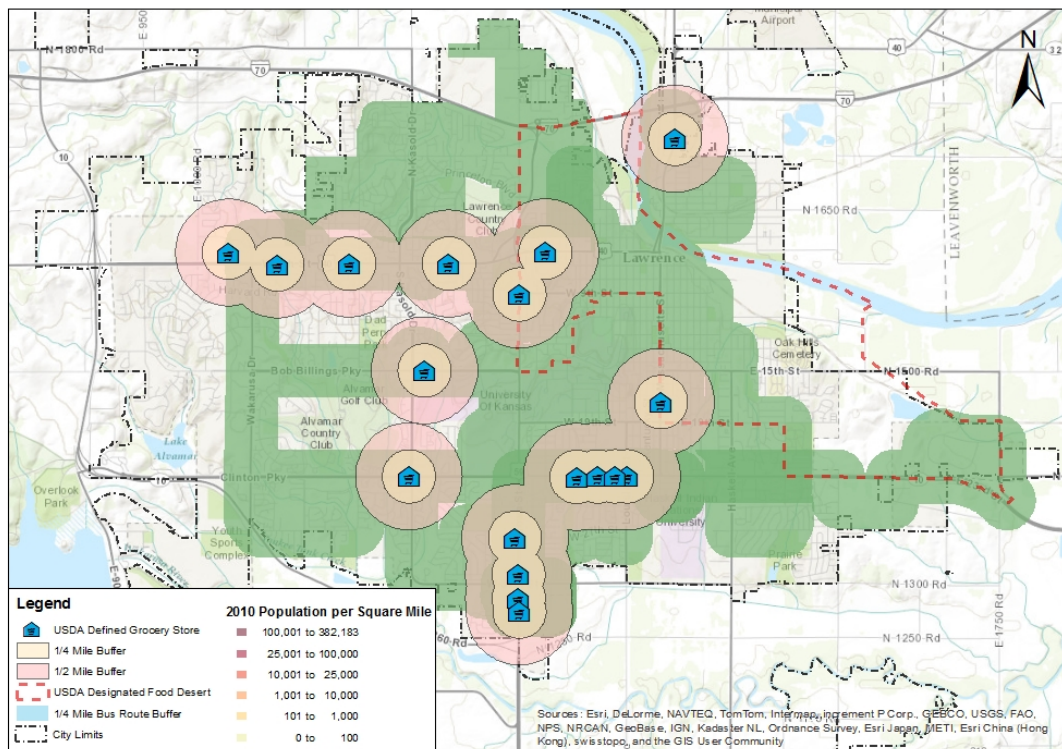
Sidewalk Inventory





The following map was created to analyze the walking and public transportation modes as they relate to the USDA designated food desert. The analysis shows that the “T” services a large portion of Lawrence, including every identified supermarket. The service however does not provide service past Wakarusa Dr. in west Lawrence as well as a large portion of the USDA food desert in east Lawrence.

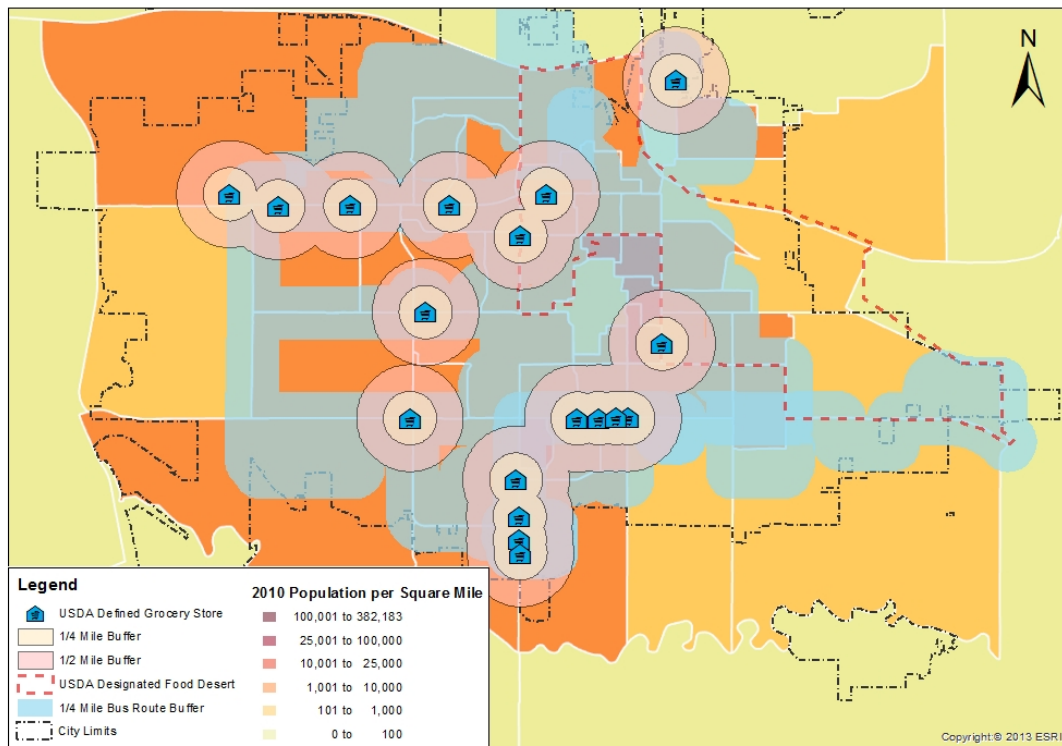
Transportation and Food Access





Further analysis was conducted to analyze the walking and public transportation modes as they relate to population. Population per square mile from the 2010 census was utilized to analyze population density as it relates to transportation access to healthy food. The following map shows that the low transportation access areas in west and east Lawrence have a lower population density than other parts of Lawrence that have a greater level of transportation access. Additionally, the analysis shows that several higher population density sections of Lawrence have low transportation access.

Food Access Assessment



3.0 Best Practices

3.1 Introduction

This chapter identifies a full range of techniques or best practices to enhance access to healthy foods in the Lawrence/Douglas County Area. Access to healthy food means two things: transportation and accessibility.

1. The transportation component is getting people (with cars, transit, etc.) to existing food resources such as stores and food pantries. While transportation is the major focus of this study, it is closely associated with accessibility.
2. The accessibility component is getting the food resources closer to the citizens. For example, have grocery stores or farmer's markets in multiple accessible locations.

This chapter is based on the literature research of 14 articles. The articles establish that access to foods can be enhanced by the private, public and non-profit sectors.

3.2 Best Practices by Sector

The following provides section provides a summary of best practices. Best practices are divided into the private, public, and non-profit sector.

3.2.1 The Private Sector

Transportation: Store Sponsored Van

For the store initiated van services, the program costs include the purchase of vehicle, labor costs for vehicle operation, insurance costs, non-labor operation & maintenance costs, permit and operating fees, and promotional costs. There are two typical cases, the El Tapatio Supermercado in Los Angeles, and Fine's Community Van Service in



El Tapatio Grocery Van

East Los Angeles.⁸ Both stores are large supermarkets, which offer a number of additional programs beyond its grocery store business and establish themselves as high-profile customer-oriented service. These grocery stores provide “store to home” service to assist transit-deficient customers, primarily their elderly clients. The “Van Routes” are free for the customers of the two supermarkets, with the stipulation that shoppers are required to purchase at least \$30 worth of groceries in order to obtain their ride.

Another option is “Bryerly’s To You” Store-to-Door Service Program. This delivery service is more expensive for customer than a van service or other store-based transport programs. This category of service is not for low-income residents, but for those customers seeking time saving options, and for whom weekly shopping has become a time constraint.⁹

Accessibility: Improved Grocery Selection

One proven option to ensure people's accessibility to healthy food is improving selection of foods at private grocery stores and convenience/gas stations. Convenience/gas stations are frequently geographically available and pose a great opportunity to improve access to healthy foods in areas that do not have adequate access to supermarkets.

Accessibility: Home and Community Based Gardening



Community Gardening

Fisher provided a typical case of the accessibility of private sector of the Voluntary Advisory Council on Hunger (1994) in Los Angeles (VACH).¹⁰ The VACH undertook a series of hearings on such issues as nutritional concerns, food concerns of children and seniors, implications of the federal devolution of safety net programs, and alternative strategies such as community gardens and farmers’ markets. The policy, the implementation plan, and initial funding for the approach were approved by the Los Angeles City Council in June 1996 and still continue to operate.

⁸ Dohan, M., Fisher, A., Gottlieb, R., O'Connor, L., Parks, V. 1996. “Homeward bound: Food-related transportation strategies in low income and transit dependent communities.” University of California Transportation Center Working Paper 366, 1-77.

⁹Whitacre, P.T., Tsai, P., Mulligan, J. 2009. “The Public Health Effects of Food Deserts: Workshop Summary.” Food and Nutrition Board, Board on Agriculture and Natural Resources, Board on Population Health and Public Health Practice. Institute of Medicine and National Research Council. Washington, D.C. IOM..

¹⁰ Dohan, M., Fisher, A., Gottlieb, R., O'Connor, L., Parks, V. 1996. “Homeward bound: Food-related transportation strategies in low income and transit dependent communities.” University of California Transportation Center Working Paper 366, 1-77.

3.2.2 The Public Sector

Best practices in the public sector range from transportation (fixed route bus service and paratransit) and accessibility (city markets at key locations; food ordering and drop off service, and cooking demonstrations). These services are described in further detail below.

Transportation: Fixed Route Bus Service

In the public sector, the prevailing mode of transportation is typically a public transit fixed route service. For a fixed route bus services to be effective in terms of healthy food access, the service must operate at convenient times and adequately serve neighborhoods in need. An additional concern often involves the limits imposed on the amount of groceries that can be transported on a bus.

Transportation: Paratransit

This option often refers to *dial-a-ride* or *taxi style* services which operate on a scheduling service. Typically both transit agencies and non-profit organizations offer various types of paratransit services. The service ranges from public use to only elderly or disabled individuals, and the routes can be predetermined for grocery stores or a more general use (i.e. doctor visits, pharmacy, etc.).

An example of a grocer-specific transit service is in Ann Arbor, MI. The Ann Arbor Transportation Authority (AATA) offers a service called Senior Ride which has been operating for over 20 years. The service offers a transportation option for six senior citizen housing complexes to go to two local grocery stores for a fare of \$0.75 each way. Stop and route changes are rare and occur only if ridership declines to fewer than five people per housing complex. Over time, the service has included fewer stops due to declining use, but AATA will likely continue to offer the Senior Ride to those who rely on it.

The AATA employs one person and one driver to coordinate the Senior Ride service. The coordinator contacts each of the six senior citizen housing complexes at the beginning of each month to distribute the schedule for that month. Funding for the Senior Ride comes from the same sources as the regular AATA fixed route service (about 40 percent from Ann Arbor property taxes, 30 percent from state operating assistance, and 20 percent from fares). Currently it takes passengers from six senior housing complexes to the nearest Kroger or Meijer location. AATA's Senior Ride offers three routes: A, B, and C. Route A runs only on the first Tuesday of the month and stops at two Kroger locations, while Routes B and C stop at two Meijer locations.



Another typical case is in Boulder, Colorado. This city initiated an innovative, alternative fuel, paratransit shuttle service called the HOP service. The shuttle travelled a circular loop connecting Downtown Boulder, the University of Colorado, and another major commercial thoroughfare which housed a large indoor shopping mall. The main goal of the program has been to create a more inviting environment associated with the smaller, quieter, and airier vehicles, demonstrating a “different” way of

providing transit service. This HOP service successfully provides access to a food store and a farmer’s market, particularly for use during working hours. More generally, HOP riders have identified shopping as a primary objective.¹¹

Additional Details:

- The HOP program provides a convenient way to access local commercial areas, employment areas, recreational activities, and access to a grocery store and a farmers’ market.
- The bus service is an integral part of street life by targeting sightseers and being designed as pedestrian-friendly.
- Because the use of alternative fuel vehicles, the HOP has also created a sustainable identity for the service.
- The HOP service operates six shuttles that run the route at any one time, at ten-minute frequencies. The shuttles are smaller than busses and have periphery seating and large windows.

¹¹ Dohan, M., Fisher, A., Gottlieb, R., O’Connor, L., Parks, V. 1996. “Homeward bound: Food-related transportation strategies in low income and transit dependent communities.” University of California Transportation Center Working Paper 366, 1-77, page 46.

Transportation: Taxi

The literature review revealed that customers sometimes took the bus or walked to the supermarkets, however they often returned home in a taxi because of the heavy shopping loads. In Australia, some local government offer the Access Taxi scheme to the disabled or pensioners, which affords passengers with specific pension or medical conditions a 50% reduction on fares.¹² Some local governments in the United States, like Los Angeles, once intended to develop this government voucher system in 1990s. However, because of the high cost of this door-to-door transportation, this plan has been overlooked in favor of other modes of public transportation.



Accessibility: City Markets

The typical case for increasing healthy food access is in Cambridge, Massachusetts.¹³ In Cambridge, inadequate food access from the lack of nearby grocery stores has been directly linked to community concerns in specific neighborhoods. In 1994, the Community Development Department informed a series of approaches to define the supermarket locations and improve their access. These measure included: a site analysis of possible supermarket locations as



defined by food access considerations; regulatory interventions, such as permitting waivers or zoning approaches to facilitate the site of supermarkets; and the development of special grocery store regulations, which could ensure “adequate access” for all Cambridge residents to full-service markets.

¹² John Coveney, Lisel A. O’Dwyer. “Effects of mobility and location on food access”. South Australian Community Health Research Unit, G3 The Flats, Flinders Medical Centre, Sturt Road, Bedford Park 5042, Australia, Department of Public Health, Flinders University, Australia

¹³ Dohan, M., Fisher, A., Gottlieb, R., O’Connor, L., Parks, V. 1996. “Homeward bound: Food-related transportation strategies in low income and transit dependent communities.” University of California Transportation Center Working Paper 366, 1-77, page 27.

Accessibility: Grocery Delivery



One example of a food-ordering program is the Baltimarket, a program of the Baltimore City Health Department¹⁴. This service links communities with high food-access needs to a virtual grocery and delivery service offered by Santoni's supermarket. Currently, Baltimarket facilitates grocery ordering and delivery at six central sites in the city: three at branches of the Enoch Pratt Free Library, one at George Washington Elementary School, and two at senior homes. Every week, Baltimarket staff members assist community members in submitting their grocery orders online. During a weekly 1-hour delivery period that is specified for each site, shoppers can pick up and pay for their groceries with the Santoni's driver. The driver accepts cash, EBT, debit and credit card.

Accessibility: Cooking Demonstrations

Baltimarket also provides healthy cooking demonstrations and a \$10 incentive for healthy food purchases. The health food incentives are issued on a customer's first order and then every subsequent fourth order.

3.2.3 The Non-Profit Sector

The non-profit sector has been shown to play an important role in enhancing access to healthy food. This includes providing transportation to food resources and increasing availability of emergency food resources and education.

¹⁴ Larsen, L., Grengs, J., Billings, J., Provonsha, E. Spangler, K., Sponseller, A. 2012. "An Integrated Assessment of Transportation to Healthy Food in Eastern Washtenaw County." Report prepared for City of Ypsilanti, Community and Economic Development; Washtenaw County, Public Health Department; Washtenaw County, Economic Development.

Transportation: Paratransit



A Dial-A-Ride transportation service is typically targeted for elderly persons (over the age of 60) and persons with disabilities who are not able to access public transportation. The purpose of this service is to provide a transportation option for individuals who have difficulty using public transportation. Dial-A-Ride is more flexible than other public transportation systems: it can provide curb-to-curb service, it does not operate on a fixed route system,

the scheduling system is flexible, and most say that the service is more comfortable than other public transit option. Yet with all of its benefits, a Dial-A-Ride service has several flaws. Priority is typically given to the elderly or disabled, some areas require the user to be a permanent resident, they typically don't provide long-term service, and the cost of operation is higher than other public transportation modes.

One example of a Dial-A-Ride transportation system is in Hartford, CT¹⁵. Hartford's Dial-A-Ride service provides a safe and reliable transportation option for Hartford's senior and disabled residents. Any Hartford resident who is over 60 or who has a disability is eligible to use the service. Allowable trip purposes are (in priority order):

- 1.) Medical
- 2.) Food/nutrition
- 3.) Senior center activities
- 4.) Religious activities
- 5.) Personal trips

Trips are restricted to the City limits, except for medical trips that are allowed on Monday and Wednesday.

¹⁵ West Hartford Dial-A-Ride

Transportation: Taxi

A not-for-profit run taxi service has been shown to improve access to healthy foods in several communities. One example of this is in Bergen and Passaic County, New Jersey, where a non-profit runs a senior community car program dubbed Meadowlink¹⁶. This taxis-esque service assists seniors with visits to a doctor and to a local grocery store. By using volunteers to drive the GPS- and camera-equipped cars, Meadowlink is able to offer rides at an initial pick-up fee of \$2.50, plus an additional 55 cents per mile, making a 10-mile trip a fare of \$8 — a fraction of what a private taxi or car service in North Jersey would charge. This kind of taxi services is faster than other public transit, door-to-door, comfortable, and the route and schedule remain unfixed. Yet like the Dial-A-Ride service mentioned above, it has some limits. Members must pay an annual \$15 fee, are billed monthly per ride, and members must be 60 and older.



Meadowlink Taxi

Accessibility: Food Pantries

In recent years, there is a growing tendency for food pantries and food banks. For example, there are seven food pantries in Kansas City, Missouri with a majority of them being categorized as “traditional” pantries. These pantries are typically run by volunteers and hand out predetermined amount of food obtained from donations. Some authors¹⁷ draw attention to the fact that the pantries often distribute a range of foods with varying nutritional quality. It is difficult for these pantries to improve the quality of food supplies because of the instability of funding and uncertain food supplies¹⁸.

¹⁶ <http://www.ezride.org/3-0-SeniorTransportation.asp>

¹⁸ Food bank http://en.wikipedia.org/wiki/Food_bank

Food pantries are options for low-income disabled individuals. It is important to note that distribution is an important factor for food pantries, and there are often eligibility and frequency restrictions. Food pantries may play a special role in emergency situations.

The chapter assesses the best practices described in the previous chapter in terms of how they might be applied to Lawrence and Douglas County area. Opportunities and constraints are identified and suggestions for next steps are made.

4.0 Assessments and Recommended Next Steps

4.1 Recommendations by Sector

4.1.1 The Private Sector

Transportation: Store Sponsored Vans

Based on the success of store-sponsored vans described in the Best Practices chapter, it is recommended they be further explored for the City of Lawrence. The study team met with a representative of Hy-Vee grocery store in Lawrence that expressed interested in exploring this option further. Hy-Vee is an employee-owned chain of 234 supermarkets located throughout the Midwest and 7 stores operate Lawrence.

Most examples are large supermarkets, which offer a number of additional programs beyond its grocery store business and establish themselves as high-profile customer-oriented service. These grocery stores provide “store to home” service to assist transit-deficient customers, primarily their elderly clients. The “Van Routes” are free for the customers of the two supermarkets, with the stipulation that shoppers are required to purchase at least \$30 worth of groceries in order to obtain their ride. Typical cost include the purchase or use of existing vehicle(s), labor costs for vehicle operation, insurance costs, non-labor operation & maintenance costs, permit and operating fees, and promotional costs¹⁹.

¹⁹ Dohan, M., Fisher, A., Gottlieb, R., O'Connor, L., Parks, V. 1996. “Homeward bound: Food-related transportation strategies in low income and transit dependent communities.” University of California Transportation Center Working Paper 366, 1-77

Accessibility: Improved selection of foods

Some food stores such as Dollar General are increasingly expanding offering from that of a convenience store to more full service grocery store style. This could be particularly important in North Lawrence where Dollar General is the only food resource.

One significant option to ensure people's accessibility to healthy food is improving selection of foods at private grocery stores and convenience/gas stations. On one hand, it is necessary to supply foods follow nutrition pyramid theory. On the other hand, groceries need to supply as much choices as possible of foods for citizens since different people have different purposes and customs. Stakeholders also need to consider geographical restrictions when supplying foods. For example, groceries operating in Midwest United States should think about supplying seafood to citizens from coastal areas²⁰.

Accessibility: On-line Ordering

On-line ordering is a new service breaking the traditional mode of shopping. It has the potential to enhance access to healthy food. The services include online grocery shopping, online bakery order, online catering orders, and online prescription refills. Hy-Vee currently offers on line ordering to its customers at two locations in Lawrence²¹:

- 3504 Clinton Parkway
- 4000 West Sixth Street

Recommended Next Steps

It is recommended that this practice be more fully explored as assess the potential to enhance assess the healthy foods. It is also recommended that other grocery stores be brought into the conversation. Recommended next steps:

- Explore implementation of store-sponsored vans along with co-funding of vehicles.
- Assess expanded opportunities for on line ordering with Hy-Vee and other grocery stores to determine potential to promote access to food for in need populations.
- Develop collaboration strategies to coordinate the private sector activities with transit agencies resources and bus schedules

²⁰ <http://www.fiestafoodssupermarkets.com>

²¹ www.hy-vee.com

- Encourage Dollar General in North Lawrence to provide a full offering of health foods.

4.1.2 The Public Sector

Transportation: Fixed-Route Public Transit

For public transit to be an effective means of providing access to healthy foods in Lawrence there are four major considerations:

There are four major consideration required for public transportation to provide adequate access to healthy food in Lawrence. The considerations are as follows:

1. Geographic Coverage of Service – *Where does the service operate?*
2. Temporal Consideration – *When does the service operate?*
3. Service Convenience – *How long does it take to get from home to food resource?*
4. Service Convenience -- *How do I transport my groceries on the transportation service?*

The best public transportation service is one that provides adequate service to appropriate areas and has low headways (approx. 10 minutes), operates every day of the week, 365 days of the year. This level of service is classified as “LOS A” because it operates at such a high level that patrons are comfortable not needing a schedule. While ideal, lack of funding and ridership demand typically force cities to operate at much lower levels of service. These standards are based on the Transit Cooperative Research Program report 100. (TCRP Report 100) and describes headways: or time between buses. Vehicles per hour are also described²².

Frequency

LOS	Avg. Headway (min)	veh/h	Comments
A	<10	>6	Passengers do not need schedules
B	10-14	5-6	Frequent service, passengers consult schedules
C	15-20	3-4	Maximum desirable time to wait if bus/train missed
D	21-30	2	Service unattractive to choice riders
E	31-60	1	Service available during the hour
F	>60	<1	Service unattractive to all riders

Service span, or hours of service operation, is another important component to public transportation. Service span is classified as the number of hours during the day when transit

²² TCRP Report 100 Transit Capacity and Quality of Service Manual - 2nd Edition

service is provided along a route, a segment of a route, or between two locations. It is as equally important as geographic coverage and frequency when determining the availability of transit service to potential users: if transit service is not provided at the time of day a potential passenger needs to take a trip, it does not matter where or how often transit service is provided the rest of the day. Hours of service LOS (Exhibit below) is based only on those hours when service is offered at essentially a minimum 1-hour frequency.

Service Span

LOS	Hours of Service	Comments
A	19-24	Night or "owl" service provided
B	17-18	Late evening service provided
C	14-16	Early evening service provided
D	12-13	Daytime service provided
E	4-11	Peak hour service only or limited midday service
F	0-3	Very limited or no service

In LOS, the A is the highest grade while the F is the worst. However, in TCRP Report 100, it mentions that hours of service can be measured at a given location, or for a particular trip. It may be more appropriate to measure hours of service by trip than by route. For example, an express bus route may operate peak hours only between a park-and-ride lot and the CBD. During off-peak midday hours, the trip might still be possible using a less frequent, slower local bus route. If measured by route, the express service would end up with a low LOS, due to the small number of hours it operates. From a passenger’s perspective, though, a trip could be made whenever either the express or local service operates, or hours of service in this case would be best calculated using the combination of the express and local service spans. The differences in service quality between the two routes could be measured by assessing frequency and transit-auto travel time LOS for the same trip during peak and midday periods.

Geographic and Temporal Consideration Related to the Summer Season

An additional consideration is how the service operates throughout the year. In Lawrence, the transit routes differ significantly when the University of Kansas is in school and when it is not. The transportation routes, frequencies, and service span all decrease significantly during the summer season.

Once on the bus, it is important to consider service convenience when assessing access to healthy food. Travel times vary considerably depending on the starting and ending location. Our anecdotal analysis found that a large portion of trips to the nearest supermarket do not require a bus transfer and are typically under a half an hour. There are exceptions to this, most notably when an individual lives in north or east Lawrence. These locations have poor levels of service and the transportation time to the nearest supermarket may take 30 to 50 minutes. Additionally, it is important to note that the transportation of groceries on the bus is limited to what an individual “can control.” This is a USDOT policy and is in place to ensure safety and convenience. In an effort to transport more groceries, reusable bags and additional persons to carry the bags have been shown to help circumvent this policy.

Recommended Next Steps

- Evaluate potential improvement to fixed route transit services in terms of geographic coverage, headways/ frequency, and service span throughout the year. Also evaluate transfer and travel times to food resources. Some people need to wait for the first bus and then wait the second bus if they need to transfer. As a result, the total time is more than walking to the destination (i.e. a grocery store). Some transit dependent people work every weekday for day and night shifts. They cannot get the service if the hours of service are too short. For example, they go off duty at 5p.m. in the evening. They can catch the last bus to go back home, but they might not catch the bus if they need to go to grocery store.
- Consider focused day and evening service. The limited daytime bus route operates hourly between 5:30 a.m. and 8:30 a.m., every 2 hours between 8:30 a.m. and 4:30 p.m., and hourly between 4:30 p.m. and 7:30 p.m. Early evening service is a bus route operates every 30 minutes between 5:30 a.m. and 8:00 p.m. Consider operation of a bus route from 4 p.m. to 9 p.m. to the people who need to work daytime and offer them night service to go to grocery or other place. Also consider Sunday service.
- Consider transit operation in different seasons. For example, the extension of operating hours in specific seasons. Consider route adjustment to better serve low-income household demand, at the same time not influence the wealthier people’s need, since farmer’s market might provide service near the wealthier people.

* [As this is being written, Lawrence is in the process of implementing a “Night Line” service. Analysis of this service should be performed to assess whether it address the above recommendations]

4.1.3 The Non-Profit Sector

Transportation: Dial-A-Ride

Lawrence, like many other similar sized municipalities, has numerous non-profit organizations that provide transportation to their clients and members. Cars, vans and buses are used to provide transportation to social services, jobs, church services and grocery stores. Opportunities may exist to collaborate with existing organizations to provide access to food, however the typical constraint is that many organizations are only funded to provide transportation to one type of client. Sometimes funding of the organizations may come through the Department of Transportation and/or the Department of the Health of Human Services. These two federal agencies often encourage collaborations to more efficiently provide a coordinated transit and human services plan.

This has been done in the City of Lawrence through the local Metropolitan Planning Organization and the Regional Transit Advisory Committee (RTAC). The Coordinated Public Transit-Human Services Transportation Plan describes the human service transportation inventory of existing transportation providers and services in Lawrence. The plan makes the following findings:

- There are spatial, temporal, and connectivity gaps in services to the disabled, senior, and low-income people.
- The current service cannot meet the needs of Lawrence in Douglas County.
- Without additional funding resources the ability for existing providers to expand or improve services is very limited.

The plan notes that providers are doing the best they can with the resources provided to meet the growing demand for services²³. Plan goals are as follows:

- Coordinate special service transportation better with mainline fixed route urban and commuter services.
- 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

²³ Coordinated Transit-Human Services Plan

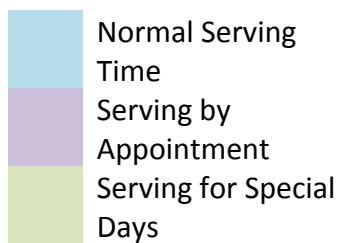
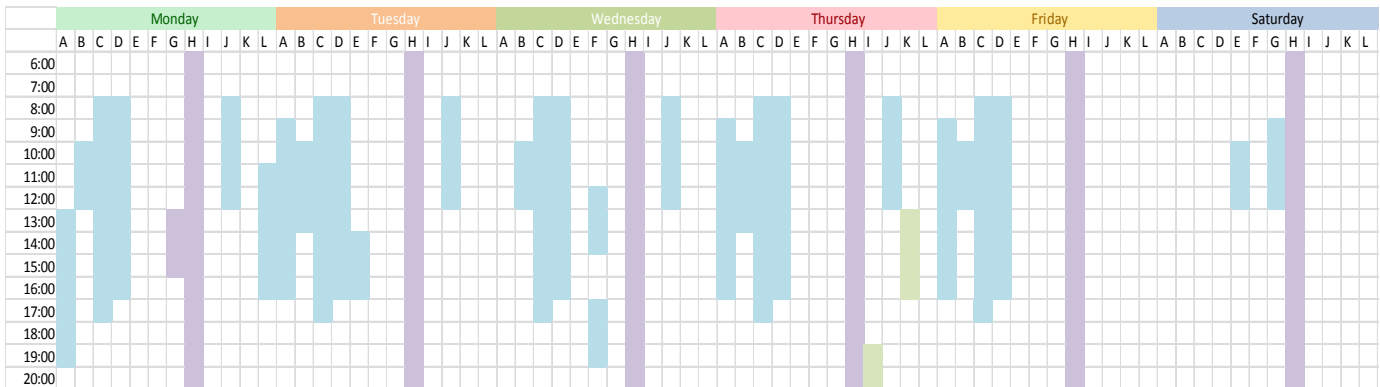


The study team met with the Regional Transit Advisory Committee (RTAC) to garner feedback on the Plan. Committee members noted that most of the local transportation programs were only able to provide service for the individuals they’ve been contracted to serve and not the general public. They did highlight, however, that they did provide access to local grocery stores if there was a demand from their contracted patrons. Additional input was requested from the access to health food stakeholders going forward.

Accessibility: Emergency Food Resources

Transportation is a large issue when considering access to healthy food. Yet even with adequate transportation, temporal barriers may exist for patrons that cannot visit these facilities at peak times. To address this issue, a tool was developed to graphically display the temporal constraints of the most frequented emergency food resources in Lawrence.

The following tool depicts when the select food pantry facilities are open by the day of the week. The select food resources and their phone number and locations are listed below the graphic²⁴.

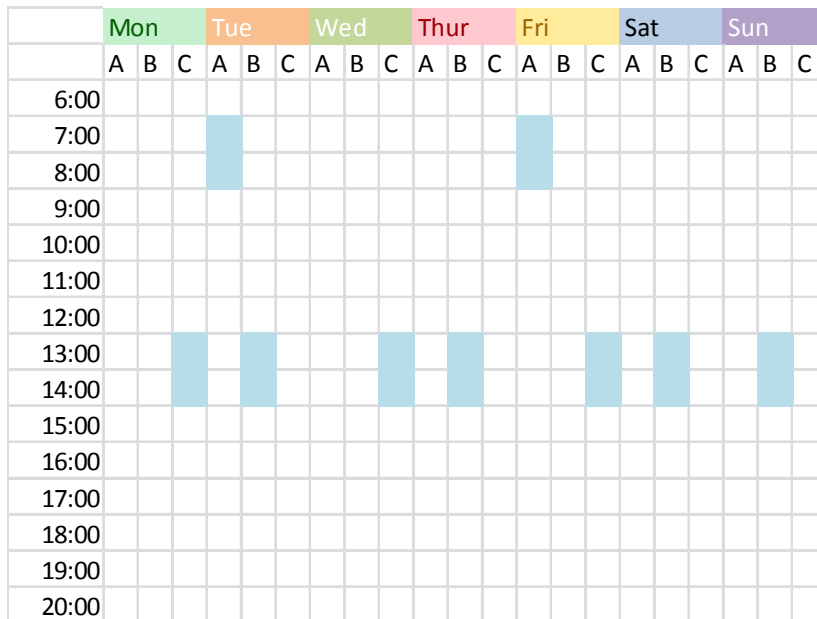



²⁴ Food Pantries and Food Assistance in Lawrence, KS Douglas County Kansas <http://activerain.com/blogsviw/3060094/food-pantries-and-food-assistance-in-lawrence-ks-douglas-county-kansas> & Salvation Army http://www.salvationarmyusa.org/usn/www_usn_2.nsf/vw-local/Home



- A: **ECKAN/Just Food**: 856-7030; 1200 East 11st St., Lawrence
- B: **The Salvation Army**: 843-4188; 946 New Hampshire St., Lawrence
- C: **Ballard Community Center**: 842-0729, extension 101; 708 Elm St., Lawrence
- D: **Penn House**: 842-0440; 1035 Pennsylvania St., Lawrence
- E: **Trinity Interfaith Pantry**: 843-6166; 1027 Vermont St., Lawrence
- F: **First Baptist Church**: 843-0020; 1330 Kasold Dr., Lawrence
- G: **Heartland Community Health Center (formerly The Leo Center)**: 841-7297; 1 Riverfront Plaza, Suite 100, Lawrence
- H: **Heritage Baptist Church**: 887-2200; 1781 E 800 Rd., Lawrence
- I: **Stull United Methodist Church Food Pantry**: 887-6521; 1596 E. 250 Rd., Lecompton
- G: **New Life Assembly of God**: 785-594-3045; 118 5th St., Baldwin City
- K: **First Christian Church**: 843-0679; 1000 Kentucky Lawrence
- L: **Cornerstone Southern Baptist Church**: 843-0442; 802 West 22nd St., Lawrence.
- Ps: -Stull United Methodist Church Food Pantry only services on 1st and 3rd Thursday
 ·First Christian Church only services on 3rd Thursday.

The following tool depicts when the select soup kitchens are open by the day of the week. The select food resources and their phone number and locations are listed below the graphic.



 Normal Serving Time

A: **Jubilee Café:** 856-9521; Located in the basement of First United Methodist Church, 946 Vermont St., Lawrence

B: **L.I.N.K.:** (Lawrence Interdenominational Nutrition Kitchen): 331-3663; 221 West 10th St., Lawrence

C: **Salvation Army:** 843-4188; 946 New Hampshire St., Lawrence

Recommended Next Steps

It is recommended that the Center for Sustainability and its stakeholder groups consider the following:

- Explore opportunities for sharing resources of other non-profit organizations as per the Coordinated Transit and Human services plan and other organizations such as churches.
- Seek to serve on the Regional Transit Advisory Committee to help develop strategies that promote efficiency and effectiveness with access to food goals.
- Explore opportunities to coordinate the schedules of food pantries and soup kitchens to ensure good coverage during the day, week and season
- Compare transit availability and schedule with food pantries and soup kitchen schedules.

5.0 Recommended Next Steps

The AHF Assessment Study, the Douglas County Community Health Assessment, and local interviews have established access to healthy food as a growing problem for Douglas County and Lawrence, KS. Fortunately, through this studies' analysis of existing conditions, best practices, and assessment of current resources, it is clear that many organizations and services are attempting to improve access through transportation and accessibility. The Lawrence bus system, while not ideal, services a majority of Lawrence at serviceable times and headways, private supermarkets like Hy-Vee offer vehicle transportation and online ordering, and a substantial amount of non-profit organizations offer emergency food resources to those in need.

Yet even amongst this comprehensive effort, many individuals in the study fail to have adequate access to healthy food. To best address this problem, special considerations should be made to the Recommended Next Steps outlined in each section of Chapter 4. The most important of which are as follows:

- Create an access to healthy food “hub” that aggregates the important information and makes it highly accessible. Information should include: the locations, hours, and selection of food resources, the various transportation resources available, and some tool that shows the temporal nature of the available food resources and how you may travel there. This hub should be online and in a print handout.
- Explore opportunities to coordinate the schedules of food pantries and soup kitchens with transportation resources to ensure good coverage
- Consider focused day and evening service
- Explore implementation of store-sponsored vans along with co-funding of vehicles