

Date: August 2, 2013

To: Fixed-Route Transit and Pedestrian Accessibility Steering Committee Members

From: Jim Meyer, AICP – URS Corporation

Subject: **Proposed Fixed-Route Transit and Pedestrian Accessibility Evaluation**

Introduction

This memo summarizes the updated evaluation criteria to complete the Fixed-Route Transit & Pedestrian Accessibility Study. We will discuss the analysis and potential areas for improvement with you at that the August 7th Steering Committee meeting. This memo includes several graphics (located at the end of this memo) including:

- Figure 1 – Revised Heat Map
- Figure 2 – Bus Stop Scoring
- Figure 3 – Common Destinations of Individuals with Disabilities
- Figure 4 – Common Destinations of Older Adults
- Figure 5 – Areas of Student Housing

Purpose of the Study

The Fixed-Route Transit & Pedestrian Accessibility Study includes all Lawrence Transit and KU routes that are part of the coordinated transit system. The purpose of the study is to identify:

- ✓ Obstacles transit riders face in accessing the fixed-route system.
- ✓ Locations where improvements to the pedestrian environment can be made to improve and/or enable people to access fixed-route transit services.
- ✓ Issues with streets/sidewalks that prevent people from accessing the fixed-route system and forces them to rely on paratransit services.
- ✓ Possible locations for bus turnouts that could make the bus boarding and exiting process more convenient and enhance traffic operations.

Updated Evaluation Criteria

At our last steering committee meeting, additional variables were identified for inclusion in the evaluation process. Table 1 summarizes all the variables used in the heat map analysis. The project team utilized a buffer (¼-mile radius) around each bus stop to identify variables that fell within the bus stop area.

Table 1 – Bus Stop Evaluation Criteria

Infrastructure / Existing Conditions	Multimodal Connectivity / Major Destinations	Potential High Demand
30 Possible Points	25 Possible Points	35 Possible Points
<ul style="list-style-type: none"> • Traffic Volumes • Roadway (crossing) Width • Travel Speeds 	<ul style="list-style-type: none"> • Area Type (CBD, urban, suburban, rural) • Proximity to Parks • Proximity to Universities • Proximity to Schools • Proximity to Commercial Areas • Proximity to Bike Facilities 	<ul style="list-style-type: none"> • Low to Moderate Income • Persons with Disabilities • Older Adults • Student Housing • Employment

Thresholds for each variable, along with point total, are provided below.

Traffic Volumes

The higher the daily traffic volume, the higher the total number of points assigned to the bus stop. Existing traffic volumes from the travel demand forecasting model were used in the analysis.

Daily Volumes	Points
> 25,000	10
20,000 to 24,999	9
15,000 to 19,999	7
10,000 to 14,999	5
5,000 to 9,999	3
2,000 to 4,999	1
< 2,000	0

Roadway (Crossing) Width

Wide roadways are scored higher given that pedestrians will have to cross a greater distance. The number of lanes, from the regional travel demand forecasting model, was used in the analysis.

Number of Lanes	Points
> 6	10
5	8
4	6
3	3
2	1

Travel Speeds

Roadways with higher travel speeds are scored higher given the potential for more severe vehicular-pedestrian conflicts. The travel speeds are based on coding in the regional travel demand model.

Travel Speeds	Points
> 45	10
35 to 44	8
25 to 34	5
15 to 24	3
< 15	1

Area Type

Areas that are likely to have high pedestrian activity levels are scored higher. The area types are based on coding in the regional travel demand forecasting model.

Area Type	Points
CBD	10
Urban	8
Suburban	5
Rural	1

Proximity to Parks, Universities, Schools, Commercial Areas, Bike Facilities

Each variable is scored as yes, if it falls within the buffer (¼-mile radius) around the bus stop. The scoring assigns points that would support enhanced connectivity throughout the region.

	Points
Yes	3
No	0

Low to Moderate Income

Areas with higher percentages of low to moderate income levels are scored higher as this may include a higher percentage of transit captive riders. This data is consistent with the low to moderate income GIS data used in the T2040 MTP.

Percent Low to Moderate Income	Points
> 50%	10
40% to 49%	8
30% to 39%	5
15% to 29%	2
< 15%	0

Individuals with Disabilities

Common destinations of Individuals with Disabilities were identified. If a destination falls within the ¼-mile buffer, the stop is scored.

Threshold	Points
Yes	5
No	0

Older Adults

Common destinations of Older Adults were identified. If a destination falls within the ¼-mile buffer, the stop is scored.

Threshold	Points
Yes	5
No	0

Student Housing

Areas of student housing within Lawrence were identified. Information from KU on Wheels was used to identify typical locations with a high number of students. If a destination falls within the ¼-mile buffer, the stop is scored.

Threshold	Points
Yes	5
No	0

Employment

2010 Employment data was scored based on the following thresholds. This data is consistent with the employment data used in the T2040 MTP.

Employment	Points
> 2,000	10
1,500 to 1,999	8
1,000 to 1,499	6
500 to 999	4
250 to 499	3
100 to 249	1
< 100	0

Traffic Congestion Analysis (Enhanced Boarding Locations)

The variables, and scoring, listed above were used to develop the “heat map” within the Lawrence Area. The heat map is a tool to help the project team identify areas for more detailed analysis. In addition to the heat map variables, the project team will be utilizing the 2010 travel demand forecasting model level of service results to further evaluate area bus stops and traffic congestion.

This analysis is intended to help identify bus stops that could benefit from projects that would improve the bus boarding/alighting process.

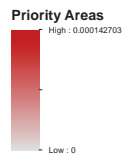
The project team will provide additional information at the upcoming Steering Committee meeting regarding this process. We will also discuss potential locations being considered for Phase 2 analysis.

TELL US ABOUT THE OBSTACLES YOU FACE WHEN YOU RIDE TRANSIT OR REASONS YOU DON'T RIDE TRANSIT.

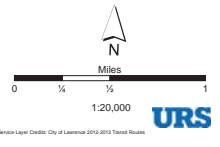
Draft Figure



- Legend**
- Bus Stop
 - Bus Route
 - Transit Flex Zone



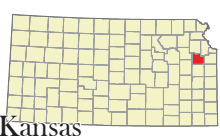
- Streets**
- Interstate
 - US Highway
 - State Highway
 - Street
 - Future Road
 - SLT Alignment
 - City Limits
 - Water



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THIS MAP IS BASED UPON A NUMBER OF VARIABLES THAT ARE BEING USED TO ANALYZE THE PEDESTRIAN AND INFRASTRUCTURE CONDITIONS WITHIN A ¼-MILE RADIUS OF EACH BUS STOP. THE PROJECT TEAM WILL USE THIS INFORMATION TO IDENTIFY A SELECT NUMBER OF BUS STOPS FOR FURTHER ANALYSIS IN PHASE 2. FOR ADDITIONAL INFORMATION ON THE HEAT MAP VARIABLES PLEASE WATCH THE SLIDE SHOW.



Draft Figure



Score

- Less than 50
- 50 - 55
- 56 - 60
- 61 - 65
- More than 65

- City Limits
- Future Road
- SLT Alignment
- Streets
- Interstate
- US Highway
- State Highway
- Street
- Water

N

Miles

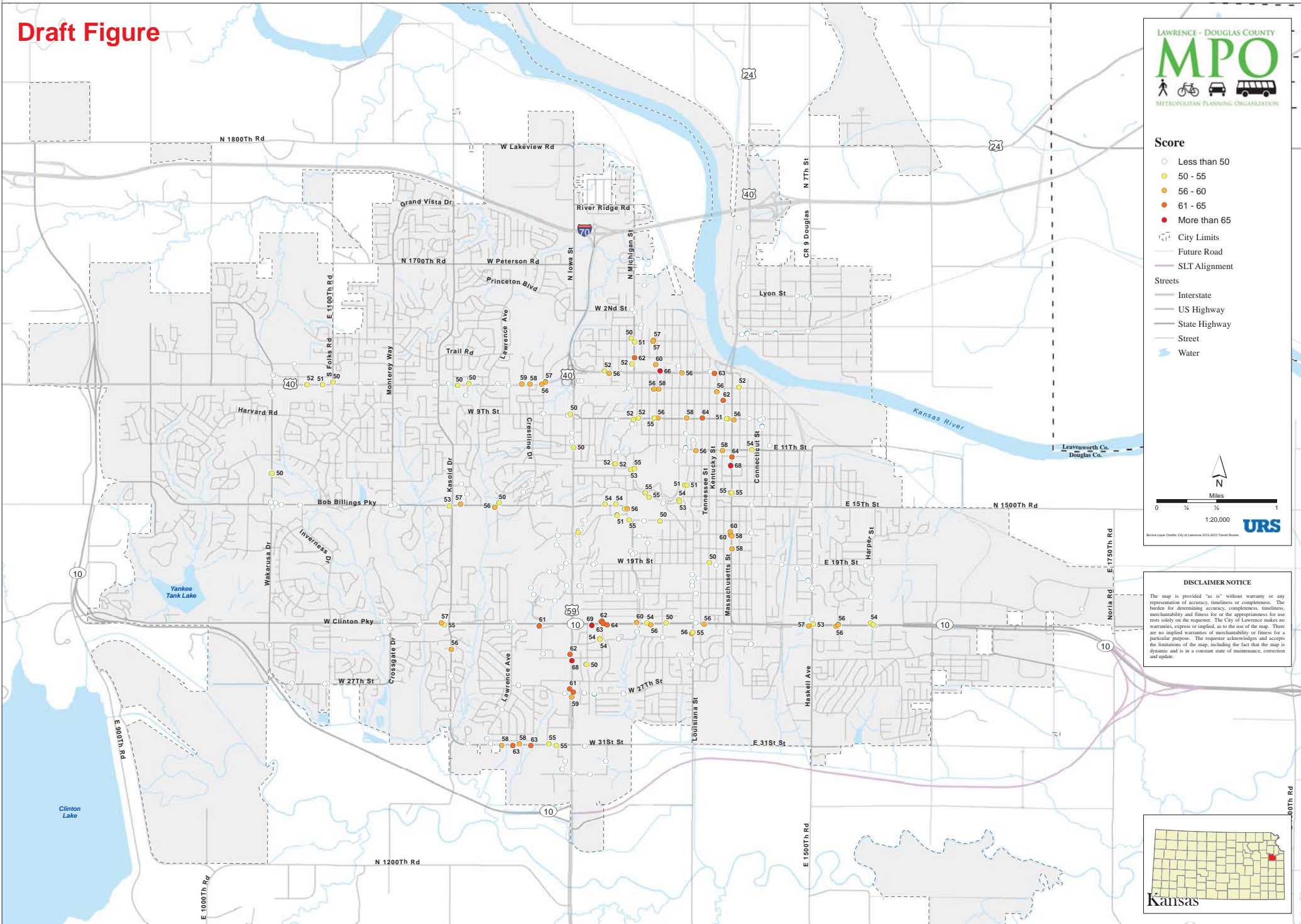
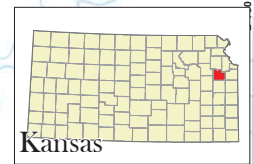
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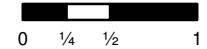
Common Destinations of people with Disabilities Lawrence, KS

Legend

- Destinations
- College/University
- Park
- City Limits



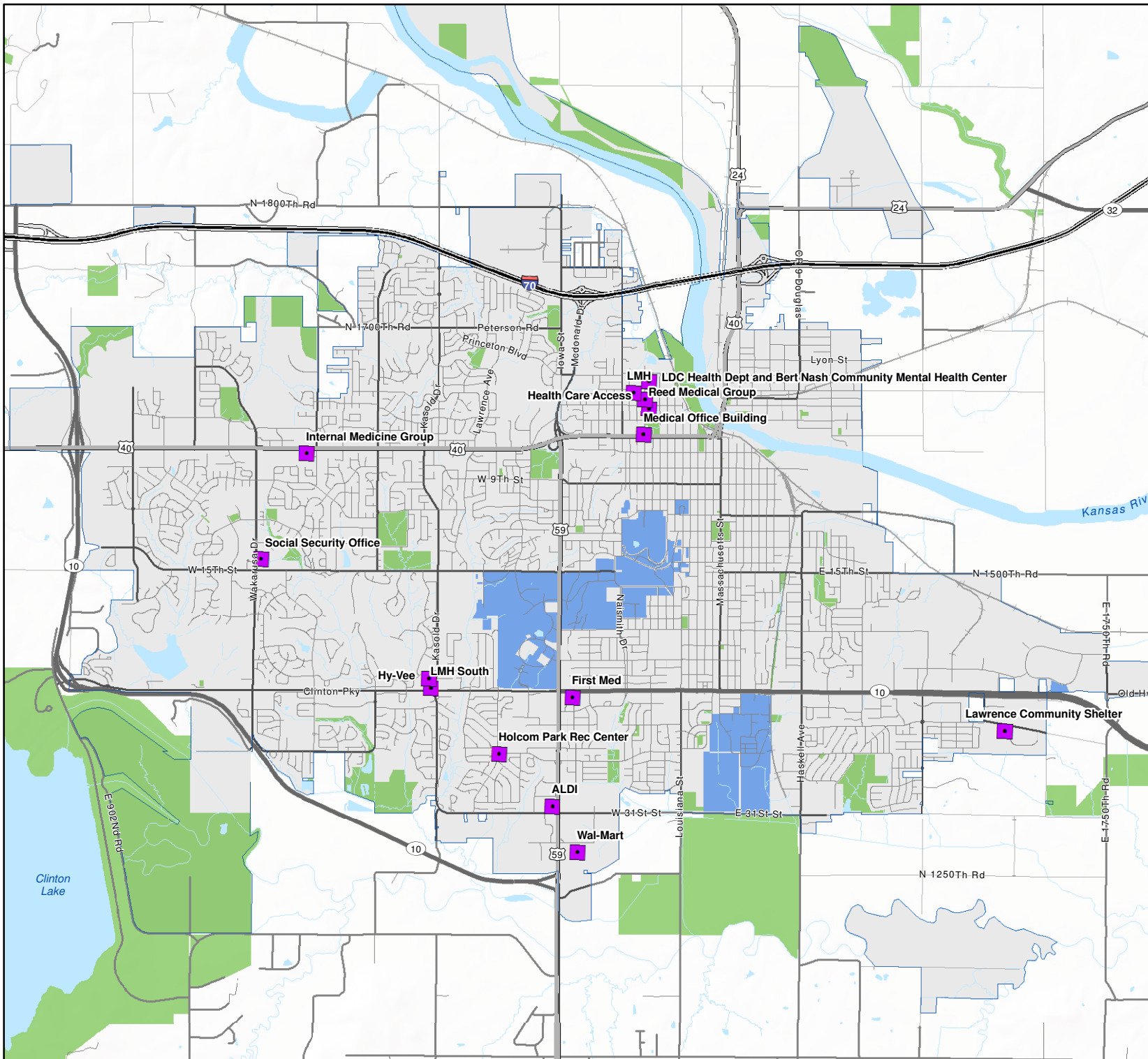
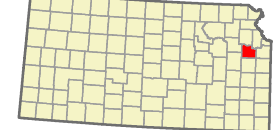
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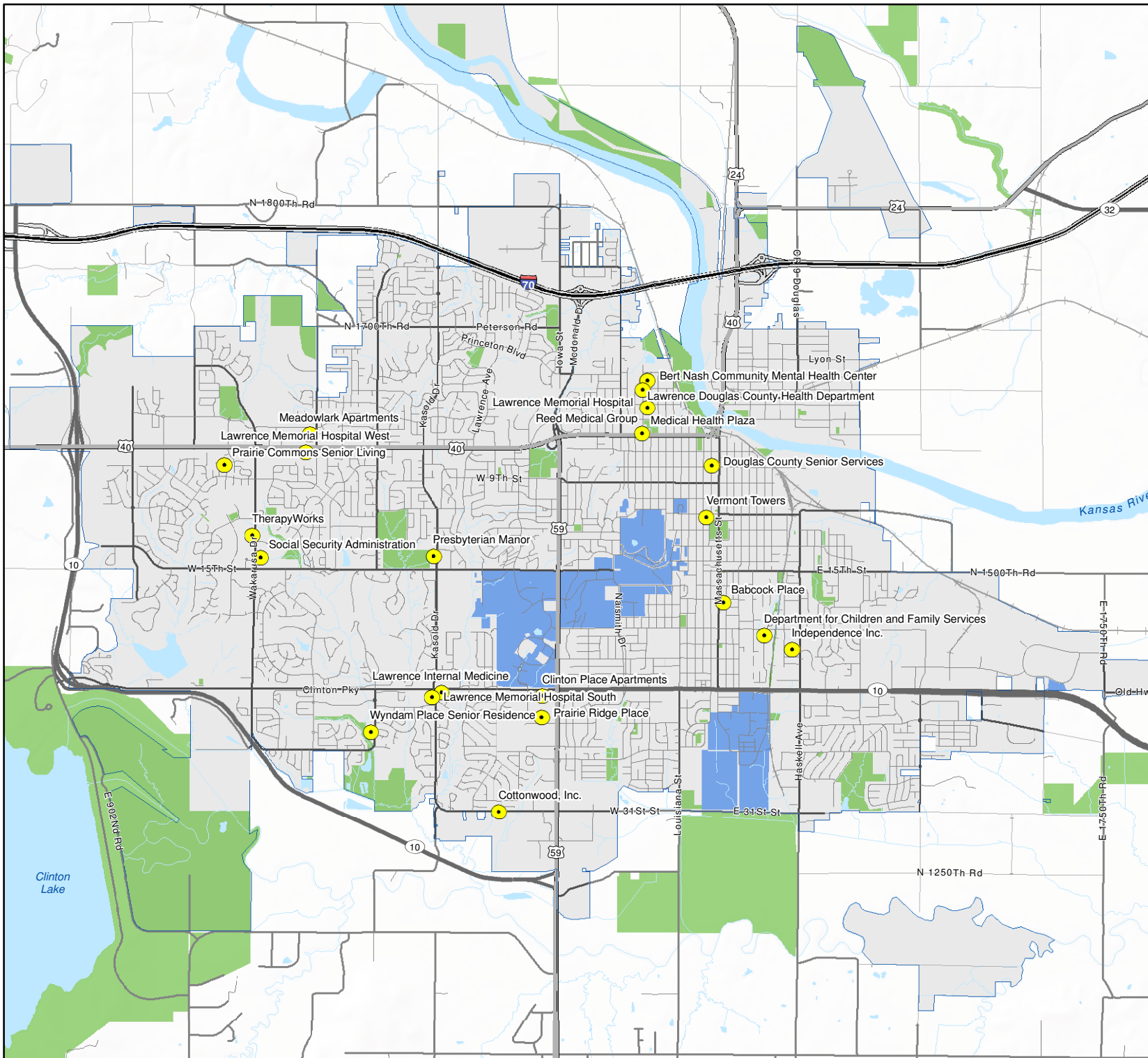
Kansas



Common Destinations for Older Adults Lawrence, KS

Legend

- Senior Destinations
- College/University
- Park
- City Limits



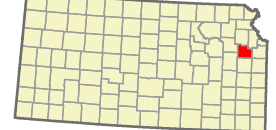
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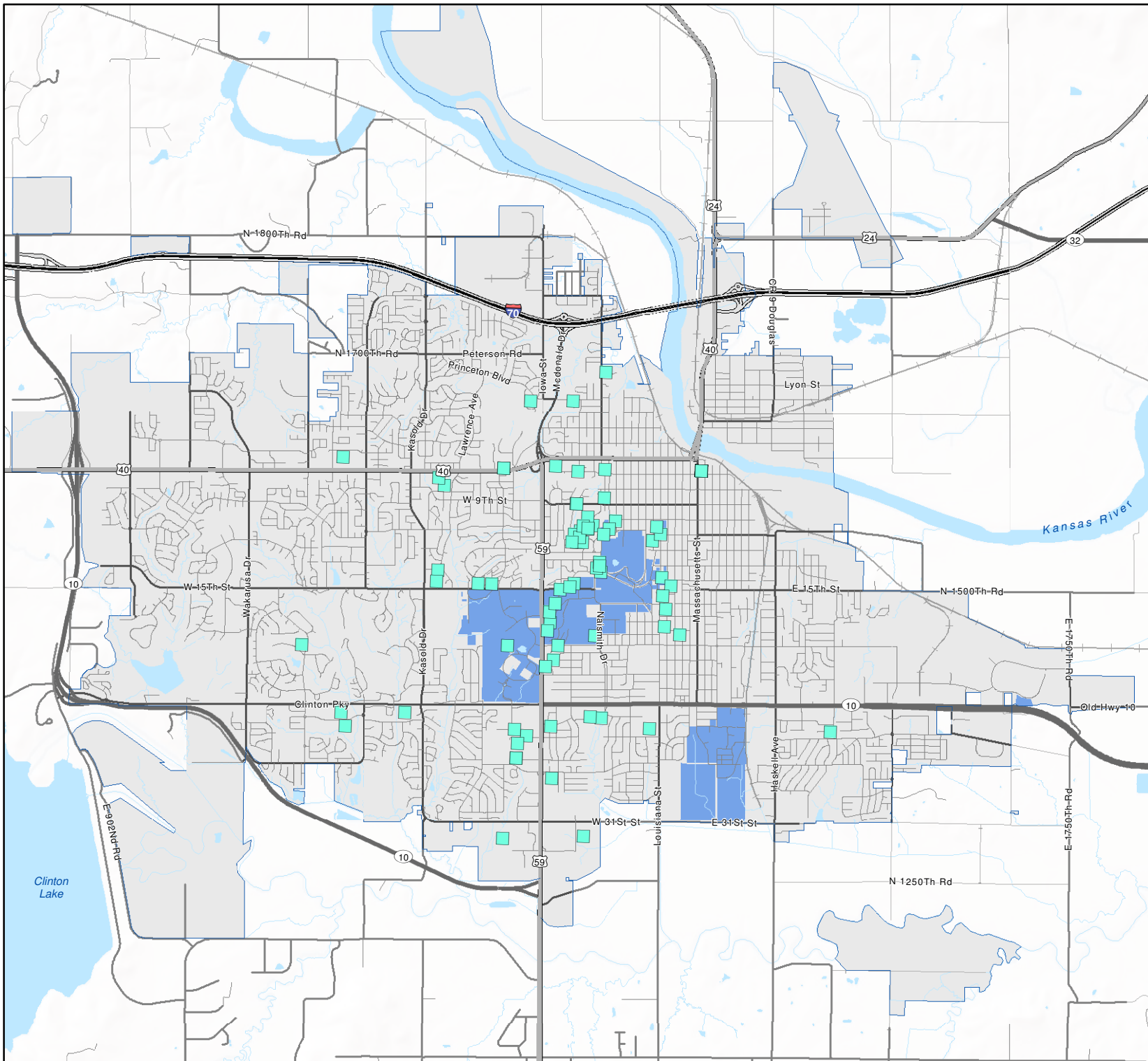


Kansas

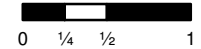


Student Housing Lawrence, KS Legend

- Student Housing
- College/University
- City Limits



Miles



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Kansas

