

## **1.0 Purpose and Need Statement**

### **1.1 Introduction**

A Purpose and Need Statement describes the transportation problems that a proposed project is to address. This statement provides a description of the purpose of the I-35/Santa Fe Street corridor project and demonstrates the need for improvements the proposed project is to address within the study area.

### **1.2 Project Overview and Background**

The City of Olathe, in coordination with the Kansas Department of Transportation (KDOT) and the Federal Highway Administration (FHWA), are proposing to upgrade the existing I-35 and Santa Fe Street interchange and the adjacent Santa Fe Street corridor within the City of Olathe, Johnson County, Kansas. The project is intended to mitigate operational and safety challenges at the interchange and throughout the corridor.

The National Environmental Policy Act (NEPA) requires the FHWA to assess the environmental effects of projects that include federal funding or require a federal action. The NEPA process allows transportation officials to make project decisions that balance engineering and transportation needs with social, economic, and natural environmental factors. An Environmental Assessment (EA) is prepared to determine whether the proposed action has the potential to cause significant natural or human environmental effects, or when the potential environmental effects are unknown.

In December 2020, the City of Olathe completed the *Santa Fe Street Concept Study Report*, which identified multiple arterial and interchange operational and safety deficiencies throughout the project study area. To address these deficiencies, the study team developed high-level conceptual interchange concepts and corridor improvements. These concepts were then screened using city-developed environmental, engineering, and public input evaluation criteria and priorities. After completing the screening process, the City of Olathe arrived at a preferred alternative that includes a mix of general improvements to the Santa Fe Street corridor and the I-35/Santa Fe interchange. These proposed improvements, with subsequent minor engineering refinements, form the basis of the proposed alternative to be evaluated in this NEPA EA document and the results of the *Santa Fe Street Concept Study Report* are incorporated by reference for further use in this EA document.

#### **1.2.1 Project Limits and Termini**

Santa Fe Street is located approximately two-miles south of 119th Street and approximately one-mile north of Old 56 Highway along I-35 in Olathe, Johnson County, Kansas. The Santa Fe/Ridgeview Road intersection serves as the western

project terminus and the Santa Fe Street/Mur-Len Road intersection is the eastern terminus. This corridor includes the existing five-ramp partial cloverleaf interchange at I-35, with four ramp terminals and a northbound I-35 to westbound Santa Fe Street loop ramp. Improvements associated with the interchange will extend along I-35 no further than 2,500 feet north or south of Santa Fe Street. **Exhibit 1-1** shows the limits of the project study area.

### **1.3 Purpose and Need for Action**

#### **1.3.1 Purpose of the Proposed Project**

The purpose of the proposed improvements is to accommodate increased travel demands and improve safety at the I-35 and Santa Fe Street interchange and in the broader Santa Fe Street corridor from Ridgeview Road to Mur-Len Road.

The proposed project is consistent with identified needs and goals of KDOT's Long Range Transportation Plan (LRTP) and is fiscally constrained as part of the Mid-America Regional Council's (MARC) *Connected KC 2050 Regional Transportation Plan* in the 2020-2029 timeframe.

#### **1.3.2 Need for the Proposed Project**

Based upon study goals and priorities established in the *Santa Fe Street Concept Study Report*, the proposed improvements are expected to:

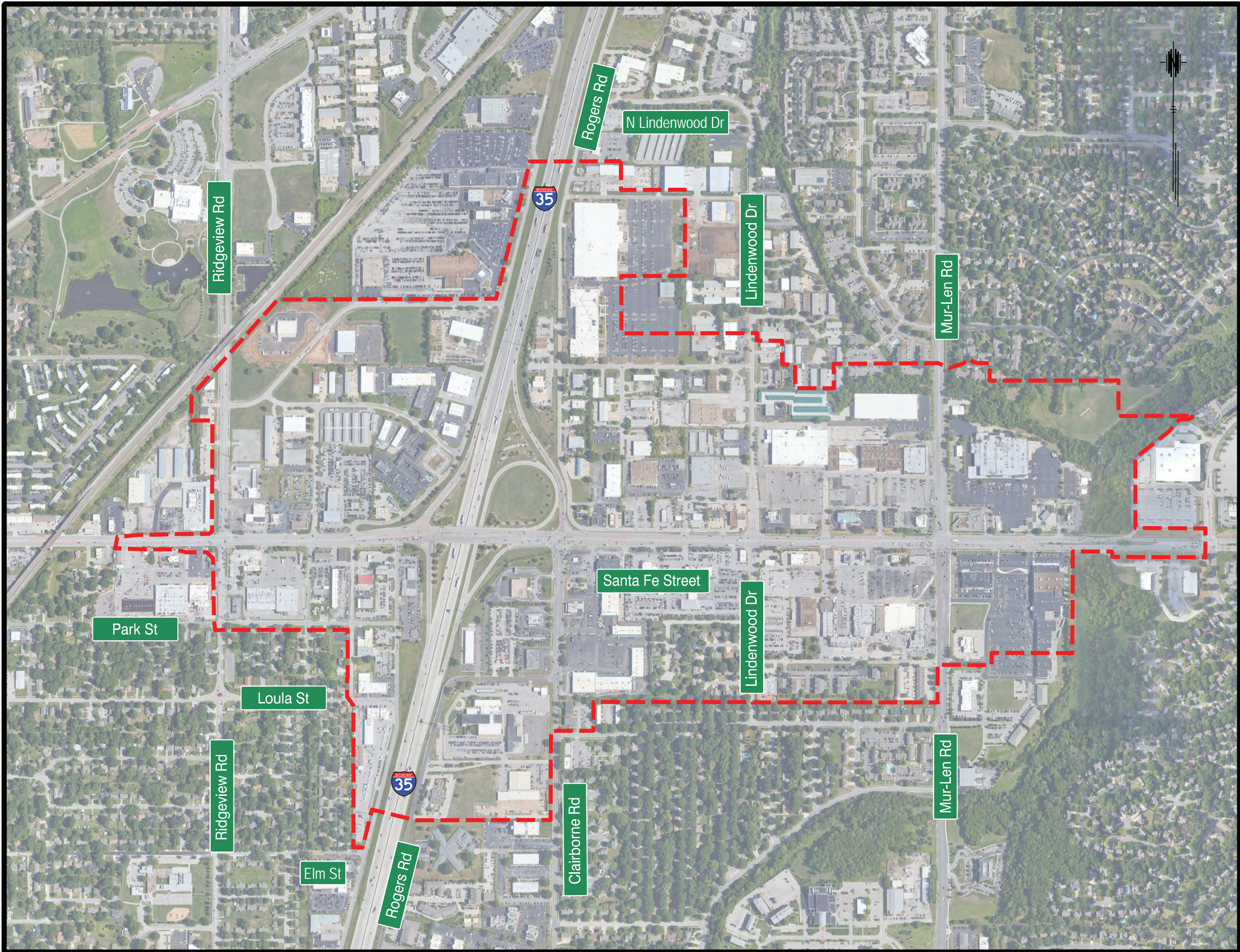
- Improve existing safety conditions through improved traffic operations, geometric improvements, and conformity with state and local access management policies;
- Improve existing and future traffic operations at the I-35 and Santa Fe Street interchange ramp terminals and at intersections in the Santa Fe corridor;
- Accommodate transportation mode choices and active transportation modes over I-35 and in the corridor, and
- Support land use planning for economic development and redevelopment and growth.

##### **1.3.2.1 Improve traffic operations at ramp terminals and in the Santa Fe corridor**

Existing traffic conditions within the study area were analyzed to identify operational deficiencies that may exist. Most traffic turning movement volumes were collected in late Spring 2019 for the corridor, with the exception of the two ramp terminal intersections. Volumes at these intersections were taken from the Mahaffie Street Transportation Management Plan and were collected in April 2018. Mainline I-35 traffic volumes were collected in December of 2021 along with volumes at the Mahaffie and Old 56 Highway and Clairborne and Rogers intersections.



**Santa Fe Street  
Project Study Area Map**



Santa Fe Street  
Corridor NEPA  
Environmental  
Assessment





All traffic volumes were grown to a common base year of 2021 using growth rates based on data in the MARC travel demand model and the City of Olathe's travel demand model. Analysis of the existing traffic conditions within the project area demonstrated that several locations are operating at unacceptable levels. Traffic congestion is measured by the level-of-service (LOS) scale, with LOS A representing free-flow conditions and LOS F representing gridlock. In this study area, KDOT and the City of Olathe consider LOS D to be the lowest level of acceptable congestion. Based on the LOS scale, the following locations are currently operating below acceptable LOS:

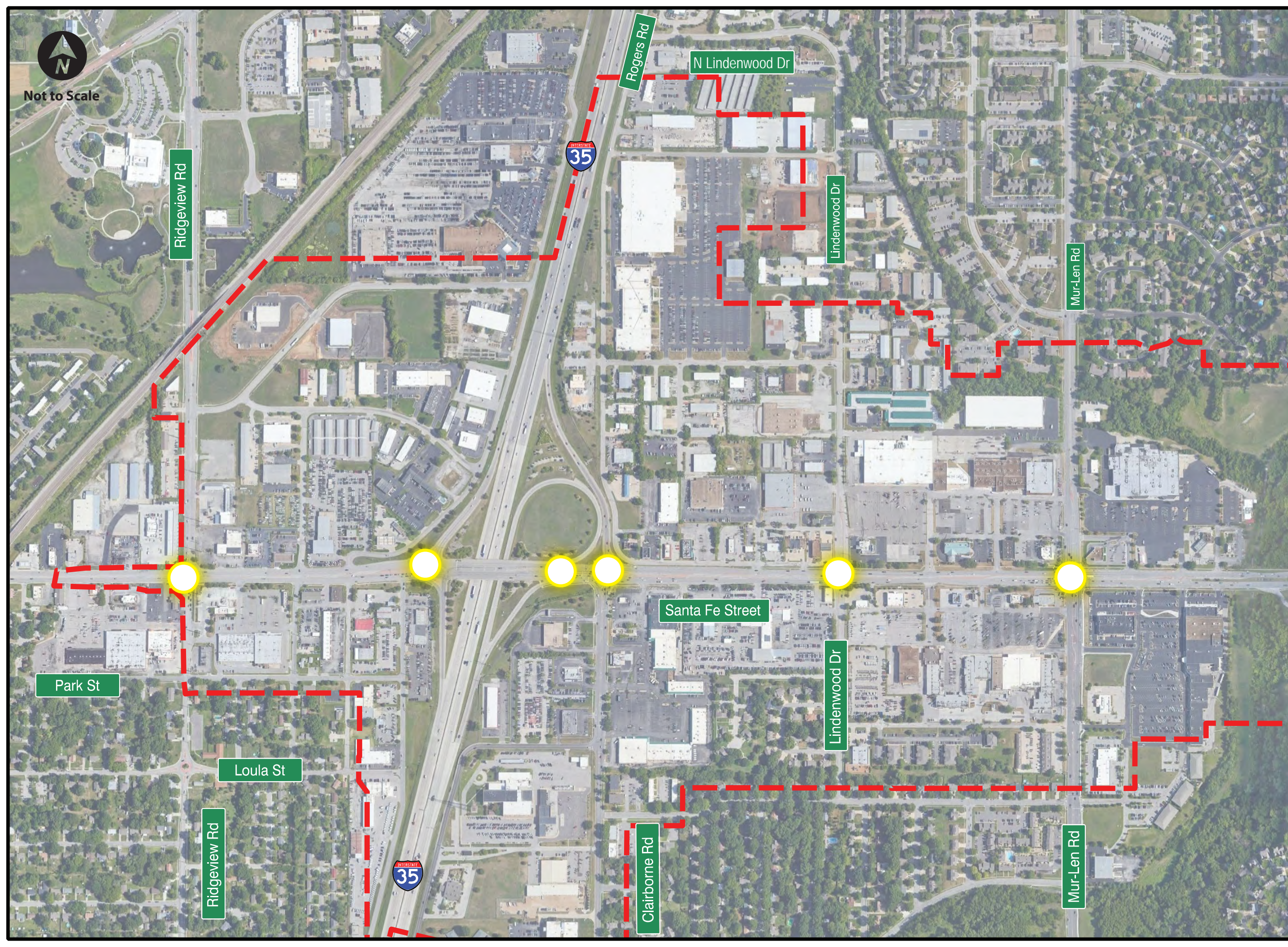
- The signalized Santa Fe Street and I-35 Southbound ramps intersection operates at LOS E during the afternoon peak period;
- The unsignalized Santa Fe Street and I-35 Northbound exit ramp operates at LOS F during the morning and afternoon peak periods;
- The unsignalized Santa Fe Street and Burch intersection operates at LOS E during the afternoon peak period;
- The unsignalized Santa Fe Street and Ford Auto Dealership access intersection operates at LOS E and F during the respective morning and afternoon peak periods;
- The unsignalized Santa Fe Street and Crossroads Shopping Center Main Entrance (north and south) intersection operations at LOS F during the morning and afternoon peak periods;
- The signalized Santa Fe Street and Mur-Len Road intersection operates at LOS E during the morning and afternoon peak periods;
- The I-35 southbound basic segment between 119<sup>th</sup> Street and Santa Fe Street operates at LOS E during the afternoon peak period; and
- The I-35 southbound diverge area at the Santa Fe Street off ramp operates at LOS F during the afternoon peak period

The location of these interchanges and the connecting local roadway network are displayed on **Exhibit 1-2**. **Tables 1-1** and **1-2** show existing LOS for traffic operations in the project area.



**Santa Fe Street  
Local Roadway Network &  
Major Intersections**

Santa Fe Street  
Corridor NEPA  
Environmental  
Assessment





**Table 1-1: Existing LOS for I-35 Freeway Segments**

| <b>I-35 Segment Description</b>         | <b>Segment type</b> | <b>AM LOS</b> | <b>PM LOS</b> |
|---|---------------------|---------------|---------------|
| <b>Southbound I-35</b>                  |                     |               |               |
| I-35 SB between 119th St. Ramps         | basic               | C             | C             |
| I-35 SB 119th St. Merge                 | merge               | C             | D             |
| I-35 SB between 119th St. and Santa Fe  | basic               | C             | E             |
| I-35 SB Santa Fe Diverge                | diverge             | D             | F             |
| I-35 SB between Santa Fe Ramps          | basic               | B             | C             |
| I-35 SB Santa Fe Merge                  | merge               | B             | B             |
| I-35 SB between Santa Fe and Old 56 Hwy | basic               | B             | B             |
| I-35 SB Old 56 Hwy Diverge              | diverge             | B             | B             |
| I-35 SB South of Old 56 Hwy             | basic               | B             | C             |
| <b>Northbound I-35</b>                  |                     |               |               |
| I-35 NB South of Old 56 Hwy             | basic               | C             | B             |
| I-35 NB between Old 56 Hwy and Santa Fe | weave               | C             | B             |
| I-35 NB between Santa Fe Ramps          | basic               | C             | C             |
| I-35 NB Santa Fe Merge                  | merge               | C             | C             |
| I-35 NB between Santa Fe and 119th St.  | basic               | D             | C             |
| I-35 NB 119th St. Diverge               | diverge             | D             | D             |
| I-35 NB between 119th St. Ramps         | basic               | C             | C             |



**Table 1-2: Existing LOS for Ramp Terminals and Other Arterial Intersections**

| Ramp Terminal or Intersection            | Intersection type | AM | PM |
|--|-------------------|----|----|
| <b>I-35 Interchange Ramp Terminals</b>   |                   |    |    |
| Santa Fe and I-35 SB Ramps               | signalized        | D  | E  |
| Santa Fe and I-35 NB Exit Ramps          | unsignalized      | F  | F  |
| Santa Fe and Clairborne/I-35 NB Entrance | signalized        | B  | C  |
| <b>Other Local System Intersections</b>  |                   |    |    |
| Ridgeview and Spruce                     | unsignalized      | B  | A  |
| Santa Fe and Ridgeview                   | signalized        | D  | D  |
| Santa Fe and Burch                       | unsignalized      | C  | E  |
| Santa Fe and Rawhide/Chester             | unsignalized      | B  | A  |
| Santa Fe and Rawhide RIRO                | unsignalized      | B  | B  |
| Santa Fe and Access South                | unsignalized      | D  | C  |
| Santa Fe and Access North/Ford           | unsignalized      | E  | F  |
| Santa Fe and Lindenwood                  | signalized        | B  | B  |
| Santa Fe and Major Access North/South    | unsignalized      | F  | F  |
| Santa Fe and Crossroads Shopping Center  | unsignalized      | C  | D  |
| Santa Fe and Olathe Landing              | unsignalized      | B  | C  |
| Santa Fe and Mur-Len                     | signalized        | E  | E  |
| Spruce and Lindenwood                    | unsignalized      | A  | B  |
| Rogers and Spruce                        | unsignalized      | A  | A  |
| Clairborne and Rogers                    | signalized        | A  | A  |
| Old 56 Hwy and Mahaffie                  | signalized        | C  | C  |

Future traffic operations for both I-35 and the Santa Fe Street corridor for the year 2050 were evaluated as part of the *Santa Fe Street Concept Study*. Utilizing growth rates developed from the MARC future travel demand model and City of Olathe’s travel demand model, traffic volume forecasts were developed for the year 2050 and were applied to a forecast model that contained all reasonably anticipated projects in the study area that will be completed by 2050. For traffic modeling purposes, one additional lane in both directions on I-35 and auxiliary lanes between the 119<sup>th</sup> Street and Santa Fe Street interchange ramps were included in this model. Analysis of the future traffic operations conditions in the corridor demonstrated that multiple locations operate at unacceptable levels:

- The signalized intersection of Santa Fe and Mur-Len Road is projected to operate at LOS F during the morning and afternoon peak periods;
- The signalized intersection at Santa Fe and the I-35 southbound ramps is projected to operate at a LOS E and F during the respective morning and afternoon peak periods;



- Five of the unsignalized intersections throughout the corridor all have at least one movement that operates unacceptably during the morning and/or afternoon peak periods; and
- All southbound I-35 segments north of the Santa Fe interchange operated at LOS E and F conditions during the afternoon peak period.

**Tables 1-3 and 1-4** display the result of the forecasted future LOS for I-35 and the Santa Fe corridor. Additional failing movements along I-35 would be expected if reasonably anticipated projects are not constructed.

**Table 1-3: Future Forecasted LOS for I-35 Freeway Segments**

| <b>I-35 Segment Description</b>         | <b>Segment type</b> | <b>AM LOS</b> | <b>PM LOS</b> |
|---|---------------------|---------------|---------------|
| <b>Southbound I-35</b>                  |                     |               |               |
| I-35 SB between 119th St. Ramps         | basic               | C             | E             |
| I-35 SB between 119th St. and Santa Fe  | basic               | B             | F             |
| I-35 SB between Santa Fe Ramps          | basic               | B             | C             |
| I-35 SB between Santa Fe and Old 56 Hwy | basic               | B             | C             |
| I-35 SB South of Old 56 Hwy             | basic               | B             | C             |
| <b>Northbound I-35</b>                  |                     |               |               |
| I-35 NB South of Old 56 Hwy             | basic               | C             | C             |
| I-35 NB between Old 56 Hwy and Santa Fe | weave               | C             | C             |
| I-35 NB between Santa Fe Ramps          | basic               | C             | C             |
| I-35 NB between Santa Fe and 119th St.  | basic               | C             | C             |
| I-35 NB between 119th St. Ramps         | basic               | C             | C             |

**Table 1-4: Future Forecasted LOS for Ramp Terminals  
and Other Arterial Intersections**

| <b>Ramp Terminal or Intersection</b>     | <b>Intersection type</b> | <b>AM</b> | <b>PM</b> |
|--|--------------------------|-----------|-----------|
| <b>I-35 Interchange Ramp Terminals</b>   |                          |           |           |
| Santa Fe and I-35 SB Ramps               | signalized               | E         | F         |
| Santa Fe and I-35 NB Exit Ramps          | unsignalized             | F         | F         |
| Santa Fe and Clairborne/I-35 NB Entrance | signalized               | C         | C         |
| <b>Other Local System Intersections</b>  |                          |           |           |
| Ridgeview and Spruce                     | unsignalized             | B         | A         |
| Santa Fe and Ridgeview                   | signalized               | D         | D         |
| Santa Fe and Burch                       | unsignalized             | D         | D         |
| Santa Fe and Rawhide/Chester             | unsignalized             | C         | C         |
| Santa Fe and Rawhide RIRO                | unsignalized             | C         | D         |
| Santa Fe and Access South                | unsignalized             | D         | D         |
| Santa Fe and Access North/Ford           | unsignalized             | F         | F         |
| Santa Fe and Lindenwood                  | signalized               | B         | C         |
| Santa Fe and Major Access North/South    | unsignalized             | F         | F         |
| Santa Fe and Crossroads Shopping Center  | unsignalized             | C         | E         |
| Santa Fe and Olathe Landing              | unsignalized             | F         | F         |
| Santa Fe and Mur-Len                     | signalized               | F         | F         |
| Spruce and Lindenwood                    | unsignalized             | A         | C         |
| Rogers and Spruce                        | unsignalized             | A         | A         |
| Clairborne and Rogers                    | signalized               | A         | A         |
| Old 56 Hwy and Mahaffie                  | signalized               | C         | C         |

**1.3.2.2 Improve safety conditions and conform with access management policies**

Existing traffic safety conditions were analyzed within the project study area for various roadway segments from Ridgeview Road to Mur-Len Road on Santa Fe Street and I-35 from 119th Street to Old 56 Highway. Crash data was obtained from the Kansas Department of Transportation (KDOT), for the most current complete five-year period (2014-2018) available when the *Santa Fe Street Concept Study* was developed. As shown on **Exhibit 1-3**, the highest density of crashes was noted to occur around the Santa Fe interchange, as well as at ramp merge and diverge points near the 119th Street interchange. The crash rates on all of the I-35 segments analyzed were below Kansas statewide averages for similar facilities. Along the Santa Fe corridor, the highest density of crashes was noted to occur around major intersections as well as at ramp merge points throughout the interchange.



**Santa Fe Street  
Crash Density Heat Map**

Santa Fe Street  
Corridor NEPA  
Environmental  
Assessment



**LEGEND**

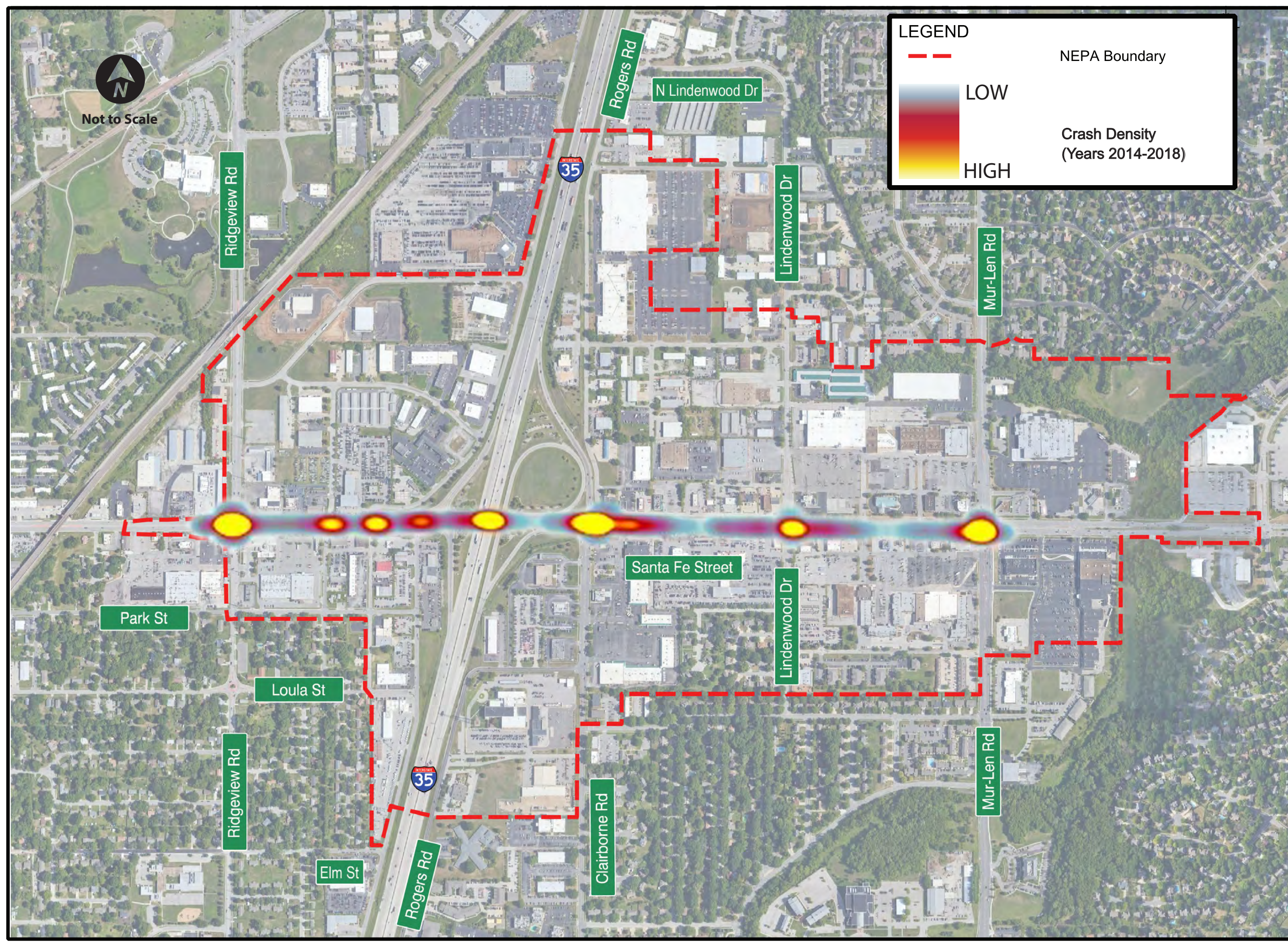
--- NEPA Boundary

LOW  
HIGH

Crash Density  
(Years 2014-2018)



Not to Scale





Access management control includes a variety of techniques designed to increase safety and reduce congestion. Both the KDOT Access Management Policy and the Olathe Access Management Plan provide guidelines for creating adequate access control for a variety of situations. A review of these guides showed the Santa Fe corridor has several deficiencies with respect to the following categories:

- Access spacing between intersections and distances between driveways;
- Number and location of designated turn lanes; and
- Median break types and locations.

A primary issue along the corridor is the proximity of Clairborne Road in relation to the I-35 northbound to eastbound exit ramp.

### **1.3.2.3 Accommodate transportation mode choices and active transportation modes**

Multimodal planning and transportation mode choice refers to transportation and land use planning that considers diverse transportation options, typically including walking, cycling, public transit, passenger automobiles and commercial trucks, and accounts for land use factors that affect accessibility. Transportation modes that pertain to the project area and broader Olathe locality (other than passenger automobiles) include public transit, bicycle, and pedestrian modes, as well as commercial trucks for goods movement. The proposed improvements to the Santa Fe Street corridor need to coordinate and be consistent with planned and proposed multimodal uses in the study area.

*Connected KC 2050 Regional Transportation Plan* adopted in June 2020, is the long-range transportation plan for the Kansas City region and surrounding lands that are under the jurisdiction of the Mid-American Regional Council MPO. The Plan identifies future transportation needs of the region through the year 2050 and sets regional goals and system improvement recommendations for a multimodal transportation system. City of Olathe input into the LRTP includes multimodal enhancements in the Santa Fe Street corridor such as on-street bike lanes, sidewalks, and shared use paths to promote active transportation and provide enhanced connections between City parks and the Olathe Community Center. Similarly, an enhanced roadway network in the Santa Fe Street corridor will accommodate an expansion of transit routes. Santa Fe Street is a designated truck route and its direct connection to I-35 necessitates accommodations for freight movements.

Improvements in the Santa Fe Street corridor need to accommodate and/or integrate the planned multimodal and active transportation enhancements while also maintaining the corridor's ability to facilitate freight and goods movements.



#### **1.3.2.4 Support land use planning for economic development**

Regional land use and development patterns provide insights into a community's transportation needs. As future land development and commercial re-development occurs in the vicinity of the study area and in the broader community, it is anticipated that local and regional traffic volumes and travel times will increase on I-35, Santa Fe Street and on local adjacent arterials as a result. Within the project area, the Santa Fe Street corridor is identified as one of the community's main commercial corridors and as a local transit corridor in the future land use plan included in City of Olathe's Comprehensive Plan (*Plan Olathe*) while I-35 is identified as a regional transit corridor and a backbone of transportation for Olathe. The future land use plan also includes industrial mixed use residential, and conventional neighborhood uses as planned future uses surrounding the Santa Fe corridor.

Capacity, operations, and safety improvements to the Santa Fe Street corridor, as well as improved access, interchange improvements, and improved transportation connections are necessary to support the planned and forecasted development and redevelopment of the project area and the broader community. These improvements will help provide the supporting transportation infrastructure for Olathe's planned developments and future economic development needs.