

COMPREHENSIVE SAFETY ACTION PLAN



GUTHRIE

CITY OF GUTHRIE

COMPREHENSIVE SAFETY ACTION PLAN

REPORT DRAFT | MAY 2025

Prepared for



COMPREHENSIVE
SAFETY ACTION PLAN



Prepared by

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COMPREHENSIVE SAFETY ACTION PLAN



CHAPTER 1 *SAFETY IN GUTHRIE*

INTRODUCTION

The Guthrie Comprehensive Safety Action Plan (CSAP) was developed using a safety framework to help the City of Guthrie achieve the goal of zero traffic-related fatalities in the city. The principles used throughout the planning process to ensure proper alignment with community goals included the Safe Systems Approach, the Six Es of Safety, and Vision Zero. These principles were used to lay the foundation for the plan and facilitate effective implementation. The CSAP will assist City Staff and local partners in making informed decisions when identifying countermeasures and policy revisions that will improve traffic safety in Guthrie.

Introduction

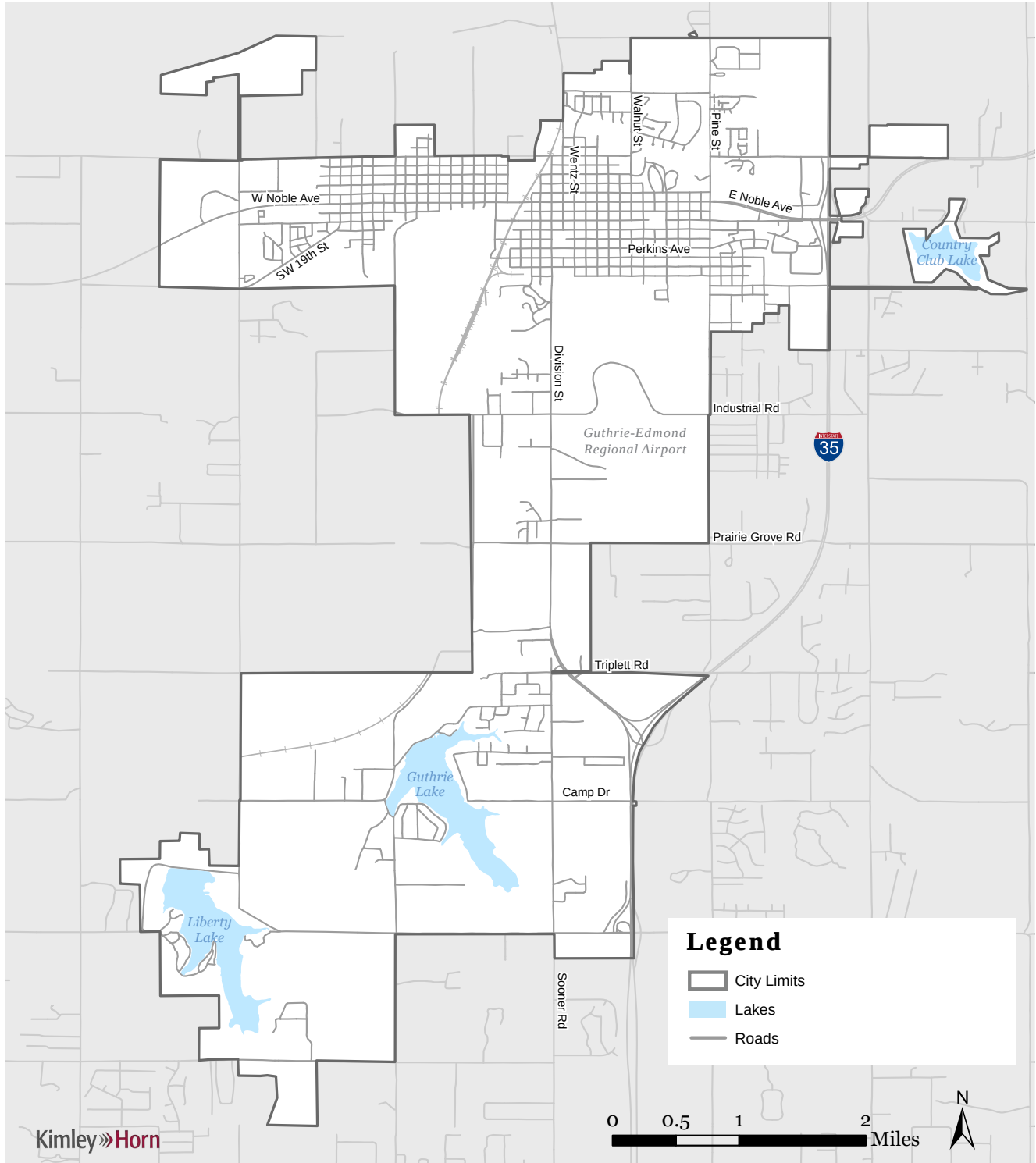
Safety Framework

Guiding Principles



CHAPTER 1

Figure 1. Guthrie City Limits



Safety Framework

Safe System Approach

The Safe System Approach was pioneered in the 1990's by Swedish road safety expert, Claes Tingvall. The Safe Systems Approach is a framework and method by which this CSAP can be implemented. The six key principles that can be used to implement the elements of the Safe Systems Approach are as follows:



Death or Serious Injury is Unacceptable

Focusing attention on preventing fatal and severe crashes over minor crashes so residents are better protected on the public roads.



Humans Make Mistakes

Human error is inevitable, inevitably leading to crashes, but a roadway system that accounts for and accommodates this fact can mitigate the effects (avoiding serious injury or death).



Humans are Vulnerable

Human tolerance to crashes is a recognized and measurable benchmark (kinetic energy transfer can be measured) and should be incorporated into design considerations.



Responsibility is Shared

No single party is responsible for crash prevention alone, but collectively all parties are responsible. This includes transportation designers and engineers, users, law enforcement, vehicle manufacturers, and publicly appointed decision-makers.



Safety is Proactive

Rather than responding to tragedy, measures should be taken beforehand to identify and mitigate potential risks.



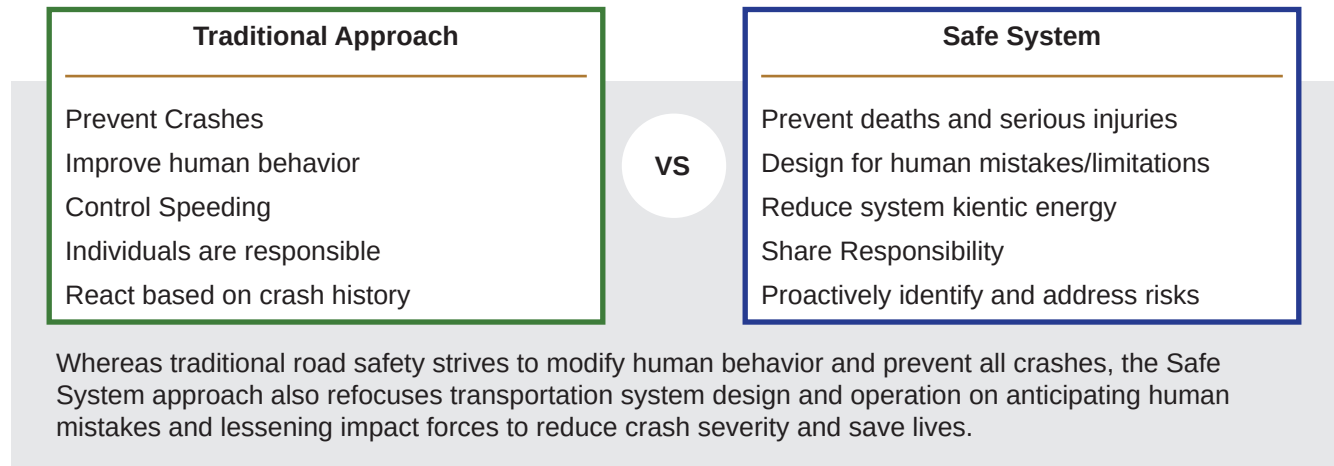
Redundancy is Crucial

Affecting change requires strengthening all Safe Systems elements. If one element fails, redundancy prevents system-wide failure, ensuring people are protected.

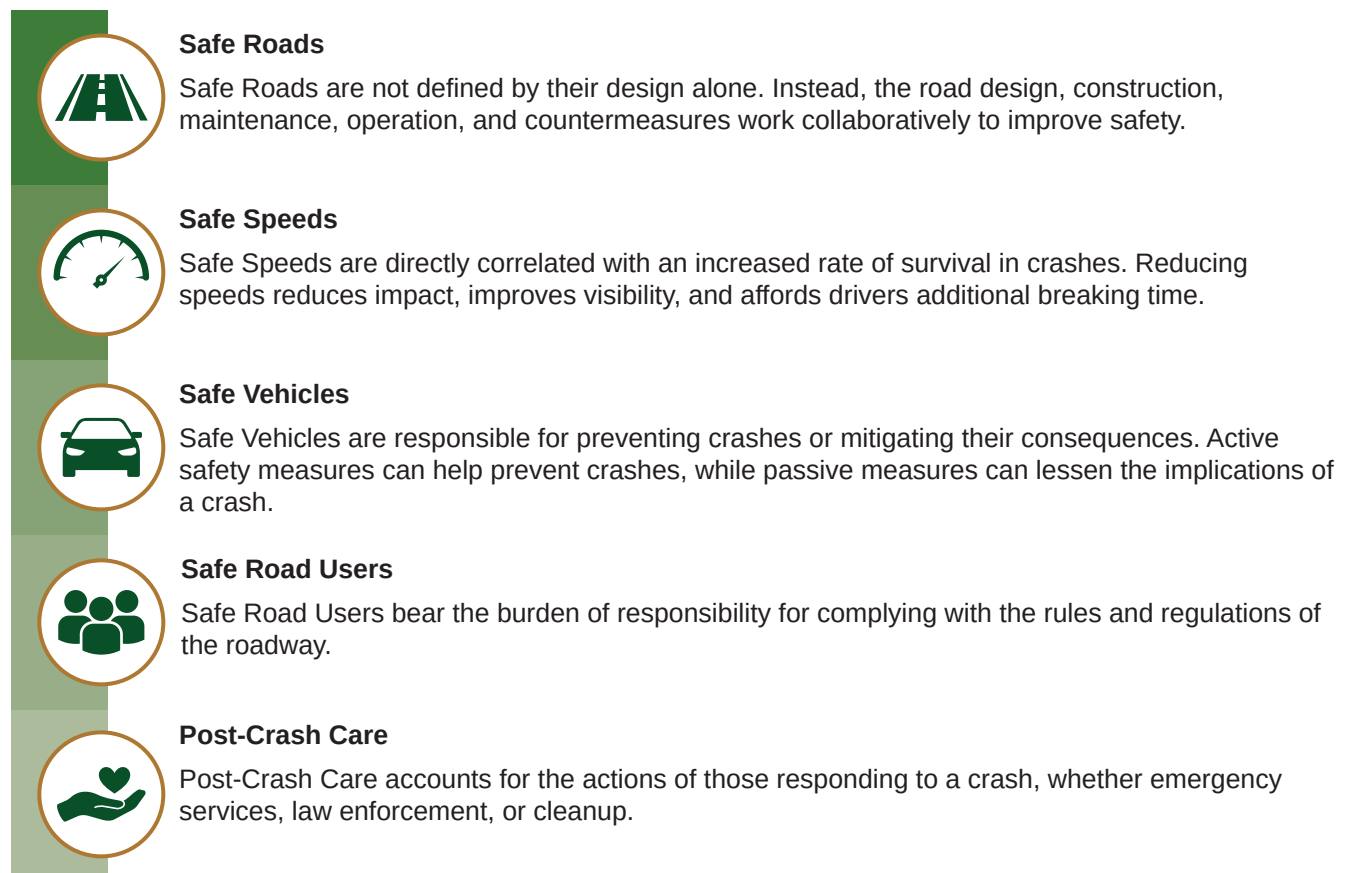


The Safe Systems Approach is a holistic, principle-based approach intended to eliminate serious and fatal injuries. This approach is different from other approaches, because it accounts for human error. Since human error is inevitable, this approach uses traffic safety planning to implement safeguards that will offset the consequences of these mistakes. Efforts to mitigate, or lessen, the physical impacts on the human body include roadway design, reducing speeds, physically separating automobiles from other road users, as well as technological advances in vehicles, such as lane departure assistance and autonomous emergency breaking.

Figure 2. Safe System Approach vs. Traditional Road Safety Practices



There are five complementary objectives outlined by the U.S. Department of Transportation (USDOT) that correspond to, and support implementation of the Safe System Approach detailed below:





Six E's of Safety

Similar to how the Safe System Approach works, the Six E's of Safety are components of an integrated and comprehensive framework. While every community varies in its composition and understanding of safety, the Six E's can be applied at all levels to enhance the user experience and improve safety.

Engineering



Engineering projects and interventions in support of Vision Zero may be implemented through the built environment to improve safety. The primary goal is to calm traffic and improve safety for all road users. Examples of proven engineering project enhancements include the implementation of safety countermeasures or traffic calming measures that reduce speeding.

Education



Education can improve safety by raising awareness of transportation choices, furthering or establishing the benefits of multimodal transportation, and demonstrating the proper use of the system.

Evaluation



Evaluation can support both proactive and responsive measures. Understanding the when, where, and why of crashes allows us to respond to historical trends and adjust to improve future safety. Similarly, careful evaluation can help head off potential issues before they reach greater severity.

Equity



Equity efforts must be made to acknowledge and rectify the imbalance and additional burden that disadvantaged populations carry. Vulnerable and disadvantaged populations are historically under-served and deserve access to the same information and infrastructure as everyone else.

Enforcement



Enforcement can ensure that system users follow traffic laws and regulations while also preventing profiling. Enforcement can also target and prioritize problem behaviors like speeding and other dangerous behaviors over minor infractions.

Encouraging



Encouraging the community to further their knowledge and understanding of safety principles can be fun and interactive. Events and activities can support and promote better behavior.



Vision Zero

Vision Zero is a traffic safety initiative, pioneered in Europe, that enacts change through prioritizing the principles of safe road design, enforcement, education, and community engagement. This multifaceted approach works by combining traffic safety efforts to reduce traffic fatalities and severe injuries, eventually leading to zero traffic related fatalities or severe injuries. The Vision Zero initiative is similar to the Safe Systems approach because it recognizes and accounts for human error. Vision Zero traffic safety planning designs road systems that mitigate the consequences of mistakes. Through the implementation of a holistic approach to crash related injury reduction communities can experience improvements in quality of life, safety, and mobility.

Vision Zero, unlike other methods, approaches traffic safety planning by creating a shift in how the community views traffic related fatalities and injuries. Vision Zero champions the view that there is a possibility of eliminating all traffic related fatalities and severe injuries. That these fatalities and severe injuries are not simply a byproduct of modern transportation networks. Vision Zero promotes the idea that there is a possibility of creating a safe and accessible transportation system for all; this community shift opens the opportunity to promote real change. Although the Vision Zero goal is ambitious, every step closer to the goal, every reduction in traffic related injury or fatality, has a tremendous positive impact on a community.

Figure 3. Safe Systems = Safe Mobility



Guiding Principles

To ensure the safety countermeasures and action items produced in this plan are tailored specifically to the safety needs of Guthrie, six Guiding Principles were developed. In order to contribute to the success of the Guthrie CSAP, the Guiding Principles were developed through stakeholder input and community priorities expressed throughout the planning process. These six Guiding Principles are the foundation for the action items in **Chapter 6**.



Bicycle & Pedestrians

Promote a safer environment for cyclists and pedestrians by creating bike lanes, enhancing sidewalk infrastructure, and increasing visibility at crosswalks.



Downtown

Improve pedestrian and vehicular safety in downtown Guthrie through upgraded traffic signals, road markings, and dedicated pedestrian pathways.



Growth

Ensure new development projects incorporate comprehensive road safety plans, prioritizing the protection of all road users, especially in high-growth areas.



Schools

Enhance safety measures around school zones to protect students, including implementing better signage, crosswalks, and speed enforcement.



Speeding

Reduce incidents of speeding by increasing enforcement, deploying speed monitoring technologies, and implementing educational campaigns about the dangers of excessive speed.



Post Crash Care

Strengthen post-crash care responses by training emergency services, ensuring quick and efficient medical assistance, and maintaining clear protocols for crashes.



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COMPREHENSIVE SAFETY ACTION PLAN



CHAPTER 2 *PROCESS & ENGAGEMENT*

INTRODUCTION

This chapter of the Guthrie CSAP details the project timeline and highlights the key takeaways and feedback gathered from the community engagement efforts throughout the project. Additionally, guidance from the Safety Steering Committee (SSC) and other City leadership was pivotal in the creation of the City's CSAP. It is vital that the community's vision and needs are taken into consideration to establish a Safety Action Plan that addresses the concerns of Guthrie's residents.

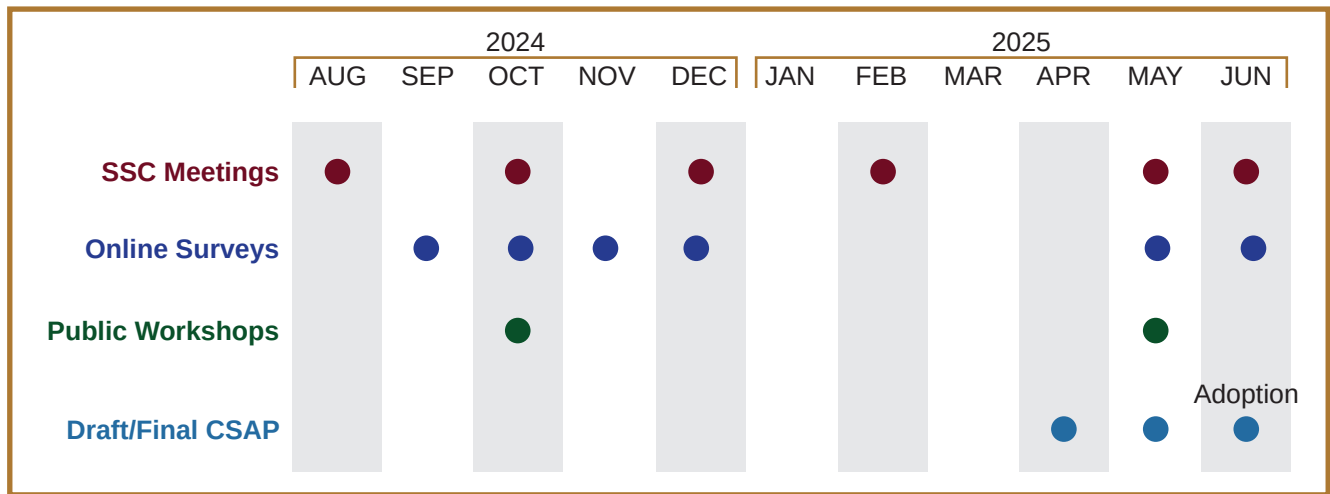
Project Timeline
Safety Steering Committee
Community Engagement



Project Timeline

Kicking off in July 2024, the Guthrie CSAP was developed over the span of 11 months. A timeline for the Safety Steering Committee (SSC) meetings and engagement efforts is presented in **Figure 4** below.

Figure 4. Project Timeline



The planning process for the Guthrie CSAP entailed three phases:

Phase I: Discovery



- ▶ Kick-off
- ▶ Visioning
- ▶ Public Engagement

Phase II: Data Analysis



- ▶ Existing Conditions
- ▶ Crash Trends & Statistics
- ▶ High Injury Network
- ▶ Field Observations
- ▶ Project Identification

Phase III: Draft Plan



- ▶ Action Plan
- ▶ Adoption

Discovery Phase: Establishing a strong foundation through discovery set the plan up for success. Before the first SSC meeting, data was collected to ensure all necessary information was available for the analysis portion of the Guthrie CSAP. This phase established an understanding of the project, defined roles and responsibilities of the stakeholder committee, and established a mission statement. Similarly, a project website was launched to provide a platform for receiving feedback from the Guthrie community and boosting awareness of the project and upcoming public engagement events.

Data Analysis Phase: This phase of the project involved an in-depth analysis of crash data to better understand the state of traffic safety in the City of Guthrie. The Data Analysis Phase included various crash analyses and the creation of the High-Injury Network (HIN). Field observations, the identification of countermeasures, and input from stakeholders including the SSC and public were critical contributors and context to incorporate into this phase.

Plan Development: Results and key takeaways from the data analyses were used to develop an implementation plan aligned with the goals of the City of Guthrie in the Plan Development phase. The SSC and public reviewed the initial plan and provided input on the direction of the Action Plan throughout this phase. Incorporating feedback from the public, the draft plan was finalized and formally adopted in June 2025.



Safety Steering Committee

The Safety Steering Committee, or SSC, was formed by a variety of stakeholders from City Staff, the Oklahoma Department of Transportation (ODOT), community leaders, and other organizations in the City of Guthrie. Members of the SSC serve as champions of the CSAP by providing key feedback at major milestones throughout the development of the plan. This committee was established to provide guidance for the plan and ensure the safety needs of Guthrie's residents, business owners, and visitors are being addressed. The SSC was tasked with attending five progress meetings to set goals, assist in community engagement efforts, identify study corridors, and aid in the implementation of the plan.

Figure 5. SSC Work Session



Safety Steering Committee Meetings

- ▶ **Meeting 1:** Kick-off and Goal Setting – August 28th, 2024
- ▶ **Meeting 2:** Public Engagement and Existing Conditions – October 22nd, 2024
- ▶ **Meeting 3:** Crash History and High Injury Network Results – December 10th, 2024
- ▶ **Meeting 4:** Guiding Principles and Policy – February 26th, 2025
- ▶ **Meeting 5:** Draft Plan Review & Annual Reporting – May 5th, 2025



Mission Statement

Over the course of the SSC meetings, members were tasked with a variety of activities which guided the plan including the selection of study corridors, HIN refinement, action matrix ideas specific to Guthrie, project prioritization, and development of the Mission Statement for the CSAP.

During the first work session with the SSC, the Mission Statement was developed to express the plan's mission and outline the commitment to serving the community and stakeholders in the City of Guthrie.

Mission Statement

“ Create a culture of safety that promotes a safe, multimodal transportation network for all ages and abilities through community education, policy, and infrastructure improvements to eliminate fatalities and injuries on Guthrie's roads. ”

Community Engagement

Community engagement for the Guthrie CSAP included online opportunities, pop-up events, and the distribution of promotional materials such as project business cards and flyers. To ensure the plan addressed the safety concerns of all road users in Guthrie, residents, community leaders, and other key stakeholders were actively involved.

Project Website

A dedicated project website was utilized throughout the plan's development, serving as a central online hub for information about the plan and community feedback surveys. Through the online surveys, Guthrie's residents had two online opportunities to share their thoughts on safety within the City using a form-based survey in addition to an interactive map survey. The project website also hosts the final plan for people to view and download. Additionally, the site included information about upcoming public events, frequently asked questions, links to helpful information, key dates, and contact information. This effort garnered valuable feedback from residents of Guthrie with 253 total unique contributions.

Figure 6. Project Website Banner





Written Survey

The Guthrie Safety Survey was created to collect information on commute, mode choice, and roadway safety concerns of residents, business owners, and visitors of the City. The survey consisted of 30 questions, divided into 4 sections. This survey was available on the project website and received a total of 128 responses.

The top age contributors to the survey were the 45-59 range with 33% of respondents in that age group. The vast majority of survey respondents' primary mode of transportation for their commute to work is by car (79%). Driving is the most common mode of transportation for 94% of respondents. Many respondents expressed a desire to walk, bike or use public transit more often if safety and infrastructure improvements were made. Additionally, 74% of respondents support investing in making bicycling safer with more bike lanes and separation from vehicle traffic, with an emphasis on the creation of protected and/or dedicated facilities. Furthermore, 91% of respondents support investing in making walking safer with more sidewalks, high visibility crosswalks and mid-block crossings.

Figure 7. Modes of Transportation Used in the Past 2 Years

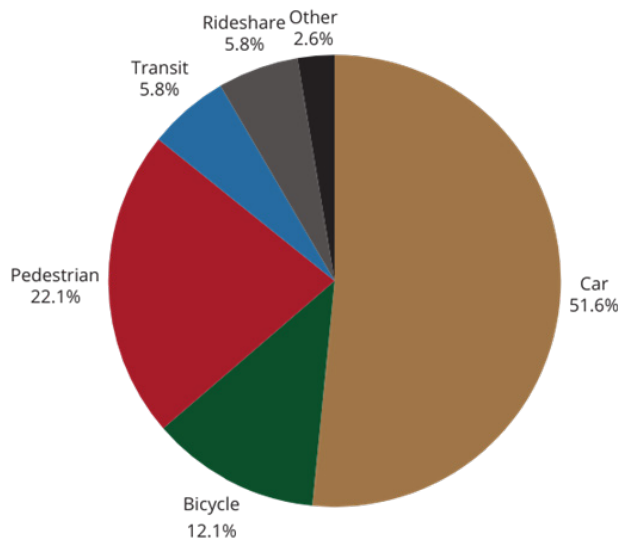
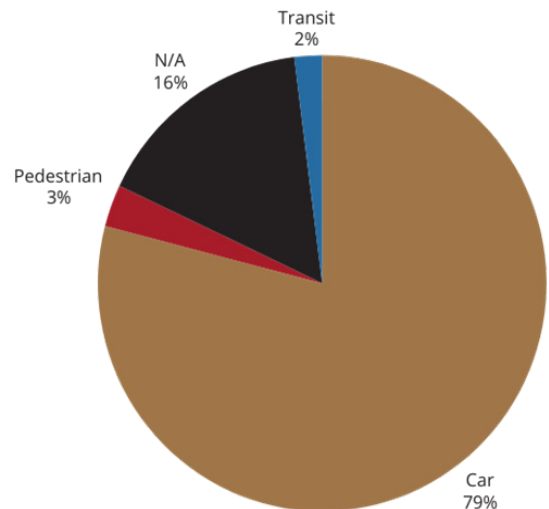


Figure 8. Work Commute Mode Used

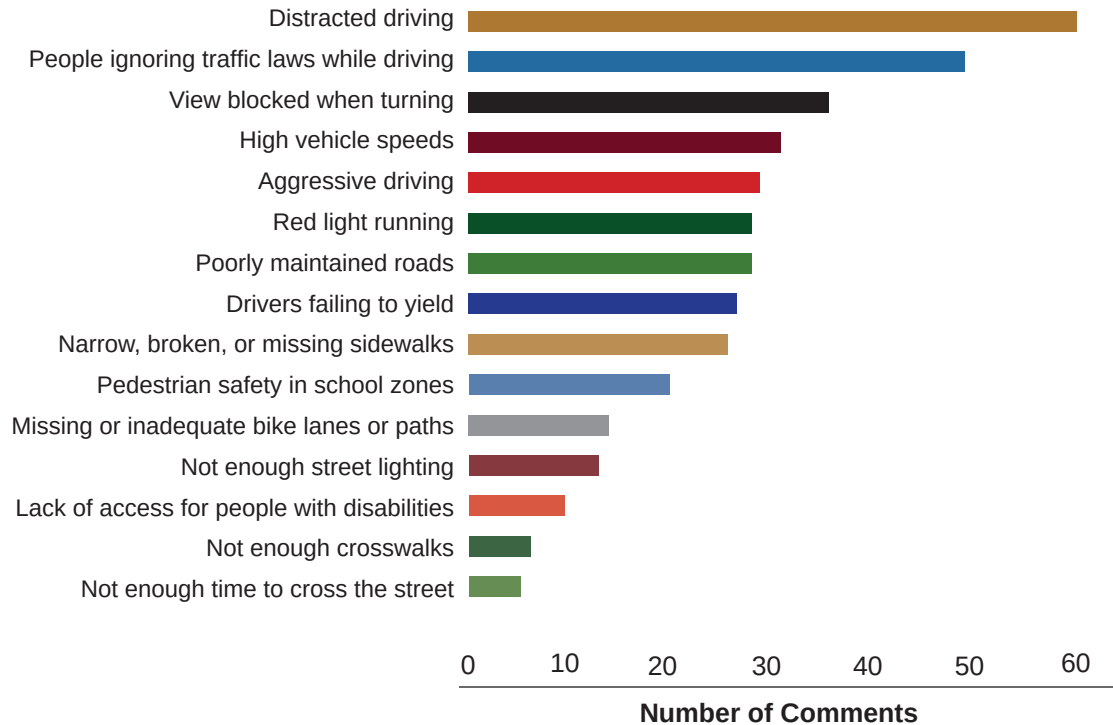




For Guthrie, the three most prevalent safety concerns expressed by respondents included: distracted driving, people ignoring traffic laws while driving, and obstructed views when turning. To help mitigate the safety deficiencies these concerns cause, enhanced enforcement and/or an increase in educational programs could be created to encourage drivers to use safer driving habits. **Figure 9** displays the top safety concerns for Guthrie based on the survey.

In conclusion, while cars remain the primary mode of transportation for many residents, a strong desire exists for a city that is more walkable and bikeable. Investing in infrastructure improvements, enhancing traffic safety and improving walkability will create a stronger transportation network for all ages and abilities in Guthrie.

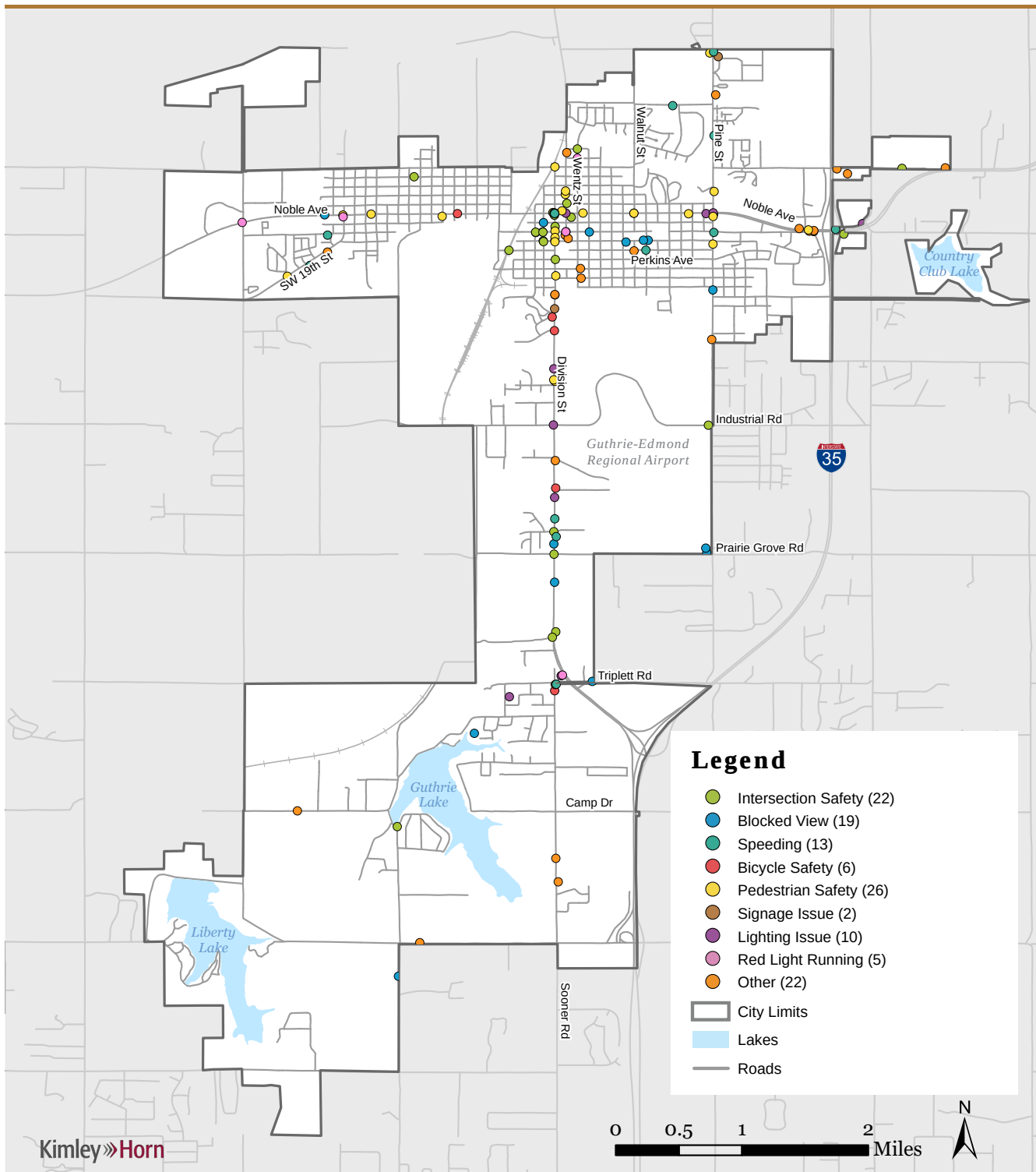
Figure 9. Top Safety Concerns



Interactive Map Survey

Using an interactive map survey, Guthrie's residents provided feedback on locations they have safety concerns about in the City. Respondents had the ability to either place a new point on the map and leave a comment, or upvote a comment from another contributor. The interactive map survey had a total of 125 contributions. A map of all the comments received on the interactive map survey can be seen in **Exhibit 1** on page 16.

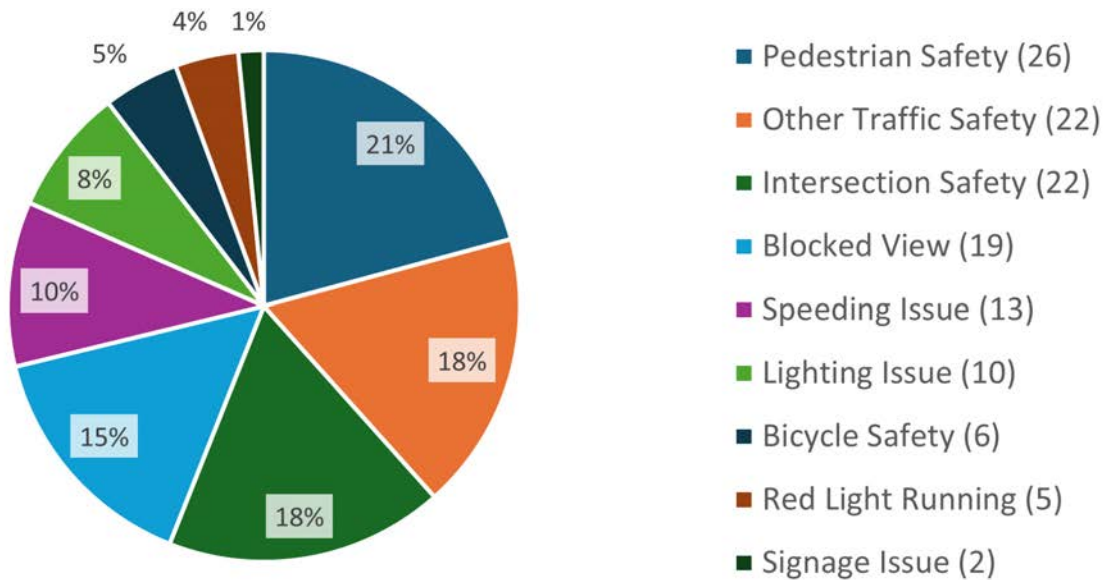
Exhibit 1. Social Pinpoint Comments





The top safety concerns on the interactive map were pedestrian safety, bicycle safety, and other traffic safety (other does not include red light running, intersection safety, speeding or signage). This is reflective of the online survey, in which the top traffic safety concerns are pedestrian safety and bicycle safety, as well as additional and improved infrastructure to accommodate each mode (**Figure 10**).

Figure 10. Top Interactive Map Survey Comment Types



The top four safety concerns on the interactive map survey were pedestrian safety, intersection safety, other traffic safety (other does not include red light running, intersection safety, speeding or signage), and obstructed views. Speeding was also reported consistently as a concern in areas with heavier pedestrian traffic such as schools, residential areas, and downtown. Frequently mentioned roads on the interactive map include:

Top Corridors of Public Concern

LOCATIONS	TOP CONCERNS						
	Speeding	Traffic Congestion	Uncontrolled Access Points	Vertical Sight Distance Visibility	Pedestrian Safety	Unsafe For Bicyclists	Lack Of Lighting
S DIVISION STREET	X			X	X		
NOBLE AVENUE		X	X		X		
SOONER ROAD	X					X	
PINE STREET	X				X		X



Pop-Up Events

To extend the public outreach and awareness of the CSAP, the project team attended two public pop-up events held within the City of Guthrie. The pop-up events gave the community the opportunity to interact with the project team, understand the importance of safety in Guthrie, and provide their input on the state of traffic safety in the City and where safety concerns are present. These events were held in public settings with the intention to generate awareness about the CSAP.

Guthrie Wine and Craft Festival

The project team attended the Guthrie Wine and Craft Festival on October 19th, 2024, to spread the word about the project and encourage the City's residents to visit the project website and participate in the survey and interactive map survey. This event was a great opportunity for residents in Guthrie to provide input on the state of safety in their community. Over 100 people stopped by the booth to learn more about safety and provide their insights on what they would like to see improved in the City of Guthrie.

Figure 11. Guthrie Wine and Craft Festival Logo



Touch-A-Truck

May 18, 2025

Figure 12. Photos from Guthrie





COMPREHENSIVE SAFETY ACTION PLAN



CHAPTER 3 *CRASH HISTORY*

INTRODUCTION

The crash history analysis for Guthrie was a primary element in the development of the CSAP. To study the crashes that occurred in the City, crash data from 2017-2021 was collected from the Oklahoma Highway Safety Office (OHSO) and analyzed to determine which roadways posed the highest risk to the community. This analysis provides a comprehensive look at the current state of safety in the City and serves as the foundation for the rest of this plan. Assessing the safety needs specific to Guthrie is crucial in developing a comprehensive plan that addresses the issues present in the City.

Citywide Crash Trends
Crash Density
Societal Cost of Crashes
**Oklahoma Strategic Highway
Safety Plan Emphasis Areas**
Equity Considerations



Citywide Crash Trends

Over the five-year period of 2017-2021, there were a total of 871 crashes in Guthrie with 86 of them resulting in a fatality (K), serious injury (A), or possible injury (B). In 2018, the highest number of crashes occurred with 195 reported. During this time, five fatal crashes happened in Guthrie. **Table 1** and **Figure 13** shows the crashes that occurred within Guthrie city limits from 2017-2021 by crash severity.

Table 1. Guthrie Crashes by Year

TOTAL		K - FATAL		A - SERIOUS INJURY		B - POSSIBLE INJURY	
2017	189	1	0.5%	4	2.1%	17	9.0%
2018	195	1	0.5%	3	1.5%	19	9.7%
2019	148	1	0.7%	0	0.0%	4	2.7%
2020	156	2	1.3%	3	1.9%	6	3.8%
2021	183	0	0.0%	3	1.6%	22	12.0%

Figure 13. Guthrie Crash Trends (2017-2021)



Top Contributing Factors

Crashes can happen for various reasons, such as distracted driving, speeding, or impairment. Identifying the factors that caused a crash is crucial for effective safety planning, as it highlights the specific issues leading to the incident. For instance, if an area experiences many severe crashes due to drivers ignoring stop signs and red lights, safety efforts should focus on preventing such violations.

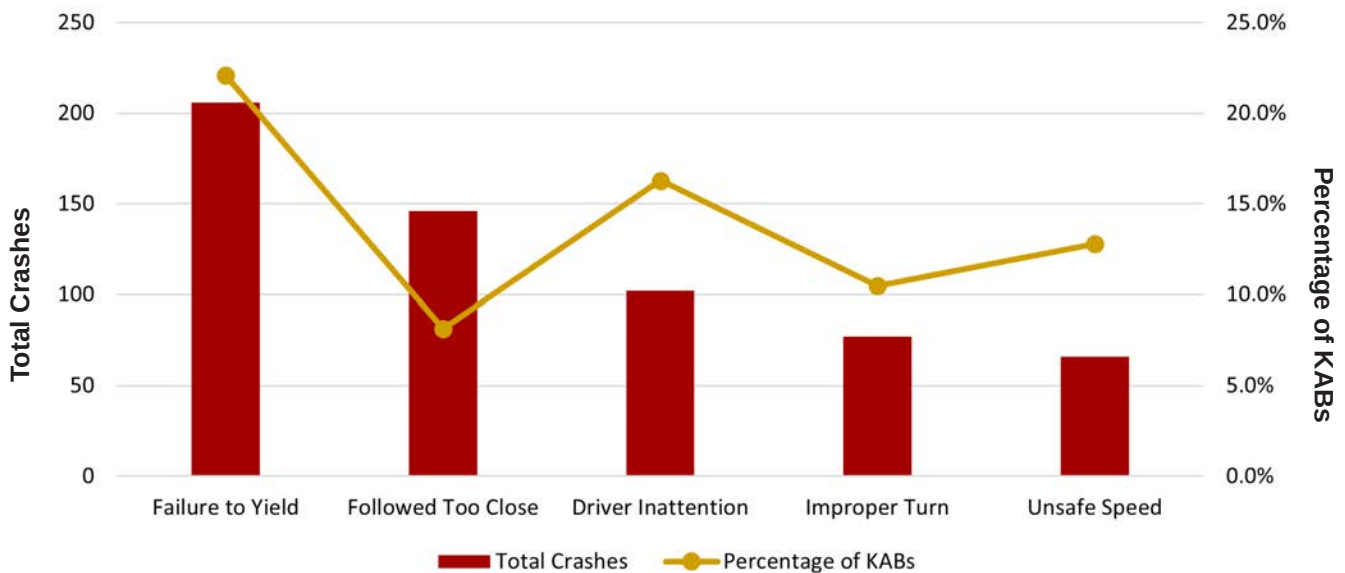
The most common contributing factors of crashes in City of Guthrie are shown in **Table 2** and **Figure 14**.

'Failure to Yield' was the highest contributing factor in the City, with 206 total crashes (23.7%) and 19 fatal and injury-related crashes (22.1% of KABs). The other 4 most contributing factors to fatal, serious injury, and minor injury crashes are: 'Followed Too Close' (146), 'Driver Inattention' (102), 'Improper Turn' (77), and 'Unsafe Speed' (66).

Table 2. Top Contributing Factors

TOP CONTRIBUTING FACTORS	TOTAL CRASHES	PERCENTAGE OF CRASHES	KABS	PERCENTAGE OF KABS
Failure to Yield	206	23.7%	19	22.1%
Followed Too Close	146	16.8%	7	8.1%
Driver Inattention	102	11.7%	14	16.3%
Improper Turn	77	8.8%	9	10.5%
Unsafe Speed	66	7.6%	11	12.8%

Figure 14. Top Contributing Factors Compared to Percentage of KABs





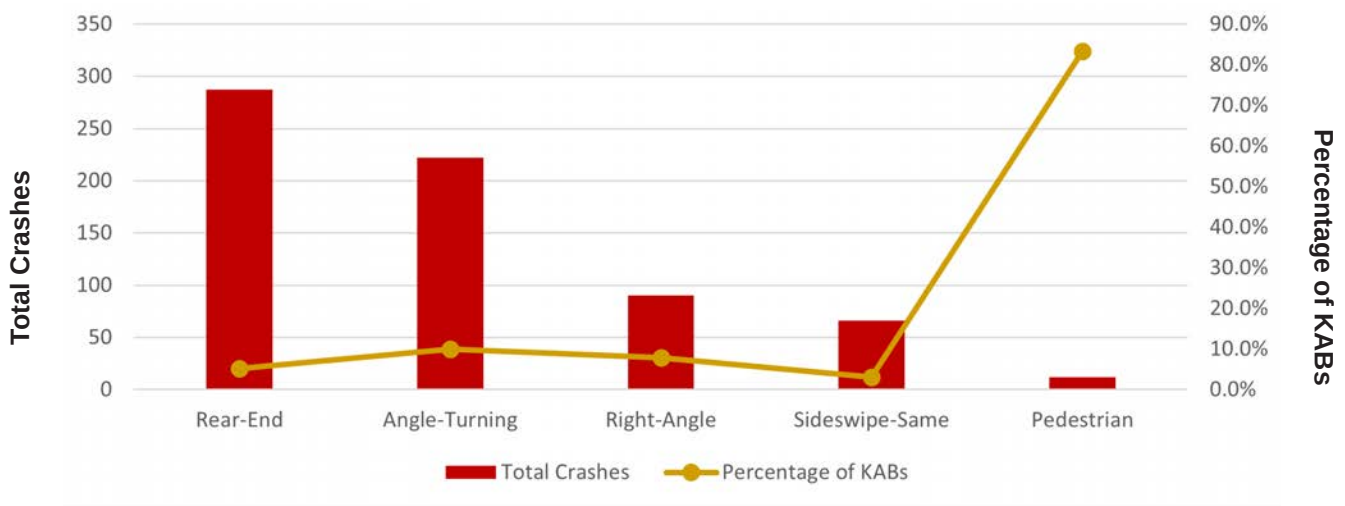
Top Manners of Collision

While contributing factors give an insight into why a crash may have occurred, manners of collision describe how the crash occurred. The top manner of collision in Guthrie from 2017-2021 was 'Rear-End' crashes as shown in **Table 3** and **Figure 15** on page 24. This commonly occurs in areas with a lack of dedicated turn lanes, which many areas in Guthrie with high volumes of crashes are experiencing. Additionally, 'Angle-Turning' crashes, (222 total crashes) account for the most of fatal, serious injury, and minor injury crashes (22 KABs).

Table 3. Top Manners of Collision

TOP MANNERS OF COLLISION	TOTAL CRASHES	PERCENTAGE OF CRASHES	KABS	PERCENTAGE OF KABS
Rear-End	287	33.0%	15	5.2%
Angle-Turning	222	25.5%	22	9.9%
Right-Angle	90	10.3%	7	7.8%
Sideswipe-Same	66	7.6%	2	3.0%
Pedestrian	12	1.4%	10	83.3%

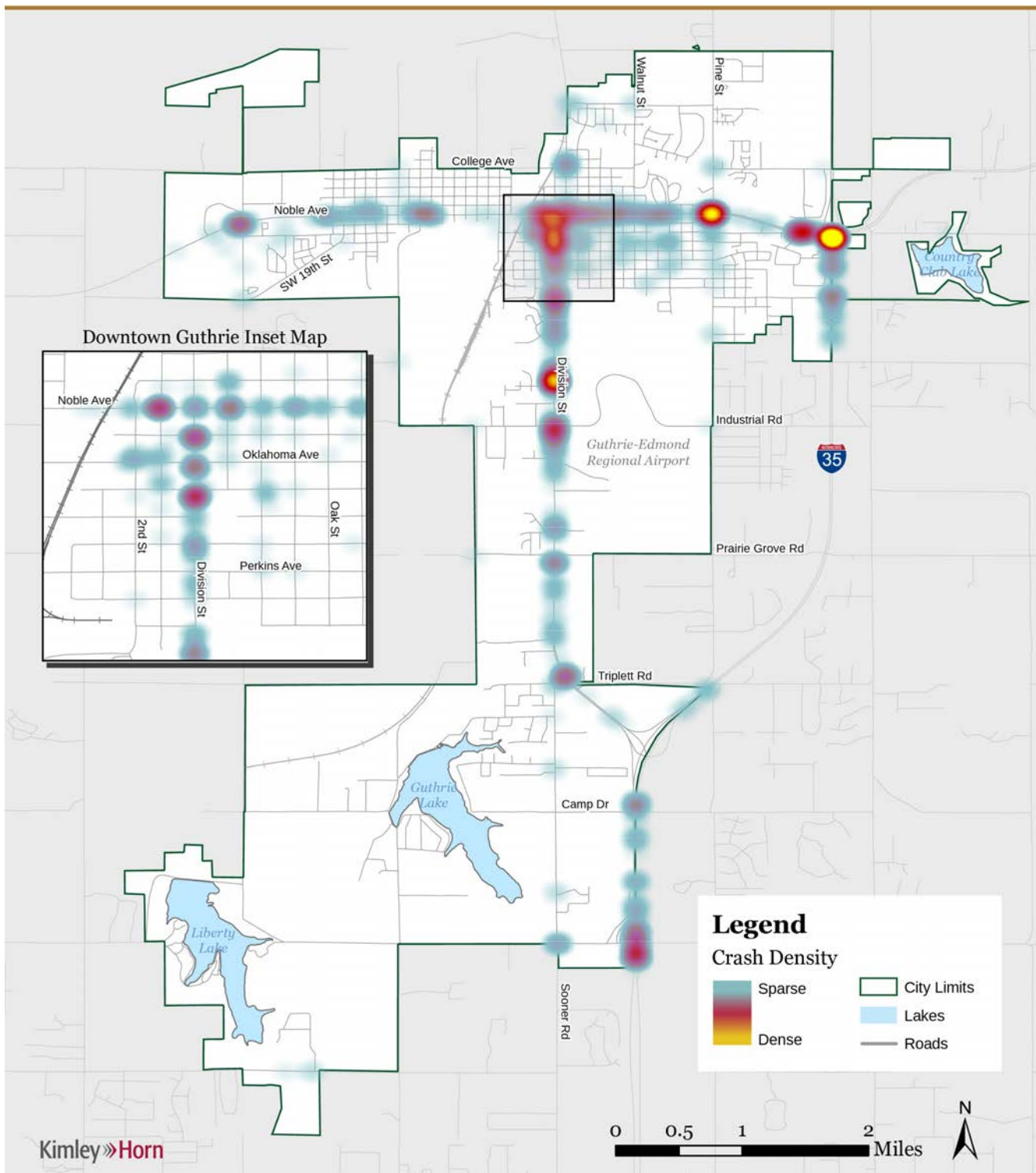
Figure 15. Top Manners of Collision Compared to Percentage of KABs



Crash Density

Exhibit 2 on page 24 displays a crash heat map that highlights the density of crashes in Guthrie from 2017-2021. The crash heat map visualizes the pure density of crash counts at various locations in the City and does not consider specific roadway or crash characteristics such as functional classification, traffic volumes, context, and crash severity. Each of these factors, though, contributes to the frequency of crashes. In Guthrie, the most common area for crashes includes downtown Division St, Noble Ave, and I-35.

Exhibit 2. Crash Heat Map





Societal Cost of Crashes

An additional trend that sheds light on the impact crashes have on communities is the societal cost of crashes. Simply, crashes of all severities ultimately cost money. These costs span across a wide range of areas including medical costs, property damage, decrease in economic productivity, and quality of life. Societal cost is determined by assigning a monetary value to the impact of crashes by their severity. These costs are a blend of economic costs and the monetized value of impacts. The values used in this analysis are from the Highway Safety Benefit-Cost Analysis Guide from the Federal Highway Administration (FHWA) Safety Program.

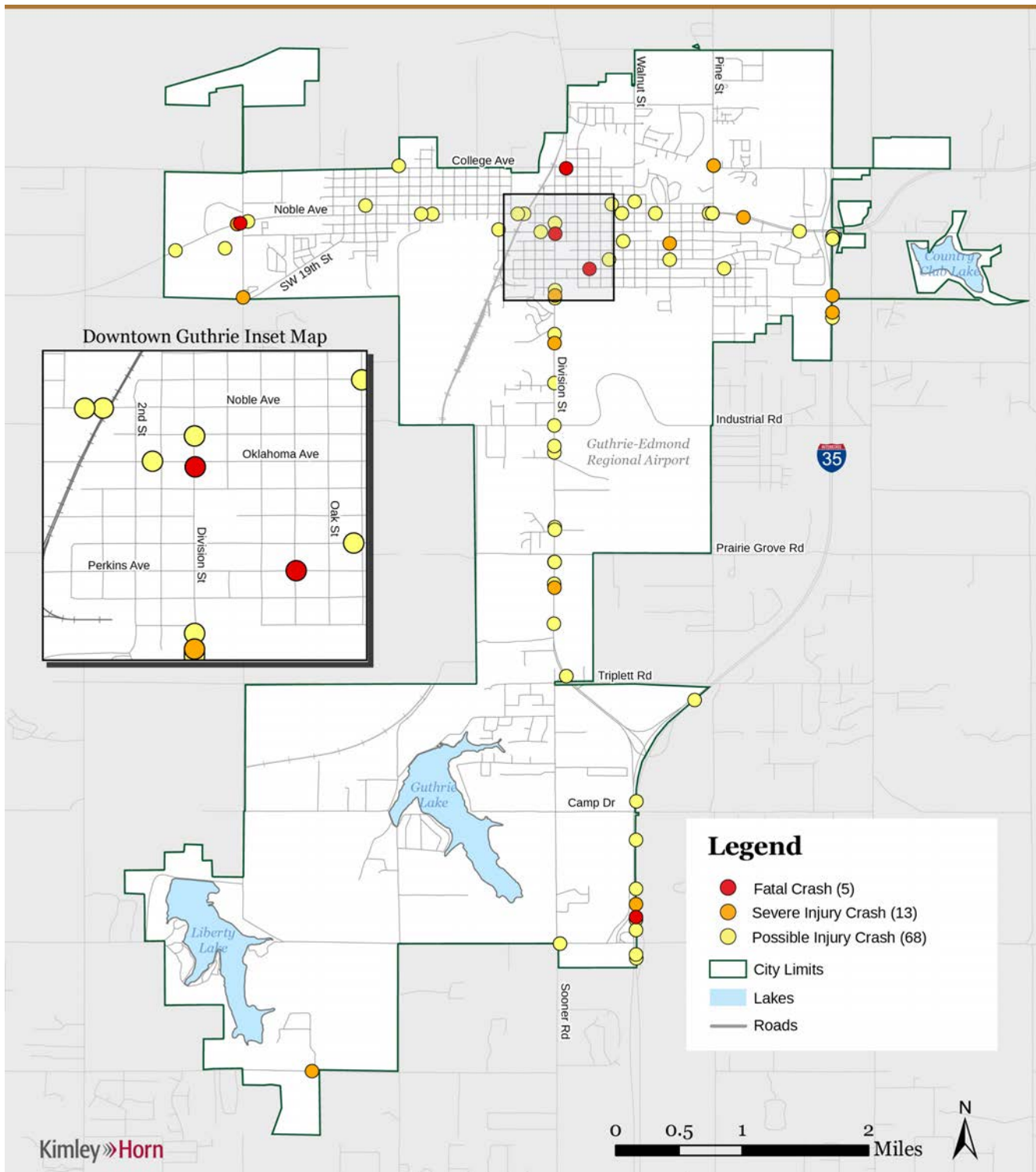
The total cost of the crashes that occurred in the study area between 2017-2021 is just over \$103 million with fatal crashes making up approximately 56% of the total cost. The cost breakdown by severity is shown in **Table 4**.

Table 4. Total Societal Cost of Crashes in Guthrie (2017 - 2021)

CRASH SEVERITY	SOCIETAL COST PER CRASH*	GUTHRIE CRASHES	SOCIETAL COST OF CRASHES
K - Fatal Injury	\$11,637,947	5	\$58,189,735.00
A - Suspected Serious Injury	\$674,353	13	\$8,766,589.00
B - Suspected Minor Injury	\$204,143	68	\$13,881,724.00
C - Possible Injury	\$129,001	113	\$14,577,113.00
Non-injury and Unknown	\$12,108	672	\$8,136,576.00
Total Societal Cost of Crashes in Guthrie:			\$103,551,737.00

* <https://highways.dot.gov/safety/hsip/highway-safety-benefit-cost-analysis-guide-0>

Exhibit 3. Fatal, Severe, and Minor Injury Crashes





Oklahoma Strategic Highway Safety Plan Emphasis Areas

In November 2023, ODOT updated their Strategic Highway Safety Plan (SHSP). The SHSP is a comprehensive plan detailing strategies and initiatives aimed at reducing traffic-related fatalities and injuries on Oklahoma roadways. Oklahoma crash data was analyzed to identify high-risk contributing factors in fatal and serious crashes. These high-risk contributing factors are the eight safety emphasis areas detailed in this section. All data regarding the emphasis areas are from the ODOT SHSP (2023). These safety emphasis areas guided the crash analysis for the City of Guthrie to ensure a comprehensive approach to the development of safety recommendations. The SHSP emphasis areas are detailed below, but it is important to note that based on the availability of data, the following emphasis areas were able to be mapped in Guthrie; Intersections, Unsafe Speed, Roadway & Lane Departures, Impaired Driving, and Commercial Motor Vehicles and Work Zones.



Occupant Protection

where a vehicle occupant was not restrained or not using appropriate child restraints or seat belts



Motorcycles and All-Terrain Vehicles

crashes involving motorcycles and all-terrain vehicles



Intersections

crashes in which the first harmful event occurred on an approach to or an exit from an intersection and is related to movement through the intersection



Vulnerable Road Users

crashes involving pedestrian and bicyclists



Unsafe Speed

contributing factor to crash involving motor vehicles traveling under the limit or over the limit at unsafe speeds



Roadway & Lane Departure

vehicles run off the road or travel outside of their dedicated lane



Impaired Driving

driver was identified as having been drinking, having taking medication or been under the influence of alcohol or drugs



Commercial Motor Vehicles and Work Zones

crashes involve vehicles used for business purposes, such as trucks, buses, and delivery vehicles and crashes occur in or near areas where road construction, maintenance, or utility work is being performed



Occupant Protection



Occupant Protection crashes are crashes involving people not wearing seatbelts. An incident is an Occupant Protection crash if even one occupant of a vehicle is not wearing a seatbelt. National Highway Traffic Safety Administration (NHTSA) reports that wearing a seatbelt reduced the risk of fatal injury by 45% and moderate to critical injury by 50% in the result of a crash. Additionally, 36% of fatal and serious injuries in the State of Oklahoma involved a person who was not wearing a seatbelt. When even one occupant is not restrained, they can be a risk to themselves as well as others in the vehicle. It is important to ensure that seatbelts and child safety seats are used properly. Failure to wear a seatbelt when combined with other risky driving behaviors such as speeding or intoxication often leads to fatality or serious injury.



Source: Adobe Stock

Motorcycles and All-Terrain Vehicles



Motorcycles and All-Terrain Vehicles (ATVs) are at increased risk in collisions, due to the lack of protection in the event of a crash. The lack of structural protection or airbags makes protective equipment, such as helmets, and traffic safety critical for motorcycle and ATV users. According to the ODOT SHSP, from 2017 through 2021, there were 377 fatal collisions involving motorcyclists and 172 collisions involving ATVs on public roads in Oklahoma. Fatal motorcycle crashes primarily occur in daylight on highways, while fatal ATV crashes are relatively split between daylight and dark unlit conditions on county roads. Unsafe speed when operating a motorcycle or ATV significantly decreases the survival rate of crashes. ODOT also emphasizes that wearing a helmet when operating a motorcycle or ATV significantly reduces the occurrence of a fatality or serious injury in a crash. 70% of motorcyclist fatalities in Oklahoma from 2017-2021 were not wearing a helmet.



Source: Adobe Stock



Intersections



Intersection-related crashes are common due to the number of conflict points available at a signalized and non-signalized intersection. Fatal and serious injury intersection related crashes most commonly occur on highways and city streets with dry road conditions in daylight. Intersection crashes can happen when drivers have poor visibility of traffic lights or stop signs, preventing them from reacting to oncoming traffic in time. The lack of or low visibility of pavement markings can also make turning at an intersection hazardous. Proper driver education about signage and traffic laws can increase safety, especially at stop-controlled intersections. Distracted driving and impaired driving increase safety risks at intersections for all roadway and sidewalk users.



Source: Adobe Stock

High Crash Intersections

Intersection safety is a top priority when approaching traffic safety because a majority of crashes in Guthrie occur at intersections. Approximately 61.4% of crashes in the City are intersection related. Intersections commonly involve vehicles, pedestrians, and bicycle users in Guthrie, primarily in downtown and residential areas. Improving intersection safety helps make roadways safer and more efficient for users of all ages and abilities. **Table 5** displays the top 12 high crash intersections from 2017-2021 and the locations can be seen in **Exhibit 4** on page 30.

Intersection-related crashes are the most common contributing factors for crashes in the City. 535, or approximately 61.4% of crashes in Guthrie were intersection related from the years 2017-2021, as shown in **Table 6**. Intersection-related crashes have a average rate of fatalities and serious injuries compared to all citywide crashes with 9.7% resulting in a KAB.

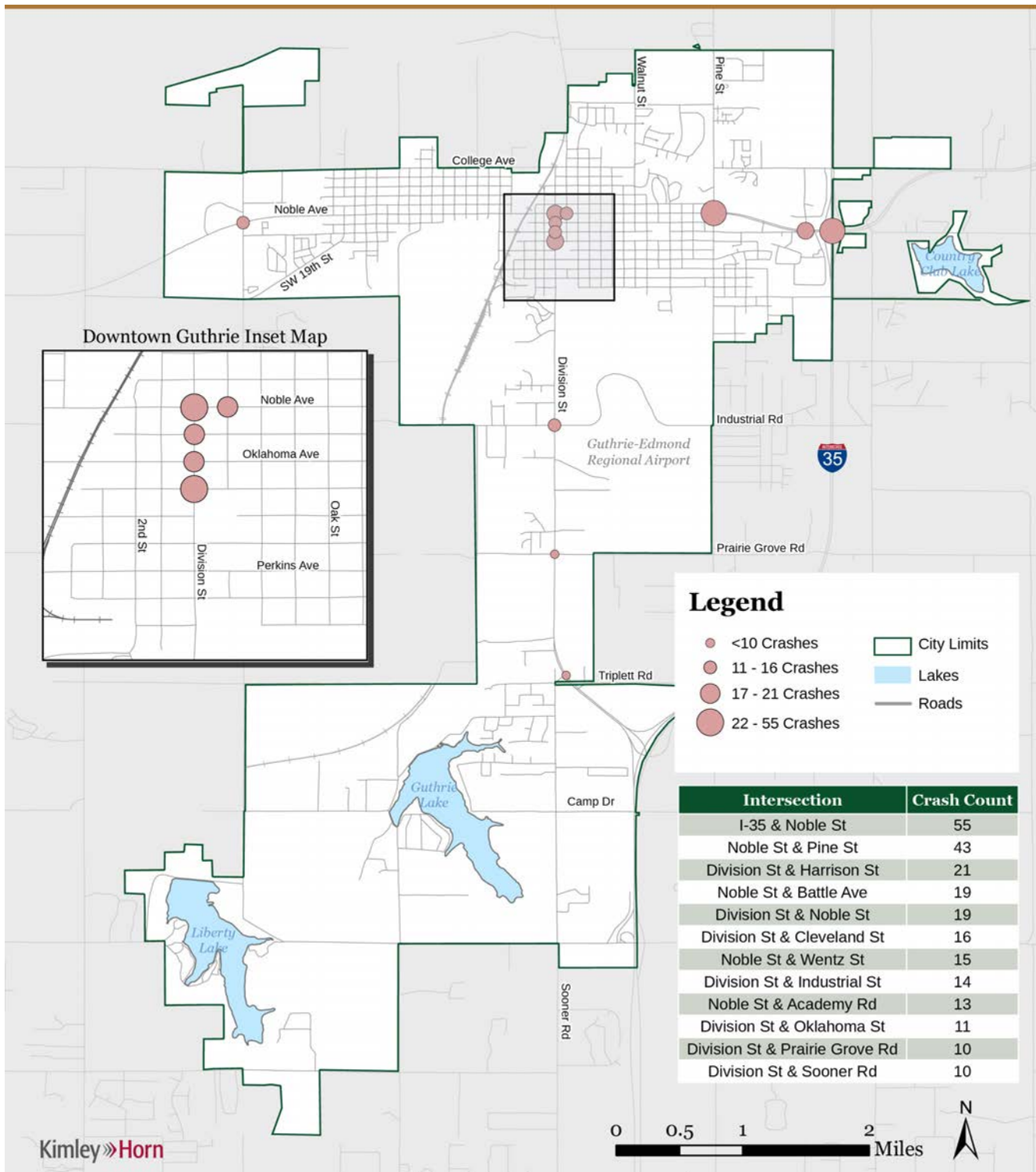
Table 5. High Crash Intersections

INTERSECTION	CRASH COUNT
I-35 & E Noble Ave	55
E Noble Ave & Pine St	43
Division St & Harrison St	21
Noble Ave & Battle Ave	19
Division St & Noble Ave	19
Division St & Cleveland St	16
Noble Ave & Wentz St	15
Division St & Industrial Rd	14
Noble Ave & Academy Rd	13
Division St & Oklahoma St	11
Division St & Prairie Grove Rd	10
Division St & Sooner Rd	10

Table 6. Intersection Related Crash Data (2017-2021)

CRASH TYPE	TOTAL CRASHES	HIGH INJURY CRASHES (KABS)	PERCENT KABS
Intersection-Related Crashes	535	52	9.7%
All Crashes	871	86	9.9%

Exhibit 4. High Crash Intersections



Vulnerable Road Users



Vulnerable Road Users (VRUs) are defined as crashes involving bicyclists or pedestrians. Fatal and serious injury crashes involving VRUs occur more often during weekday commuting hours. The risk of these crashes can be exacerbated when a city lacks proper sidewalks, trails, or crossings that move these users safely and separate from vehicular traffic. Distracted driving and driving impairment also pose a major concern for VRUs, particularly involving alcohol and phone usage. Crashes resulting in fatality or serious injury primarily occur in dark unlit conditions on city streets.



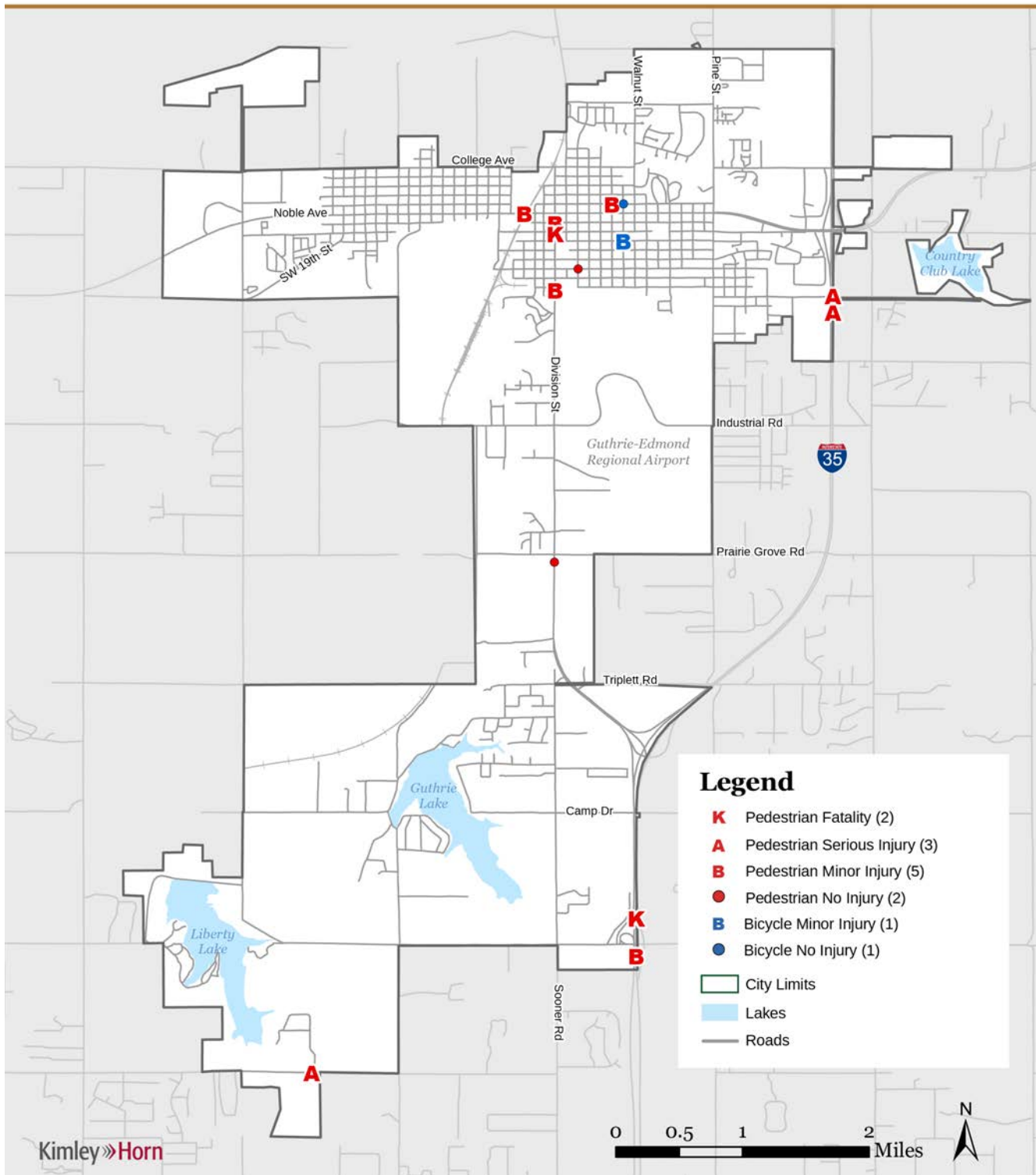
Source: Adobe Stock

Bicyclists and pedestrians are the most vulnerable road users to fatal or serious injuries in the event of a crash. In the years 2017-2021, Guthrie experienced 12 pedestrian crashes and 2 bicyclist crashes as shown in **Table 7**. Of the 14 crashes that involved pedestrians or bicyclists, 12 of them resulted in a fatality, suspected serious injury, or suspected minor injury. In Guthrie, bicycle and pedestrian related crashes are the top emphasis areas in terms of a crash resulting in a fatality or serious injury. Pedestrian safety in the City is a crucial topic that is covered in this plan due to 83% of pedestrian related crashes resulting in a KAB. The downtown area of Guthrie is the primary location where these crashes are occurring as seen in **Exhibit 5** on page 32.

Table 7. Bicycle & Pedestrian Crash Data

CRASH TYPE	TOTAL CRASHES	HIGH INJURY CRASHES (KABS)	PERCENT KABS
Pedestrian Related Crashes	12	10	83.3%
Bicycle Related Crashes	2	1	50.0%
All Crashes	871	86	9.9%

Exhibit 5. Bicycle & Pedestrian Crashes



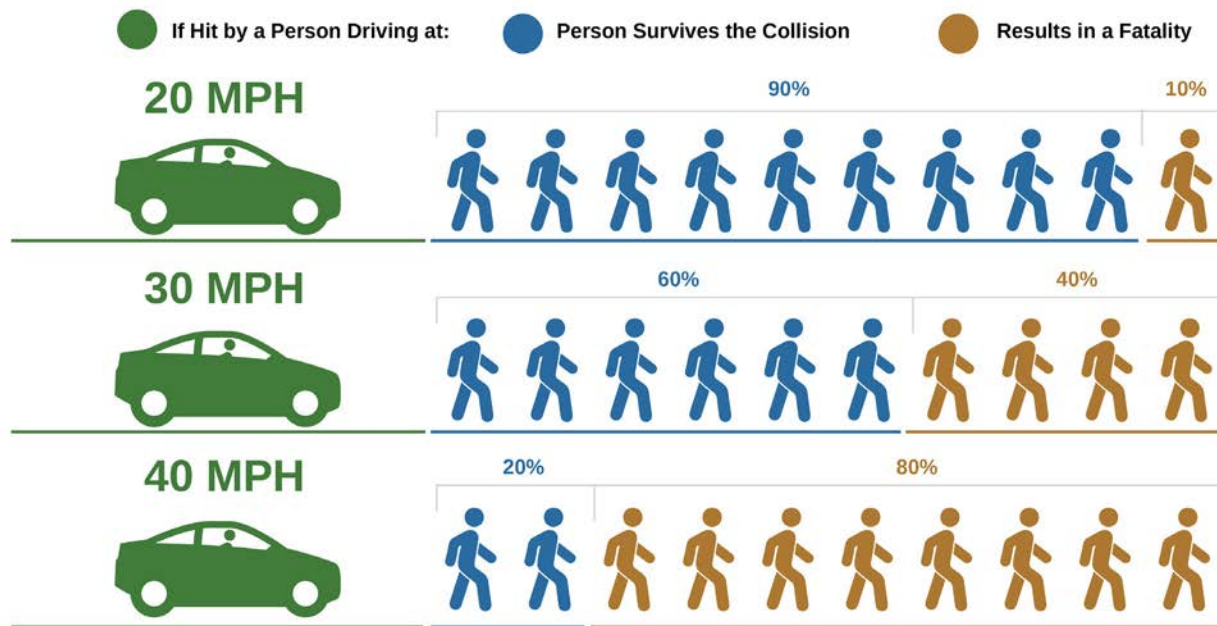


Unsafe Speed



Unsafe Speed occurs when a driver exceeds the posted speed limit or drives too fast for conditions. Unsafe speed crashes often go underreported, and the true impact of unsafe speed is likely greater than what is shown in collected data. Unsafe speed crashes resulting in a fatality or serious injury most often occur on highways with dry road conditions in daylight according to ODOT. Exceeding the posted speed limit can increase the severe injury and fatality rate of all types of collisions, making unsafe speed a top safety emphasis area. If speed is safely reduced, the force of impact will be far less - increasing the survival rate of collisions. The top two contributing factors to making an unsafe speed crash fatal are lane departures and occupant protection. Unsafe speed also greatly impacts pedestrian related crash severity. **Figure 16** displays the chance of pedestrian fatalities compared to vehicle speeds.

Figure 16. Vehicle Speed Comparison to Chance of Pedestrian Fatality

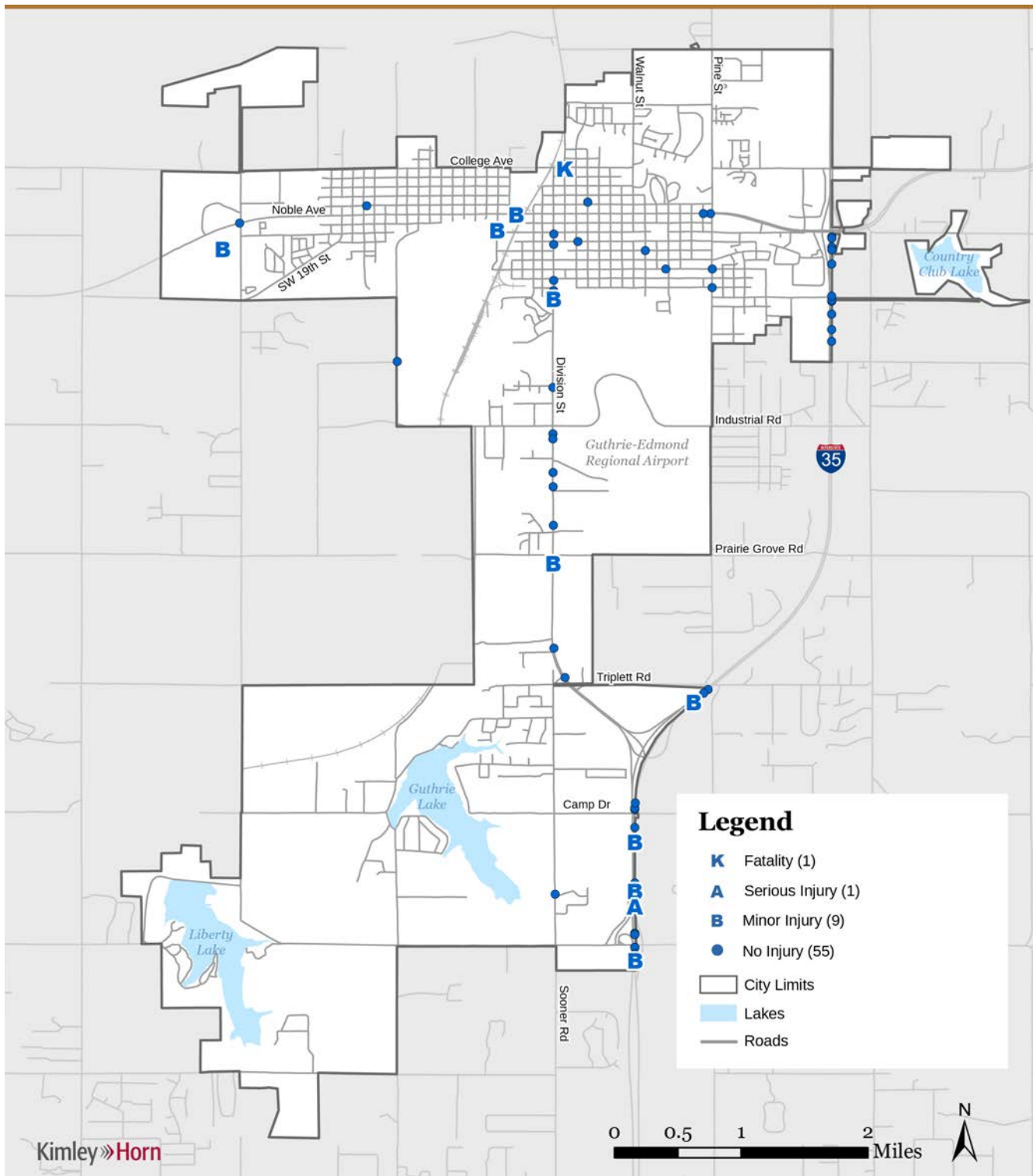


Speeding is a priority safety concern for citizens and stakeholders of the City of Guthrie. From 2017-2021, the City saw 66 total speed-related crashes and one (1.5%) speed-related fatality. **Table 8** and **Exhibit 6** on page 34 display the locations of all speed-related crashes that occurred in Guthrie from 2017-2021. According to the OHSO data, Division St and I-35 are the most common locations in Guthrie where unsafe speeding has been reported.

Table 8. Unsafe Speed Crash Data (2017-2021)

CRASH TYPE	TOTAL CRASHES	HIGH INJURY CRASHES (KABS)	PERCENT KABS
Unsafe Speed Related Crashes	66	11	16.7%
All Crashes	871	86	9.9%

Exhibit 6. Unsafe Speed Crashes



Roadway & Lane Departures



A roadway or lane departure occurs when a vehicle departs from the traveled way – crossing center or edge lines. Roadway and lane departures are the most reported contributing factor to crashes.

Roadway and lane departure crashes resulting in fatalities or serious injuries most commonly occur on highways with dry roadway conditions in daylight according to ODOT. Unsafe driver behavior, unsafe speeds, and impaired driving are often the main factors leading to these crashes. Roadway and lane departure crashes are extremely dangerous due to the manner of collision that they can lead to such as head-on collision and rollovers.



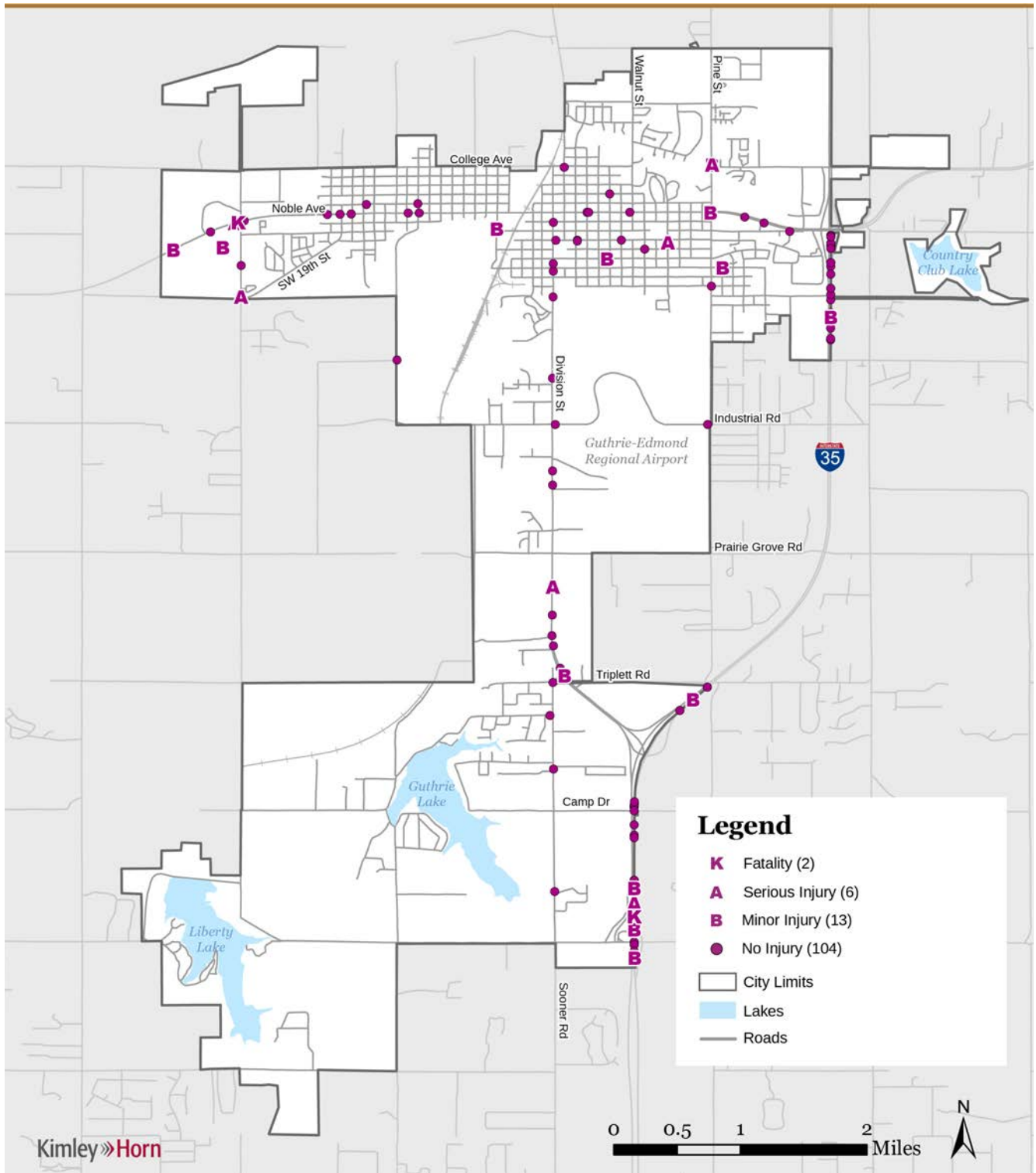
Source: Adobe Stock

Roadway and lane departures are a top contributing factor for crashes on Guthrie roads. These types of crashes most commonly occur on highways and high-volume corridors such as I-35, Division St, and Noble Ave. During 2017-2021, the City experienced 125 total roadway departure related crashes and 21 high injury or fatal roadway or lane departure crashes. **Table 9** and **Exhibit 7** on page 36 display the locations of all roadway and lane departure crashes that occurred in Guthrie during this five-year span. These crashes most commonly occur along I-35, Division St, and Noble Ave.

Table 9. Roadway & Lane Departure Crash Data (2017-2021)

CRASH TYPE	TOTAL CRASHES	HIGH INJURY CRASHES (KABS)	PERCENT KABS
Roadway & Lane Departure Crashes	125	21	16.8%
All Crashes	871	86	9.9%

Exhibit 7. Roadway & Lane Departure Crashes



Impaired Driving



According to ODOT, impaired driving consists of drugs, including prescription medications, and physical impairments such as drowsy driving, poor vision, or reduced cognitive capabilities. Using alcohol, drugs, or some medications will affect the driver's ability to perceive danger and react appropriately in a reasonable amount of time to avoid a collision. Impaired driving crashes most commonly occur under dry roadway conditions on highways in dark unlit conditions according to the ODOT SHSP. When a person chooses to drive with any impairment(s), it endangers all roadway users. Driving impaired slows reaction time and motor skills, reducing a driver's window of time to safely react to a potentially dangerous situation. The most common form of impaired driving is driving while intoxicated, which means having a BAC of between 0.05 and 0.08. These types of crashes disproportionately affect individuals aged 16-30 in Oklahoma.



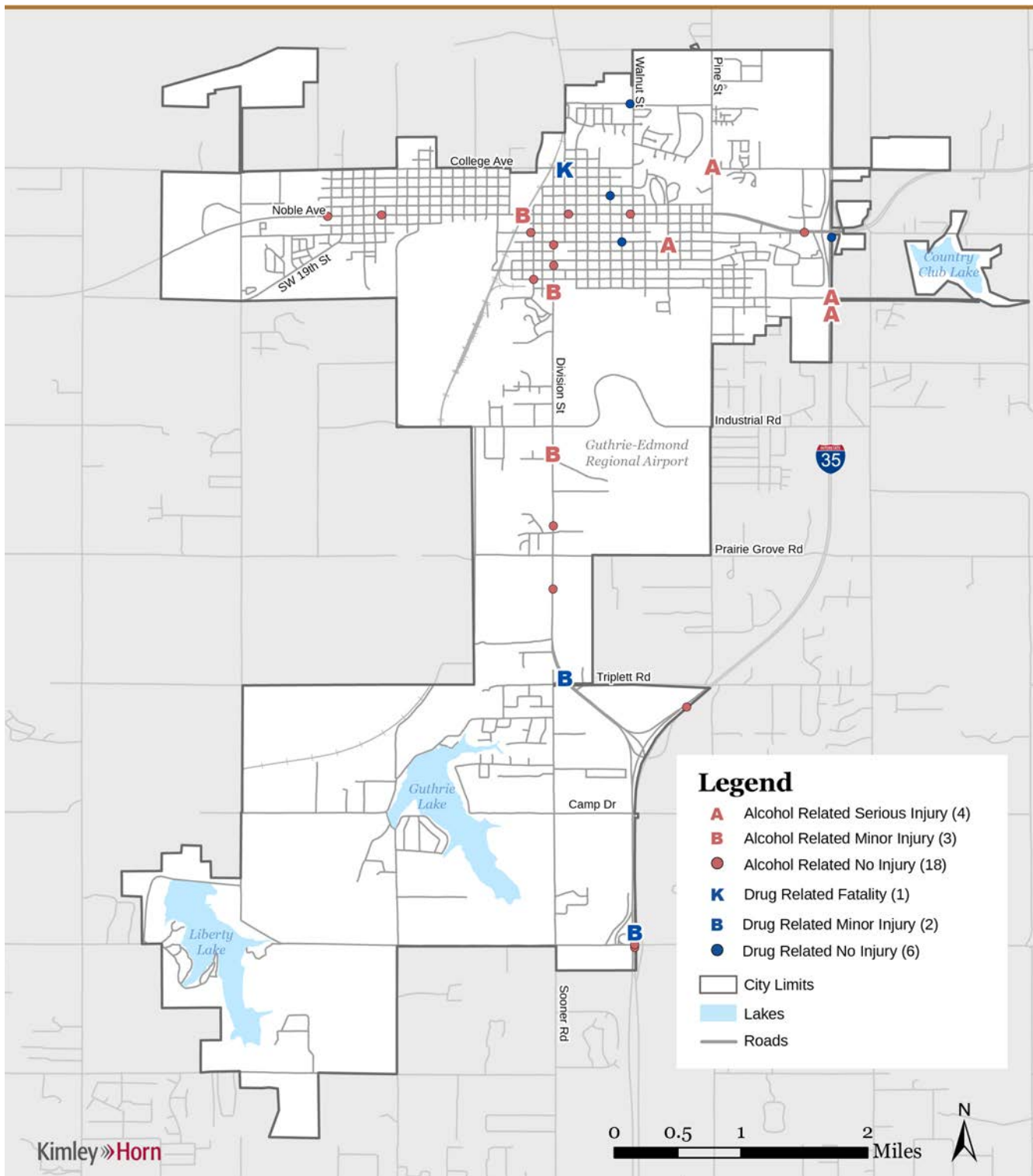
Source: Adobe Stock

From 2017-2021, the City experienced 34 total impaired driving-related crashes, with 10, or 29.4%, of those resulting in a KAB (fatality, serious injury, or minor injury) as shown in **Table 10**. Impaired driving contributes to a high likelihood of a crash resulting in a KAB in Guthrie. **Exhibit 8** on page 38 displays the locations of all impaired driving crashes that occurred in Guthrie from 2017-2021. Downtown Guthrie experiences the most impaired driving related crashes.

Table 10. Impaired Driving Crash Data (2017-2021)

CRASH TYPE	TOTAL CRASHES	HIGH INJURY CRASHES (KABS)	PERCENT KABS
Alcohol Related Crashes	25	7	28.0%
Drug Related Crashes	9	3	33.3%
All Impaired Driving Crashes	34	10	29.4%
All Crashes	871	86	9.9%

Exhibit 8. Impaired Driving Crashes





Commercial Motor Vehicles and Work Zones



A Commercial Motor Vehicle (CMV) is described by the Federal Motor Carrier Safety Administration (FMCSA) as a vehicle with a gross weight of 10,001 pounds or more. Due to the weight of a CMV, the force of impact in any crash can be fatal. CMV-related crashes result from CMV driver and non-CMV driver behaviors such as distracted driving, impaired driving, speeding, unsafe lane changes, and following too closely. Fatal and severe injury CMV crashes primarily occur on highways with dry roadway conditions in the daylight. Work zone-related crashes occur where there is roadway construction, maintenance, or utility work taking place. Work zones should be clearly marked and have reduced speed limits. Work zones may have a reduced number of lanes, reduced lane width, improper pavement markings, heavy machinery, and workers present. Driver inattention due to impairment or distraction in a work zone is extremely hazardous.



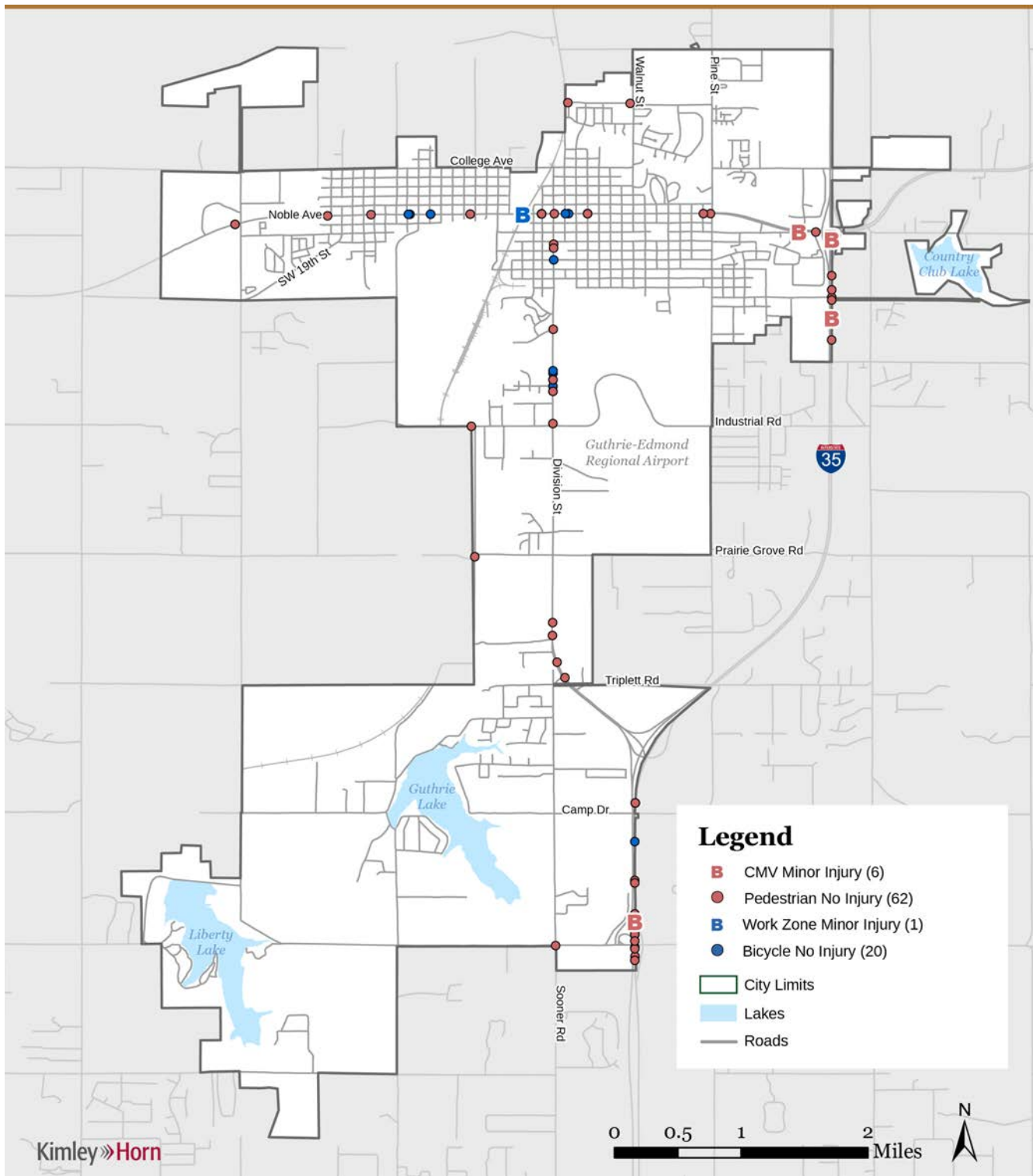
Source: Adobe Stock

The majority of CMV and work zone crashes in Guthrie occur along primary roadways such as I-35, SH 77 (Division St), and SH 33 (Noble Ave). A total of 68 crashes occurred in the City of Guthrie involving CMVs and 21 crashes in work zones. Of the CMV and work zone related crashes, 7 resulted in a KAB during 2017-2021. These crashes result in a slightly lower percentage of KABs compared to the City average. In Guthrie, CMV and work zone crashes are not as severe of an issue in comparison to the state. **Table 11** showcases the CMV and work zone crash data and **Exhibit 9** on page 40 displays these crashes.

Table 11. CMV and Work Zone Crash Data

CRASH TYPE	TOTAL CRASHES	HIGH INJURY CRASHES (KABS)	PERCENT KABS
Commercial Motor Vehicle Crashes	68	6	8.8%
Work Zone Crashes	21	1	4.8%
All CMV and Work Zone Crashes	89	7	7.9%
All Crashes	871	86	9.9%

Exhibit 9. Commercial Motor Vehicles & Work Zone Crashes





Equity Considerations

Equity is a crucial consideration when prioritizing and selecting future transportation investment opportunities in Guthrie. Equity involves shaping resources and interventions to meet the specific needs of all people, ensuring that vulnerable communities have the necessary support and investments to achieve similar safety goals. The U.S. Department of Transportation (USDOT) defines disadvantaged census tracts as communities that score at the 65th percentile based on national scoring data; scoring is conducted through an assessment based on the following criteria:

✓ **Transportation Insecurity**

Lack of reliable transportation options for users to get to their desired destination, which includes access to public transportation.

✓ **Environmental Burden**

Environmental characteristics such as pollution, hazardous material exposure, or the built environment that contribute to health disparities, negative educational outcomes, and economic hardships.

✓ **Social Vulnerability**

Socioeconomic factors such as poverty rates contribute to a larger burden on individuals

✓ **Health Vulnerability**

Assesses the increased prevalence of health conditions that may result from air, noise, water pollution, and other lifestyle factors such as poor walkability and long commute times.

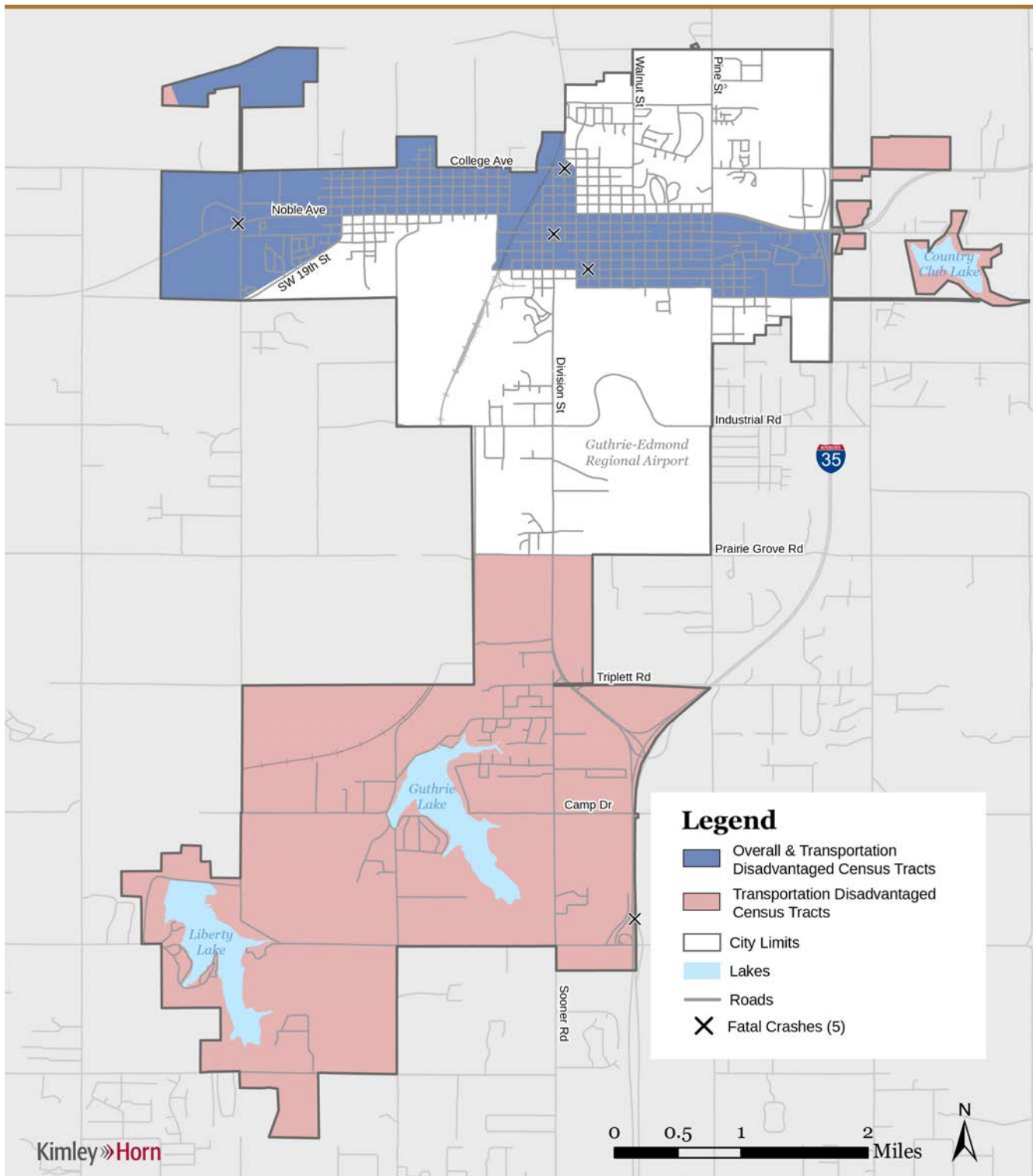
✓ **Climate and Disaster Risk Burden**

Measures the current and future risks to communities from climate and natural disasters, based on potential losses from existing hazard exposure and vulnerability.

The five components are scored, summed, and the resulting percentiles are ranked to create the final score. Disadvantaged census tracts may also experience higher rates of traffic crashes while having inadequate infrastructure for vulnerable road users. Identifying these tracts played a crucial part in the analysis of corridors for Guthrie CSAP and allows the project identification process to incorporate equity opportunities.

Exhibit 10 on page 42 displays the Overall and Transportation Disadvantaged Census Tracts in Guthrie. This input is a combination of the five criteria for the equity analysis. It is important to note that all five fatal crashes in Guthrie from 2017-2021 occurred in a disadvantaged census tract. Due to this, it was a focal point of the CSAP to address safety concerns in disadvantaged areas to ensure traffic safety for all people. This analysis was used to prioritize the study corridors found in **Chapter 5** to ensure an equitable selection process for the CSAP.

Exhibit 10. Disadvantaged Census Tracts





COMPREHENSIVE SAFETY ACTION PLAN



CHAPTER 4 *HIGH INJURY NETWORK*

INTRODUCTION

To build on the analysis covered in the preceding chapter, **Chapter 4** will provide details on the decision-making analysis conducted to aid in project selection and prioritization: High Injury Network. The crash analysis displays traffic safety concerns in the City of Guthrie and specific safety emphasis areas of concern. This chapter will filter down the locations that are experiencing high numbers of fatal and severe injury crashes and prioritize corridors needing safety countermeasures.

What is the High Injury Network?

Critical Crash Rate Method

High Injury Network Results



What is the High Injury Network?

The high injury network (HIN) is a network of road segments in the City that experience a higher-than-average rate of crashes resulting in fatal, severe, and minor injuries (KABs). The HIN is a key component of Vision Zero, aiming to provide safe mobility for roadway users. Through analyzing crash data, functional classifications, and traffic volumes, the HIN targets the roadways and intersections where a disproportionately high number of KABs occur to provide the most significant impact on road safety.

This network is meant to assist Guthrie in prioritizing future transportation projects and investments. Identifying road segments with the most severe and frequent crashes is the first step in developing countermeasures and policy recommendations to improve safety for all.

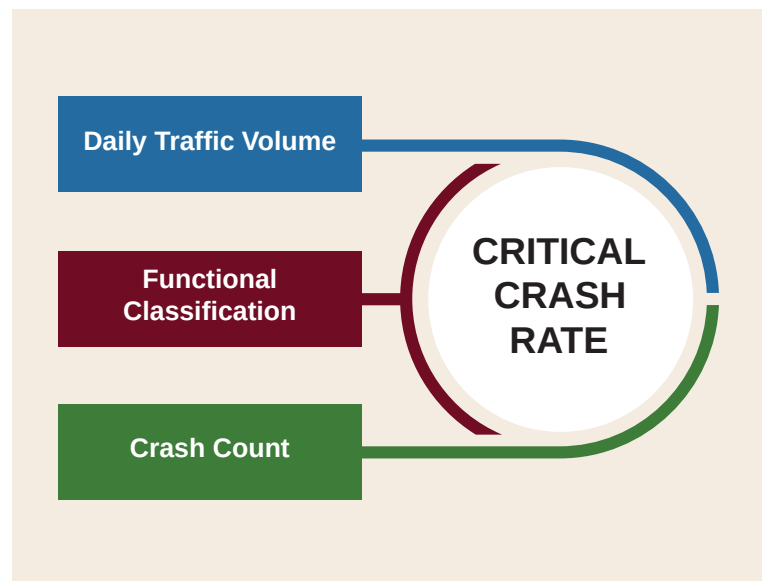
Critical Crash Rate Method

Calculating critical crash rates involves comparing roadway segments of similar functional classes and contexts, normalized by vehicle miles traveled (VMT). If the observed crash rate on a segment exceeds the expected crash rate, this means the segment has a critical crash rate and is flagged to potentially be added to the HIN. These steps are further detailed in **Chapter 4** of the Highway Safety Manual (pages 4-41 – 4-45; Section 4.4.2.5).

Since the critical crash rate method requires several intermediate calculations to arrive to the final crash rate, an ArcGIS Pro model was created to complete these calculations for each segment on Guthrie's network.

The critical crash rate was calculated for each segment in the City's network using the following three steps:

Figure 17. High Injury Network Data Inputs



1. Assigning Data to Road Segments

Calculating the critical crash rate requires three data inputs: roadway functional classification, daily traffic volumes, and weighted crash counts. Crashes were weighted by severity to ensure that areas with fatal crashes were prioritized in the development of the HIN. The critical crash rate compares road segments of the same functional classification and normalizes daily traffic volumes to evenly evaluate roads against others of a similar function.

2. Calculate Variables of Critical Crash Rate

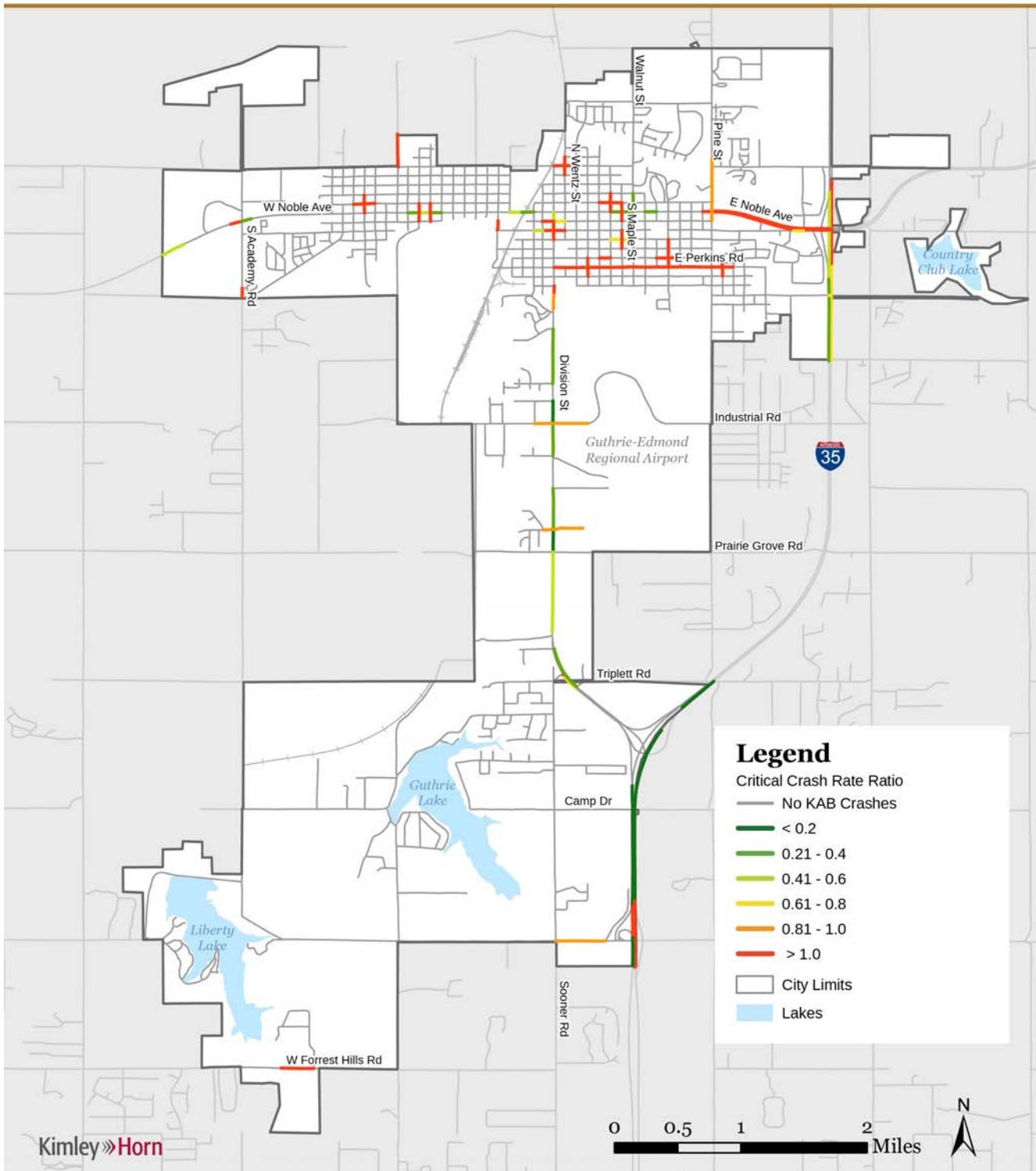
The variables of the critical crash rate were calculated using the equations specified in the FHWA Highway Safety Manual. The critical crash rate compares the difference between the observed crash rate and the expected crash rate. The observed crash rate is determined by using the existing crashes at each segment per 100 million VMT. The expected average crash rate per 100 million VMT normalizes the daily volumes for each functional class per context. After both values are calculated for a segment, the equation highlights segments that experience a higher crash rate than what is expected for a segment of its functional classification, context, traffic volume, and weighted crash counts.

3. Calculate Critical Crash Rate Ratio

Once all variables are input, a ratio is calculated to identify segments experiencing higher-than-average rates of fatal, serious, and minor injury crashes. If the ratio is greater than 1.0, or the observed critical crash rate is higher than the critical crash rate, then the segment's crash history is higher than other road segments of similar functional classification and context. Segments with a high critical crash rate ratio were considered for the HIN.

Exhibit 11 on page 46 displays the results of the critical crash rate analysis.

Exhibit 11. Critical Crash Rates Results





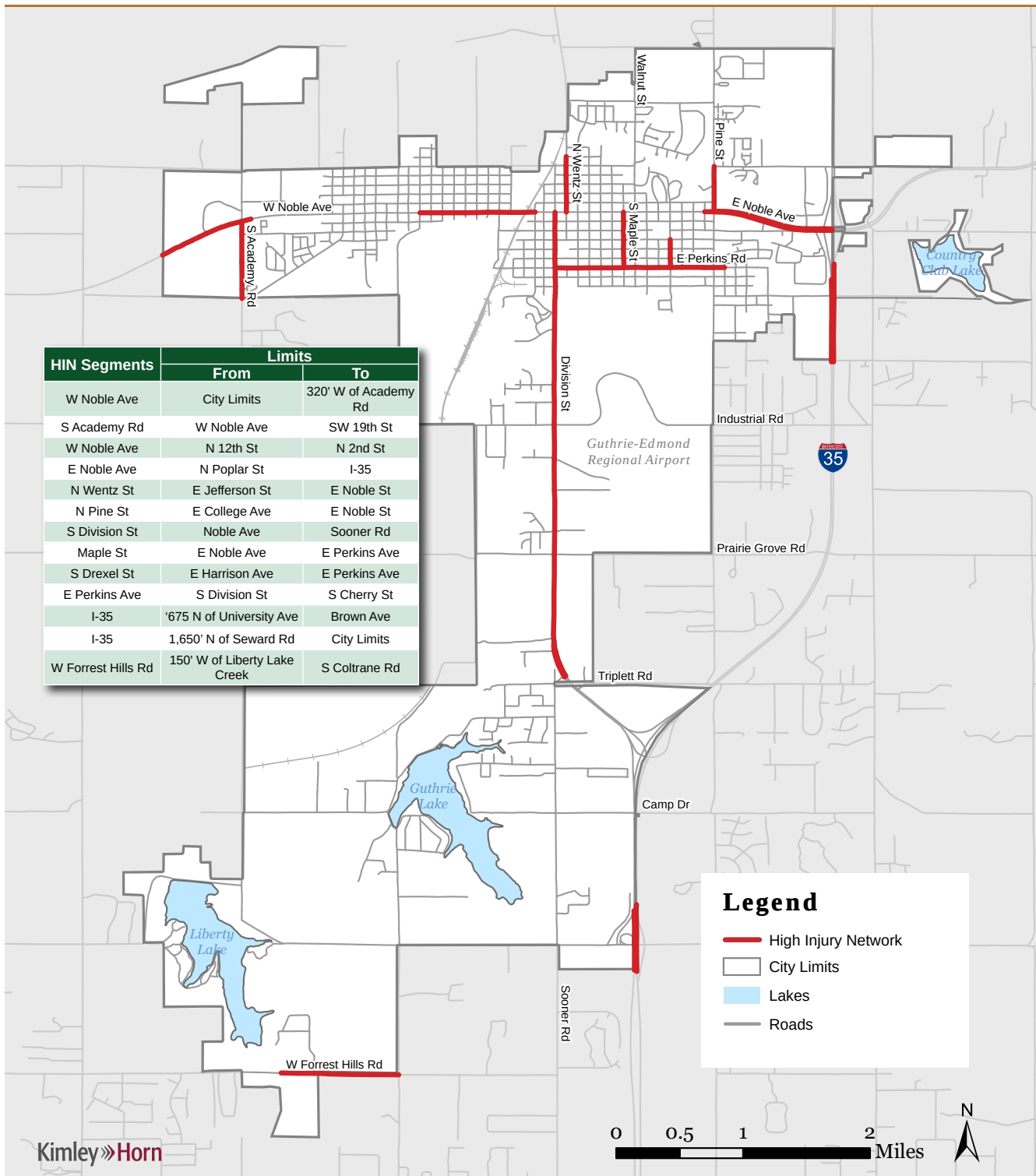
High Injury Network Results

Creating the HIN requires both a qualitative and quantitative approach. While the critical crash rate method produces results that identify segments with higher-than-average crash rates, finalizing the network requires post processing. Gaps between the remaining segments were connected to create a consistent and continuous network. Ultimately, the goal of the HIN selection process is to maximize the total fatal, severe, and minor injury crashes on the least mileage of roads on the network. The final HIN for the City of Guthrie comprises of only 8.5% of the total road network while capturing 100% of all fatal crashes and 68.6% of all fatal, suspected serious, and suspected minor injury crashes. **Table 12** and **Exhibit 12** display the HIN.

Table 12. High Injury Network Segments

HIN SEGMENTS	LIMITS		LENGTH (MILES)	CRASHES			TOTAL KABS	AADT
	FROM	TO		K	A	B		
W Noble Ave	City Limits	320' W of Academy Rd	0.63	1	2	3	6	9,700
S Academy Rd	W Noble Ave	SW 19th St	0.60	0	1	0	1	1,100
W Noble Ave	N 12th St	N 2nd St	0.73	0	0	4	4	9,700
E Noble Ave	N Poplar St	I-35	0.80	0	1	15	16	11,200
N Wentz St	E Jefferson St	E Noble Ave	0.43	1	0	0	1	3,500
N Pine St	E College Ave	E Noble Ave	0.35	0	1	8	9	4,000
S Division St	Noble Ave	Sooner Rd	3.60	1	3	18	22	13,105
Maple St	E Noble Ave	E Perkins Ave	0.43	0	0	2	2	270
S Drexel St	E Harrison Ave	E Perkins Ave	0.22	0	1	1	2	180
E Perkins Ave	S Division St	S Cherry St	1.07	1	0	1	2	420
I-35	I-35 Frontage Road Ramps	Brown Ave	0.76	0	2	1	3	38,090
I-35	I-35 Frontage Road Ramps	I-35 Frontage Road Ramps	0.52	1	1	4	6	46,300
W Forrest Hills Rd	150' W of Liberty Lake Creek	S Coltrane Rd	0.74	0	1	0	1	1,500

Exhibit 12. High Injury Network Results





COMPREHENSIVE SAFETY ACTION PLAN



CHAPTER 5 *COUNTERMEASURES*

INTRODUCTION

This chapter of the Guthrie CSAP defines the countermeasure-based recommendations for the highest priority corridors. A total of 5 corridors were selected for further study based on crash history roadway geometry, existing intersection control, and context. In addition to the targeted recommendations for the study corridors, a Systemic Countermeasures Toolbox was developed for the City to utilize. This toolbox consists of a variety of roadway countermeasures that can be used by the City of Guthrie to enhance safety on city roadways.

Systematic Countermeasure Toolbox

Targeted Recommendations



Systemic Countermeasure Toolbox

The Systemic Countermeasure Toolbox details specific safety countermeasures that can be implemented in Guthrie to enhance roadway safety. Countermeasures in the toolbox can be applied to any roadway in the City, though roads that are within disadvantaged census tracts or on the high injury network is recommended to be prioritized. Additionally, all countermeasures in the toolbox are included in the [FHWA's Proven Safety Countermeasures](#) list. Implementing countermeasures on roadways can have a significant impact on the number of severe crashes in Guthrie. The systemic countermeasures toolbox shown in **Table 13** is a comprehensive collection of strategies and countermeasures developed to address safety issues.

Each countermeasure in the toolbox receives Crash Modification Factor (CMF) ID and a CMF score. According to the Crash Modification Factor Clearinghouse, CMF is defined as a factor that indicates the ratio of crashes that would be expected after implementing a countermeasure. CMFs with a value less than 1.0 indicate an expected decrease in crashes. CMFs greater than 1.0 indicate an expected increase in crashes.

Table 13. Systemic Safety Countermeasures

SAFETY EMPHASIS AREAS	CMF ID	CMF	OCCUPANT PROTECTION	INTERSECTIONS	MOTORCYCLES & ATVS	VULNERABLE ROAD USERS	UNSAFE SPEED	ROADWAY & LANE DEPARTURES	IMPAIRED DRIVING	COMMERCIAL MOTOR VEHICLES & WORK ZONES
APPROPRIATE SPEED LIMITS	11288	0.856	●		●	●	●			●
BIKE LANES	10737	0.435				●	●			
CORRIDOR ACCESS MANAGEMENT	178	0.69		●						
CROSSWALK VISIBILITY ENHANCEMENTS	4123	0.6		●		●				
DEDICATED LEFT- AND RIGHT-TURN LANES AT INTERSECTIONS	MULTIPLE	0.52 – 0.86*		●						
ENHANCED DELINEATION FOR HORIZONTAL CURVES	2431	0.82			●		●	●		●
LONGITUDINAL RUMBLE STRIPS AND STRIPES ON TWO-LANE ROADS	6852	0.742	●		●	●	●	●	●	●
MEDIANS AND PEDESTRIAN REFUGE ISLANDS	2219	0.29	●		●	●	●	●	●	
PEDESTRIAN HYBRID BEACONS	10585	0.883				●	●	●		
RECTANGULAR RAPID FLASHING BEACONS (RRFB)	11158	0.31		●		●				
REDUCED LEFT-TURN CONFLICT INTERSECTIONS	10867	0.7029		●						
RETROREFLECTIVE BACKPLATES	1410	0.85		●					●	
ROADWAY RECONFIGURATION	2841	0.53	●		●	●	●	●		
ROUNDBABOUTS	10089	0.495	●	●			●			
SIDEWALKS	11246	0.598				●				
SYSTEMIC APPLICATION OF MULTIPLE LOW-COST COUNTERMEASURES AT STOP-CONTROLLED INTERSECTIONS	8874	0.734		●						
TARGETED LIGHTING	582	0.68			●	●		●		●
WIDER EDGE LINES	4737	0.635						●	●	
YELLOW CHANGE INTERVALS	4203	0.99		●						



Appropriate Speed Limits

Speed limit signs often match the speed limits established by state law. Agencies or municipalities with the authority to set speed limits can establish speed limits that differ from the statutory speed limits or designate areas as reduced speed zones, and many are doing so. Roadway safety experts agree that speed control is one of the most effective methods for reducing fatal and serious injury crashes.

Drivers may be unaware of conditions along a corridor and choose speeds that feel appropriate to them but may not be safe for all users - particularly vulnerable groups like children and older adults.

Figure 18. Appropriate Speed Limits



Source: Adobe Stock



CMF: 0.856

Safety Emphasis Area Addressed:

Unsafe Speeds, Vulnerable Road Users, Occupant Protection, Commercial Motor Vehicles and Work Zones, Motorcycles and All-Terrain Vehicles

Bike Lanes

Bike lanes are designated sections of a roadway that are reserved for bicycles and are typically marked with pavement markings and signage. Bike lanes provide cyclists with their own dedicated space to ride and improve safety conditions by reducing conflicts with motor vehicles, encouraging more people to choose bicycling as a mode of transportation. **Adding bike lanes has been shown to significantly reduce crashes by up to 49% on urban four-lane undivided roads, and by 30% on two-lane undivided roads according to FHWA.**

Figure 19. Bike Lanes



Source: Adobe Stock



CMF: 0.435

Safety Emphasis Area Addressed:

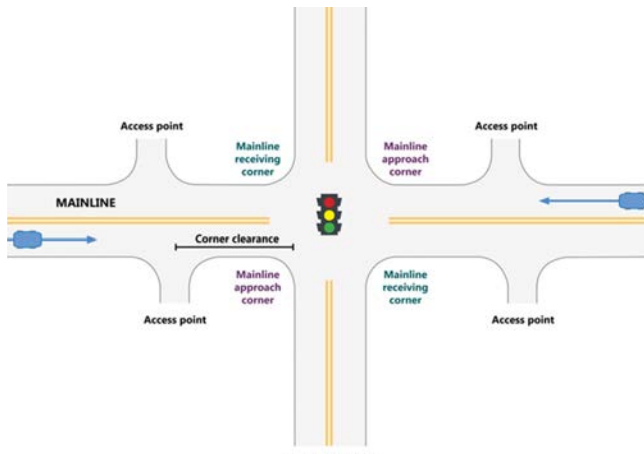
Unsafe Speeds, Vulnerable Road Users



Corridor Access Management

Access management involves the planning and regulation of where vehicles can enter or exit a roadway, including intersections and driveways. When applied thoughtfully, it can improve safety for all users, support walking and biking, and reduce delays and congestion. Common strategies include spacing intersections appropriately, adding protected turn lanes, and limiting conflict points. **Along urban and suburban arterials, effective access management can lead to a 25% to 31% reduction in fatal and injury crashes.**

Figure 20. Corridor Access Management



Source: FHWA



CMF: 0.69

Safety Emphasis Area Addressed:
Intersections

Crosswalk Visibility Enhancements

Crosswalk visibility enhancements include a range of strategies that can be used individually or together to improve safety. High-visibility crosswalks, often made with inlay or thermoplastic tape, are designed to be easily seen by both drivers and pedestrians from a distance. Upgraded lighting improves visibility by using forward-facing fixtures that create a strong contrast and better illuminate pedestrians. Additional signage and pavement markings can warn drivers in advance that a crosswalk is ahead. **These improvements, especially high-visibility crosswalks, have been shown to reduce pedestrian injury crashes by up to 40%.**

Figure 21. Crosswalk Visibility Enhancements



Source: Adobe Stock



CMF: 0.6

Safety Emphasis Area Addressed:
Vulnerable Road Users, Intersections



Dedicated Left- and Right-Turn Lanes at Intersections

Auxiliary turn lanes designed for left or right turns create a dedicated space for vehicles to slow down or stop without disrupting the flow of through traffic. These lanes help reduce delays and improve safety by separating turning vehicles from moving traffic, especially at intersections. **They are particularly effective at two-way stop-controlled intersections, where dedicated turn lanes can lead to a 28% to 48% reduction in total crashes.**

Figure 22. Dedicated Left- and Right-Turn Lanes at Intersections



Source: Adobe Stock



CMF: 0.52 – 0.86

Safety Emphasis Area Addressed:
Intersections

Enhanced Delineation for Horizontal Curves

Enhanced delineation for horizontal curves involves a variety of strategies used before and within the curve to help drivers navigate safely. Pavement markings, including center and edge lines, guide drivers in maintaining proper lane position. In-lane curve warning markings—typically solid center lines on two-lane roads—signal that a curve is ahead. Retroreflective strips on signposts help catch drivers' attention at night by reflecting headlights, while delineators—reflective devices mounted on posts or barriers—help drivers stay aligned with the road. Chevron signs placed along the outer edge of a curve indicate its direction and reinforce safe navigation. Visibility can be further improved by upgrading to larger, more reflective signs. Advanced tools like dynamic curve warning systems detect vehicle speeds and alert drivers when they're approaching a curve too quickly. **One of the most effective measures, Sequential Dynamic Chevrons, has been shown to reduce fatal and injury crashes by up to 60%.**

Figure 23. Enhanced Delineation for Horizontal Curves



Source: Adobe Stock



CMF: 0.82

Safety Emphasis Area Addressed:
Roadway & Lane Departures, Unsafe Speeds,
Motorcycles and All-Terrain Vehicles,
Commercial Motor Vehicles and Work Zones

Longitudinal Rumble Strips and Stripes on Two-Lane Roads

Longitudinal rumble strips are grooves or raised patterns milled or painted into the roadway surface that produce noise and vibration to alert drivers when they begin to drift out of their lane. These strips are typically placed along the shoulder, edge line, or centerline of undivided roads to help prevent vehicles from unintentionally crossing into oncoming traffic or off the roadway. **On two-lane rural roads, longitudinal rumble strips have been shown to reduce head-on fatal and injury crashes by 44% to 64%.**

Figure 24. Longitudinal Rumble Strips and Stripes on Two-Lane Roads



Source: Adobe Stock



CMF: 0.742

Safety Emphasis Area Addressed:

Roadway & Lane Departures, Unsafe Speeds, Vulnerable Road Users, Impaired Driving, Occupant Protection, Commercial Motor Vehicles and Work Zones, Motorcycles and All-Terrain Vehicles

Medians and Pedestrian Refuge Islands

In urban and suburban areas, medians help separate motorized and non-motorized road users typically by pavement markings, raised areas, or islands. They provide a safe refuge for pedestrians crossing streets. **A median with marked crosswalks can lead to a 46% reduction in pedestrian crashes.**

A pedestrian refuge island is a type of median designed to give people a safe place to wait while crossing the road. **These islands can significantly improve safety, contributing to a 56% reduction in pedestrian crashes.**

Figure 25. Medians and Pedestrian Refuge Islands



Source: Adobe Stock



CMF: 0.29

Safety Emphasis Area Addressed:

Roadway & Lane Departure, Unsafe Speed, Vulnerable Road Users, Impaired Driving, Occupant Protection, Motorcycle and All-Terrain Vehicles



Pedestrian Hybrid Beacons

The pedestrian hybrid beacon (PHB) is a traffic control device designed to help pedestrians safely cross busy or higher-speed roadways, especially at midblock crossings or intersections without stop signs or signals. PHBs are particularly effective on roads with three or more lanes or in areas with heavy traffic. In communities where PHBs are new, public education may be needed to help drivers and pedestrians understand how to use them. **When implemented, PHBs can reduce pedestrian crashes by up to 55%.**

Figure 26. Pedestrian Hybrid Beacon



Source: Adobe Stock



CMF: 0.883

Safety Emphasis Area Addressed:

Roadway & Lane Departure, Unsafe Speed,
Vulnerable Road Users

Rectangular Rapid Flashing Beacons (RRFB)

A rectangular rapid flashing beacon (RRFB) is a pedestrian-activated traffic control device used at crosswalks to increase visibility and alert drivers people crossing. When activated, the RRFB emits a rapid, alternating pattern of flashing lights that signals drivers to yield to pedestrians crossing the street. **According to FHWA, RRFBs can achieve motorist yielding rates as high as 98% at marked crosswalks, even in areas with varying speed limits, crossing distances, and numbers of travel lanes.**

Figure 27. Rectangular Rapid Flashing Beacons



Source: FHWA



CMF: 0.31

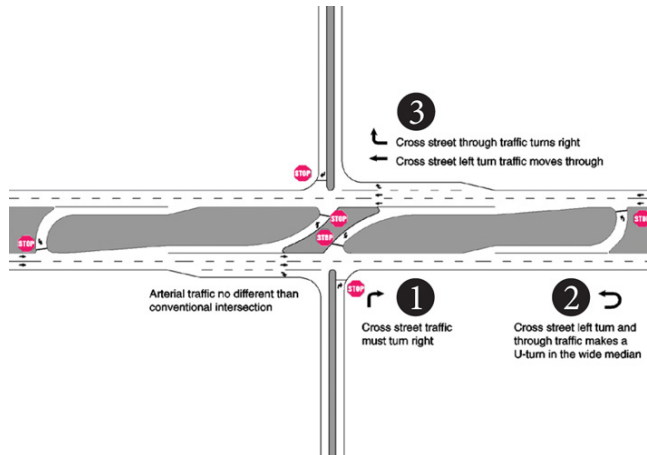
Safety Emphasis Area Addressed:

Intersections, Vulnerable Road Users

Reduced Left-Turn Conflict Intersections

Reduced left-turn conflict intersections are roadway designs that change how left turns are made, typically by redirecting drivers to make a U-turn at a designated location. This design reduces conflict points, simplifies decision-making, and lowers the risk of severe crashes—such as head-on and angle collisions. **Reduced left-turn conflict intersections have been shown to reduce fatal and injury crashes by up to 54%.**

Figure 28. Reduced Left-Turn Conflict Intersections



Source: FHWA



CMF: 0.7029

Safety Emphasis Area Addressed:
Intersections

Retroreflective Backplates

A retroreflective backplate is a traffic signal enhancement that frames the signal with a 1- to 3-inch yellow retroreflective border. This border increases the signal's visibility by creating greater contrast against the surrounding environment, making it easier for drivers to see during the day and at night. **Retroreflective backplates have been shown to reduce total crashes by up to 15%.**

Figure 29. Retroreflective Backplates



Source: Adobe Stock



CMF: 0.85

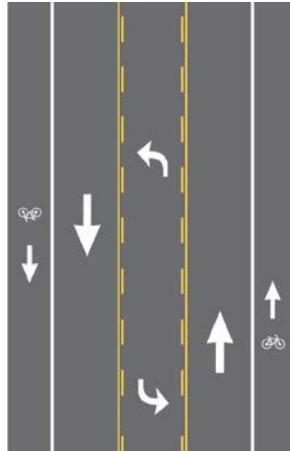
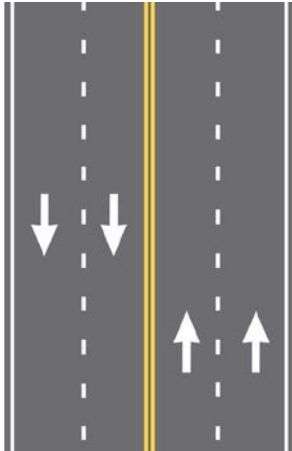
Safety Emphasis Area Addressed:
Intersections, Impaired Driving



Roadway Reconfiguration

A roadway reconfiguration typically involves converting an existing four-lane roadway into a three-lane roadway. This type of change can improve safety, calm traffic, and make the roadway more accessible for all users, including people walking or biking. By creating space for bike lanes or pedestrian areas, roadway reconfigurations help make streets more “complete” and contribute to a higher quality of life. **In 4-lane to 3-lane conversions, total crashes can be reduced by up to 47%.**

Figure 30. Roadway Reconfiguration



CMF: 0.53

Safety Emphasis Area Addressed:

Roadway & Lane Departures, Unsafe Speed, Vulnerable Road Users, Occupant Protection

Source: FHWA

Roundabouts

A roundabout is a circular intersection where traffic moves continuously around a central island, with vehicles entering yielding to those already inside. This design reduces conflict points, improves traffic flow, and enhances overall safety compared to traditional intersections. **Roundabouts can lead to a 78% to 82% reduction in fatal and injury crashes.**

Figure 31. Roundabouts



CMF: 0.59

Safety Emphasis Area Addressed:

Intersections, Unsafe Speed, Occupant Protection

Source: Adobe Stock

Sidewalks

A sidewalk is a designated path alongside a street meant specifically for pedestrians, providing a safe space for pedestrians to walk separated from vehicle traffic. Sidewalks improve safety by reducing the risk of pedestrian-vehicle collisions, encouraging walking as a transportation option, and ensuring accessibility for people of all ages and abilities. **When present, sidewalks can lead to as much as an 89% reduction in crashes involving pedestrians walking along roadways.**

Figure 32. Sidewalks



Source: Adobe Stock



CMF: 0.598

Safety Emphasis Area Addressed:
Vulnerable Road Users

Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections

A systemic approach to improving safety at stop-controlled intersections involves implementing a package of low-cost countermeasures, such as enhanced signage and pavement markings. These treatments help increase driver awareness and recognition of intersections and potential conflicts. **This strategy is associated with a 10% reduction in fatal and injury crashes across various locations, intersection types, and areas.**



Source: FHWA



CMF: 0.734

Safety Emphasis Area Addressed:
Intersections



Targeted Lighting

Although fatal crashes happen at similar rates during the day and night, the risk is much higher after dark. Nighttime fatality rates are three times higher than during the day, even though only about 25% of vehicle miles are traveled at night. One reason is that at higher speeds, drivers may not have enough time to react to hazards that only become visible within their headlights' range. Improving roadway lighting helps make the road more visible and safer for everyone. Adequate lighting, meeting or exceeding minimum recommended levels of horizontal and vertical illuminations support safer conditions for all road users. It also enhances personal security for people walking or biking along or across roadways. **Lighting upgrades, whether at intersections or along corridors, can reduce nighttime pedestrian crashes by up to 42%.**

Figure 33. Targeted Lighting



Source: Adobe Stock



CMF: 0.68

Safety Emphasis Area Addressed:

Intersections, Roadway & Lane Departures, Vulnerable Road Users, Commercial Motor Vehicles and Work Zones, Motorcycles and All-Terrain Vehicles

Wider Edge Lines

Edge lines are pavement markings placed along the outer edges of travel lanes to help drivers better identify the road's alignment, especially in low-visibility conditions. Increasing the width of these lines from the standard 4 inches to 6 inches can improve lane visibility and driver guidance. **On rural freeways, wider edge lines have been associated with up to a 22% reduction in fatal and injury crashes.**

Figure 34. Wider Edge Lines



Source: FHWA



CMF: 0.635

Safety Emphasis Area Addressed:

Roadway & Lane Departures, Impaired Driving



Yellow Clearance Intervals

The yellow clearance interval is the time a yellow light is displayed between the green and red light phases of a traffic signal. Properly timing this interval is critical for safety, as it helps drivers stop safely without encouraging them to speed through the intersection. Running Red-lights is a major cause of crashes and fatalities, and a well-timed yellow signal can promote safer driving behavior and effective speed management. **When appropriately timed, yellow clearance intervals can reduce red-light running by 36% to 50%.**

Figure 35. Yellow Clearance Intervals



Source: Adobe Stock



CMF: 0.99

Safety Emphasis Area Addressed:
Intersections



Targeted Recommendations

Five roadway segments were selected from the high injury network as study corridors for the CSAP. The chosen corridors received targeted recommendations that will improve safety on some of the most unsafe roads in Guthrie. The five study locations were selected based on the following criteria:

Figure 36. Study Corridor Selection Criteria

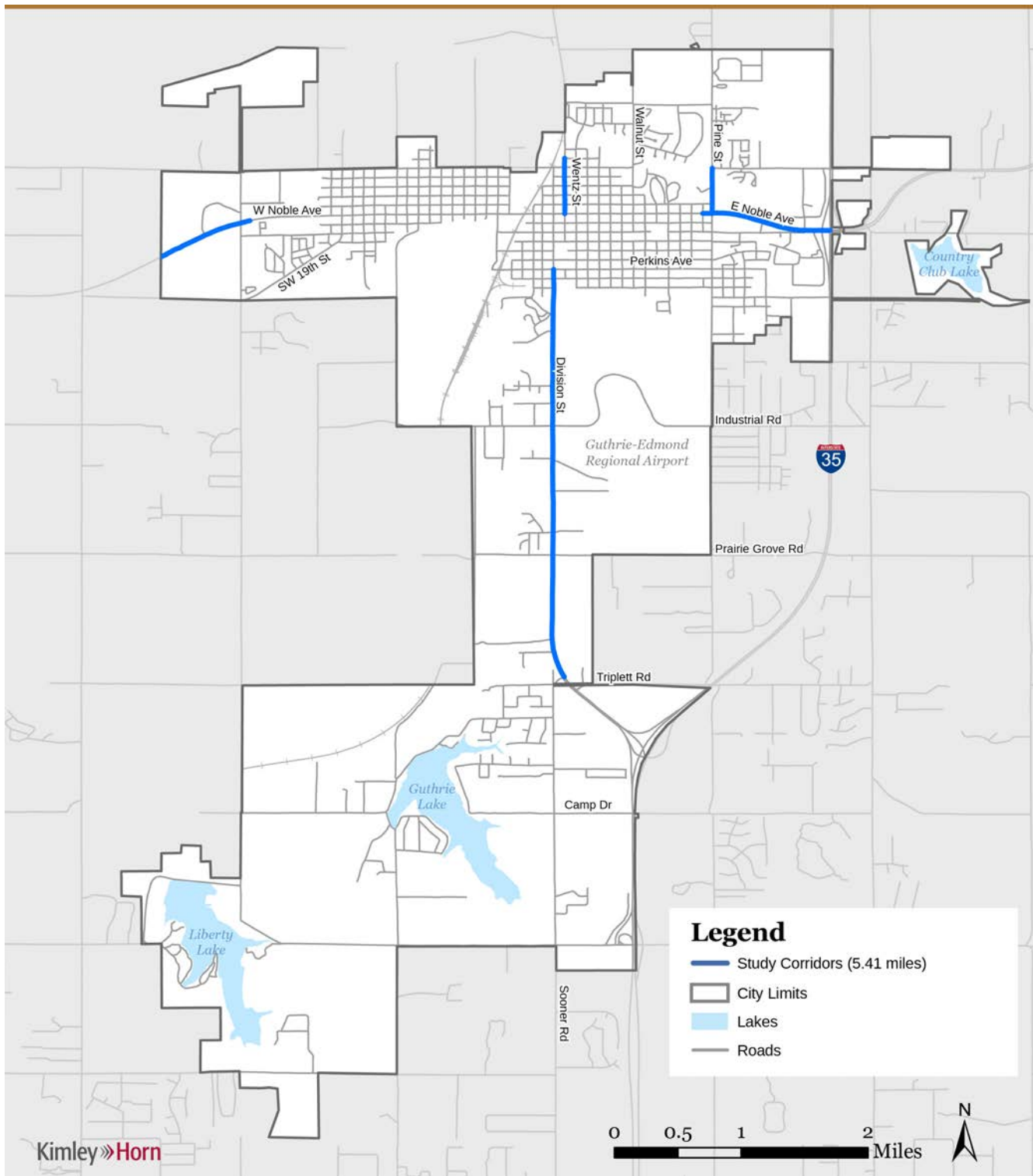
Equity	Engagement	Feasibility	Priority Corridor
- Disadvantaged Areas (USDOT ETC Explorer) - Transportation Disadvantaged Areas (USDOT ETC Explorer)	- Social Pinpoint Map Survey Comments - SSC Study Area Comments (from Meeting 2) - SSC Priority Corridor Selection (from Meeting 3)	- Current Roadway Projects - ODOT On/Off System	- Located on the HIN - Fatal Crashes

Table 14 below lists the five study corridors:

Table 14. Study Corridors

HIN SEGMENTS	LIMITS		LENGTH (MILES)	CRASHES			TOTAL KABS	AADT
	FROM	TO		K	A	B		
W Noble Ave	City Limits	320' W of Academy Rd	0.63	1	2	3	6	9,700
E Noble Ave	N Poplar St	I-35	0.80	0	1	15	16	11,200
N Wentz St	E Jefferson St	E Noble Ave	0.43	1	0	0	1	3,500
N Pine St	E College Ave	E Noble Ave	0.35	0	1	8	9	4,000
S Division St	Perkins Ave	Sooner Rd	3.20	1	3	18	22	13,105

Exhibit 13. Study Corridors





W Noble Ave

FROM CITY LIMITS TO ACADEMY RD

EXISTING CONDITIONS

- Primary/Principal Arterial
- 9,700 vehicles per day
- Two-lane undivided roadway
- 55 mph speed limit

CRASH SUMMARY

19 Total Crashes	1 Fatal Crash
0 Pedestrian & Bicyclist Crashes	2 Suspected Serious Injury Crashes
13 Intersection Related Crashes	3 Suspected Minor Injury Crashes

CONTRIBUTING FACTORS

Improper Turn

31.6%

Failed to Yield or Stop

26.3%

Driver Inattention

15.8%

Followed Too Close

10.5%

MANNERS OF COLLISION

Rear-End

36.8%

Angle-Turning

26.3%

Right-Angle

21.1%

Sideswipe-Same

10.5%

50%

50%

SAFETY EMPHASIS AREAS



Lane Departures



Impaired Driving



Vulnerable Road Users



Intersection Safety

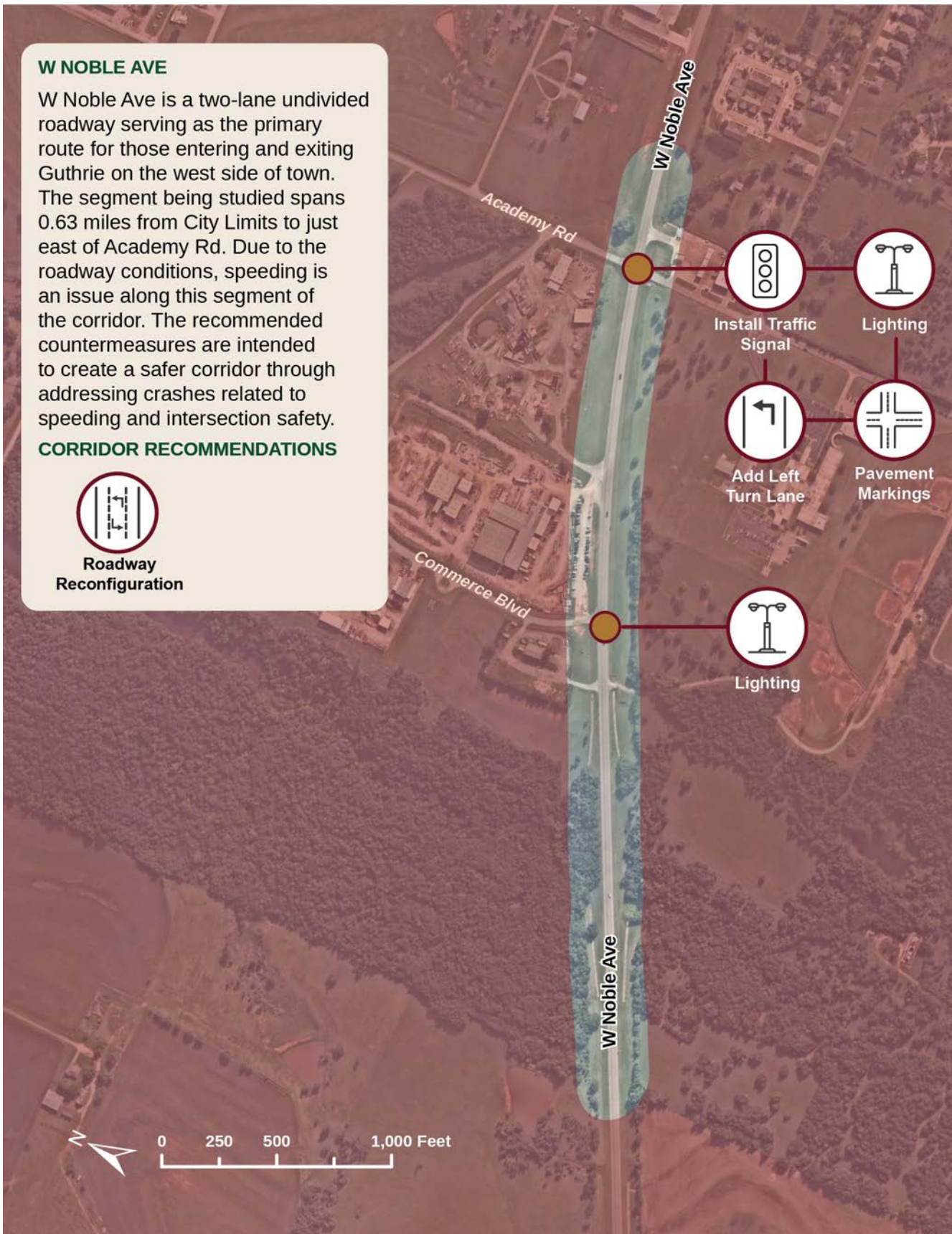


Speed Related



Commercial Motor Vehicles & Work Zones

Exhibit 14. W Noble Ave





E Noble Ave

FROM N POPLAR ST TO I-35 FRONTAGE RD

EXISTING CONDITIONS

- Primary/Principal Arterial
- 11,200 vehicles per day
- Four-lane undivided roadway
- 45 mph speed limit

CRASH SUMMARY

91 Total Crashes

0 Fatal Crash

0 Pedestrian & Bicyclist Crashes

1 Suspected Serious Injury Crashes

79 Intersection Related Crashes

8 Suspected Minor Injury Crashes

CONTRIBUTING FACTORS

Failed to Yield or Stop

53.8%

Improper Lane Change, Pass, or Turn

24.2%

Followed Too Close

7.7%

Driver Inattention

6.6%

50%

MANNERS OF COLLISION

Angle-Turning

51.6%

Right-Angle

17.6%

Rear-End

16.5%

Sideswipe-Same

5.5%

50%

SAFETY EMPHASIS AREAS



Lane Departures



Intersection Safety



Impaired Driving



Speed Related



Vulnerable Road Users



Commercial Motor Vehicles & Work Zones

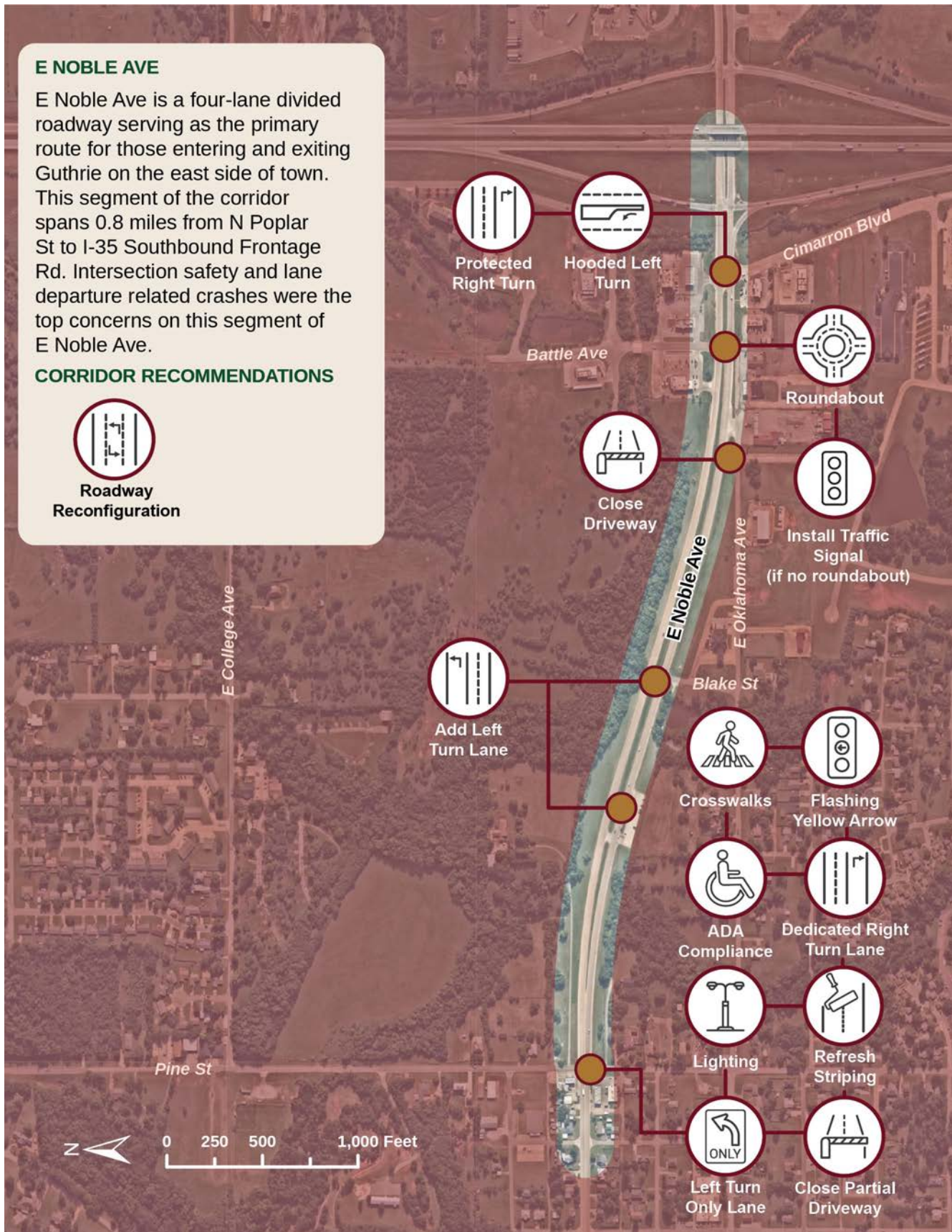
Exhibit 15. E Noble Ave

E NOBLE AVE

E Noble Ave is a four-lane divided roadway serving as the primary route for those entering and exiting Guthrie on the east side of town. This segment of the corridor spans 0.8 miles from N Poplar St to I-35 Southbound Frontage Rd. Intersection safety and lane departure related crashes were the top concerns on this segment of E Noble Ave.

CORRIDOR RECOMMENDATIONS

**Roadway
Reconfiguration**





N Wentz St

FROM E JEFFERSON AVE TO NOBLE AVE

EXISTING CONDITIONS

- Primary/Principal Arterial
- 3,500 vehicles per day
- Two-lane undivided roadway
- 35 mph speed limit

CRASH SUMMARY

25 Total Crashes	1 Fatal Crash
0 Pedestrian & Bicyclist Crashes	0 Suspected Serious Injury Crashes
21 Intersection Related Crashes	0 Suspected Minor Injury Crashes

CONTRIBUTING FACTORS

Failed to Yield or Stop

36.0%

Improper Back, Start, or Turn

24.0%

Driver Inattention

20.0%

Driving While Intoxicated

8.0%

MANNERS OF COLLISION

Rear-End

32.0%

Right-Angle

32.0%

Angle-Turning

8.0%

Other

8.0%

50%

50%

SAFETY EMPHASIS AREAS



Lane Departures



Impaired Driving



Vulnerable Road Users



Intersection Safety

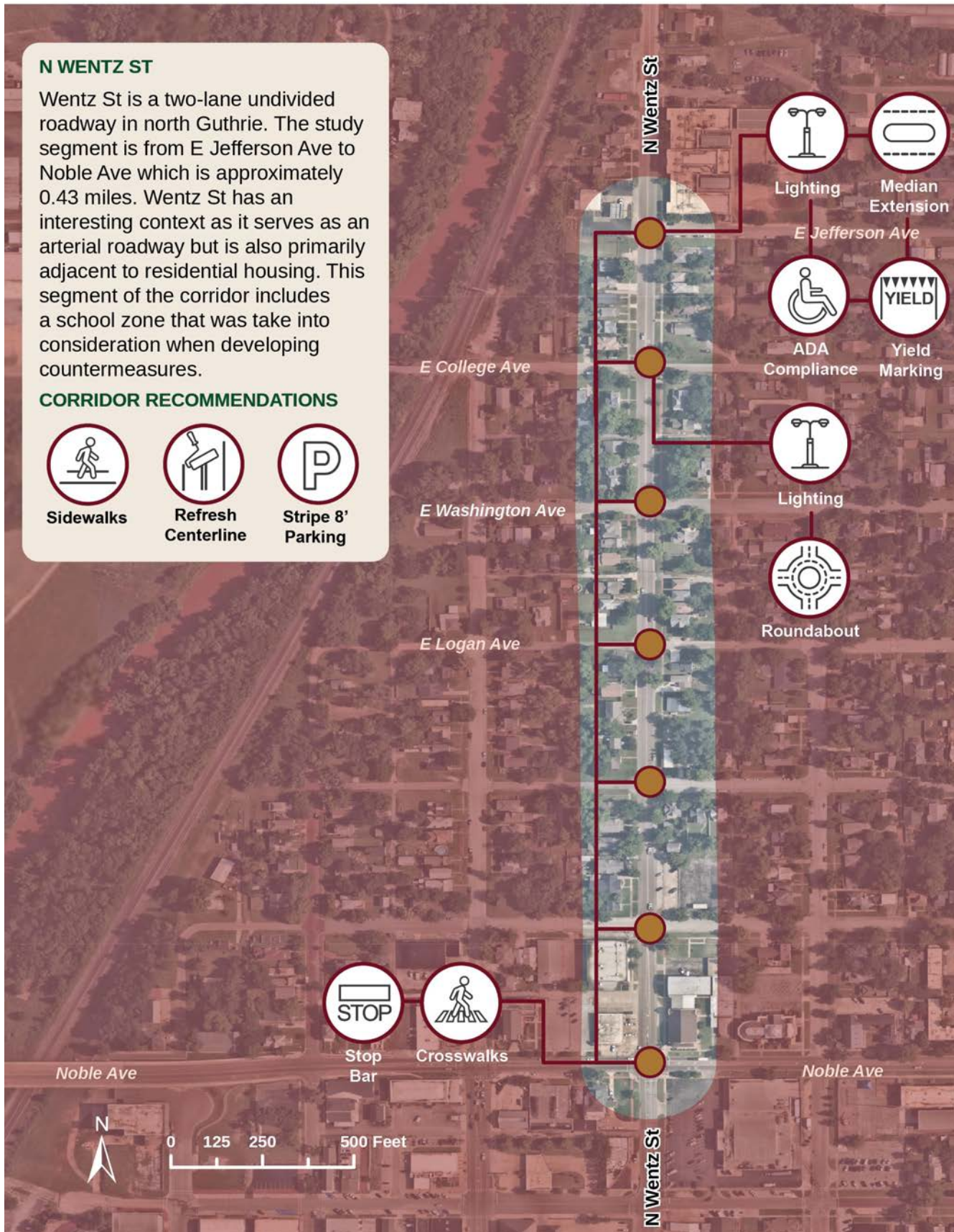


Speed Related



Commercial Motor Vehicles & Work Zones

Exhibit 16. N Wentz St





N Pine St

FROM E COLLEGE AVE TO NOBLE AVE

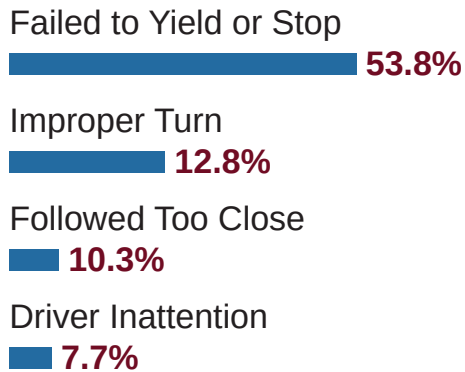
EXISTING CONDITIONS

- Minor Arterial
- 4,000 vehicles per day
- Two-lane undivided roadway
- 35 mph speed limit

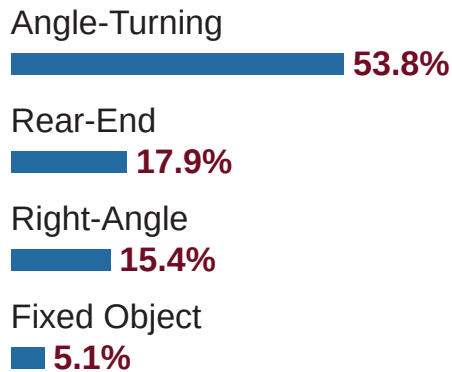
CRASH SUMMARY

39 Total Crashes	0 Fatal Crash
0 Pedestrian & Bicyclist Crashes	1 Suspected Serious Injury Crashes
39 Intersection Related Crashes	7 Suspected Minor Injury Crashes

CONTRIBUTING FACTORS



MANNERS OF COLLISION



50%

50%

SAFETY EMPHASIS AREAS



Lane Departures



Intersection Safety



Impaired Driving



Speed Related

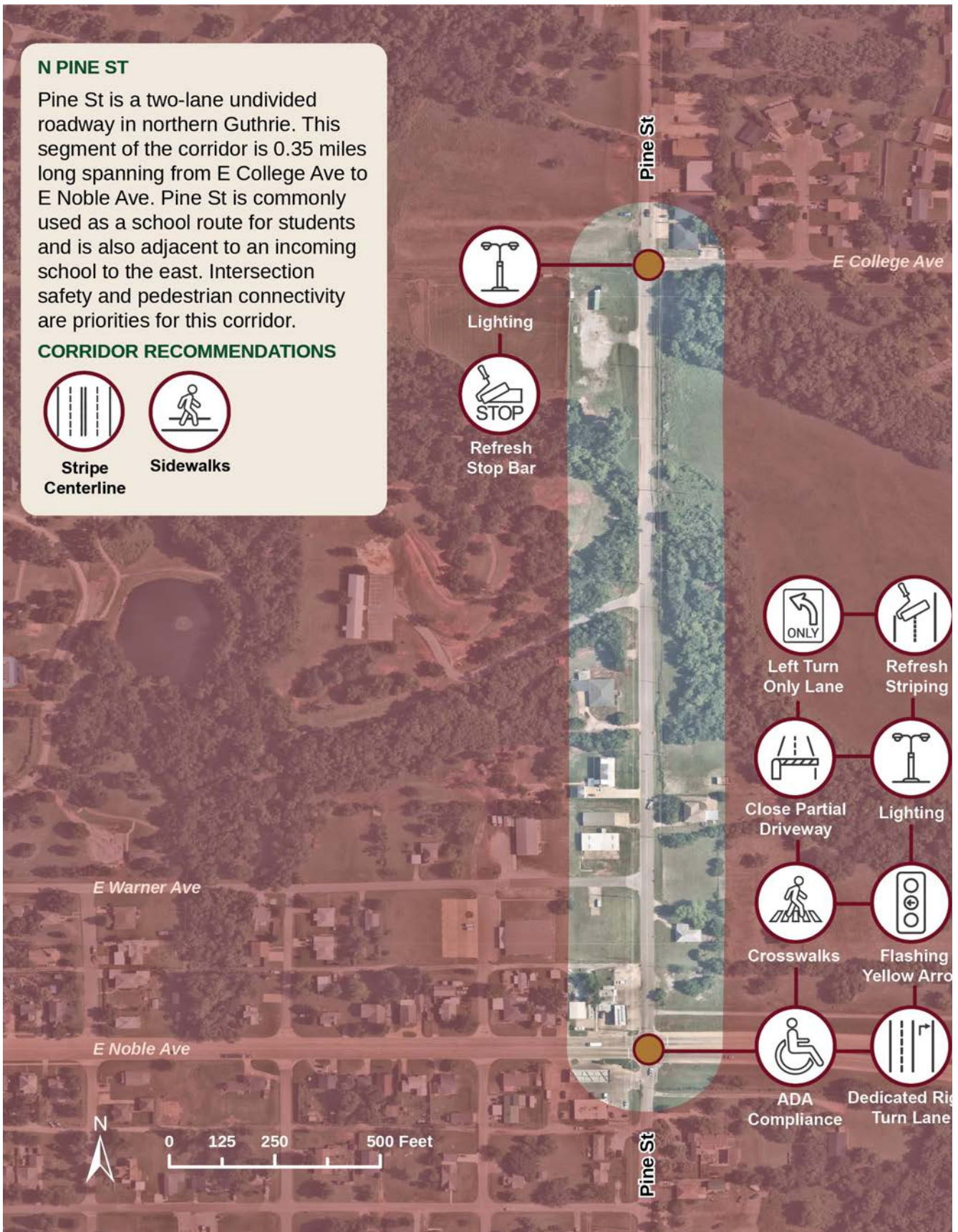


Vulnerable Road Users



Commercial Motor Vehicles & Work Zones

Exhibit 17. N Pine St





S Division St

FROM PERKINS AVE TO SOONER RD

EXISTING CONDITIONS

- Primary/Principal Arterial
- 13,100 vehicles per day
- Three-lane / Four-lane undivided roadway
- 45 mph speed limit

CRASH SUMMARY

195 Total Crashes	0 Fatal Crash
2 Pedestrian & Bicyclist Crashes	3 Suspected Serious Injury Crashes
68 Intersection Related Crashes	17 Suspected Minor Injury Crashes

CONTRIBUTING FACTORS

Failed to Yield or Stop

26.2%

Improper Turn

21.0%

Followed Too Close

21.0%

Driver Inattention

13.3%

MANNERS OF COLLISION

Angle-Turning

39.5%

Rear-End

29.7%

Right-Angle

9.2%

Fixed Object

5.6%

50%

50%

SAFETY EMPHASIS AREAS



Lane Departures



Impaired Driving



Vulnerable Road Users



Intersection Safety

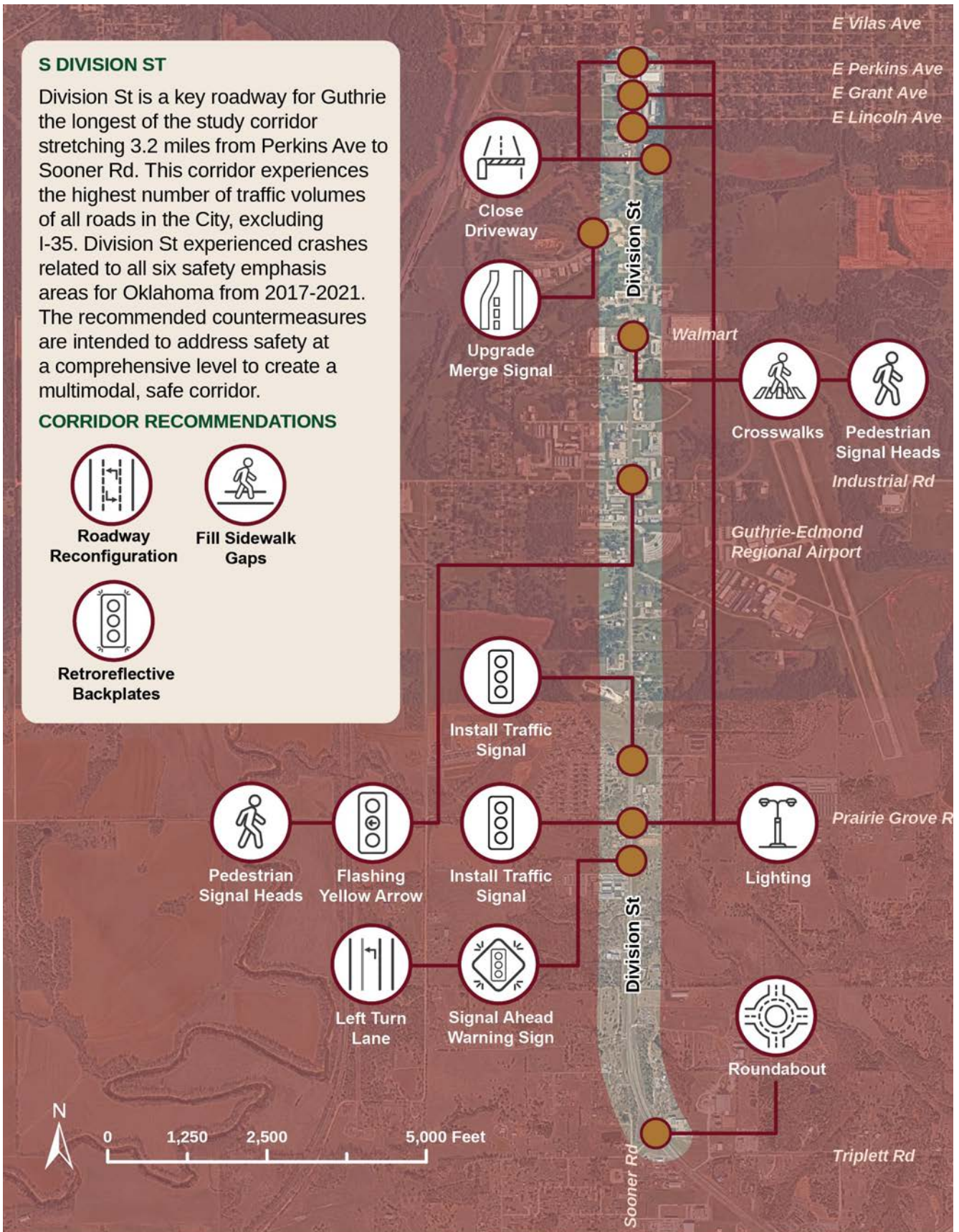


Speed Related



Commercial Motor Vehicles & Work Zones

Exhibit 18. S Division St





COMPREHENSIVE SAFETY ACTION PLAN



CHAPTER 6 *ACTION PLAN*

IMPLEMENTATION PROGRAM

This chapter outlines the recommended policies and programs that assist in achieving the Mission Statement set by the SSC. These policies and programs are meant to help solve the safety deficiencies in the City's transportation system. The policies and programs are organized by the six Guiding Principles discussed previously. To create a clear path toward achieving the CSAP goals, each Guiding Principle has actions that should be done as part of implementation efforts.

**Policy Recommendations
and Action Matrix**
Plan Administration

Figure 37. Example Action Item Policy Hierarchy



Policy Recommendations and Action Matrix

Guiding Principles and Six “E’s”: The first two elements of the action matrix are the Guiding Principles and the Six “E’s” of Safety, described in **Chapter 1**.

Timeframe: For every strategy, each action provides an estimated timeframe for implementation. The estimated timeframe for implementation allows for better informed decision-making and allocation of funds to complete the action plan strategies and actions promptly. Timeframes are broken out into the following:

- ▶ **Short (<2 years):** This action is a top priority and can be a “quick win” for Vision Zero.
- ▶ **Medium (2 – 5 years):** This action may take longer but can be accomplished before the next CSAP update.
- ▶ **Long (>5 years):** This action will require many years but will have a significant impact when complete.

Partners: In many instances, collaboration with partner organizations, entities, or stakeholders is crucial to successfully implement the recommended actions. These partners play a vital role by contributing resources, expertise, and support to achieve the Plan’s goals. The following list identifies internal and external partners that could aid in the implementation process, though it is not exhaustive:

- | | |
|----------------------------|--|
| ▶ City Manager (CM) | ▶ Public Safety (PS) |
| ▶ Planning Department (PD) | ▶ Oklahoma Department of Transportation (ODOT) |
| ▶ Public Works (PW) | ▶ Oklahoma Highway Safety Office (OHSO) |

Funding: Potential funding and its sources are an essential ingredient to implementing the action plan. The action matrix provides guidance on how three distinct funding sources can be utilized to accomplish each individual action. The three potential funding sources are as follows:

- ▶ Existing Funds
- ▶ Reallocation of Funds
- ▶ Grant Acquisition



Bicycle & Pedestrians



Table 15. Bicycle and Pedestrian Action Items

ID	ACTION	WHICH SIX E'S OF SAFETY	TIMEFRAME	PARTNERS	FUNDING
BP.1	Work with law enforcement to determine the feasibility of enhanced enforcement in future pedestrian-priority zones	Enforcement	Short (<2 years)	PS; CM	Existing Funds; Reallocation of Funds
BP.2	Partner with the County Health Department to host a Bike Rodeo at Touch-a-Truck event each year	Education	Medium (2-5 years)	CM; PD	Reallocation of Funds; Grant
BP.3	Update the Master Trails Plan	Engineering	Medium (2-5 years)	PD; PW	Reallocation of Funds; Grant
BP.4	Conduct a condition assessment of intersection and corridor pavement markings throughout the City and implement a restriping program	Engineering	Medium (2-5 years)	PW; ODOT	Reallocation of Funds; Grant
BP.5	Complete an ADA Transition Plan	Evaluation	Medium (2-5 years)	PW; PD; CM; ODOT	Reallocation of Funds; Grant

BP.1: Work with law enforcement to determine the feasibility of enhanced enforcement in future pedestrian-priority zones

Collaborating with law enforcement to assess the feasibility of enhanced enforcement in future pedestrian-priority zones is a critical step toward improving safety for vulnerable road users. These pedestrian-priority zones are intended to prioritize pedestrian movement and reduce vehicle conflicts, and effective enforcement can help ensure that drivers comply with speed limits, yield requirements, and other safety-related regulations. By evaluating necessary resources, enforcement strategies, and potential impacts, the City and law enforcement can develop a practical, data-informed approach to supporting safer, more respectful interactions between all road users in areas where pedestrian activity is highest.

BP.2: Partner with the County Health Department to host a Bike Rodeo at Touch-a-Truck event each year

Partnering with the County Health Department to host a Bike Rodeo at the annual Touch-a-Truck event provides a valuable opportunity to promote bicycle safety education in a fun and engaging setting. The Bike Rodeo allows children and families to learn essential biking skills, helmet use, and road safety rules through hands-on activities and interactive demonstrations. By integrating this event into a popular community gathering, the City can reach a broader audience, encourage safe biking habits from an early age, and foster a culture of active transportation and safety awareness among residents.

BP.3: Update the Master Trails Plan

Updating the Master Trails Plan is a key component in improving safety throughout the City, ensuring that the trail network evolves to meet current and future needs for safe, accessible, and connected active transportation options. This update would allow the City to incorporate community input, address gaps in the existing network, and align future improvements with the current best practices in trail design and safety. By prioritizing routes that improve connectivity to schools, parks, transit, and neighborhoods, the updated plan will guide future investments and enhancements that support walking, biking, and other non-motorized travel—ultimately contributing to a safer and more equitable transportation system for all users.



BP.4: Conduct a condition assessment of intersection and corridor pavement markings throughout the City and implement a restriping program

Conducting a conditions assessment of intersection and pavement markings is essential in identifying faded, damaged, or missing markings that may compromise roadway safety for all users. Clear and well-maintained pavement markings play a critical role in guiding drivers, cyclists, and pedestrians, especially at high-traffic intersections and along key corridors. By evaluating their current condition, the City can prioritize areas in need of attention and implement a restriping program to restore visibility and functionality. This proactive approach helps reduce crashes, enhance traffic flow, and support safer, more predictable travel behavior for all roadway users.

BP.5: Complete an ADA Transition Plan

Completing an ADA Transition Plan is a vital step to ensure that public infrastructure is accessible, inclusive, and safe for people of all abilities. This plan identifies physical barriers within sidewalks, crossings, public buildings, and other right-of-way elements that may limit access for individuals with disabilities. By assessing current conditions and outlining a prioritized strategy for improvements, the City can make informed decisions to bring facilities into compliance with the Americans with Disabilities Act (ADA). This not only enhances mobility and independence for all residents but also reinforces the City's commitment to equity, safety, and universal access.

Downtown



Table 16. Downtown Action Items

ID	ACTION	WHICH SIX E'S OF SAFETY	TIMEFRAME	PARTNERS	FUNDING
DT.1	Partner with law enforcement to establish a public education campaign for innovative safety initiatives	Education	Short (<2 years)	CM; PW; PD; OHSO; ODOT	Existing Funds; Reallocation of Funds; Grant
DT.2	Update design standards to integrate green spaces and community designs that promote safe infrastructure	Engineering	Medium (2-5 years)	PW; PD; CM	Existing Funds
DT.3	Develop a public messaging campaign with local business owners on the proper use of pedestrian facilities downtown	Education	Medium (2-5 years)	PD; PW	Reallocation of Funds; Grant
DT.4	Partner with OHSO to implement "Don't Drink and Drive" campaigns for downtown visitors	Education	Short (<2 years)	OHSO; CM; PS	Reallocation of Funds; Grant
DT.5	Expand materials related to the First Capital Trolley to advertise alternative mobility options downtown	Equity	Short (<2 years)	CM; PS	Existing Funds; Reallocation of Funds
DT.6	Implement daylighting in downtown intersection design standards	Engineering	Medium (2-5 years)	PW; CM; PD; ODOT	Existing Funds

DT.1: Partner with law enforcement to establish a public education campaign for innovative safety initiatives

Partnering with law enforcement to establish a public education campaign for innovative safety initiatives is a proactive strategy to build community awareness and support new approaches to traffic safety. By working together, the City and law enforcement can effectively communicate the purpose, benefits, and proper use of emerging safety measures—such as new street designs, traffic calming tools, or pedestrian-focused policies. A well-coordinated education campaign helps ensure residents understand and embrace these changes, leading to safer behaviors, increased compliance, and greater overall success of safety improvements throughout the community.

**DT.2: Update design standards to integrate green spaces and community designs that promote safe infrastructure**

Updating design standards to integrate green spaces and community-oriented designs that promote safe infrastructure is a forward-thinking action aimed at creating safer, more livable streets. By incorporating elements such as landscaped buffers, curb extensions, pedestrian plazas, and traffic-calming features, the City can enhance visibility, reduce vehicle speeds, and encourage walking and biking. These design updates not only improve safety for all road users, especially pedestrians and cyclists—but also contribute to the aesthetic and environmental quality of neighborhoods. This approach supports a holistic vision of transportation safety that balances mobility, accessibility, and community well-being.

DT.3: Develop a public messaging campaign with local business owners on the proper use of pedestrian facilities downtown

Developing a public messaging campaign with local business owners on the proper use of pedestrian facilities downtown is an important step to promote respectful and safe use of shared public spaces. By partnering with businesses that are closely connected to daily foot traffic, the City can effectively reach residents and visitors with consistent messaging about keeping sidewalks clear, using crosswalks, and avoiding behaviors that put pedestrians at risk. This collaborative approach not only helps educate the public but also fosters a stronger sense of community responsibility for maintaining a safe and welcoming downtown environment for everyone. Collaboration could occur between City staff and the Historic Preservation Commission.

DT.4: Partner with OHSO to implement “Don’t Drink and Drive” campaigns for downtown visitors

Partnering with the Oklahoma Highway Safety Office (OHSO) to implement “Don’t Drink and Drive” campaigns for downtown visitors is a key initiative to reduce impaired driving and prevent crashes. Through targeted messaging, educational materials, and visible outreach—especially during events and high-traffic times—the campaign aims to raise awareness about the dangers and consequences of driving under the influence. By promoting safe alternatives such as designated drivers, rideshare options, and public transportation, the City and OHSO can work together to create a safer downtown experience for everyone while reinforcing a strong culture of responsible behavior. NHTSA also provides readily made social media and other campaign materials to promote safety.

DT.5: Expand materials related to the First Capital Trolley to advertise alternative mobility options downtown

Expanding materials related to the First Capital Trolley to advertise alternative mobility options downtown encourages residents and visitors to choose safe, accessible, and convenient transportation alternatives. By increasing awareness of the trolley’s routes, schedules, and benefits, the City can reduce reliance on personal vehicles, decrease traffic congestion, and lower the risk of crashes in busy downtown areas. Promoting the First Capital Trolley also supports equitable mobility for those without access to a car, while contributing to a more connected, pedestrian-friendly downtown environment. It also provides the necessary materials to promote safe ridesharing options.

DT.6: Implement daylighting in downtown intersection design standards

Implementing daylighting in downtown intersection design standards can improve visibility and reduce crashes involving pedestrians and turning vehicles. Daylighting involves clearing visual obstructions—such as parked cars or signage—near intersections to create an unobstructed line of sight between drivers and pedestrians. By integrating this concept into design standards, the City can ensure that new and existing intersections prioritize safety through enhanced visibility, reduced turning speeds, and better reaction time for all users. This simple yet effective design practice helps create a safer, more predictable street environment, especially in high-foot-traffic downtown areas.



Growth



Table 17. Growth Action Items

ID	ACTION	WHICH SIX E'S OF SAFETY	TIMEFRAME	PARTNERS	FUNDING
GR.1	Engage with residents to communicate future growth and develop a future land use plan	Equity	Long (>5 years)	CM; PD	Existing Funds
GR.2	Update the Comprehensive Safety Action Plan every five years	Evaluation	Long (>5 years)	PW; PD; CM	Reallocation of Funds
GR.3	Update and implement new subdivision regulations to incorporate safety treatments in design	Engineering	Medium (2-5 years)	PW; CM; PD	Existing Funds
GR.4	Evaluate the need for a designated truck route in the City	Evaluation	Short (<2 years)	ODOT; PD	Existing Funds; Reallocation of Funds
GR.5	Update development standards to connect sidewalk and trails from the Master Trails Plan into all new developments	Engineering	Long (>5 years)	PD; PW	Existing Funds

GR.2: Engage with residents to communicate future growth and develop a future land use plan

Engaging with residents to communicate future growth and develop a future land use plan ensures that safety is built into the long-term vision of community development. By involving residents in discussions about how and where the city should grow, the planning process can reflect local priorities, identify potential safety concerns early, and promote land use patterns that support safe, accessible transportation options. A thoughtfully developed future land use plan helps guide decisions about street design, connectivity, and infrastructure investments—creating neighborhoods and destinations that are not only well-organized and vibrant, but also safe for all users.

GR.2: Update the Comprehensive Safety Action Plan every five years

Updating the CSAP every five years ensures that the City remains proactive, data-driven, and responsive to changing conditions, technologies, and community needs. Regular updates allow the City to evaluate the effectiveness of implemented strategies, incorporate the latest crash data and safety research, and adjust priorities based on new growth, infrastructure changes, or emerging challenges. This ongoing commitment to refinement and improvement helps maintain momentum toward long-term safety goals and reinforces the City's dedication to creating a safer, more livable environment for all residents and visitors. Additionally, an update to the CSAP every five years is required for receiving future funding from state agencies or FHWA.

GR.3: Update and implement new subdivision regulations to incorporate safety treatments in design

Updating and implementing new subdivision regulations to incorporate safety treatments in design is a proactive step to ensure that new residential developments are built with safety as a core consideration. By integrating features such as traffic calming measures, connected sidewalk networks, safe crossing points, and appropriate street widths, the City can create neighborhoods that naturally promote lower vehicle speeds and safer interactions between drivers, pedestrians, and cyclists. These updated regulations will help prevent future safety issues, support walkability, and foster a built environment that reflects the City's long-term commitment to protecting all roadway users from the start of each development.



GR.4: Evaluate the need for a designated truck route in the City

Evaluating the need for a designated truck route in the City is aimed at improving roadway safety, reducing wear on local streets, and minimizing conflicts between heavy vehicles and more vulnerable road users. By analyzing current truck traffic patterns, high-frequency delivery areas, and residential neighborhood impacts, the City can determine whether a designated route would help streamline freight movement while keeping large vehicles away from schools, parks, and pedestrian-heavy zones. A thoughtfully planned truck route can enhance traffic flow, reduce crash risks, and support a more efficient and safer transportation network for all.

GR5: Update development standards to connect sidewalk and trails from the Master Trails Plan into all new developments

Updating development requirements to connect sidewalks and trails from the Master Trails Plan into all new developments is to ensure a safe, continuous, and accessible network for pedestrians and cyclists. By requiring new developments to align with the existing and planned trail infrastructure, the City can eliminate gaps, improve connectivity, and promote active transportation as a convenient and safe option for everyday travel. This approach supports a more walkable and bike-friendly community, reduces dependence on cars, and reinforces the City's long-term vision of a cohesive, equitable, and safe transportation system for all users.

Schools



Table 18. Schools Action Items

ID	ACTION	WHICH SIX E'S OF SAFETY	TIMEFRAME	PARTNERS	FUNDING
SC.1	Partner with the County Health Department to obtain and distribute bicycle and pedestrian safety activity books for students	Education	Short (<2 years)	CM; PS	Reallocation of Funds; Grant
SC.2	Partner with Guthrie Common School District (GCSD) to conduct driver safety workshops for teenage drivers	Education	Short (<2 years)	PS; PW; OHSO; ODOT	Reallocation of Funds
SC.3	Develop and implement a Safe Routes to School plan for existing school sites	Evaluation	Medium (2-5 years)	PW; ODOT; OHSO	Grant
SC.4	Conduct interactive crash simulation workshops in schools to raise awareness and promote safer behaviors	Education	Short (<2 years)	CM; PS; OHSO	Reallocation of Funds; Grant

SC.1: Partner with the County Health Department to obtain and distribute bicycle and pedestrian safety activity books for students

Partnering with the County Health Department to obtain and distribute bicycle and pedestrian safety activity books for students is an important initiative to promote early education on safe travel behaviors. These engaging, age-appropriate materials help teach children essential skills such as how to cross streets safely, the importance of wearing helmets, and how to navigate sidewalks and bike paths. By incorporating safety education into fun, interactive learning, the City can foster lifelong safe habits, reduce crash risks involving young pedestrians and cyclists, and empower students to be more confident and responsible as they travel within their communities.



SC.2: Partner with Guthrie Common School District (GCSD) to conduct driver safety workshops for teenage drivers

Partnering with the Guthrie Common School District (GCSD) to conduct driver safety workshops for teenage drivers is a proactive measure in reducing crash risks among one of the most vulnerable driving populations. These workshops provide young drivers with critical education on safe driving practices, including distracted driving prevention, the importance of seatbelt use, speed management, and awareness of pedestrians and cyclists. By collaborating with schools to reach students early in their driving experience, the City can help instill responsible habits, build driving confidence, and create a safer roadway environment for everyone.

SC.3: Develop and implement a Safe Routes to School plan for existing school sites

Developing and implementing a Safe Routes to School plan for existing school sites is a key action to ensure that children can travel to and from school safely, whether walking, biking, or riding the bus. This initiative involves identifying barriers to safe travel—such as missing sidewalks, high-speed traffic, or unsafe crossings—and prioritizing infrastructure improvements, enforcement strategies, and educational efforts to address them. By making school routes safer and more accessible, the City can encourage active transportation, reduce congestion around schools, and foster a culture of safety and independence among students and families.

SC.4: Conduct interactive crash simulation workshops in schools to raise awareness and promote safer behaviors

Conducting interactive crash simulation workshops in schools is designed to raise awareness among students about the real-life consequences of unsafe behaviors on the road. These hands-on workshops use realistic scenarios and simulations to demonstrate the dangers of distracted driving, speeding, impaired driving, and failure to follow traffic laws. By engaging students in an immersive learning experience, the City can foster a deeper understanding of road safety, encourage responsible decision-making, and empower young people to become safer drivers, passengers, and pedestrians in their daily lives.

Speeding



Table 19. Speeding Action Items

ID	ACTION	WHICH SIX E'S OF SAFETY	TIMEFRAME	PARTNERS	FUNDING
SP.1	Partner with ODOT to enhance safety measures on state-owned roads	Engineering	Long (>5 years)	ODOT; PW; PD	Reallocation of Funds; Grant
SP.2	Deploy speed monitoring trailers along corridors where speed-related crashes occur the most frequently	Enforcement	Short (<2 years)	PS; ODOT; OHSO	Reallocation of Funds; Grant
SP.3	Collaborate with OHSO and NHTSA to distribute targeted safety materials about speeding and safe driving behavior	Education	Short (<2 years)	OHSO; CM; PS	Grant
SP.4	Partner with local insurance companies to implement incentive programs for safe drivers	Encouragement	Medium (2-5 years)	PS; CM	Reallocation of Funds
SP.5	Continue partnering with OHSO to fund overtime for speed enforcement	Enforcement	Short (<2 years)	OHSO; PS	Reallocation of Funds

SP.1: Partner with ODOT to enhance safety measures on state-owned roads

Partnering with the ODOT to enhance safety measures on state-owned roads ensures a coordinated approach to reducing crashes and improving conditions on key transportation corridors. Many of these roads carry high volumes of traffic and intersect with local streets, schools, and neighborhoods, making safety enhancements essential for protecting all road users. Through collaboration with ODOT, the City can advocate for improvements such as upgraded signage, pedestrian crossings, signal timing, and access management strategies that align with local safety priorities and support a safer, more connected transportation network.

SP.2: Deploy speed monitoring trailers along corridors where speed-related crashes occur the most frequently

Deploying speed monitoring trailers along corridors where speed-related crashes occur most frequently is a targeted strategy to address dangerous driving behaviors and reduce crash risks. These trailers provide real-time feedback to drivers by displaying their current speed, encouraging them to slow down and comply with posted speed limits. By placing them in high-risk areas, the City can raise driver awareness, collect valuable speed data, and identify patterns that may warrant further enforcement or engineering solutions. This cost-effective measure serves as both an educational tool and a deterrent, supporting safer travel for everyone along these critical corridors.

SP.3: Collaborate with OHSO and NHTSA to distribute targeted safety materials about speeding and safe driving behavior

Collaborating with the OHSO and the National Highway Traffic Safety Administration (NHTSA) to distribute targeted safety materials about speeding and safe driving behavior is aimed at changing risky driving habits through education and outreach. By leveraging existing resources and expertise from state and federal partners, the City can provide data-driven, impactful messaging that resonates with specific audiences, such as young drivers or those traveling through high-crash corridors. These materials help raise awareness about the consequences of speeding, promote safe driving practices, and support a broader culture of roadway safety within the community.

SP.4: Partner with local insurance companies to implement incentive programs for safe drivers

Partnering with local insurance companies to implement incentive programs for safe drivers is a proactive measure that can encourage responsible driving through positive reinforcement. By offering rewards such as premium discounts or recognition programs, the City and its partners can motivate drivers to adopt and maintain safe behaviors like obeying speed limits, avoiding distractions, and practicing defensive driving. This collaboration not only benefits individual drivers through financial savings but also contributes to a safer overall traffic environment by promoting long-term behavioral change and community-wide awareness around road safety. This can also help reduce the overall cost of crashes to the community, with less vehicle and property damage, and even less bodily injuries.

SP.5: Continue partnering with OHSO to fund overtime for speed enforcement

Continuing to partner with the OHSO to fund overtime for speed enforcement is a vital element to reduce speed-related crashes and enhancing roadway safety. Through existing OHSO grant programs—such as the Selective Traffic Enforcement Program (STEP)—local law enforcement agencies receive funding to dedicate additional officer hours specifically for targeting speeding and other dangerous driving behaviors during peak crash times. This ongoing partnership allows the City to maintain a consistent enforcement presence without straining regular staffing resources, reinforcing the importance of speed compliance and supporting a safer environment for all road users.



Post Crash Care



Table 20. Post Crash Care Action Items

ID	ACTION	WHICH SIX E'S OF SAFETY	TIMEFRAME	PARTNERS	FUNDING
PC.1	Create a City-wide signal optimization and intelligent transportation systems (ITS) plans	Engineering	Medium (2-5 years)	PW; ODOT; OHSO	Reallocation of Funds; Grant
PC.2	Increase frequency of emergency trauma training for law enforcement	Education	Short (<2 years)	PS	Reallocation of Funds; Grant

PC.1: Create a City-wide signal optimization and intelligent transportation systems (ITS) plans

Creating a City-wide Signal Optimization and Intelligent Transportation Systems (ITS) Plan is a forward-looking initiative to improve traffic flow, reduce delays, and enhance safety through smarter infrastructure. By evaluating and upgrading traffic signal timing, coordination, and communication systems, the City can minimize congestion, reduce driver frustration, and lower the likelihood of crashes at intersections. Integrating ITS technologies—such as real-time traffic monitoring, adaptive signals, and connected vehicle data—enables more responsive and efficient traffic management. This comprehensive approach supports safer, more reliable mobility for all users while laying the groundwork for future innovations in transportation.

PC.2: Increase frequency of emergency trauma training for law enforcement

Increasing the frequency of emergency trauma training for law enforcement is a critical action to improve the ability of officers to respond effectively in high-pressure, life-threatening situations. By providing regular, hands-on training in trauma care, such as CPR, bleeding control, and managing severe injuries, law enforcement officers can be better equipped to assist victims in the critical moments before emergency medical services arrive. This proactive approach not only improves outcomes for injured individuals but also strengthens the overall emergency response network, ensuring that law enforcement plays a vital role in safeguarding public health and safety during emergencies.



Plan Administration

The City of Guthrie and the Safety Steering Committee are responsible for administering this Plan. City staff will oversee the Plan's day-to-day implementation, monitoring, and amendments. This section details the administration activities.

✓ **City Departments**

Through the safe system approach, all City of Guthrie departments will be involved to some extent. The Planning, Public Works, and Public Safety departments will primarily oversee the administration and provide annual updates to the City Council.

✓ **City Council**

The City Council will play a pivotal role by providing continuous guidance and direction to staff and other boards and commissions and making decisions on budget allocations and regulatory modifications as specified in the Implementation Program.

✓ **Other Boards, Committees, & Commissions**

City boards, committees, and commissions are designated to review and guide specific initiatives. They will play a crucial role in implementing the recommendations in the Implementation Program that align with their areas of focus.

✓ **Safety Steering Committee and Other Partners**

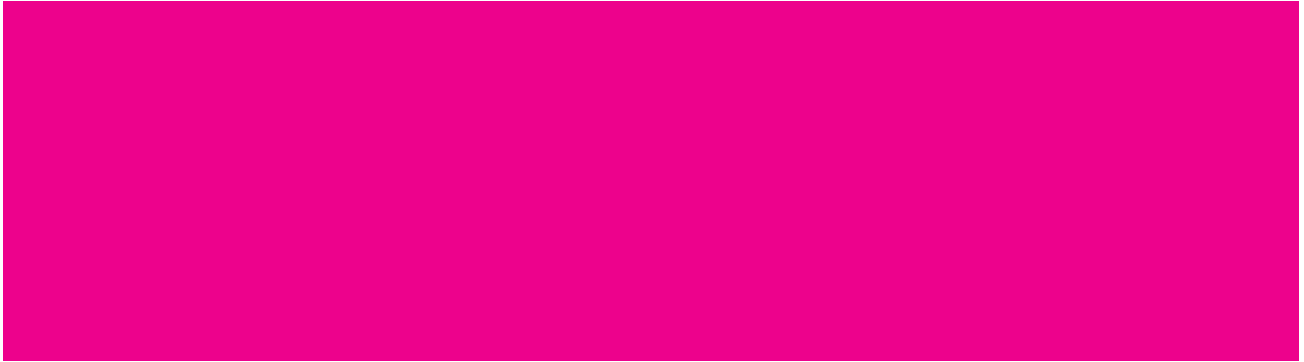
The SSC plays a crucial role in implementation by overseeing the plan's actions and initiatives to ensure goals are met efficiently and effectively. The committee provides continuous guidance, supports implementing agencies, monitors progress, and adjusts for emerging challenges. Additionally, the SSC fosters collaboration among stakeholders, including residents, regional entities, and external departments—facilitates communication and promote community engagement to maintain momentum and accountability.

✓ **Monitoring Progress**

Extensive efforts were dedicated throughout the planning process to engage a broad spectrum of external stakeholders to ensure the Plan aligns with the overarching community vision. To sustain community engagement and enthusiasm, transparency about forthcoming progress in Plan implementation is crucial. An effective approach for conveying this progress is through an annual progress report, which should provide updates on the status of implementation strategies and showcase achievements accomplished in the preceding year. The responsibility of producing the annual progress report will be led by the Planning Department and presented to the City Council. Annual reporting will be supported by the Safety Dashboard, which tracks crash trends and identifies various behavioral, design, and environmental characteristics. As new data is entered, the Safety Dashboard can be used to illustrate and describe these trends.



Figure 38. Safety Dashboard



Amending the Plan: Guthrie's CSAP captures a moment in time, with changes expected as the City grows and matures. To ensure the attainability of the overarching vision, the implementation approach must remain adaptable, capable of accommodating shifts in crash trends. The Planning Department will provide annual updates to the City Council on Implementation Program progress, including necessary High-Injury Network revisions due to changes in trends. The Plan should undergo a comprehensive review and update every five years to align with these trends and evaluate the relevance of action plan strategies.



ABBREVIATIONS GLOSSARY

CSAP – Comprehensive Safety Action Plan
USDOT – U.S. Department of Transportation
ODOT – Oklahoma Department of Transportation
FHWA – Federal Highway Administration
SSC – Safety Steering Committee
HIN – High-Injury Network
KABs – Fatal, severe, and minor injuries
VMT – Vehicle Miles Traveled
VRUs – Vulnerable Road Users
CMV – Commercial Motor Vehicle
FMCSA – Federal Motor Carrier Safety Administration
ATVs – All-Terrain Vehicles
SHSP – Strategic Highway Safety Plan
BAC – Blood Alcohol Concentration
NHTSA – National Highway Traffic Safety Administration

COMPREHENSIVE SAFETY ACTION PLAN



GUTHRIE

