



Safe Streets and Roads for All (SS4A)

SAFETY ACTION PLAN

Lincoln County, September 2025



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List of Acronyms

AADT – Annual Average Daily Traffic
AASHTO – American Association of Highway and Transportation Officials
ACS – American Community Survey
BOCC – Board of County Commissioners
CMF – Crash Modification Factors
DOT – Department of Transportation
FEMA – Federal Emergency Management Agency
FHWA – Federal Highway Administration
GIS – Geographic Information System
HIN – High Injury Network
IIJA – Infrastructure Investment and Jobs Act
MMUCC – Model Minimum Uniform Crash Criteria
MOE – Measure of Effectiveness
MOU – Memorandums of Understanding
NHTSA – National Highway Traffic Safety Administration
NOFO – Notice of Funding Opportunity
ODOT – Oklahoma Department of Transportation
OHSO – Oklahoma Highway Safety Office
PDO – Property Damage Only
QR – Quick Response
SH – State Highway
SRTS – Safe Routes to School
SS4A – Safe Streets and Roads for All
TAP – Transportation Alternatives Program
URL – Uniform Resource Locator
US – United States
USDOT – U.S. Department of Transportation
VRU – Vulnerable Road User

RESOLUTION No. 25- 1166

Lincoln County is requesting approval and adoption of the resolution affirming the county's commitment to the reduction of fatal and serious injury crashes and its accompanying targeted percentage reduction in fatal and serious injury by the year 2045, by recommending adoption of the following:

A RESOLUTION OF COMMITMENT TO LINCOLN COUNTY SAFETY ACTION PLAN

WHEREAS, traffic crashes were significant causes of death and injuries between 2017-2021, totaling 40 fatal and 102 incapacitating injury crashes in Lincoln County; and

WHEREAS, the life, safety, and health of Lincoln County residents, employees, and visitors are of upmost priority; and

WHEREAS, the [Infrastructure Investment and Jobs Act \(IIJA\)](#), aka [Bipartisan Infrastructure Law \(BIL\)](#) Law established the Safe Streets and Roads for All (SS4A) discretionary program and funds regional, local, and Tribal initiatives through grants to prevent roadway fatalities and serious injuries; and

WHEREAS, Lincoln County entered into a grant agreement for the preparation of a Safety Action Plan; and

WHEREAS, Lincoln County's Safety Action Plan was developed to meet the federal goals of an SS4A Action Plan which is to develop a holistic, well-defined strategy to prevent roadway fatalities and serious injuries in a locality, Tribal area, or region; and

WHEREAS, Lincoln County's Safety Action Plan has been completed and includes the federally required key components of a SS4A Action Plan for successful implementation: 1) planning structure; 2) safety analysis; 3) engagement and collaboration with the public and stakeholders; 4) policy and process changes; 5) strategy and project selections; and 6) progress and transparency; and 7) this resolution serves as the leadership commitment from Lincoln county; and

WHEREAS, Lincoln County is recommending approval and adoption of the County goal year of 2040 and accompanying fatal and serious injury crash percentage reduction goals of 20 percent by 2030, 50 percent by 2035, 75 percent by 2045.

WHEREAS, Lincoln County desires to implement the Safety Action Plan within the authority and boundaries of the County.

NOW, THEREFORE, BE IT RESOLVED THIS 22ND DAY OF SEPTEMBER 2025, BY THE BOARD OF COMMISSIONERS OF LINCOLN COUNTY, OKLAHOMA ADOPTS THE PLAN AND GOALS SET FORTH:

A handwritten signature in black ink, appearing to read "Lee Doolen".

Lee Doolen, *Chairman*

A handwritten signature in black ink, appearing to read "Marlon Miller".

Marlon Miller, *Vice-Chairman*

A handwritten signature in black ink, appearing to read "Will Fine".

Will Fine, *Member*

ATTEST:



A handwritten signature in blue ink, appearing to read "Alicia Wagnon".

Alicia Wagnon, *County Clerk*

A handwritten signature in blue ink, appearing to read "Stacy Bateman Woods".

Stacy Bateman Woods, *District Attorney (or Asst. DA)*

Executive Summary

The U.S. Department of Transportation (USDOT) Safe Streets and Roads for All (SS4A) program was created by the 2021 Infrastructure Investment and Jobs Act (IIJA), aka Bipartisan Infrastructure Law and provides \$5 billion over 5 years to fund community-led projects that address the preventable crisis of deaths on our nation's roads, streets, and highways. It provides grants to local, regional, and tribal communities for planning, demonstration, and implementation activities as part of a systematic approach. Under the SS4A Program, one of the funded grant opportunities is a planning grant for the development of a Comprehensive Safety Action Plan OR Safety Action Plan, which provides the basis for supplemental planning, demonstration, and implementation grants.

Lincoln County applied for and was subsequently awarded funding to develop an SS4A Comprehensive Safety Action Plan in 2024. The Plan was led by the Lincoln County, and a project oversight team was formed to provide vision, guidance, direct, and oversee the project's progress, WSB as the consultant lead.

Document & Data Collection and Analysis

Existing plans, relevant plans, studies, and other transportation safety documents were collected and reviewed. Additionally, a 5-year crash history, and roadway inventory data from Oklahoma Department of Transportation (ODOT) were collected and analyzed. Primary factors contributing to crash occurrences were identified. Based on the distribution of crashes, a High Injury Network (HIN) was identified which includes 100% of fatal crashes and 89.39% of incapacitating injury crashes. The HIN provides Lincoln County with a broad roadmap for investment and focus, to achieve its goal of significantly reducing fatal and serious injury crashes.

Public Outreach and Stakeholder Engagement

To provide the most opportunity for public and stakeholder participation, in-person and virtual engagement options were made available. This included an interactive project website, sharing details on Lincoln County's website, Facebook posts, meeting flyers, business cards, stakeholder emails, newspaper advertisements, and public meetings. A survey, comment map, helpline, and comment cards were used to gather input on safety concerns and current conditions. Two stakeholder and public meetings were conducted. The first was on February 10, 2025, to explain why the SS4A Plan is needed, what it entails, and to request input on areas in Lincoln County that could benefit from safety improvements. The second meeting was on April 8, 2025, to share community feedback received, and crash data findings for Lincoln County. Each meeting was documented with a summary report to outline what the meetings were about, who participated, and the feedback received.

Plan Development: Project Prioritization

A set of prioritization criteria was established, considering factors such as safety, community engagement, proximity to certain locations/venues, vulnerable road users, synergy with other projects, traffic volume, and roadway functional classification. All roadway segments and intersections were prioritized based on these criteria. The plan has identified both location-specific and systemwide improvements. One criterion gave greater emphasis to non-Interstate and non-freeway roadway

Executive Summary

segments. An in-depth review of the top 20 roadway segments and 10 intersections was conducted, identifying specific opportunities to enhance safety for these high-priority areas.

The goal of the Lincoln County Safety Action Plan is aimed at reducing and eliminating fatal and serious injury crashes for all roadway users in the county. The safety improvement strategies and projects in the Plan address significant transportation safety risks that can be applied during various time frames over the next 20 years. The USDOT has described seven components of a successful Safety Action Plan in order for the Lincoln County to be eligible for supplemental planning/demonstration activities. The seven components are listed below as well as described throughout in the Plan:

Leadership Commitment & Goal Setting	Policy & Project Changes
Planning Structure	Strategy & Project Selections
Safety Analysis	Progress & Transparency
Engagement & Collaboration	

The Plan was adopted and supported by Lincoln County Resolution **-**** on September **, 2025. It is posted on the Lincoln County website, indicates how progress is measured over time and is reviewed annually by the Lincoln County Oversight Committee.

INTRODUCTION



Chapter 1 Highlights:

- Uses SS4A funding to address rural, high-risk roadway conditions
- Applies FHWA's Safe System Approach and 4 E's framework
- Combines data analysis and community input to identify crash hotspots
- Prioritizes improvements for high-crash areas and vulnerable users
- Emphasizes equity, coordination with the County, and alignment with other efforts
- Reflects a long-term vision for safer, more inclusive roads

1. Introduction

Safety is a priority for Lincoln County, Oklahoma, as the county works to protect the well-being of its residents, visitors, and communities traveling through its road network. Recognizing the need to address high-risk areas and improve roadway conditions, Lincoln County applied for federal funding through the Safe Streets and Roads for All grant program. Through this grant, the county secured resources to develop a comprehensive Safety Action Plan that will guide future investments and help reduce serious injuries and fatalities on its transportation system.

The SS4A Safety Action Plan for Lincoln County aims to enhance roadway safety, reduce fatal and serious injury crashes, and promote equitable access to safe transportation across the county. This plan primarily addresses safety concerns in rural areas with limited infrastructure and high-risk conditions within Lincoln County's jurisdiction.

Building on previous safety initiatives and grounded in the Federal Highway Administration (FHWA) Safe System Approach, this SS4A Safety Action Plan incorporates key safety strategies that align with the FHWA's "4E's" – Engineering, Education, Enforcement, and Emergency Services.

A core component of the SS4A Safety Action Plan is the integration of data-driven analysis and public input. By analyzing crash data to identify high-risk "hotspot" locations and incorporating feedback from residents and stakeholders, the plan targets specific areas of concern and proposes mitigation countermeasures to address safety challenges at and around these locations. This collaborative approach ensures that solutions are community-specific and responsive to local needs. The plan outlines best practices and safety protocols to guide long-term implementation. Locations with significant safety concerns, identified through both data and community input, are prioritized for safety improvement efforts.

The plan addresses high-crash locations, including roadway segments and intersections with elevated rates of fatal and serious injury crashes. It also accounts for pedestrian and bicycle incidents to protect vulnerable road users. Factors such as impartiality, community engagement, proximity to critical facilities, and public-school routes, were considered when identifying locations of concern. The SS4A Safety Action Plan was developed in close coordination with the Lincoln County and County Commissioners to ensure successful implementation and improved safety outcomes for all road users.

The U.S. Department of Transportation (USDOT) outlines seven key components required for a successful Safety Action Plan, which are necessary for eligibility for supplemental planning and demonstration activities. The specific sections/pages where each of these components is addressed in this plan are summarized in a reference table in Appendix I. By adhering to the SS4A program's framework, Lincoln County is committed to reducing roadway fatalities and serious injuries. This plan represents a long-term vision for a safer transportation system throughout the county.

OVERVIEW: LINCOLN COUNTY



Chapter 2 Highlights:

- Lincoln County spans 966 square miles in central Oklahoma, with an estimated population of around 34,000 residents as of 2024.
- The road network covers approximately 1,880 miles, including 495 miles of main roads and 1,385 miles of local roads, connecting rural areas and key towns like Chandler, Stroud, Meeker, and Prague.
- Major roads include U.S. Route 66, Route 177, Interstate 44 (Turner Turnpike), and multiple state highways, providing east-west and north-south access.
- Most roadways (89%) have low traffic volume; shoulder width is inadequate on many minor and local roads.
- Governance is led by the Lincoln County Board of County Commissioners (BOCC), and the Highway Department, with collaboration from state and federal partners including ODOT and FHWA.
- A Project Oversight Team and WSB consultants collaboratively developed the SS4A Safety Action Plan, focusing on reducing roadway injuries and fatalities through improved infrastructure and strategic planning.

2. Overview: Lincoln County

2.1. Geography and Land Use

Lincoln County is located in central Oklahoma, bordered by Payne County to the north, Creek and Okfuskee counties to the east, Pottawatomie County to the south, and Oklahoma and Logan counties to the west. Covering approximately 966 square miles, the county has an estimated population of around 34,000 residents. Predominantly rural, Lincoln County features a network of small towns and communities spread throughout the area. **Figure 1** provides a map illustrating the county's boundaries within the state of Oklahoma.

The landscape of Lincoln County consists of gently rolling hills, agricultural lands, forested areas, and scattered water bodies. Land use is predominantly agricultural, including farming and ranching, with some areas of low-density residential and commercial development. The county seat is Chandler, and other notable communities include Stroud, Meeker, and Prague.

Lincoln County's road network plays a vital role in connecting its rural population to regional economic centers such as Oklahoma City and Tulsa. The predominance of rural roads, combined with limited infrastructure and varying roadway conditions, presents ongoing safety challenges that the SS4A Safety Action Plan aims to address.

Additional details on key landmarks and traffic generators can be found in **Appendix A - Supplementary Data on the Lincoln County Overview, Section A.1.**

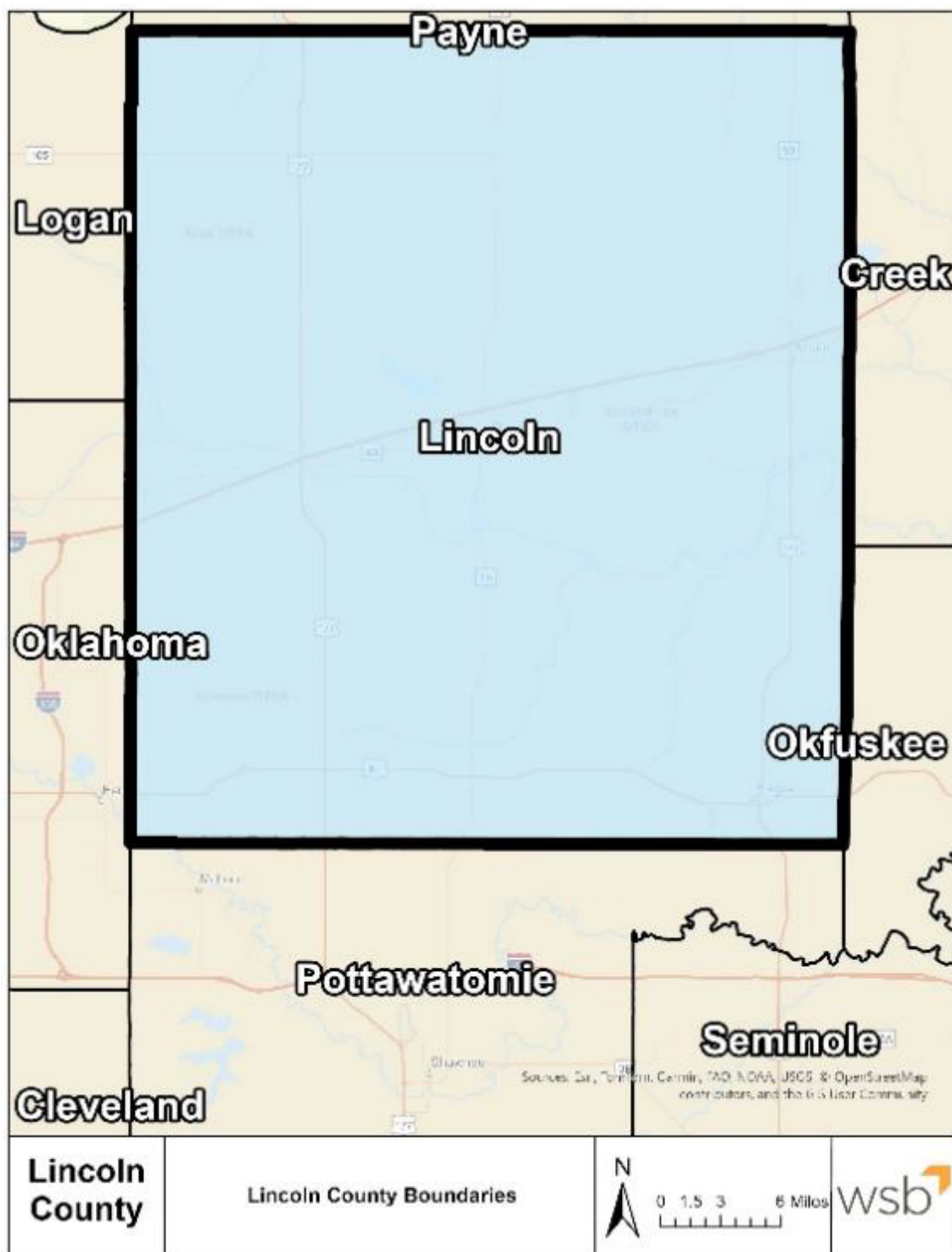


Figure 1 - Location and Boundaries of Lincoln County, Oklahoma

2.2. Demographics

Lincoln County has maintained a relatively stable population in recent years, with modest growth that contributes to ongoing demands on transportation infrastructure and road safety systems. According to U.S. Census estimates, Lincoln County had a population of approximately 34,000 as of 2024, up from about 32,500 in 2019; an increase of roughly 4.6% over five years. While not experiencing rapid growth, this trend underscores the importance of strategic planning and sustained investment in transportation safety infrastructure, especially for rural and underserved communities.

Lincoln County is primarily rural in character, with key population centers spread across small towns and communities. These towns serve as critical hubs for commerce, education, healthcare, and emergency services and therefore experience higher travel demand and safety concerns relative to surrounding rural areas.

2.2.1. Population by Major Communities

Lincoln County includes several incorporated towns and many rural areas. **Table 1** presents the estimated population, land area, and population density of major communities within the county, based on the most recent U.S. Census Bureau data. Population density is measured as the number of people per square mile. Among the incorporated towns, Agra has the highest population density followed by Wellston, Prague, and Meeker. These higher densities reflect smaller land areas paired with relatively concentrated populations. Other towns such as Sparks, Chandler, and Stroud have larger land areas and correspondingly lower densities.

The rural and unincorporated areas of Lincoln County, which encompass the vast majority of the county's land area, have a significantly lower population density of just 25.4 people per square mile. These areas contain the largest share of the county's population overall but are much more sparsely settled. **Figure 2** illustrates the population density distribution across major communities in Lincoln County.

Table 1 - Population Density by Major Communities

Community	Estimated Population (2021)	Land Area (sq. mi.)	Density (per sq. mi.)
Agra	276	0.38	726.3
Wellston	796	1.43	556.6
Prague	1,756	3.37	521.1
Meeker	1,332	3.01	442.5
Sparks	138	0.4	345.0
Chandler	2,905	9.37	310.0
Stroud	2,717	12.5	217.4
Rural Areas	23,730	935.32	25.4
Lincoln County Total	33,650	965.78	34.8

Source: Census Bureau 2017 - 2021 ACS 5-Year Data Profile.

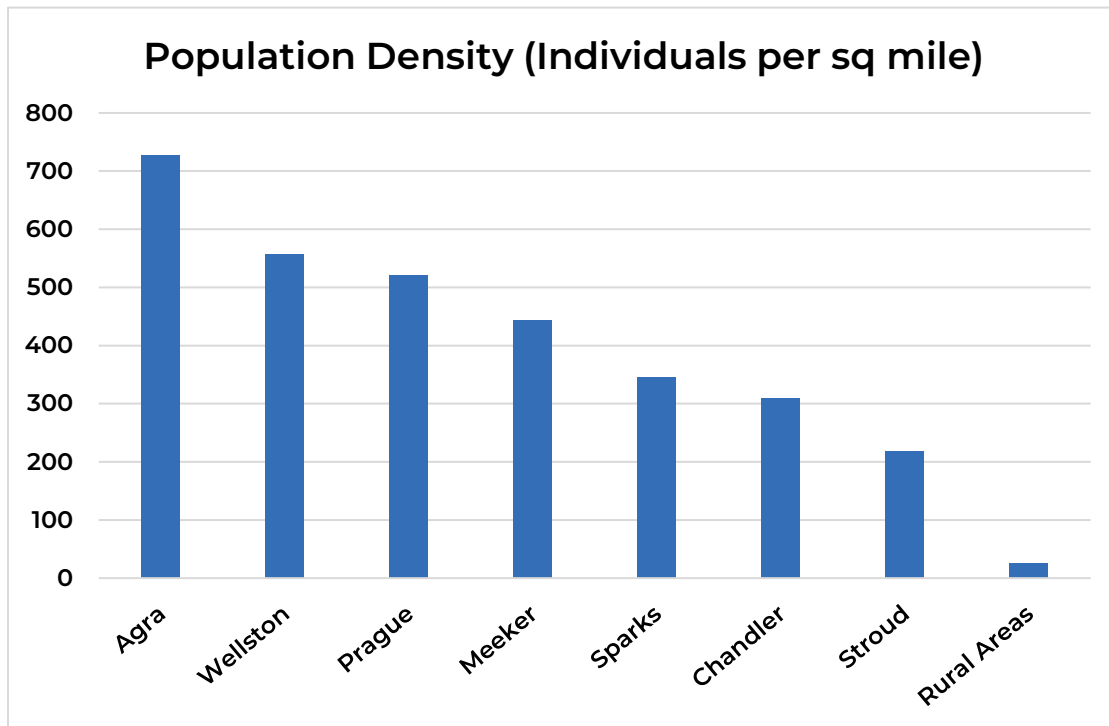


Figure 2 - Population Density by Major Communities (2017-2021)

2.2.2. Population Diversity and Income Distribution

Lincoln County's population is predominantly White (close to 80%), but the county also includes a notable proportion of American Indian and Alaska Native residents; approximately 14%, which is significantly higher than the national average. Smaller percentages of African American, Hispanic, and multiracial residents contribute to the county's demographic makeup.

Household income data indicates that Lincoln County has a lower income profile compared to national averages. Approximately 43.9% of households earn less than \$50,000 annually, compared to 36.8% across the U.S., while only 24.7% earn more than \$100,000, below the national share of 35%. These patterns may affect transportation affordability, limit access to private vehicles, and increase reliance on well-maintained public infrastructure.

These demographic trends are essential in identifying transportation safety needs and ensuring equitable infrastructure planning. They guide the development of solutions that are sensitive to the county's rural context and the needs of all population segments.

2.3. Transportation Network and Infrastructure

Lincoln County, Oklahoma is served by a mix of U.S. highways, state routes, and local roads, forming the backbone of its rural transportation system. Major arterial routes include U.S. Route 66 (Historic Route 66), U.S. Route 177, State Highways 62, 66, 99, and 102, as well as Interstate 44 (Turner Turnpike). These roads provide vital east–west and north–south connections across the county, linking key communities such as Chandler, Stroud, Wellston, Meeker, Prague, and Agra to regional and statewide destinations.

The road network outside of the incorporated towns is mostly rural in nature, with county roads connecting farms, small communities, and residential areas. In most towns, local roads follow a basic grid layout, though the terrain and older development patterns often create irregularities.

Speed limits in Lincoln County vary depending on the type of roadway:

- On non-interstate rural highways, such as Highways 62, 66, 99, 102, and U.S. Route 177, speed limits typically range around 55 miles per hour.
- Within town limits, speeds generally reduce to between 35 and 45 miles per hour, with further reductions to 25 miles per hour or less in school zones.
- On Interstate 44 (Turner Turnpike), the county's controlled-access highway, speed limits are higher, typically posted up to 75 miles per hour.

To analyze roadway infrastructure within Lincoln County, the ODOT Geographic Information System (GIS) databases were reviewed. Two relevant datasets were identified:

- Main Roadways, which includes all functional classes except local roads
- Local Roadways, which contains data specific to local (non-classified) roadways

By combining both datasets, Lincoln County's roadway network totals approximately 1,880 miles of roads.

Main roadways are categorized into six types based on functional classification, totaling 495 miles.

Figure 3 illustrates these roadway types with their respective percentages, while **Figure 4** presents a map of the functional classifications within the main roadway network.

Local roadways, unlike main roadways, are not classified under specific road types in the ODOT GIS database. Instead, an alternative database is used to identify and assess local roads, which account for 1,385 miles of Lincoln County's network.

To understand travel demand, roadways in Lincoln County were also categorized by Annual Average Daily Traffic (AADT). This metric provides an estimate of the average number of vehicles traveling on a roadway each day. The AADT was broken into the following three categories using the Jenks Natural Breaks algorithm (Reference: Jenks, G. F. (1967). "The Data Model Concept in Statistical Mapping," International Yearbook of Cartography, 7, 186–190):

- Low Traffic Volume: AADT below 1,800 vehicles per day - Majority of the roads (88.63%)
- Medium Traffic Volume: AADT between 1,800 and 26,700 vehicles per day (9.74% of total roadways)
- High Traffic Volume: AADT above 26,700 vehicles per day (1.63% of total roadways)

Note: A map showing the geographic distribution of roadways by AADT categories is provided in **Appendix A - Supplementary Data on the Lincoln County Overview, Section A.2.1.**

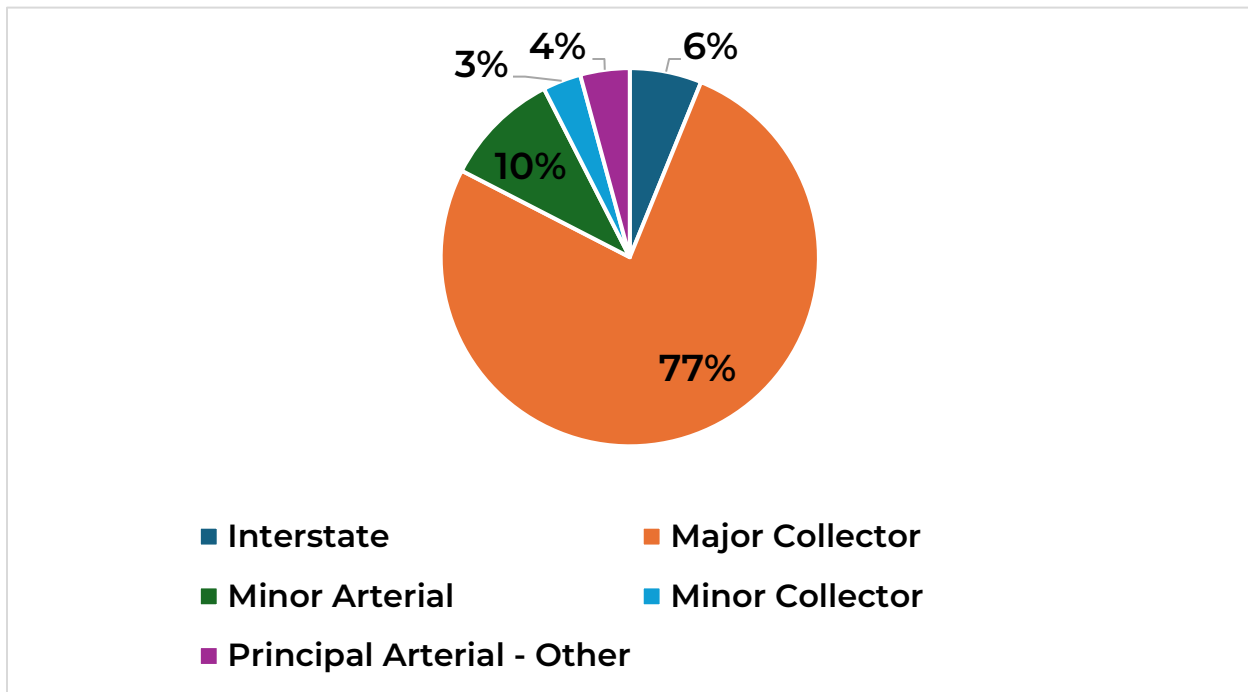


Figure 3 - Main Roadway Network Functional Classification Percentages

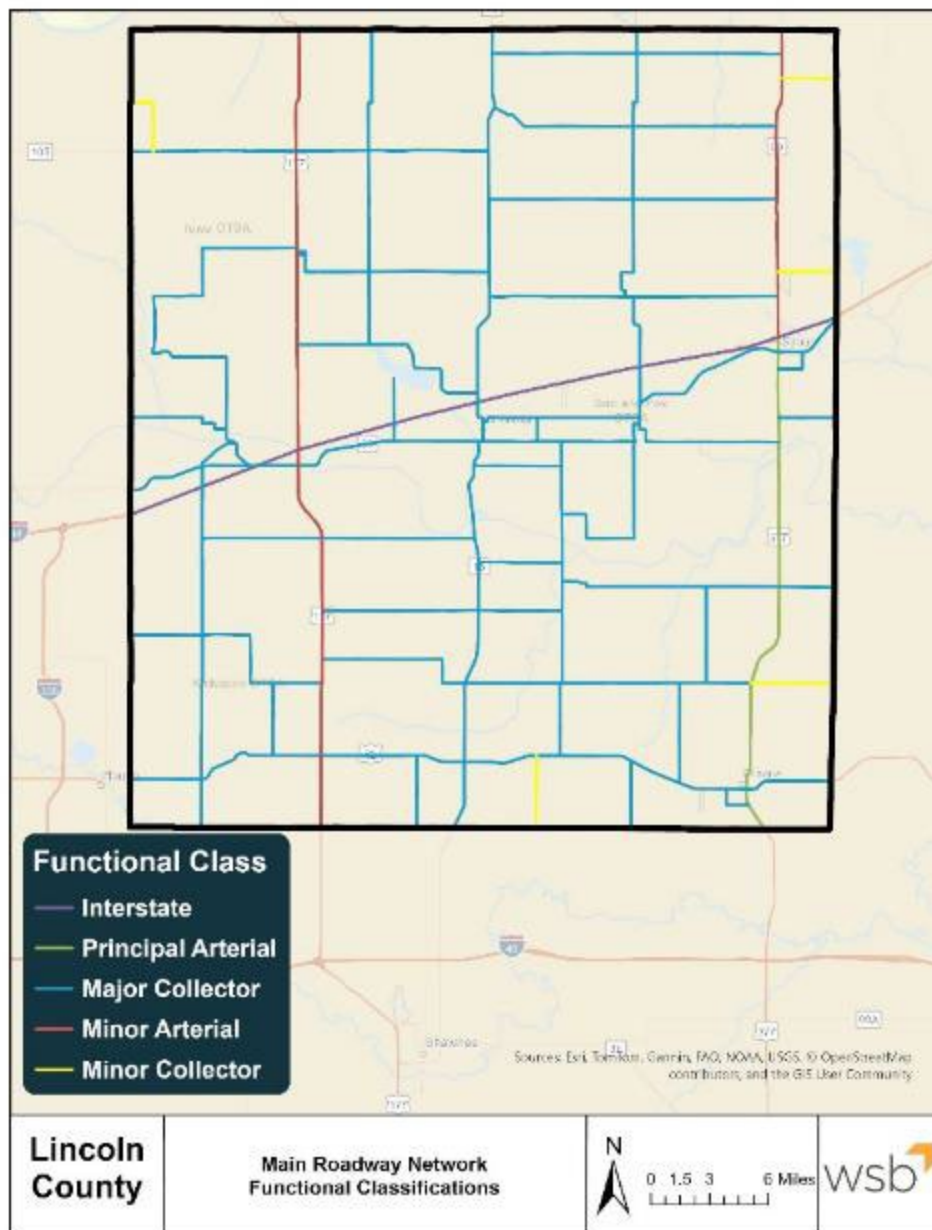


Figure 4 - Main Roadway Network Functional Classification

2.3.1. Major Corridor Characteristics and Roadway Design

Lincoln County's major corridors exhibit diverse roadway designs depending on traffic demand, location, and function. These corridors range from controlled-access interstates to rural two-lane highways and urban main streets with pedestrian infrastructure. This section provides an overview of major corridors in Lincoln County, highlighting roadway design characteristics, key infrastructure elements, and each corridor's role in supporting local and regional travel. A map of Lincoln County illustrating these corridors is provided in **Figure 5**.

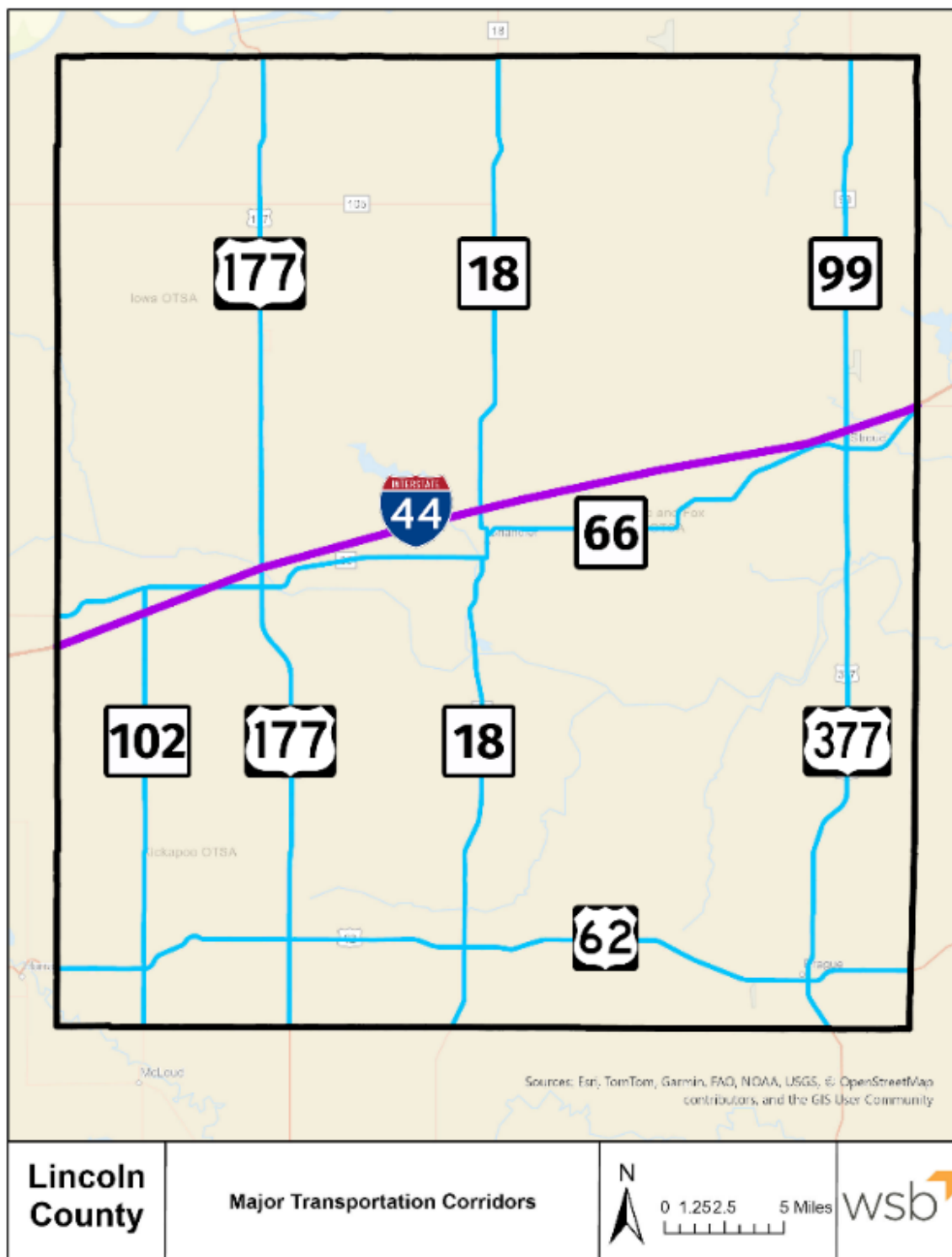


Figure 5 - Major Transportation Corridors in Lincoln County

- **State Highway 99 / U.S. Route 377 (SH-99 / US-377)**

SH-99 / US-377 is a primary north-south route running through Prague and Stroud, accommodating both local and regional travel demand. It is mostly a two-lane highway south of Prague, with narrow shoulders and no pedestrian or bike facilities. In Prague, a center turn lane provides access to local destinations. North of Prague, the highway becomes a four-lane divided roadway with wide medians and shoulders. Near and through Stroud, it remains four lanes but becomes undivided. In town centers, segments include some pedestrian infrastructure and occasional on-street parking (**Figure 6**).



Figure 6 - SH-99 / US-377 Characteristics

- **State Highway 66 (SH-66)**

SH-66, also known as Historic Route 66, is a major east-west arterial that traverses Lincoln County, connecting the communities of Wellston, Chandler, Davenport, and Stroud. It serves as one of the county's primary transportation corridors, facilitating both local and regional travel (**Figure 7**).

In rural segments, SH-66 functions as a two-lane highway with limited shoulders, few access points, and no dedicated pedestrian or bicycle facilities. These sections are primarily designed for through-traffic and serve agricultural and low-density residential areas.

In urban centers, SH-66 transitions into a main street corridor, often featuring two travel lanes, sidewalks, and on-street parking. This configuration supports slower traffic speeds, improved walkability, and access to local businesses.



Figure 7 - State Highway 66 Characteristics

- **Manvel Avenue (SH-66 in Chandler)**

As SH-66 enters Chandler, it becomes known locally as Manvel Avenue, the city's primary north-south thoroughfare. As shown in **Figure 8**, the corridor exhibits two distinct segments with different design characteristics. The rural segment, located before merging with US-66, functions as a two-lane highway. This segment primarily serves through traffic with minimal access points, reflecting typical rural highway design standards. The segment passing through the town includes two travel lanes with angled on-street parking that acts as a buffer between traffic and the sidewalk. Sidewalks are present and generally continuous, supporting pedestrian access throughout the corridor.



Figure 8 - Manvel Avenue Characteristics

- **State Highway 18 (SH-18)**

SH-18 runs north-south through the center of Lincoln County, connecting the Pottawatomie County line to the northern border near Agra.

- The route passes through Chandler, where it briefly overlaps with SH-66 in the city's downtown core. In this area, SH-18 features wider lanes, signalized intersections, and some sidewalk infrastructure, supporting local access and circulation.
- Outside of Chandler, SH-18 resembles SH-66's rural segments, with a two-lane undivided cross-section, narrow shoulders, and no pedestrian or bicycle infrastructure.
- The corridor serves regional travel needs and functions as a supplemental north-south

route to SH-99 / US-377, which carries higher traffic volumes and connects more urbanized areas such as Prague and Stroud.

- **State Highway 62 (SH-62)**

- SH-62 runs east–west across the southern portion of Lincoln County, connecting Meeker and Prague.
- In rural areas, it is a two-lane undivided highway with narrow shoulders, no sidewalks, and limited intersections.
- Within town boundaries, especially in Meeker and Prague, SH-62 may include turn lanes and modest pedestrian infrastructure to support local access.

- **U.S. Route 177 (US-177)**

- US-177 runs north–south through the central part of Lincoln County, serving communities such as Tryon and Warwick.
- The route is a rural arterial, typically designed as a two-lane undivided highway with narrow shoulders and no pedestrian or bicycle facilities.
- US-177 serves local traffic and regional connections, with low to moderate traffic volumes

- **State Highway 102 (SH-102)**

SH-102 serves the western part of Lincoln County, running north–south and passing near Carney.

- It is a two-lane undivided highway with narrow shoulders and limited intersections, serving rural and agricultural areas.
- Although SH-102 and US-177 briefly overlap just south of Carney, they otherwise function as separate corridors.
- SH-102 does not include pedestrian or bicycle infrastructure and primarily accommodates rural vehicle travel.

- **Interstate 44 (Turner Turnpike)**

I-44 is a controlled-access toll interstate crossing the county east–west. It includes four or more lanes, wide shoulders, and no pedestrian or bicycle access. Access is provided through tolled interchanges at Wellston, Chandler, and Stroud.

2.3.2. Shoulder Width

Shoulder width is a key component of roadway safety and operational efficiency. Adequate shoulders provide space for emergency stops, enhance accessibility for non-motorized users, and contribute to smoother traffic flow. In Lincoln County, shoulder width varies across roadway types, with a notable percentage of minor and local roads falling below adequacy standards. Details on the specific thresholds and mileage distribution by road type are provided in **Appendix A - Supplementary Data on the Lincoln County Overview, Section A.2.2.**

2.3.3. School Bus Routes

School buses are a key part of Lincoln County's transportation system, carrying students daily across major cities and rural areas. Routes often cover long distances on rural roads with limited infrastructure, making safety a critical concern.

Including school transportation in the SS4A Safety Action Plan helps address risks around school zones, bus stops, and bus routes, especially during peak travel times. Improving these conditions supports the plan's broader goal of reducing traffic-related injuries and fatalities. **Figure 9** illustrates the school bus routes received from schools in Lincoln County.

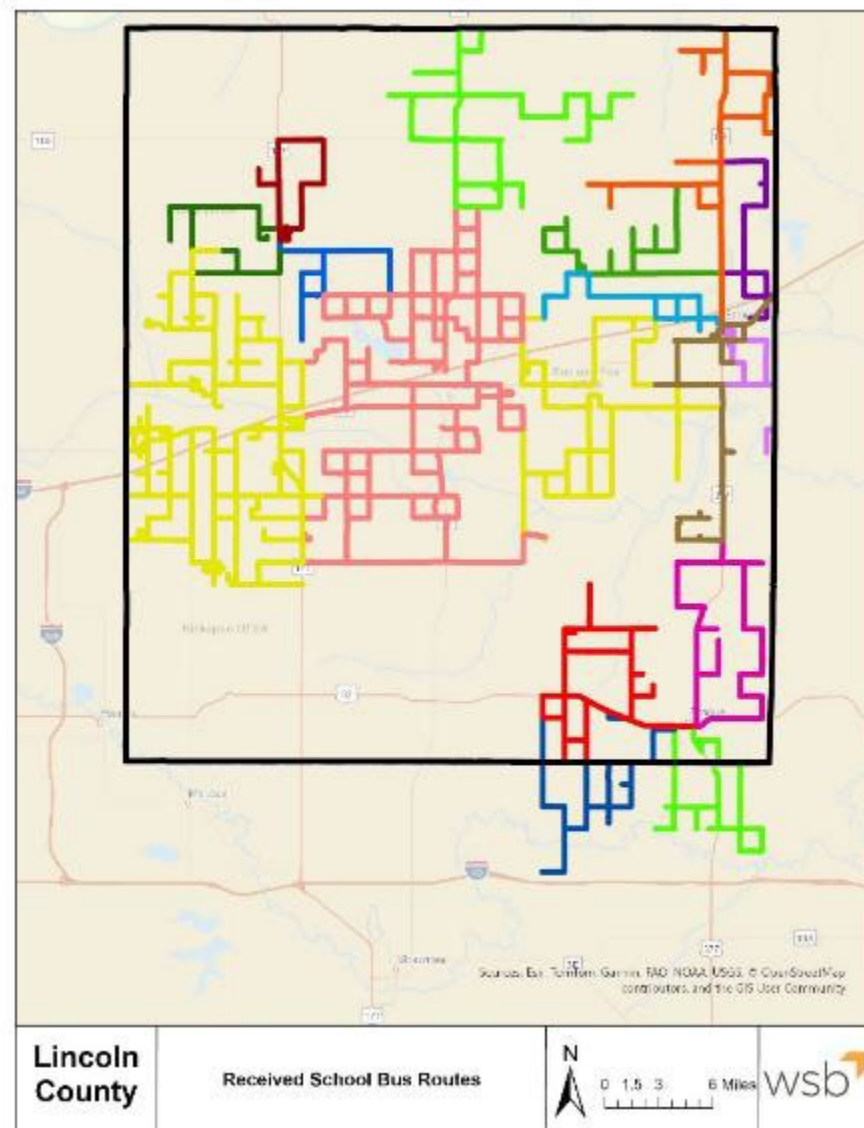


Figure 9– Received School Bus Routes in Lincoln County

2.4. Transportation Authority and Governance Structure

2.4.1. Authority

Lincoln County operates under a county-level governance framework that enables its elected officials and departments to manage, plan, and oversee transportation infrastructure within its jurisdiction. The Lincoln County Board of County Commissioners (BOCC) holds executive and legislative authority over county policies, including those related to roads, bridges, and transportation safety.

The Lincoln County Highway Department is the primary agency responsible for the maintenance and improvement of county-maintained roads and bridges. This department works to ensure a safe, efficient, and accessible transportation network for residents, businesses, and visitors throughout the county.

In addition to its internal responsibilities, Lincoln County collaborates with various state and federal agencies to support transportation projects and funding initiatives.

- **Federal Partnerships**

Lincoln County accesses federal resources through programs such as the Federal Highway Administration's SS4A initiative and other relevant funding sources. Support may include grant opportunities and technical assistance to improve rural transportation safety and infrastructure.

- **State-Level Coordination**

Lincoln County works in partnership with the ODOT on regional infrastructure planning, state highway intersections, and projects that span multiple jurisdictions. This coordination ensures local priorities align with statewide transportation strategies.

2.4.2. Project Governance

For the development of an SS4A Safety Action Plan and as part of the planning structure, Lincoln County created a Project Oversight Team. This team consisted of Will Fine - District #1 Commissioner, Marlon Miller - District #2 Commissioner, Lee Doolen - District #3 Commissioner, Chassary Goodman - Administrative Assistant. The Oversight Team provided vision, guidance, and decisions on behalf of the county. Additionally, a Project Team was formed that included staff members from the consulting firm WSB. The Project Team worked in a collaborative manner and environment with clear communication and direction. Through the collaborative process the Oversight and Project Teams were able to keep everyone informed of the project milestones, gather feedback, collaborate, and provide an avenue to maintain transparency in the SS4A planning process.

As the project moved forward, they convened bi-monthly and monthly status meetings during the development of the Safety Action Plan. It is anticipated that the Lincoln County Oversight Team will oversee the implementation and monitoring of the SS4A Safety Action Plan going forward.

A photograph of a car accident scene. A light blue car on the left has a severely damaged front end, with its hood crumpled and its front wheel visible. A dark blue car on the right has its front end also damaged, with the hood and bumper area crumpled. A large, white, stylized number '3' is overlaid on the image, with its top horizontal bar positioned behind the text 'SAFETY ANALYSIS'.

SAFETY ANALYSIS

Chapter 3 Highlights:

- Data Collected from Crash Trends Snapshot (2017–2021)
- Total Crashes: 1,786
- Fatal Crashes: 40 (2.24%)
- Most Common: Rear-end, angle-turning, fixed-object
- Top Causes: Failure to yield, speeding, poor lighting, distraction
- Rural Areas: Higher fatality rate, more rollovers/fixed-object crashes
- Major Cities (Chandler, Stroud, Prague, Meeker): More total crashes, especially rear-end and intersection-related
- High-Risk Groups: Older adults (65+), male drivers, unbelted occupants
- Pedestrian/Bike Crashes: 2.2% of total, but 21% of all fatalities

3. Safety Analysis

3.1. Data Collection

The data used in this study consists of a 5-year historical crash dataset from January 1, 2017, to December 31, 2021. This data was requested and collected from the ODOT Collision Data Request Portal on September 30th.

For pedestrian and bicycle crashes, the dataset from the Oklahoma Highway Safety Office (OHSO) was used, as it reports a higher number of such incidents—totaling 9—and includes additional details such as age, sex, injury type, and the conditions of both the driver and pedestrian. While ODOT categorizes pedestrian crashes as one of many crash types, OHSO reports them separately with more detailed attributes.

After integrating the OHSO dataset and removing duplicate pedestrian and bicycle crashes from the ODOT dataset, the final dataset for analysis includes 1,777 unique vehicle crashes from ODOT and 9 pedestrian and bicycle crashes from OHSO, resulting in a total of 1,786 unique crashes. The full data filtering and integration process is detailed in **Appendix B - Supplementary Data on Safety Analysis, Section B.1.**

3.2. Crash Analysis

3.2.1. Total Crashes by Severity

According to the FHWA injury classification scale and definitions for Oklahoma, collisions are ranked on a severity scale of 1 to 5, categorized as follows:

1 – Property Damage Only (PDO): No Injuries: If the person has no injuries.

2 – Possible Injury: An injury reported or claimed which is not a fatal injury, incapacitating injury or non-incapacitating evident injury.

3 – Non-incapacitating Injury: Any injury, other than a fatal injury or an incapacitating injury, which is evident to observers at the scene of the accident in which the injury occurred.

4 – Incapacitating Injury: Any injury, other than a fatal injury, which prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred.

5 – Fatality: if the person is fatally injured (death occurs within 30 days of the date of the collision).

Figure 10 shows the percentage of crashes by severity in the entire Lincoln County. These crashes include 40 fatal crashes, 102 incapacitating injury crashes, 289 non-incapacitating injury crashes, 360 possible injury crashes, and 995 property damage-only crashes.

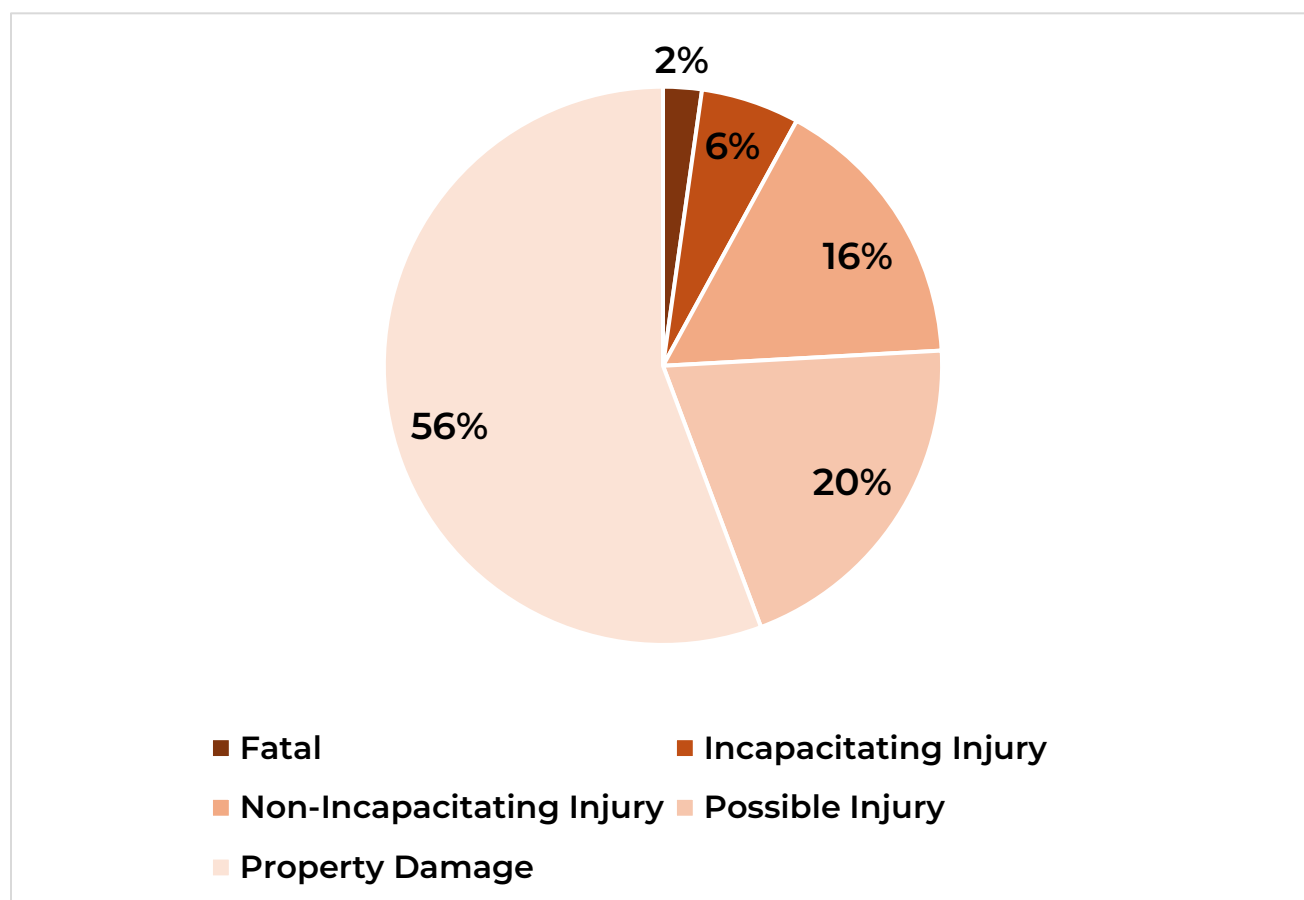


Figure 10 - Total Crashes by Severity (2017-2021) - Entire Lincoln County

3.2.2. Crash Types

Crashes within Lincoln County vary by type, with some categories presenting more significant safety concerns than others. **Figure 11** shows the most common types of crashes that happened between the year 2017-2021 in the entire county. As shown in **Figure 11**, Fixed-Object crashes have the highest percentage, followed by Rear-End and Angle-Turning.

Figure 12 illustrates the three most common types of crashes in different communities across Lincoln County.

In urban areas including Chandler, Stroud, Prague, and Meeker, rear-end (26.95%), angle-turning (22.42%), and fixed-object (12.85%) crashes are the most frequent. These patterns likely reflect the influence of higher traffic volumes, signalized intersections, and frequent stopping or turning movements. Urban areas also show a notable presence of sideswipe-same-direction and right-angle crashes, typically associated with lane changes and turning at intersections.

In contrast, rural areas outside of these cities experience a different crash profile. Fixed-object crashes dominate (32.38%), followed by rear-end (19.21%) and rollover (10.93%) crashes. These are often linked to narrow, curving roadways, limited lighting, and higher speeds. Animal-related crashes (5.54%) are also more frequent in rural zones, particularly in low-visibility conditions or during periods of seasonal wildlife movement.

Despite these urban–rural differences, angle-turning and right-angle crashes remain common across both settings, indicating a broader regional trend tied to roadway design and turning behavior.

Figure 13 illustrates the differences in crash types between intersection-related and roadway-related crashes, which derives from distinct driving conditions and traffic patterns. Intersection crashes often involve conflicts between crossing or turning vehicles, while roadway crashes are influenced by speed, lane changes, and road departures. As shown in this figure, Intersection-related crashes are predominantly angle-turning (32.06%) and rear-end (26.01%) collisions, with right-angle crashes (21.97%) also being prevalent. Roadway-related crashes most commonly involve fixed-object collisions (34.55%), rear-end crashes (19.25%) and rollover crashes (11.79%).

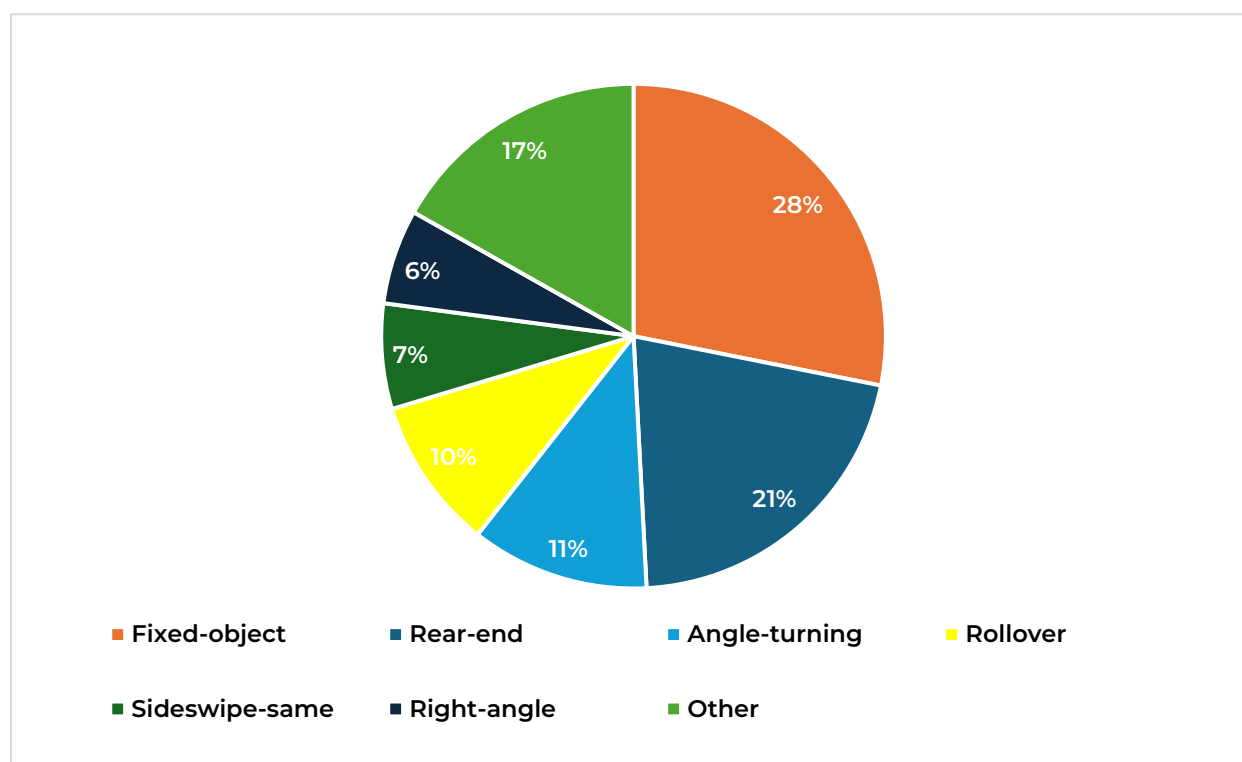


Figure 11 - Total Crashes by Crash Type - Entire Lincoln County

Note: Crash types with less than 5% involvement, including head-on, and animal-related crashes, are categorized as "Other".

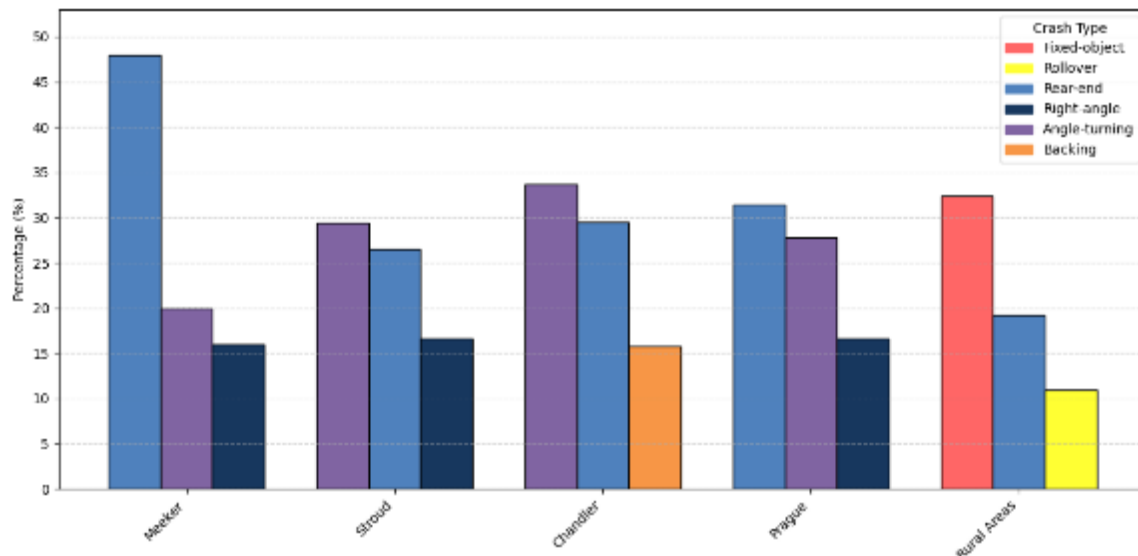


Figure 12 - Crash Types by Major Communities

Note: All crashes, excluding those in major cities, are included in rural areas

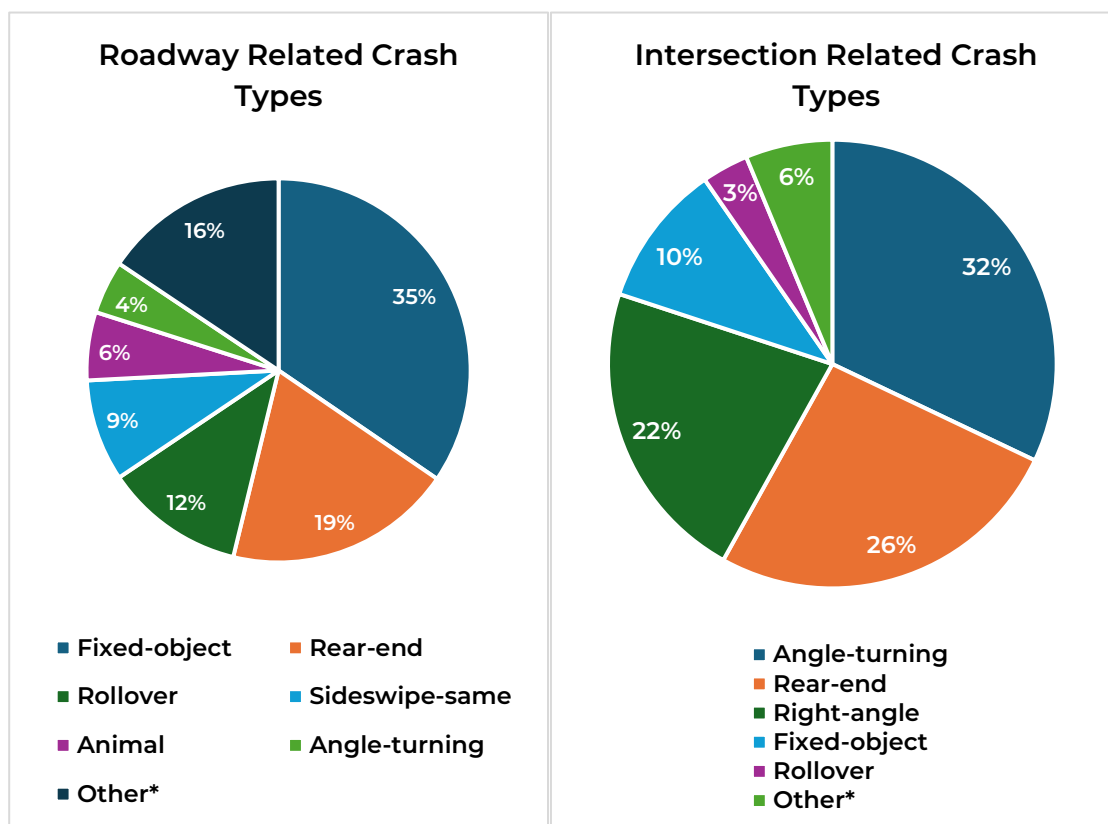


Figure 13 - Main Crash Types in Roadway Related and Intersection Related Crashes

Note: Crash types with less than 5% involvement, including Pedestrian, Bicyclist, Head-On, Other Angles, Sideswipe, Opposite Direction, and Animal related, are categorized as "Other".

3.2.3. Contributing Factors (Crash Reasons)

Understanding the factors that contribute to crashes is crucial for identifying key safety concerns and implementing effective countermeasures. A number of reasons can lead to crashes, but some stand out as more significant than others. The analysis focuses on these major contributing factors to highlight critical behavioral and environmental issues affecting roadway safety.

Of all the categories representing the reasons behind crashes, as provided in the data, only the contributing percentages higher than 5% were identified as the main contributing factors. **Table 2** presents the primary contributing factors in crashes for Lincoln County. It shows the number and percentage of crashes associated with each of these reasons, ordered from highest to lowest based on the total contributing percentage. This table includes the following:

- Contributing Crashes (Total): Represents the total number of crashes where this reason was one of the contributing factors.
- Sole Cause Crashes: Represents the number and percentage of crashes where this reason was the only cause.

As shown in **Table 2**, Poor Lighting is the most frequently cited factor, involved in 30.35% of crashes, though it is the sole reason in only 6.22%. Speeding follows at 18.65% involvement and is the sole cause in 5.6% of cases. Distraction and Failed to Yield are also notable, each contributing to over 8% of crashes and serving as the sole reason in 6.66% and 5.82% of cases, respectively. Poor Weather is involved in 14.56% of crashes but rarely the only cause (1.85%). Other contributing factors include Alcohol/Drug use (7.22%), Poor Road Condition (6.72%), and Following Too Closely (5.04%), though these are less often the sole cause of a crash.

Table 2 - Primary Contributing Factors in Crashes (≥5% Contribution) – Entire Lincoln County

Crash Reasons	Contributing Crashes (Total)		Sole Cause Crashes	
	Number	Percentage	Number	Percentage
Poor Lighting	542	30.35%	111	6.22%
Speeding	333	18.65%	100	5.6%
Poor Weather	260	14.56%	33	1.85%
Distraction	180	10.08%	119	6.66%
Failed to Yield	143	8.01%	104	5.82%
Alcohol/Drug	129	7.22%	37	2.07%
Poor Road Condition	120	6.72%	7	0.39%
Followed too Closely	90	5.04%	67	3.75%

In addition to the major contributing factors that cause crashes, the use of protective devices (such as seat belts, helmet or child seats) impacts the severity of the crash. Crash records include an attribute indicating whether the person involved was using a protective device. According to crash data from the ODOT database (2017-2021), approximately 43% of fatalities were linked to instances where the protective device was not used, highlighting the critical need for promoting usage of safety devices.

3.2.4. Crashes by Demographic Patterns

Between 2017 and 2021, crash data in Lincoln County showed distinct trends among age groups. Older drivers (65+) were involved in 9.63% of total crashes but accounted for 17.5% of fatal crashes, reflecting a higher likelihood of fatal outcomes relative to their overall involvement. In contrast, teenage drivers were involved in a larger share of total crashes (13.61%) but made up only 5% of fatal crashes. This suggests that while teen drivers are more frequently involved in crashes, those incidents are generally less severe than those involving older drivers. Gender analysis further indicates that male drivers were involved in 61.01% of total crashes and 68.37% of fatal crashes, suggesting a disproportionate share of severe outcomes compared to female drivers, who accounted for 38.99% of total and 31.63% of fatal crashes.

Table 3 provides a breakdown of total crashes and fatal crashes involving older and teenage drivers from 2017 to 2021, including the percentage of these crashes relative to the total crashes and fatal crashes across all years.

Table 3 - Crash Involvement by Age Group (2017-2021) – Entire Lincoln County

Year	Older Drivers				Teenage Drivers			
	Total Crashes		Fatal Crashes		Total Crashes		Fatal Crashes	
	Number of Crashes involving Older Drivers	% of Total Crashes	Number of Crashes involving Older Drivers	% of Total Fatal Crashes	Number of Crashes Involving Teenage Drivers	% of Total Crashes	Number of Crashes Involving Teenage Drivers	% of Total Fatal Crashes
2017	30	7.77%	0	0%	57	14.77%	2	22.22%
2018	32	9.28%	2	20.00%	46	13.33%	0	0%
2019	52	13.37%	2	22.22%	47	12.08%	0	0%
2020	32	9.85%	1	14.29%	46	14.15%	0	0%
2021	26	7.62%	2	40.00%	47	13.78%	0	0%
Total	172	9.63%	7	17.50%	243	13.61%	2	5.00%

3.2.5. Crashes by Major Communities

Table 4 presents the percentage of crashes by severity level for major communities within Lincoln County, along with the total number of crashes in each area, ordered from the highest to lowest crash totals. According to this table:

- Stroud has the highest number of crashes (102), with fatal crashes at 1% and a majority (64%) resulting in property damage only. About 10% each were incapacitating and non-incapacitating injuries, indicating a moderate severity distribution.
- Chandler also reported 1% of fatal crashes, with 70% resulting in property damage only. The city had no reported incapacitating injuries, but 10% were non-incapacitating and 13% possible injuries.
- Prague showed a similar fatal crash rate (1%) but had a higher share of incapacitating injuries (2%) and a lower share of property damage-only crashes (36%), suggesting a greater proportion of injury-related incidents compared to Chandler and Stroud.
- Meeker, despite a small total crash count (25), had 2% incapacitating and 6% non-incapacitating injuries, with 15% possible injuries and 24% property damage-only crashes, indicating a more balanced distribution across severity levels.
- Rural areas experienced a higher fatal crash rate at 2.45%, with 5.89% incapacitating and 17.28% non-incapacitating injuries. While 53.77% of crashes resulted in property damage only, the overall severity profile is higher than in the cities, reflecting the increased risks associated with rural road conditions and higher-speed environments.

A detailed breakdown of normalized crash data by population and area, as well as contributing crash factors across major communities (e.g., failed to yield, speeding, poor lighting), is provided in **Appendix B - Supplementary Data on Safety Analysis**.

Table 4 - Crash Distribution by Major Communities and Severity Level

County	Severity Level					Total Crashes
	Fatal	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	Property Damage	
Stroud	1.0%	9.8%	9.8%	15.7%	63.7%	102
Chandler	1.0%	0.0%	9.8%	12.7%	69.6%	95
Prague	1.1%	2.1%	5.3%	12.6%	35.8%	54
Meeker	0.0%	1.9%	5.6%	14.8%	24.1%	25
Rural Areas	2.45%	5.89%	17.28%	20.60%	53.77%	1,510

Note: All crashes, excluding those in major cities, are included in rural areas

3.2.6. Pedestrian and Bicycle Crashes

According to data from the OHSO for the years 2017 to 2021, there were 8 pedestrian-involved crashes (0.45%) and 1 bicycle-involved crash (0.06%) out of a total of 1,786 crashes in the region. While pedestrian and bicycle crashes accounted for just 0.51% of all crashes, they were associated with disproportionately severe outcomes. Among the 9 total pedestrian and bicycle crashes, 1 was fatal and 3 resulted in incapacitating injuries. Two crashes caused non-incapacitating injuries, two caused possible injuries, and only one resulted in property damage alone. These figures highlight the elevated risk of serious harm in crashes involving vulnerable road users, despite their relatively low occurrence. **Figure 14** shows pedestrian and bike crashes by severity level.

There were a total of 9 pedestrian and bicycle crashes recorded between 2017 and 2021. Of these, 3 occurred within urban areas (Chandler, Stroud, Prague, and Meeker), resulting in 2 incapacitating injuries and 1 property damage-only incident. The remaining 6 crashes occurred in rural areas and were more severe, including 1 fatal crash, 1 incapacitating injury, 2 non-incapacitating injuries, and 2 possible injuries. Notably, 5 of the 9 crashes occurred under poor lighting conditions, and all crashes were roadway-related, with none taking place at intersections. These patterns highlight the heightened vulnerability of non-motorized road users in both urban and rural settings, especially under low-visibility conditions.

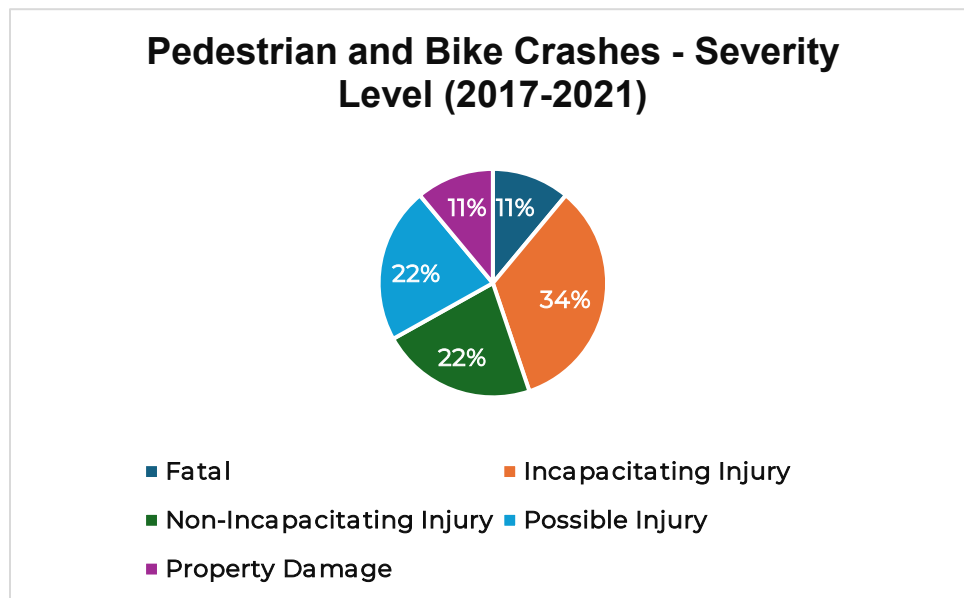


Figure 14 - Pedestrian and Bike Crashes Severity Level Distribution in Lincoln County (2017-2021)

3.2.7. Crash Heatmaps

To gain a clearer understanding of areas with higher crash concentrations, heatmaps were created to enhance visualization. The heatmap was created based solely on crash frequency, with red areas indicating locations with the highest concentration of fatal and injury crashes, gradually transitioning to green for lower frequencies. Areas without color experienced no fatal or injury crashes. **Figure 15** and **Figure 16** display the heatmaps for total crashes, and for pedestrian and bike crashes, respectively.

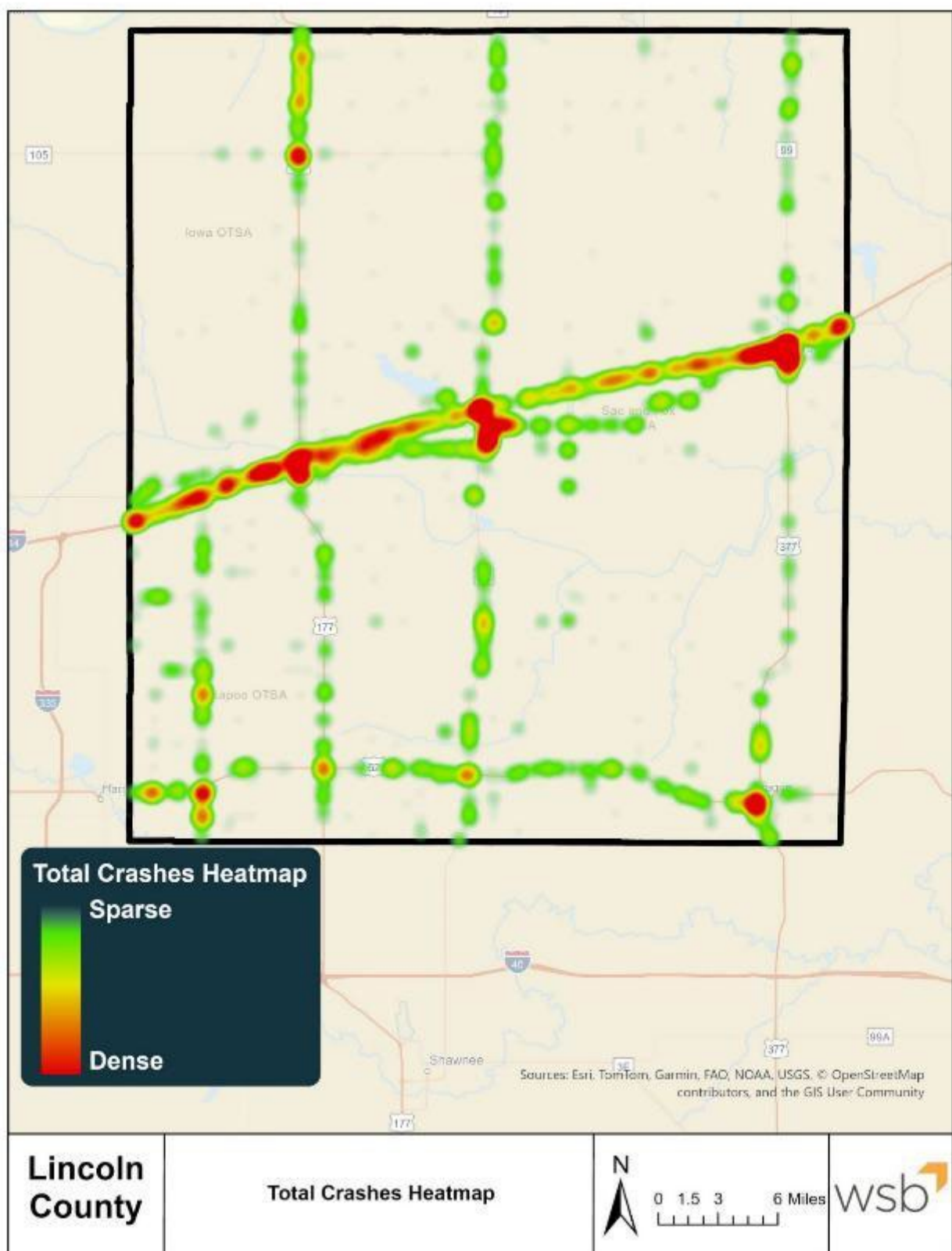


Figure 15 - Total Crashes Heatmap

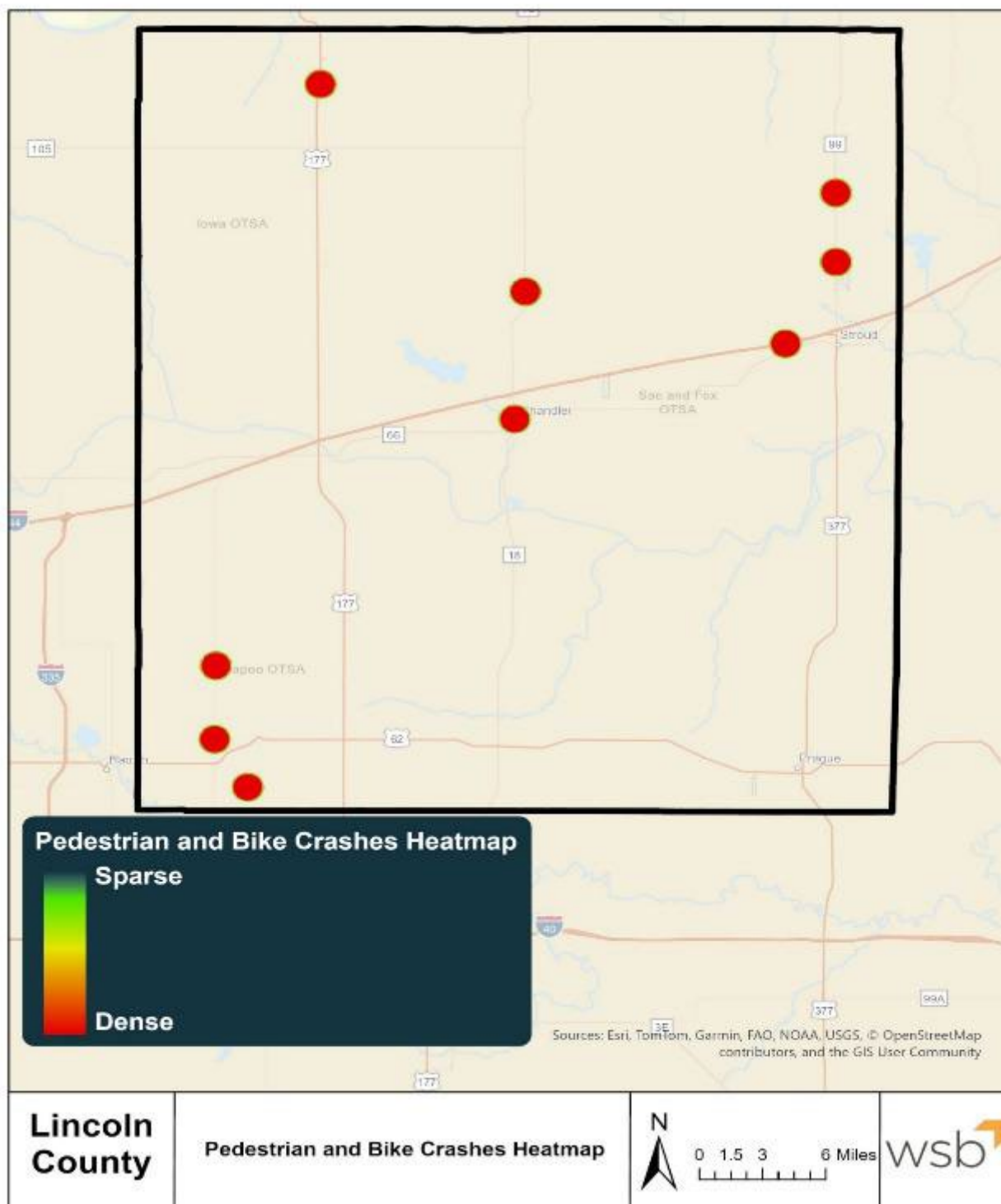


Figure 16 - Pedestrian and Bike Crashes Heatmap

The total crash heatmap highlights elevated concentrations of crashes in cities such as Chandler, Stroud, Prague, and Warwick. Additionally, major corridors, especially the I-44 interstate and surrounding arterial roadways show significant crash density.

3.2.8. High Injury Network (HIN)

In line with the Vision Zero strategy—aimed at eliminating all traffic fatalities and severe injuries—identifying locations with a high incidence of severe crashes is crucial. The HIN is a method for network screening, focusing on street corridors and intersections that have a history of severe crashes. A detailed, step-by-step explanation of how the HIN network was generated for the county is provided in the memo of **High Injury Network Development Methodology in Appendix C**.

In developing the HIN crashes with the top three severity levels: fatal, incapacitating injury, and non-incapacitating injury were considered. For each road segment and intersection, a crash rate was calculated and categorized into three groups: Low Safety Concerns, Medium Safety Concerns, and High Safety Concerns using the following formula:

The Medium and High Concern categories collectively account for 97.5% of fatal crashes, 80.95% of incapacitating injuries, and 49.66% of non-incapacitating injuries, despite covering only 7.99% of the roadway network and 1.14% of intersections. As a result, these two categories were selected as the final High Injury Network, as shown in **Figure 17**.

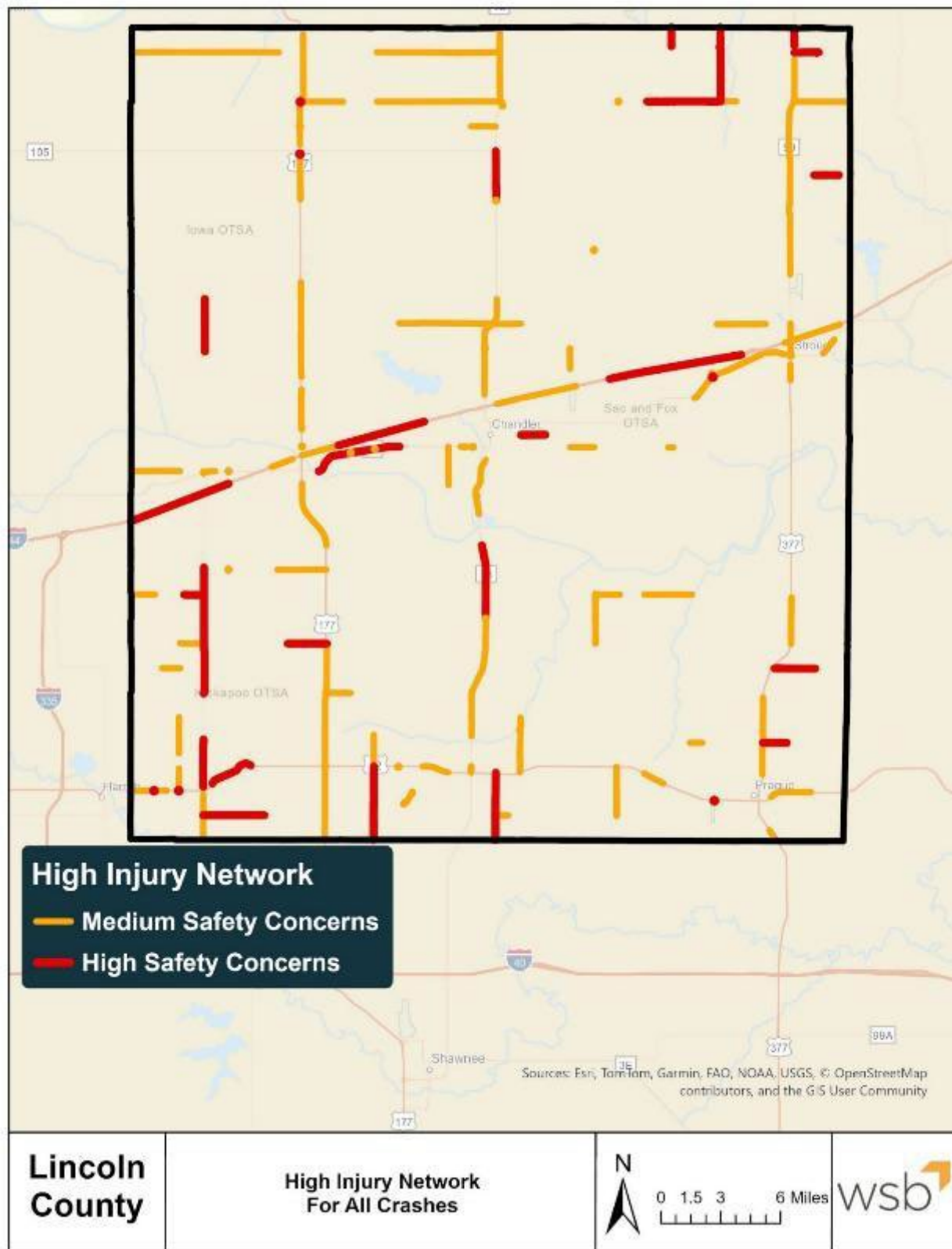


Figure 17 - High Injury Network

PUBLIC OUTREACH AND STAKEHOLDER ENGAGEMENT

Chapter 4 Highlights:

- Outreach engaged Lincoln County residents, schools, first responders, and government agencies
- Community input was collected via a survey, interactive comment map, comment cards, 2 meetings and the helpline
- The project website (LincolnCountySS4A.com) served as a central hub with project information and ways for the community to get involved
- 34 survey responses, 25 map comments, and 3 helpline inquiries
- The top three areas for safety improvements were 2-lane rural highways, pedestrian crossings, and all-way stop control intersections
- The top three preferred communication channels were social media (ranked #1), community meetings (ranked #2), and public awareness campaigns (ranked #3)

4. Public Outreach and Stakeholder Engagement

4.1. Approach

Hearing from those who live, work and play in Lincoln County is important for the SS4A Plan because it gives the plan more depth by integrating feedback with the available crash data records. Sometimes roadway safety or hazards don't involve emergency management and thus don't get reported in the records. Understanding the communities' perceptions and experiences helps to fill this gap. An engagement plan was developed early in the process to identify ways to hear from the community and stakeholders. The following groups were invited to participate in the planning process:

- **Community Members:** Individuals who live, work or play in Lincoln County
- **First Responders and Law Enforcement:**
 - Emergency Management (Lincoln County, Perkins)
 - Fire Departments (Chandler, Stroud, Jacktown, Agra, COEDD Rural Fire, Wellston)
 - Police Departments (Wellston, Sac & Fox, Iowa Tribe, Stroud, Kickapoo Tribe, Carney, Prague, Davenport, Chandler, Agra, Meeker)
 - School Resource Officers (Chandler, Wellston, Meeker, Agra, Stroud, and Prague)
 - Lincoln County 911 Comm Center Dispatch
 - Stroud Code Enforcement
 - Miller EMS
 - Survival Flight
- **Oklahoma Transportation Agencies:** Department of Transportation, Turnpike Authority, and Highway Patrol
- **Tribal Nations:** Sac & Fox, Kickapoo, and Iowa Tribe
- **City Government Officials:** Stroud, Wellston, Prague, Chandler, and Meeker
- **Town Government Officials:** Kendrick, Sparks, and Tryon
- **Educational Institutions:** Superintendents (Stroud, Chandler, Wellston, Meeker, Agra, Prague, Carney, and Perkins Tryon)
- **Businesses:**
 - Chandler Chamber of Commerce
 - First Capital Trolley
 - Sac & Fox Pow Wow & RV Park
 - 99 Roping Arena
 - Iowa Tribe Pow Wow
 - Chandler Interpretive Center

- Hawk Haven
- White Rock Schools
- Lakeview Ridge Event Venue
- Service King Mfg.
- Oak Glen RV Park
- Pine Crest & 1040 Road RV Park
- 3310rd and 66 RV Park
- Fair Grounds
- Stroud Lake Road
- Sparks American Biker Rally & Campgrounds

4.2. Strategies

To solicit community and stakeholder participation, both in-person and virtual engagement options were provided in February and April 2025. The in person meetings hosted in Lincoln County Clerk (811 Manvel Ave, Chandler, OK 74834). Other strategies included an interactive project website, content on Lincoln County's website, pop-up events, Facebook posts, meeting flyers, stakeholder emails, business card distribution, newspaper advertisements, and public meetings. Input on safety concerns and current conditions was collected through a survey, comment map, helpline, and comment cards.

1. **Interactive project website** - Hosted via an ArcGIS Hub site and provided one location for all things the community and stakeholders needed to know about the project and ways to get involved. The website hosted the survey, comment map, meeting calendar, helpline information, and engagement summaries. A custom Uniform Resource Locator (URL) "LincolnCountySS4A.com" and Quick Response (QR) code were included in all promotional materials to direct people to the website.
 - a. **Comment map:** A tool that allows people to add comments to specific locations on a map. The entire boundary of Lincoln County was outlined, and commenters were only allowed to comment within this boundary. This was open from December 7, 2024, to April 10, 2025. It received 25 comments regarding specific locations that need safety improvements.
 - b. **Survey:** Consisted of 19 questions and collected 34 responses. The survey was hosted on the project's website, and printed copies were made available at public meetings. It was open from December 7, 2024, through February 24, 2025.
2. **Helpline** - Included an email and phone number to provide a direct way for people to get in touch with the project team to share information and ask questions. Throughout the project, 3 inquiries were received and responded to.
3. **Invitation flyer** - Emailed four weeks prior to the meetings to around 70 stakeholders and printed copies were distributed around Lincoln County.

4. **Business card** – Included general project information and was handed out around town to build awareness about the Plan and to solicit public feedback. These were brought to 14 businesses:
 - a. Sac & Fox Pow Wow & RV Park
 - b. 99 Roping Arena
 - c. Iowa Tribe Pow Wow
 - d. Chandler Interpretive Center
 - e. Hawk Haven
 - f. White Rock Schools
 - g. Lakeview Ridge Event Venue
 - h. Service King Mfg.
 - i. Oak Glen RV Park
 - j. Pine Crest & 1040 Road RV Park
 - k. 3310rd & 66 RV Park
 - l. Fair Grounds
 - m. Stroud Lake Road
 - n. Sparks America Biker Rally & Campgrounds
5. **Pop up events** – Project business cards and invitation flyers were distributed at the City of Chandler's Council meeting and during the holiday parade in Chandler.
6. **County website** – Meeting details were listed in the bulletin section, on the county calendar, on a ribbon on the home page, and in the forms section. The project website was also listed in the other links section.
7. **Facebook promotion** – Two meeting invitation posts were made by the Lincoln County Sheriff's Office. The first was posted on February 3, 2025, received 15 likes, 1 comment, and 20 shares. The second posted on March 26, 2025, received 9 likes, 2 comments that tagged others to look at the post, and 7 shares.
8. **Newspaper ad** – A quarter page, color ad was included in the February 6, 2025, and April 3, 2025, publications of The Lincoln County News. These advertisements invited the community to participate in public meetings.
9. **Stakeholder and public meetings:** The first was on February 10, 2025, to explain why the SS4A Plan is needed, what it entails, and to request input on areas in Lincoln County that could benefit from safety improvements. The second meeting was on April 8, 2025, to share community feedback received, and crash data findings for Lincoln County. Each meeting was documented with a summary report to outline what the meetings were about, who participated, and the feedback received.

Full meeting summaries can be found in **Appendix D**.

4.3. Findings

Key findings from the survey

The SS4A - Safety Action Plan survey gathered insights from 32 respondents about transportation and safety in the community from December 7, 2024, through February 24, 2025. This was accessible via the project website, and printed copies were provided as an option during the public and stakeholder meetings.

- **Primary mode of transportation:** Nearly all respondents (96.88%) use personal vehicles. Walking (3.13%) is the only other choice the respondents selected.
- **Daily travel:** 81.25% travel more than 10 miles per day.
- **Children's school transportation:** Majority of children (61.11%) are driven by parents, followed by 11.11% using a school bus.
- **Safety concerns for school commutes:** Respondents prioritized improved sidewalk conditions, crosswalks and pedestrian signals, and lighting conditions.
- **Vehicle safety:** 40% feel somewhat safe in vehicles, while only 12% feel very safe.
- **Walking safety:** 36% feel very unsafe, 20% feel somewhat unsafe, and 16% don't/rarely walk.
- **Bicycle safety:** 40% feel very unsafe, 16% feel somewhat unsafe, and 32% don't/rarely bike.
- **Street accessibility:** 72% find streets very inaccessible or somewhat inaccessible for users, including those with disabilities.
- **Factors negatively impacting transportation safety:** Poor road conditions (76%), speeding (56%), poor road design (52%), and distracted driving (48%) were the main concerns.
- **Safety improvement needs:** 84% of respondents believe 2-lane rural highways need improvement. The next highest priorities are pedestrian crossings and all-way stop control intersections, each receiving 36%.
- **Safety improvement suggestions:** The highest percentage of responses favor road improvements (ranked #1), increased traffic enforcement (ranked #2), and public awareness campaigns (ranked #3).
- **Preferred communication channels:** Social media (ranked #1), community meetings (ranked #2), and local news (ranked #3) were the most preferred for traffic safety updates.
- **Support for the safety committee:** 90% support the formation of a committee to enhance road safety efforts.

Raw survey results and specific comment map locations can be found in **Appendix D**.

General concerns and suggestions received through the survey and comment map

In addition to the survey, respondents were asked to identify intersections they believe need safety improvements in Lincoln County. Respondents were able to place comments at any location on a map that included all the roads in Lincoln County. The comment map was available to the public from December 7, 2024, to April 10, 2025.

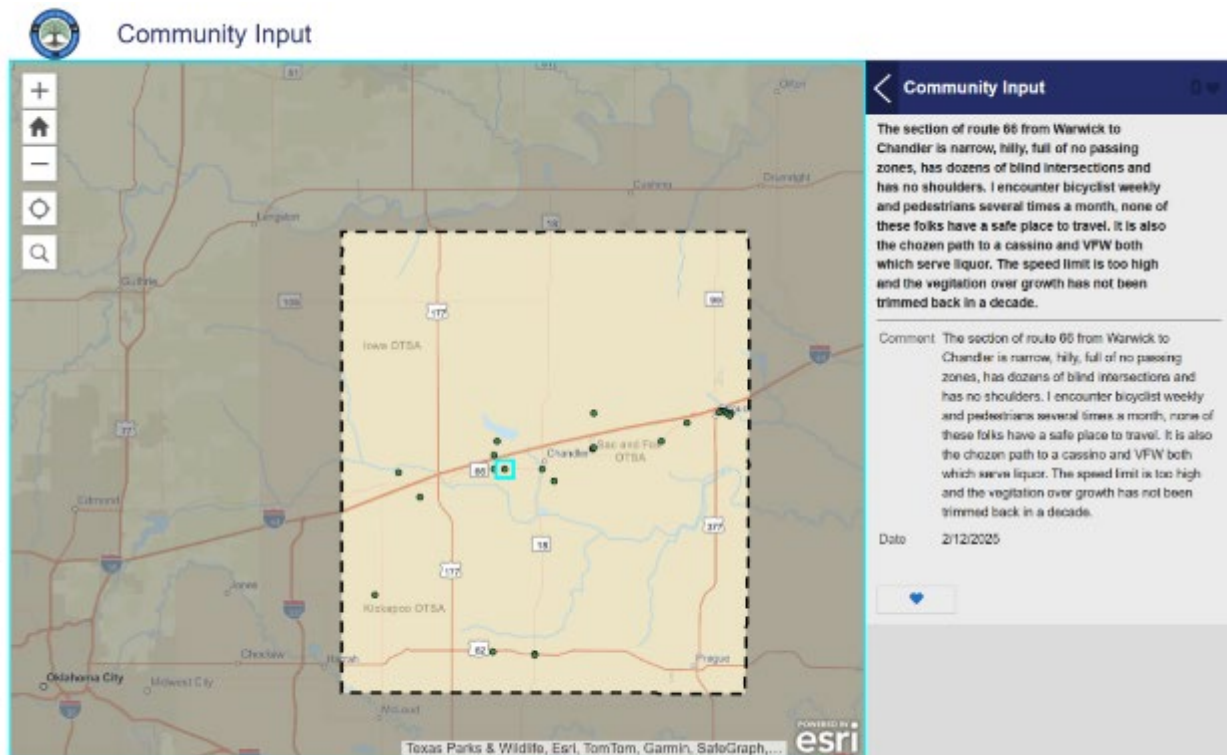


Figure 18 - Comment map for SS4A Website

Survey responses and comments left on the map emphasized the need for increased traffic enforcement, improved road maintenance, and better signage. Many respondents expressed concerns about rural and county roads, citing issues such as narrow lanes, soft shoulders, and poor drainage. Some highlighted the need for clearer road markings, freshly painted stop lines, and improved traffic signs. Others pointed out specific areas, including gravel roads that become impassable after rain and blind hills that create hazardous driving conditions. Several responses stressed the importance of considering rural roads in planning discussions, rather than focusing solely on town roads.

1. Road Safety and Infrastructure

- Dangerous road conditions were reported on multiple roads, including Route 66, and intersections in Chandler, Meeker, and Stroud.
- Specific roads were mentioned for lacking shoulders, having dangerous curves, and being prone to accidents.
- Calls for better road maintenance, repaving, attention to narrow roads, and filling potholes in multiple locations.
- Requests for traffic control measures at high-risk intersections.
- Request to update or replace the Spring Creek bridge.

2. Driving Behavior and Enforcement

- Speeding concerns in residential areas and school zones.
- Calls for lower speed limits and increased enforcement outside of school hours.
- Issues with blind intersections could contribute to reckless driving risks.

3. Children's Commute to School

- Requests for safer school bus routes, particularly on narrow roads that are shared with heavy truck traffic.
- Calls for resurfacing and widening of roads near schools for better accessibility.

4. Cycling and Walking

- Safety concerns for pedestrians and cyclists on Route 66 due to lack of sidewalks, bike lanes, and shoulder space.
- Overgrown vegetation limits visibility and makes roads more hazardous for non-motorists.

Comment Map and helpline inquiries can be found in **Appendix D**.

UNDERSERVED COMMUNITY CONSIDERATIONS

Chapter 5 Highlights:

- Equity guided outreach and project prioritization in the Safety Action Plan.
- Data and partner collaboration identified underserved communities.
- Entire Lincoln County classified as Historically Disadvantaged; excluded from prioritization.
- 8 census tracts fall under Areas of Persistent Poverty.
- Minority populations make up 18.82% of residents, with higher concentrations in select counties.
- 2.83% of households lack vehicle access, increasing transportation vulnerability.
- Outreach included in-person meetings, virtual options, and multiple feedback tools were created to reduce participation barriers.

5. Underserved Community Considerations

Fairness directed outreach and project priorities in the Safety Action Plan.

Impartiality was a central focus in developing the Lincoln county's SS4A Safety Action Plan, guiding both community outreach strategies and project prioritization. The plan was shaped using a comprehensive representative process that reflects the SS4A program's emphasis on equitable engagement. To support this approach, the team conducted data-driven analyses to identify underserved communities in collaboration with key partners. These analyses considered population characteristics and included preliminary fairness impact assessments for proposed strategies and projects, ensuring that the needs and voices of all community members, especially those historically underserved, were meaningfully integrated into the planning process.

5.1. Analysis and Metrics

To ensure a thorough evaluation of fairness, various datasets provided by the USDOT were reviewed, including the American Community Survey (ACS) data related to minority populations and vehicle ownership. This approach examined diverse population characteristics that inform safety and transportation needs. The primary datasets used for disadvantaged community considerations are summarized in **Table 5**.

Table 5 - Primary Datasets for Disadvantaged Community Considerations

Data	Source, Year	What this showed us	How we used it
Areas of Persistent Poverty	USDOT, 2020	Identifies geographic areas with consistently high poverty rates over time.	Help reveal if communities with fewer resources experience disproportionately higher road safety risks due to factors like older infrastructure or limited access to safe transportation options.
Minority Population	American Community Survey, 2021	Shows the spatial distribution of minority populations.	Analyzing this alongside crash data can highlight if certain racial or ethnic groups face elevated risks, potentially due to systemic inequities in infrastructure, traffic enforcement, or access to driver safety education.

Vehicle Ownership	American Community Survey, 2021	Indicates the percentage of households with vehicle access.	This helps understand mobility patterns and identify communities reliant on walking, cycling, or public transit, which might face higher risks if pedestrian and bicycle infrastructure or public transportation safety measures are inadequate.
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The Historically Disadvantaged Communities dataset was also assessed in alignment with the SS4A Notice of Funding Opportunity (NOFO) guidelines. However, the entirety of Lincoln County falls within the area defined as Historically Disadvantaged, as illustrated in **Figure 19**.

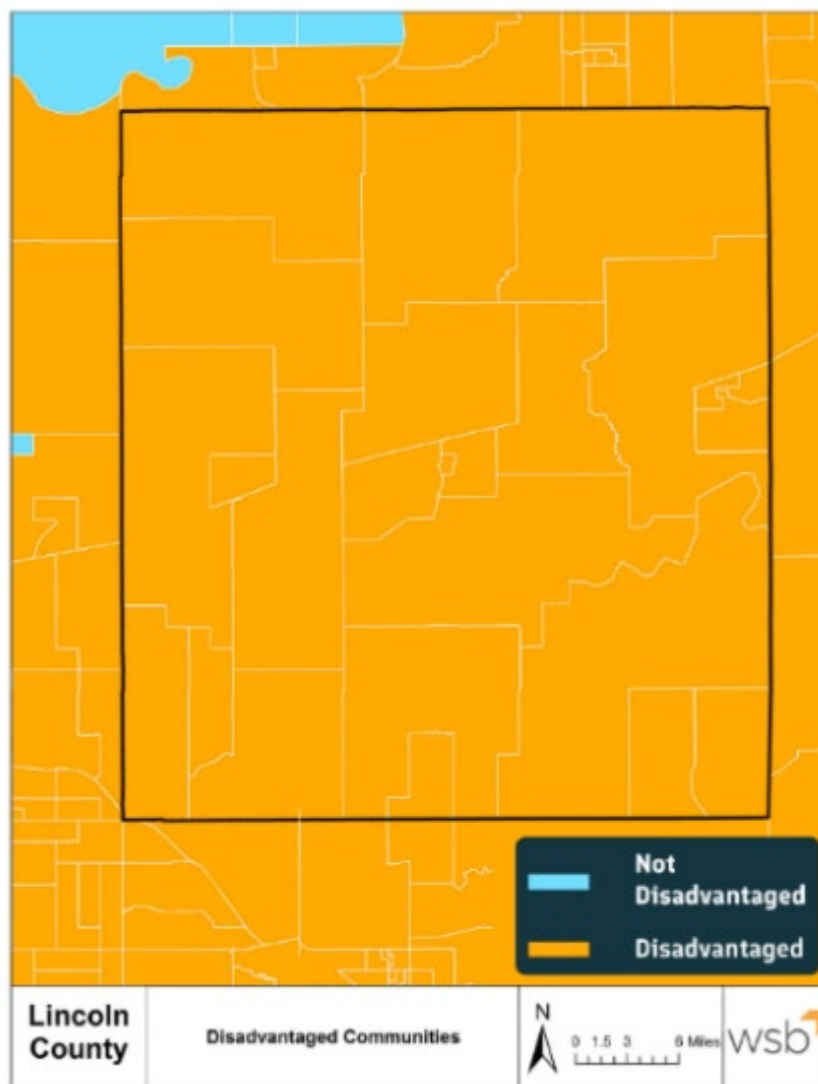


Figure 19 - Historically Disadvantaged Communities

5.1.1. Areas of Persistent Poverty

Persistent poverty is defined by the U.S. Department of Agriculture as counties where 20% or more of the population has lived in poverty over the last 30 years. According to the U.S. Census Bureau's 2021 American Community Survey 5-Year Estimates, **None of the 8 census tracts** in Lincoln county fall within areas classified as Areas of Persistent Poverty as can be seen in **Figure 20**.

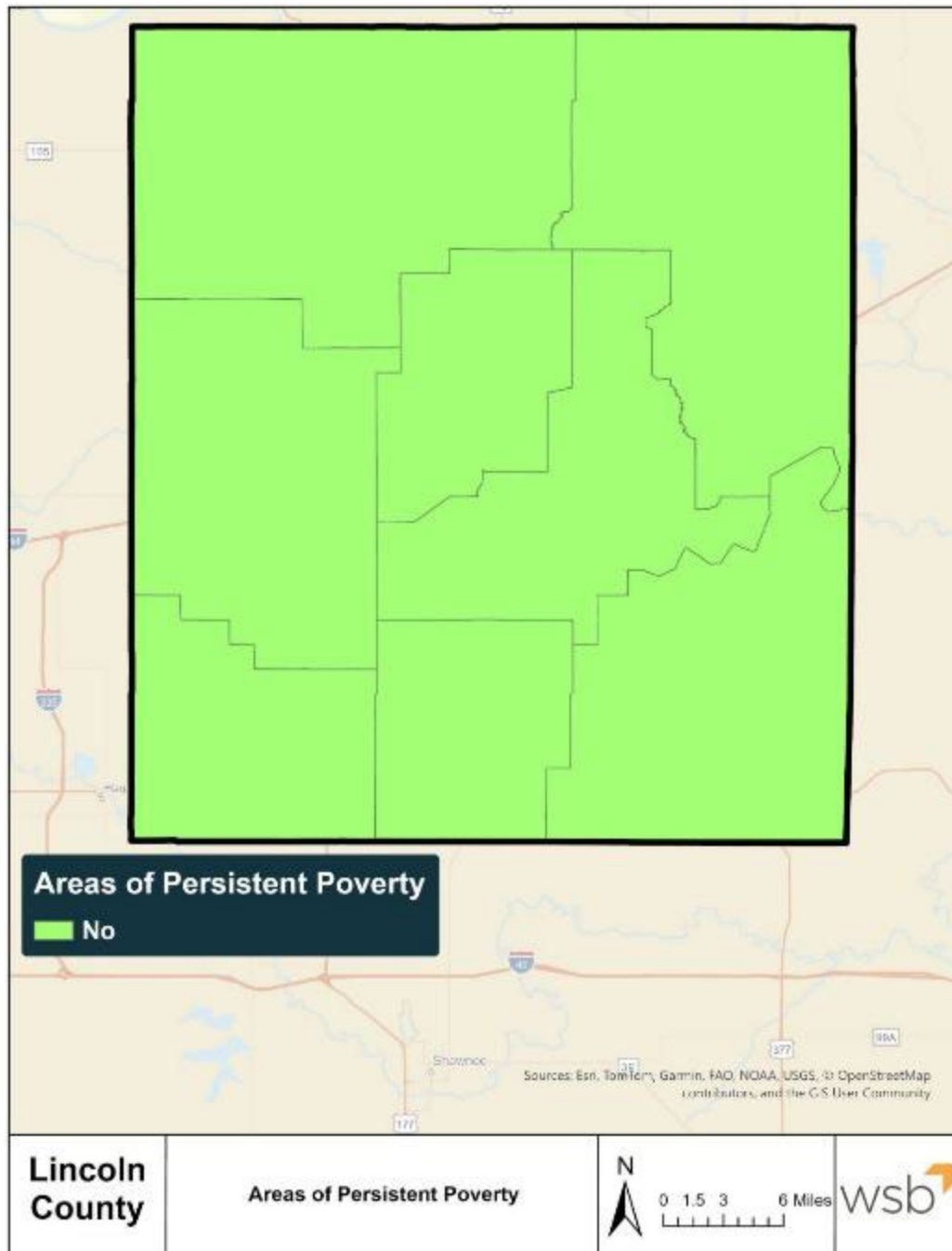


Figure 20 - Areas of Persistent Poverty

5.1.2. Minority Population

The majority of the population within Lincoln County is White, with a notable Native American population and smaller populations of African American, Hispanic, and Asian descent. In this plan, minority populations are defined as all races except White. Approximately **18.82%** of the population is classified as a minority. **Figure 21** illustrates the distribution of minority populations across the census tracts within Lincoln County.

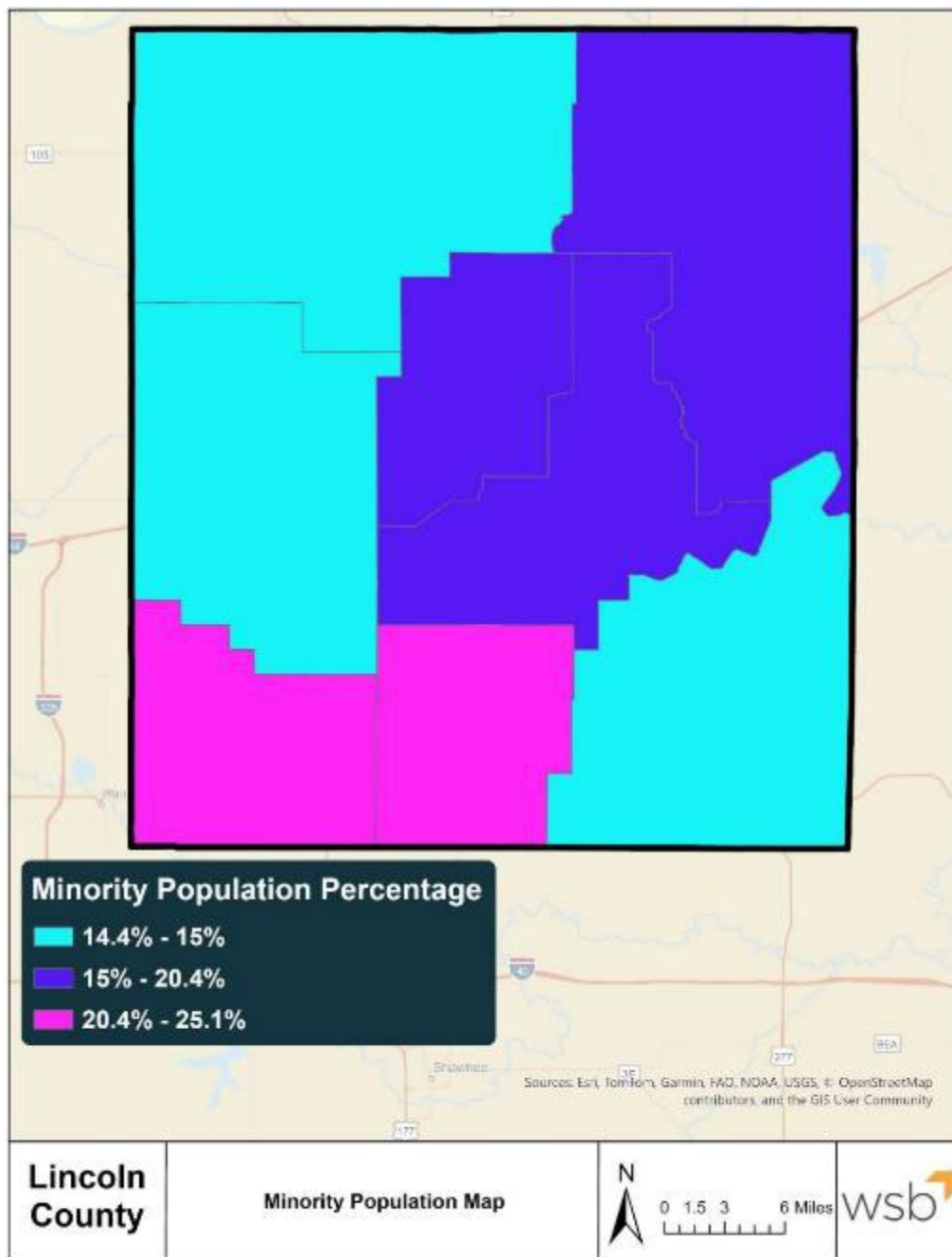


Figure 21 - Minority Population

5.1.3. Vehicle Ownership

Approximately **2.83% of households** within Lincoln County do not have access to a vehicle. Lack of vehicle ownership is a critical issue, especially in rural and tribal areas where public transportation is often limited or unavailable. Without access to a personal vehicle, households may struggle to reach employment opportunities, schools, healthcare services, grocery stores, and other essential destinations.

From a roadway safety perspective, individuals without vehicles are more likely to walk, bike, or depend on others for transportation. These alternative modes can expose them to higher crash risk, particularly in areas that lack pedestrian or cyclist infrastructure.

Integrating vehicle ownership data into the safety planning process enables Lincoln County to better identify vulnerable populations and prioritize investments in multimodal infrastructure, traffic calming measures, and connectivity improvements. This approach directly ensures that underserved and transportation-disadvantaged communities receive targeted safety improvements.

Figure 22, Household Vehicle Ownership, illustrates the percentage of households without vehicles across each census tract within the Lincoln County boundaries.

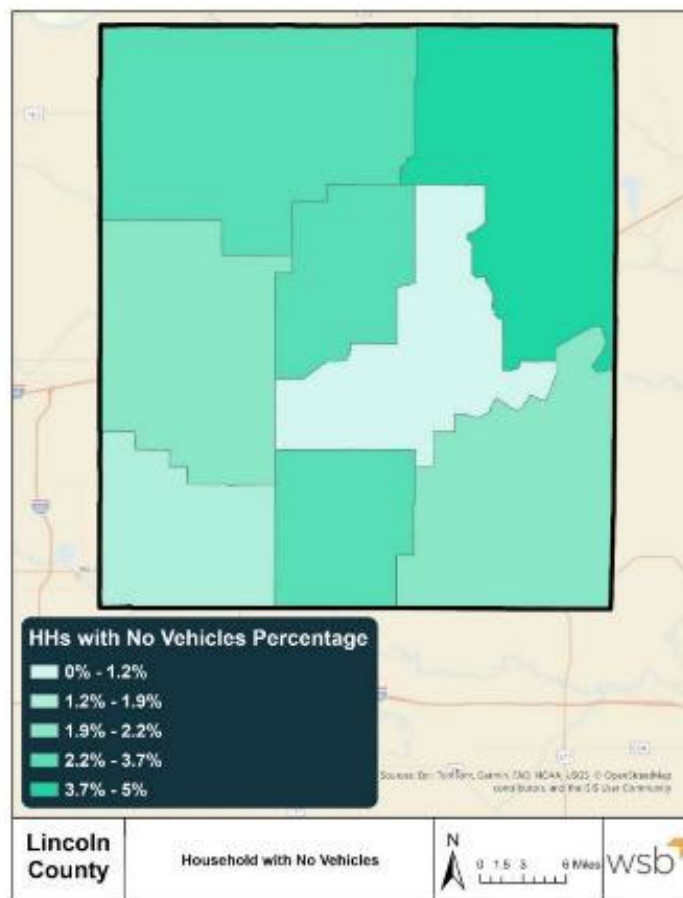


Figure 22 - Household Vehicle Ownership

5.2. Strategies for Underserved Community Outreach

To ensure public outreach included diverse populations, including minority, low-income, and elderly residents, the following elements were included:

- Two public meetings were hosted in Lincoln County (811 Manvel Ave, Chandler, OK 74834) on February 10 and April 8, 2025 (details provided in Chapter 4).
- During each meeting, a virtual option was provided to offer another method to present information and solicit feedback from the various communities across the county.
- The project website was established to provide communication and transparency to the project. It was used as a communication tool to deliver information about the project and provide a feedback loop for the county residents, community members, those employed in the community, and the many stakeholders who serve the county.
- A survey (on-line and hard copy), a comment map, email address and a 24-hour hot-line were other tools utilized to gather public input as well as provide an avenue for community members to ask questions or voice concerns about transportation safety in their communities. These strategies provided flexible alternatives for people to participate and reduced barriers for public input and engagement.

EXISTING PLANS, POLICY, AND PROCESS REVIEW

Chapter 6 Highlights:

- A comprehensive search found no existing transportation safety plans, policies, or procedures specific to Lincoln County, highlighting a critical need for local documentation and organization.
- The team reviewed three major Oklahoma transportation safety plans.
- The creation, maintenance, and integration of transportation safety plans at all levels (Federal, State, County, Municipal) are essential to improve Lincoln County's roadway safety through enhanced collaboration and resource sharing.
- It's recommended Lincoln County establish a centralized system to store transportation-related safety documents, policies, and crash data for effective tracking and future planning.
- Each jurisdiction in Lincoln County is urged to adopt the SS4A Safety Action Plan, contribute to its implementation, and develop their own supporting safety plans aligned with the county-wide strategy.

6. Existing Plans, Policy, and Process Review

Policy and process assessment and recommendations are part of the USDOT Safe Streets and Roads for All Grant Program. Aligning the Nation's policies and processes with other agencies, organizations, and departments utilizing the Safe System Approach is a critical step to successfully achieving the goals of the Lincoln County Safety Action Plan. Some of the items researched were existing plans including but are not limited to roadway maintenance, infrastructure improvements, intersection safety, pedestrian safety, bicycle safety, guidelines, standards, projects, funding sources, work zone & traffic management plans, emergency response times and incident management. After a thorough search for existing plans, policies, and documents in Lincoln County, we did not locate any.

Relevant and existing plans, policies, and procedures were collected and reviewed for the State of Oklahoma. These plans were reviewed, and a summary of the analysis and findings of those plans can be found in **Appendix E**.

6.1. Strategies for Underserved Community Outreach

Oklahoma plans that address transportation safety were reviewed as part of this Safety Action Plan. Each plan had a focus on reducing crashes by various methods to include education, infrastructure, countermeasures, enforcement, performance measures, collaboration, and providing safe alternatives for travelers. Each plan provided recommendations and opportunities for a safe traveling environment and a commitment to traffic crash reduction.

The following State-Level plans were reviewed:

- Oklahoma Triennial Highway Safety Plan (2024-2026)
- Oklahoma Department of Transportation Strategic Highway Safety Plan (November 2023)
- Oklahoma Public Transit Policy Plan (December 2020)



6.2. Key Findings

The development, maintenance, and updating of transportation safety plans, documents, Memorandums of Understanding (MOU)s, policies, and procedures can help with the overall safety of the Lincoln County roadway network. The creation and maintenance of various plans and integrated training sessions facilitate collaboration and resource sharing among Federal, State, County, and Municipal stakeholders. Although we did not collect and review any Lincoln County transportation safety plans, we do anticipate the Lincoln County SS4A Safety Action Plan to have a significant impact on safety.

It is recommended that Lincoln County government develop a method to document, record and store all transportation safety documents, policies, procedures, and plans.

6.3. Key Findings

The three State Level transportation safety plans revealed various safety-related prominent themes. It is recommended that each local jurisdiction within Lincoln County review and adopt the Lincoln County SS4A Safety Action Plan and take part in its successful implementation. Development of other jurisdiction-specific transportation safety plans is also recommended and should be integrated into the Lincoln County SS4A Safety Action Plan. Additional recommendations include:

- Develop a safety culture through partnership, collaboration, data collection, information sharing, and emergency response
- Increase partnerships across all Federal, State, County and local emergency responders and support personnel
- Enhance emergency response coordination and communication with Traffic Incident Management Plans
- Improve crash data accuracy & sharing, create a centralized crash database
- Identify roadway and infrastructure safety improvements and countermeasures based on citizen input and data analysis; this is for daily roadway use as well as emergency response and recovery
- Provide safe and adequate facilities for pedestrians and bicyclists
- Protect vulnerable road users through crash data analysis, countermeasures, education and awareness
- Implement speed management strategies around pedestrian and transit facilities
- Encourage "Safe streets to school" initiatives
- Conduct law enforcement high visibility enforcement and educational campaigns
- Provide transportation safety education and awareness for all road users
- Address poor driving behaviors through legislation, enforcement and education

PROJECT PRIORITIZATION AND RECOMMENDATIONS



Chapter 7 Highlights:

- Data-driven, equitable approach to identifying Hotspot locations
- Multi-criteria framework developed with Lincoln County Oversight Team
- Public and stakeholder input considered for location identification
- Evaluation criteria and Measures of Effectiveness (MOEs) used for prioritization
- Hotspot locations ranked using a composite index combining crash and non-crash factors
- Two analyses: one for all users, another for vulnerable road users (pedestrians and cyclists)
- Projects categorized by implementation timelines: Short-Term (1–3 years), Medium-Term (3–5 years), Long-Term (over 5 years)
- Safety Strategies and Countermeasures
- Multimodal enhancements, pedestrian and bicycle infrastructure, traffic calming, signage, and lighting improvements
- Strategies align with the Safe Systems Approach
- Projects and strategies are flexible, allowing for selection based on available funding opportunities
- Metrics for tracking progress on each strategy and action

7. Project Prioritization and Recommendations

7.1. Prioritization Process

Ensuring roadway safety within Lincoln County requires a data-driven and equitable approach to identifying and addressing hotspot locations. This SS4A Action Plan includes a structured and transparent prioritization process to guide the selection of projects that improve safety outcomes for all users, particularly vulnerable and underserved communities.

The process begins with a comprehensive screening and evaluation of roadway segments and intersections across the transportation network. A multi-criteria framework—developed in coordination with the Lincoln County’s Oversight Team was used to score each location based on its safety performance, community context, and other key factors aligned with SS4A goals. Public and stakeholder input also informed the identification of locations with local safety concerns.

The list of evaluation criteria and associated Measures of Effectiveness (MOE) used to prioritize locations is shown in **Table 6**. Additional details outlining how each MOE was developed and its role in assessing the corresponding criterion can be found in the **Prioritization Criteria & MOE memo**, included in **Appendix F**.

Table 6 - Prioritization Criteria and MOEs

Criteria	MOE
#1. Safety	• Crash Rate (CR)
	• Number of Total Crashes (NTC)
	• Number of Fatal/Incapacitating Injury Crashes (FIC)
	• High Crash Reoccurrence (CR)
	• High Injury Network (HIN)
#2. Underserved Communities	• Minority Population (MP)
	• Vehicle Ownership (VO)
#3. Community Engagement	• Public/Stakeholder Input (PSI)
#4. Proximity	• Proximity to Casinos/Schools/Bus Routes (PCSB)
#5. Vulnerable Users	• Pedestrian Crash Rate (PCR)
	• Bicycle Crash Rate (BCR)
#6. Traffic Volume	• Annual Average Daily Traffic (AADT)
#7. Roadway Functional Classification	• Roadway Classification Type (RCT)

To identify the hotspot locations, an index-based ranking method was applied, incorporating both crash-related and non-crash-related factors. Each location was evaluated and scored using this composite index. The ranking index formula used in the analysis is shown below, with details on the weighting and calculation process provided in **Appendix G**:

$$\text{Ranking Index} = \left[\sum (CRA_i * W_{CRA_i}) \right] * \prod NCRA_i$$

- CRA: crash-related MOE
- WCRA: weight assigned to each crash-related MOE
- NCRA: weighting multiplier (factor) of each non-crash-related MOE.
- Π : Product symbol, which calculates the multiplication of all non-crash-related MOEs factors

Two distinct analyses were conducted: one encompassing all users and another specifically focused on vulnerable road users (pedestrians and bicyclists). Initial hotspot lists were generated for both groups and refined based on factors such as segment proximity, overlapping risk areas, and crash severity thresholds. Through this process, a final set of high-priority locations—comprising 20 roadway segments and 10 intersections—was identified, with an emphasis on excluding freeways and major arterials based on roadway functional classifications.

As part of the hotspot identification process, additional locations were gathered through public and stakeholder input via a survey and an interactive comment map. Lincoln County also provided a list of locations with known roadway geometry and safety concerns. Some of these locations overlapped with those identified through the prioritization process. Locations that did not overlap were reviewed again to determine whether they should be included in the final list. This secondary review considered factors such as the proximity to already selected sites, crash frequency and severity, and the potential to merge with existing high-priority areas. This approach ensured that all relevant safety concerns, including those raised by the public, stakeholders, and Lincoln County, were thoroughly evaluated and appropriately reflected in the final hotspot list.

Figure 23 illustrates the overall prioritization process, from data collection and scoring to final project selection. Details of the rating and ranking process for hotspot location selection are provided in the memo titled “**Rating and Ranking Process for Hotspot Location Selection and Project Prioritization**,” in **Appendix G**.

Table 7 and **Table 8** present Hotspot Locations for roadway segments and intersections respectively. **Figure 24** and **Figure 25** visualize the selected locations in relation to roadway classifications and High Injury Network (HIN) respectively.

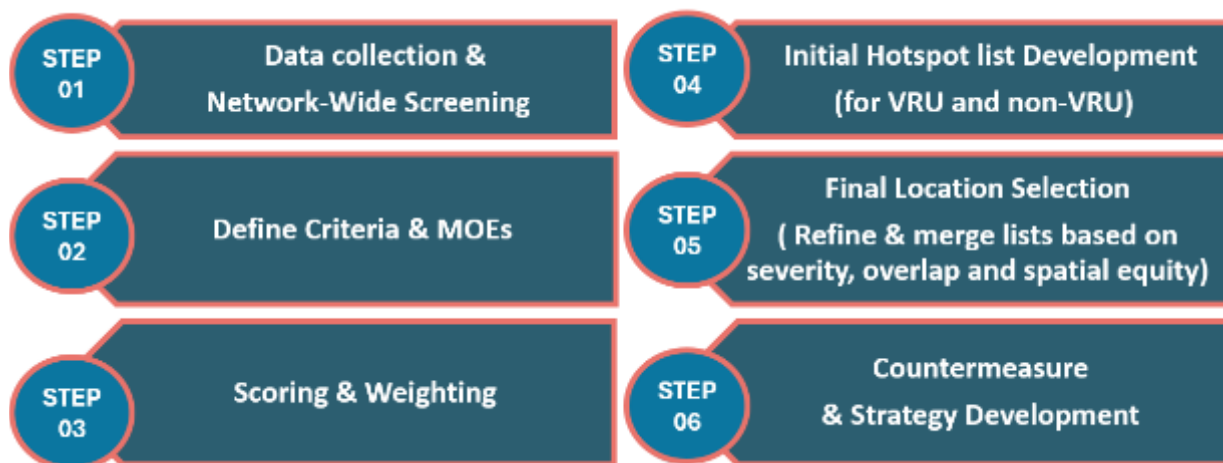


Figure 23 - Prioritization Process

Table 7 - Hotspot Locations (Combined VRU and non-VRU) for Roadway Segments

Location Rank	Source List (VRU/Non-VRU)	Location	On HIN
1	Non-VRU	E Highway 66 from E 0920 to E Memorial Rd, Warwick to Chandler	Yes
2	Both	Highway 102 from E 960 Rd to Belmont Rd	Yes
3	Both	S Highway 177 from E 810 Rd to E 810 Rd	Yes
4	Non-VRU	Historic Route 66 from E 0890 Rd to S 3540 Rd	Yes
5	Non-VRU	S Highway 18 from E 950 Rd to E 1025 Rd	Yes
6	Both	Highway 99 from E 750 Rd to E 860 Rd	Yes
7	Non-VRU	Highway 177 from Hamner Park Rd to E 900 Rd, Emsey	Yes
8	Non-VRU	S Highway 18 from E 740 Rd to E 770 Rd	Yes
9	Non-VRU	S Highway 18 from E 850 Rd to E 890 Rd	Yes
10	Non-VRU	S Highway 18 from E 920 Rd to E 940 Rd	Yes
11	Non-VRU	Highway 177 from E 930 Rd to E 980 Rd	Yes
12	Non-VRU	S Highway 18 from E 780 Rd to E 810 Rd	Yes

13	Non-VRU	E Highway 62 from E Main St to S 3570 Rd, Prague	Yes
14	Non-VRU	S 3470 Rd from E 910 Rd E 930 Rd	No
15	Non-VRU	S Highway 177 from E 990 Rd to E 1070 Rd	Yes
16	Non-VRU	E Highway 66 from S 3470 Rd to Santa Fe Rd, Davenport	No
17	Non-VRU	W Main St from Williams to N 4th Ave, Stroud	No
18	Non-VRU	E Memorial Rd from S 3300 Rd to W 97 Rd	No
19	Non-VRU	E Highway 62 from S 3470 Rd to S 3490 Rd	No
20	Non-VRU	E Highway 62 from Jack Reed Dr to E 1040 Rd, Midway to Fowler	Yes

Table 8 - Hotspot Locations (Combined VRU and non-VRU) for Intersections

Location Rank	Source List (VRU/Non-VRU)	Location	On HIN
1	Non-VRU	E Main St & N Dawson St, Meeker	No
2	Non-VRU	W Main St & N 8th Ave, Stroud	Yes
3	Non-VRU	E Highway 66 & S Highway 177	No
4	Non-VRU	S Highway 177 & E 791 Rd	Yes
5	Non-VRU	Highway 18 & E 980 Rd	Yes
6	Non-VRU	W Main St & Westlawn Ave, Prague	No
7	Non-VRU	I-44 & Highway 377 Ramps	No
8	Non-VRU	Main St & N Jim Thorpe Blvd, Prague	No
9	Non-VRU	I-44 & Highway 18 Ramps	No
10	Non-VRU	E Highway 62 & Highway 177, Jacktown	Yes

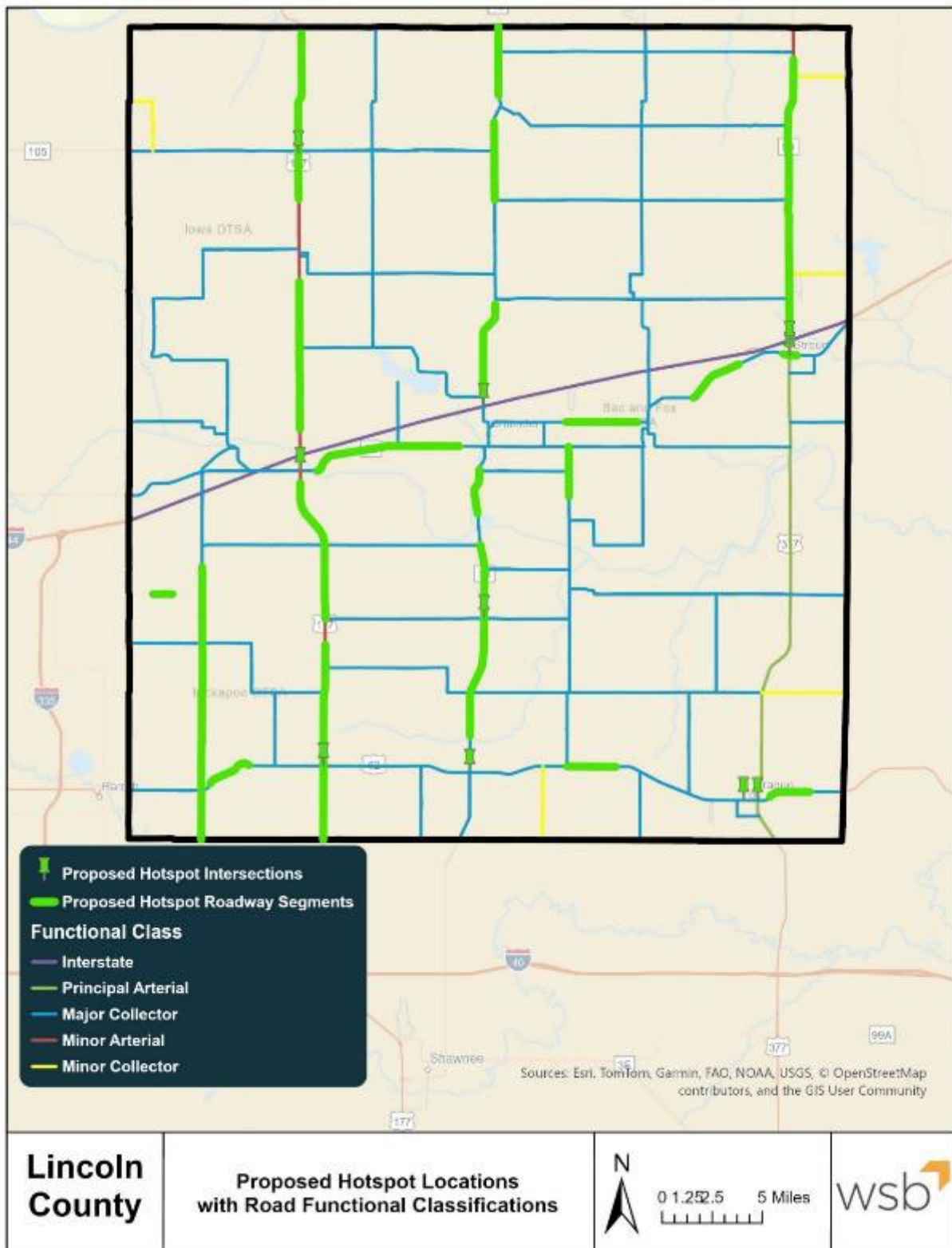


Figure 24 - Proposed Hotspot Locations – With Road Classifications

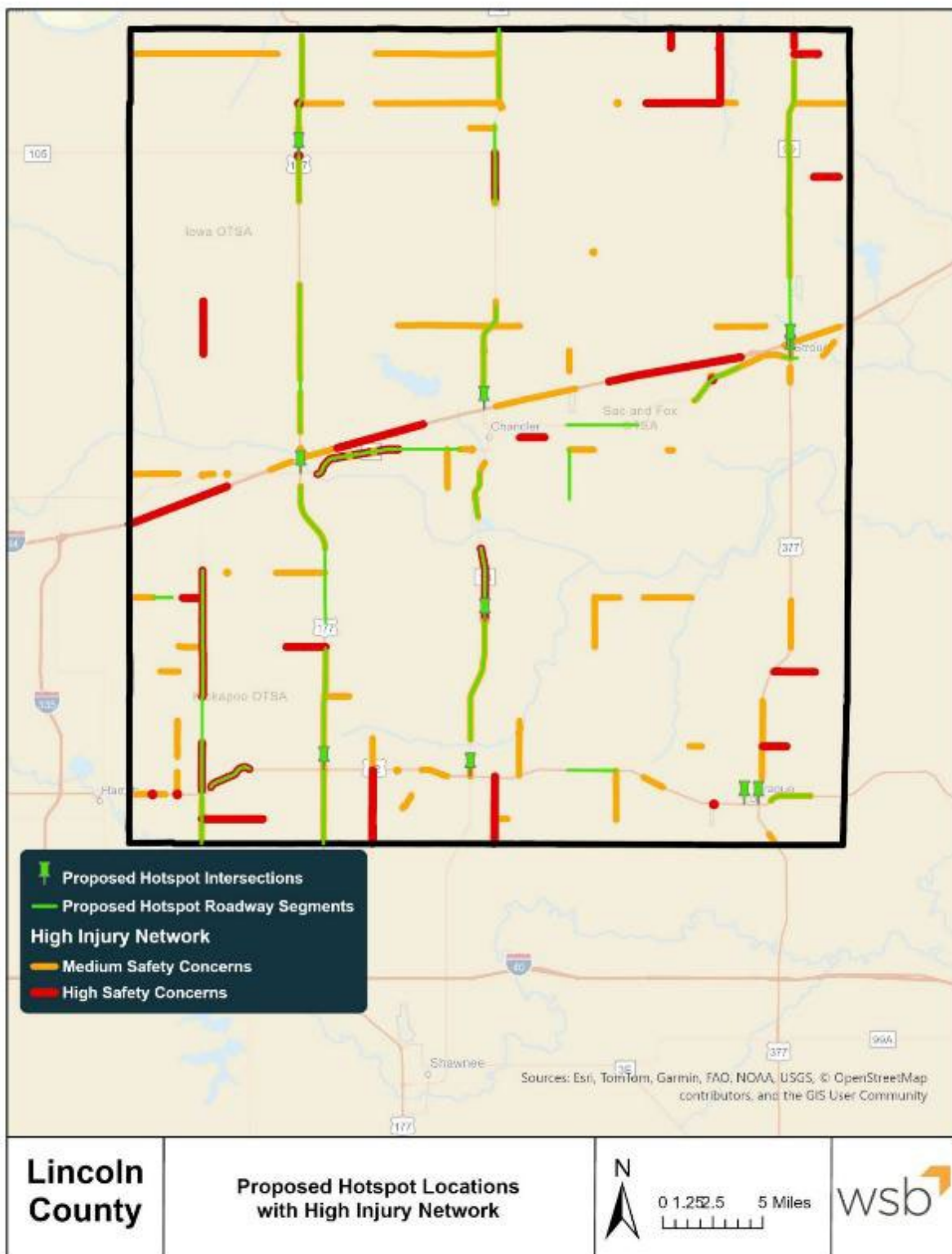


Figure 25 - Proposed Hotspot Locations – With High Injury Network

7.2. Safety Strategies and Countermeasures

The Lincoln County Safety Action Plan identifies targeted strategies and countermeasures based on a combination of crash data analysis, site-specific field reviews, and public engagement. The approach follows the principles of the Safe System model, with the aim of reducing fatal and serious injury crashes through both systemic improvements and site-specific hotspot mitigation.

A critical foundation for transportation safety planning is accurate, complete, and standardized crash data collection and sharing. Lincoln County's crash records are maintained across multiple jurisdictions, including municipal, county, state, and tribal agencies. Inconsistent reporting formats and incomplete datasets make it difficult to identify and compare crash patterns or prioritize projects.

To address this, Lincoln County recommends enhancing crash data quality by adopting the National Highway Traffic Safety Administration's Model Minimum Uniform Crash Criteria (MMUCC). This voluntary guideline establishes a minimum, standardized set of crash data variables that would enable better problem identification and more effective countermeasure selection.

Key Countywide Safety Strategies:

- **Data and Evaluation**
 - Standardize crash reporting using MMUCC criteria.
 - Review and update post-project evaluation processes to ensure safety improvements are measured against clear, project-specific metrics.
 - Maintain a centralized Lincoln County crash data repository to allow trend monitoring and hotspot tracking.
- **Infrastructure Funding and Policies**
 - Proactively research and apply for federal, state, and tribal transportation safety grants to implement improvements identified in this plan.
 - Advocate Complete Streets policy for all county jurisdictions to ensure roads are designed for safe use by drivers, pedestrians, bicyclists, and transit riders of all ages and abilities.
 - Expand Safe Routes to School programs in every school district to address congestion, pedestrian safety, and access infrastructure near campuses.
- **Road Safety Audits (RSAs)**
 - Conduct RSAs for all identified 20 hotspot roadway segments and 10 hotspot intersections.
 - Use multidisciplinary teams to review design, visibility, signage, and operational issues.
 - Integrate RSA recommendations into capital planning and resurfacing programs.
- **Systemwide Mitigation Actions**
 - Inventory and upgrade traffic control devices, especially for consistency with the Manual on Uniform Traffic Control Devices (MUTCD).
 - Implement targeted lighting upgrades at rural intersections and segments with nighttime crash concentrations.

- Improve speed management through a combination of engineering measures (e.g., rumble strips, narrowing lanes, installing speed feedback signs) and enforcement.

The plan organizes strategies and actions into short-term (1–3 years), medium-term (3–5 years), and long-term (5+ years) timeframes, following the principles of the **Safe System Approach**.

Through a combination of public and stakeholder input and an in-depth analysis of five years of crash data, the assessment identified key safety concerns at both roadway segments and intersections, with particular focus on the proposed 20 hotspot roadway segments and the proposed 10 hotspot intersections.

In response, a list of mitigation strategies and countermeasures has been developed, including **Crash Modification Factors (CMFs)** where available, to guide decision-making and help quantify the anticipated safety benefits of each action.

Identified safety concerns, recommended countermeasures, implementation timelines, and CMFs to support a data-driven approach to prioritizing and implementing safety improvements are summarized in **Appendix H**.

In addition to identifying and documenting the proposed hotspot roadway segments and intersection locations — along with the associated geometric, safety concerns and contributing factors, as summarized in **Appendix H**.

Table 9 outlines the recommended systemwide safety improvements and mitigation strategies. These recommendations are grounded in a data-driven, comprehensive safety analysis and align with the principles and objectives of the Safe System Approach to advance proactive and systemic safety enhancements across the Nation.

Table 9 - Systemwide Safety Improvements and Mitigation Strategies

Systemwide Safety Improvement Category	Safety Improvement / Mitigation Strategy
Safer Roads (Roadways)	Widen shoulders on two-lane, two-way rural roadways to meet safety standards.
	Install or upgrade speed limit and advisory speed signs, especially at curves. Conduct speed zone studies
	Optimize traffic signal placement for visibility and compliance
	Install delineator posts and chevron reflectors along curves and key locations
	Refurbish pavement markings and implement appropriate, high-visibility striping
	Install or enhance school bus stop delineators for improved visibility
	Adjust the mounting height of existing signs (e.g., stop signs) for uniformity. Conduct signing inventory and improving consistency.
	Remove line-of-sight obstructions on roadways and intersections
	Install rumble strips in rural areas
	Install safety edge treatments on pavement
	Resurface roads and improve bridges on poor-condition routes
	Reduce ditch angles and realign sidewalks away from road where necessary.
Safer Roads (Intersections)	Ensure uniformity in traffic signal head placement and distance from stop bars
	Install redundant signal heads for enhanced visibility.
	Standardize signal head types (3, 4, or 5-section heads)
	Add or upgrade pedestrian crosswalks at major intersections with pedestrian signals, push buttons, and detection systems
	Install "RIGHT LANE MUST TURN RIGHT" signs for designated right-turn lanes
	Improve pavement striping quality and ensure retro reflectivity for nighttime visibility
	Install Crossroad / Intersection Advance Warning signs with advisory speed panels
	Enhance lighting at wide rural intersections for nighttime visibility and safety
	Remove obstructions from driver line-of-sight at intersections
	Evaluate and improve signal timing, including adaptive controls
	Install red-light cameras to reduce violations
	Add dedicated turn lanes at intersections (left/right).

Safer People	Provide ongoing safety training for all employees, including specialized hotspot training.
	Develop and maintain a safety compliance certification program.
	Ensure comprehensive safety orientation for new hires
	Conduct community engagement & education, including school drop-off programs
	Collaborate with transit providers to expand and optimize services
	Launch road user education programs for safe walking, cycling, and crossing behaviors
	Promote public campaigns on distracted driving, aggressive driving, and occupant protection
	Train law enforcement for impaired driving detection and conduct sobriety checkpoints
	Implement Safe Routes to School programs
Safer Speeds	Collaborate with multiple agencies to coordinate enforcement on speeding and other violations.
	Install speed safety cameras and deploy speed trailers in targeted areas
	Implement speed limit enforcement and traffic calming measures in hotspots
	Conduct inventory and install missing speed limit and advisory speed signs
	Install speed monitoring devices for real-time feedback
Post Crash Care	Develop Traffic Incident Management (TIM) Plans in collaboration with stakeholders
	Enhance EMS and emergency response times through better interagency coordination.
	Establish Memorandums of Understanding (MOUs) with neighboring jurisdictions for coordinated emergency response.
	Develop structured emergency response operation plans with local authorities and first responders.

PROGRESS AND TRANSPARENCY

Chapter 8 Highlights:

- Form an oversight committee with quarterly meetings and key stakeholder participation
- Develop and adopt a multi-year plan of projects to address issues and priorities identified in this plan
- Integrate safety into capital projects, field practices, and construction management
- Allocate funds annually for implementing safety countermeasures
- Provide regular and specialized safety training; create a safety certification program
- Conduct regular road safety audits
- Conduct safety review of construction and maintenance operations of
- Maintain emergency preparedness through updated plans, drills, and supplies
- Track safety performance, gather feedback, adopt new tech, and revise protocols
- Develop outreach materials and engage cities, counties, schools, and businesses
- Collaborate on initiatives with co-benefits like public health and workforce development
- Create a Safety Pool fund; apply for SS4A, FHWA, FEMA, and other federal grants
- Monitor and evaluate safety project impacts using crash data and performance measures
- Share progress transparently online with data dashboards, public input, and educational materials

8. Progress and Transparency

Overview

This Safety Action Plan provides a foundation, as well as specific recommendations to achieve the goals set forth to significantly reduce fatal and serious injury crashes. This chapter describes several actions and initiatives aimed at addressing the issues and priorities identified in this plan and creates a framework for accountability and the measurement of progress. An overarching strategy should be the integration of safety into all aspects of the county's business practices. Each subsection delineates specific guidelines, procedures, and strategies. Success factors have been identified and are considered essential to ensuring adequate leadership and oversight, progress, and transparency in the implementation of the plan towards making it a reality.

- Formation of an oversight committee
- Integration of safety into all business practices
- Advocacy and collaboration
- Funding sources
- Data and performance measures
- Transparency and reporting

8.1. Form an Oversight Committee

To track the progress of the Safety Action Plan an oversight committee should be formed. This committee should meet quarterly or as otherwise determined by the committee, with the goal of ensuring progress in the implementation of all aspects of the plan, and updating the plan as needed. Membership in the oversight committee should consist of key stakeholders such as relevant Lincoln County departments, law enforcement and ODOT. Residents or key businesses representatives may be selected as committee members or collaborators.

8.2. Integration of Safety into All Business Practices

This section outlines the fundamental measures and procedures designed to integrate safety comprehensively into all business practices.

- Require construction projects to address safety within project limits when feasible
 - Develop guidelines and criteria
- Develop and implement safety procedures and requirements for Lincoln County field staff
- Consider setting aside annual funds to implement Safety Action Plan countermeasures
- Collaborate with local municipalities, schools, law enforcement, and other entities to jointly

pursue funding and project implementation

- Prioritize work zone safety in construction management and construction traffic control processes

8.2.1. Safety Training and Education

Effective safety culture and training is critical for reducing risks and ensuring that all staff are knowledgeable about safety protocols. This section highlights the importance of training and lists key initiatives.

- Provide regular safety training for all employees
- Implement specialized training for high-risk areas
- Develop a certification program for safety compliance
- Collaborate with law enforcement and schools to educate students about transportation safety
- Prepare and distribute pamphlets and brochures focused on safety
- Ensure all new hires receive comprehensive safety orientation

8.2.2. Safety Audits and Inspections

Conducting regular safety audits and inspections will help to identify potential hazards and ensuring continuous improvement. This section outlines the procedures for audits and inspections.

- Develop a schedule for regular road safety audits guided by crash data or reported unsafe roadway of operational conditions
- Establish criteria for safety inspections of filed operation and construction zones
- Document and address all findings from audits and inspections
- Implement corrective actions promptly

8.2.3. Emergency Preparedness

Preparing for emergencies is vital for minimizing the impact of crashes or hazardous weather or other conditions. This section details the emergency preparedness plans and initiatives to ensure readiness.

- Create and update emergency response plans
- Conduct regular emergency drills with response agencies
- Develop a communication plan for emergencies
- Ensure availability of emergency equipment and supplies

8.2.4. Continuous Improvement

Continuous improvement in safety practices is crucial for evolving and adapting to new challenges. This section emphasizes the importance of ongoing evaluation and enhancement of safety measures.

- Establish a system for tracking safety performance
- Encourage feedback from employees on safety practices
- Implement new technologies to enhance safety
- Review and revise safety protocols regularly

8.3. Advocacy and Collaboration

The following steps outline how to effectively advocate and collaborate:

- Develop informational and educational material with focus on transportation safety
- Engage cities and counties as partnering agencies to promote safety.
- Develop partnerships that advance co-benefits such as workforce development, public health and safety so efforts are cost-effective and integrate related efforts.
- Seeking endorsement and partnership from cities and counties in support of implementing plan recommendations
- Engage schools, businesses and public transportation providers

8.4. Funding

Securing adequate funding is crucial for the successful implementation of safety projects. Here are several strategies to consider:

- Consider a set-aside Safety Pool to be used for stand-alone safety projects, or to add safety improvements to other planned projects
 - Consider doing so in collaboration and partnership with cities and counties, including a possible pooled-fund to implement safety projects or address safety on capital projects.
- Apply for SS4A Supplemental Planning, Demonstration, and Implementation Grants. This program will make funds available through 2026.
- Apply for safety funds distributed through ODOT, for example:
 - Transportation Alternatives Program (TAP)
 - Safe Routes to School (SRTS)
 - Municipal Road Drilling Activity Funds
 - Other ODOT programs <https://oklahoma.gov/odot/programs-and-projects.html>
- Consider other federal grant opportunities including grants that could leverage and

complement SS4A implementation projects with co-benefits such as workforce development access, hazard prevention, air quality, flood mitigation, infrastructure investment, resilience, and rural access. For example,:

- Reconnecting Communities Pilot (RCP) Grant Program (<https://www.transportation.gov/reconnecting>)
- Better Utilizing Investments to Leverage Development Program (BUILD) [Better Utilizing Investments to Leverage Development \(BUILD\) Grant Program | US Department of Transportation](#)
- PROTECT ([Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation Program \(PROTECT\) | US Department of Transportation](#)) offers two types of awards: planning grants and Competitive Resilience Improvement Grants.

Note: All grant timelines and funding availability referenced are based on past cycles and current projections. While these programs are expected to reopen for FY2026, final dates and requirements may change. It is recommended to confirm the most up-to-date information from official sources at the time of application.

8.5. Data and Performance Measures

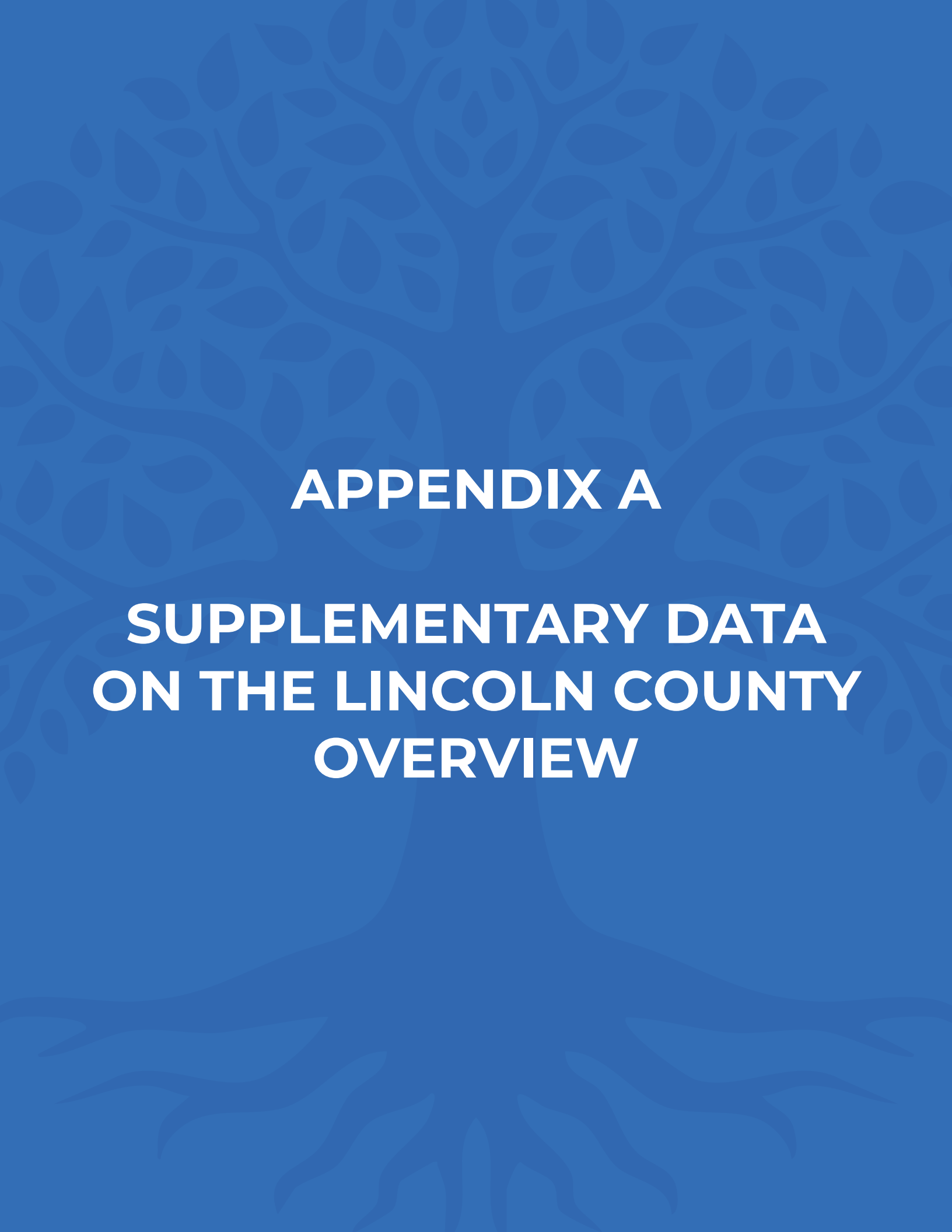
Collecting and analyzing data is vital for tracking progress and identifying areas for improvement. The following steps help establish effective data and performance measures:

- Establish a multi-year plan of projects addressing identified safety issues
- Compile and report information about projects in design or construction addressing safety
- Conduct before-after studies to document the benefits of implemented projects
- In collaboration with ODOT, compile crash statistics and comparison tables to document progress in reducing fatal and serious injury crashes

8.6. Transparency and Reporting

Transparency and regular reporting ensure accountability and community engagement. Consider these measures:

- Dedicate space to transportation safety on the Lincoln County website
- Disseminate data and performance measures on the website
 - Consider semi-annual reporting
- Provide the ability for the public to provide input
- Disseminate training and safety brochures to schools and community center



APPENDIX A

SUPPLEMENTARY DATA ON THE LINCOLN COUNTY OVERVIEW

A.1 Key Landmarks and Traffic Generators

Figure 1 highlights key landmarks and traffic generators within Lincoln County including 4 casinos and 24 public schools.

Casinos are key landmarks, serving as economic and social hubs that generate revenue for local communities. As popular destinations for visitors, they are critical points of focus in a road safety plan. Ensuring safe access to and from these locations is essential to reducing accident risks and enhancing transportation safety.

Lincoln County is also home to 24 **public schools**, including elementary, middle, and high schools. These schools are high-traffic areas, especially during school hours. Strengthening road safety measures near schools is important to create a secure environment for children, minimizing risks associated with pedestrian and vehicular interactions.

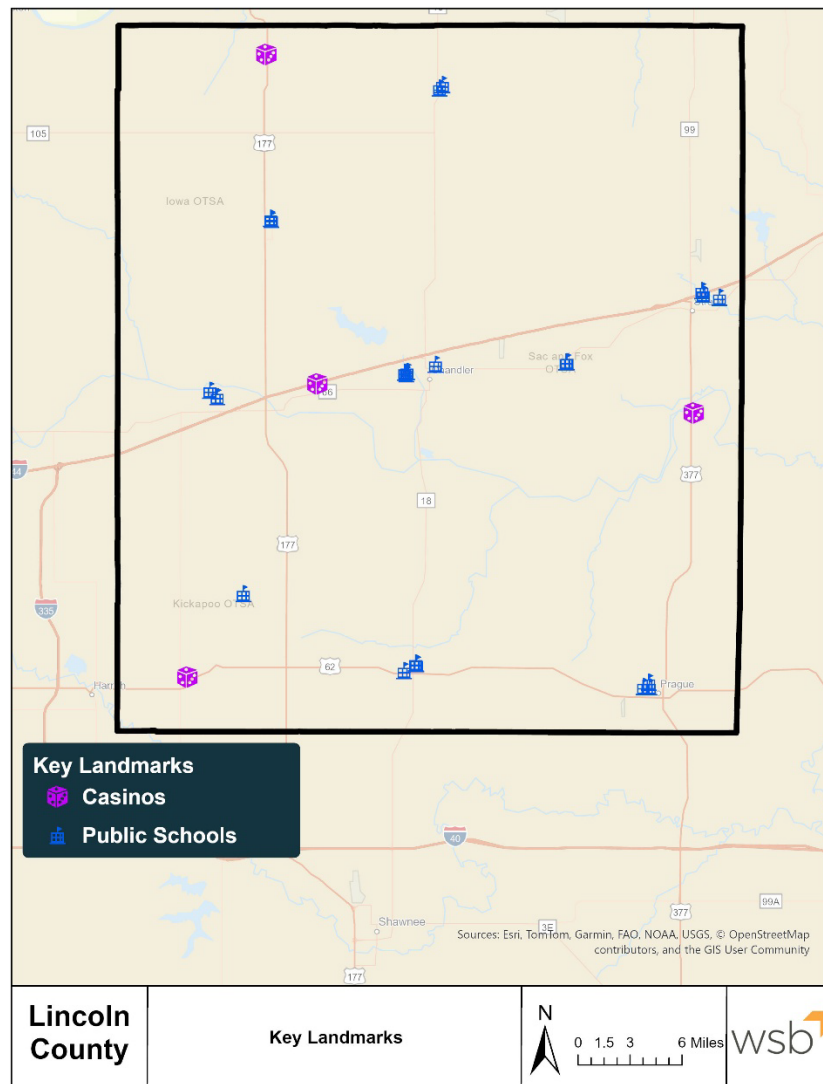


Figure 1 - Key Landmarks and Traffic Generators within Lincoln County

A.2 Additional Data on Transportation Network and Infrastructure

A.2.1 Geographic Distribution of Annual Average Daily Traffic (AADT) Classifications

Figure 2 displays the spatial distribution of roadways within Lincoln County based on the AADT classification described in Section 2.3. It visually represents areas of low, medium, and high traffic volume, as determined by the Jenks Natural Breaks algorithm.

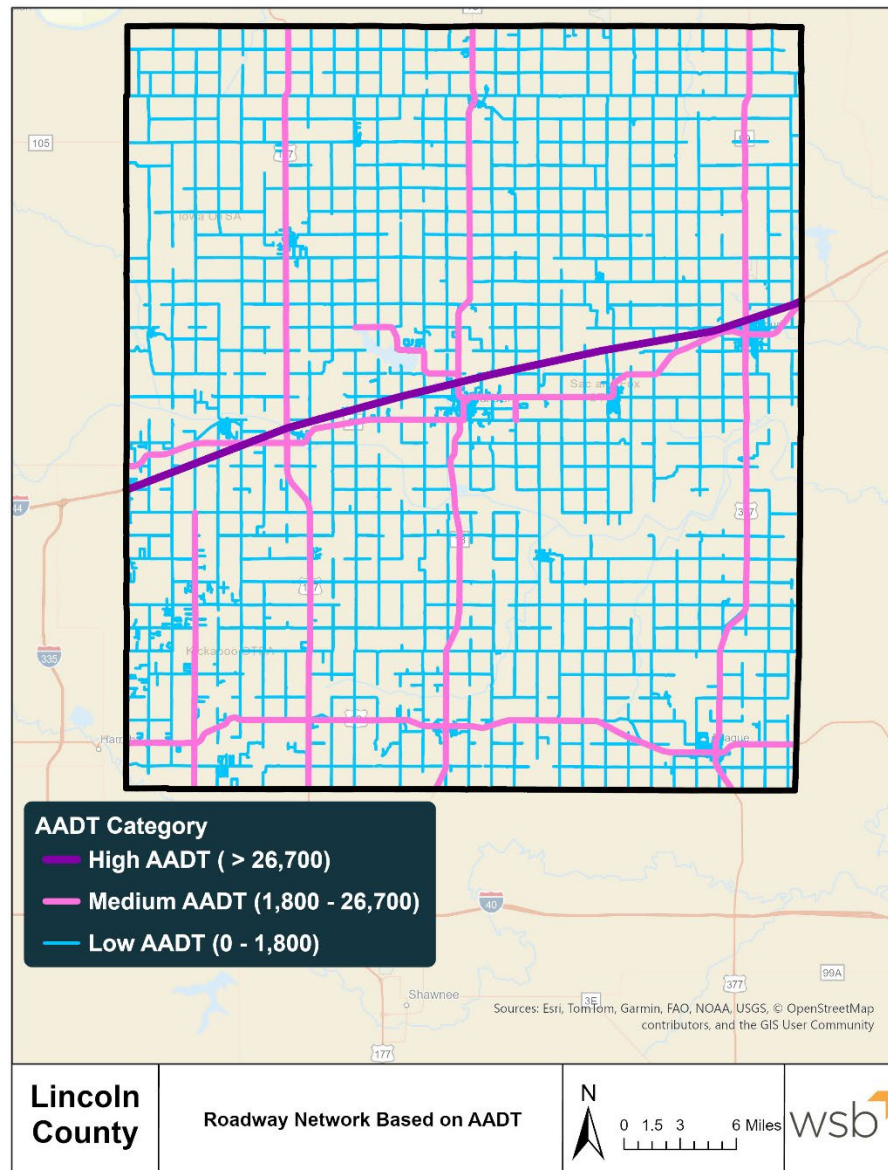


Figure 2 - Geographic Distribution of Roadways Based on AADT Thresholds

A.2.2 Shoulder Width Analysis

Shoulders play a critical role in roadway safety by providing space for emergency stops, accommodating non-motorized users, and improving overall traffic operations. The American Association of Highway and Transportation Officials (AASHTO) Green Book establishes specific shoulder width thresholds for different roadway types. **Table 1** presents these thresholds as defined by AASHTO.

Table 1: Shoulder Width Thresholds by Roadway Type

Roadway Type	Inadequate Shoulder Width	Adequate Shoulder Width	More than Adequate Shoulder Width
High-Speed, High-Volume Roads (e.g., Interstate, Principal Arterial)	< 10 ft	10–12 ft	> 12 ft
Secondary Arterials & Major Collectors	< 6 ft	6–8 ft	> 8 ft
Secondary Collectors & Low-Volume Highways (Local)	< 2 ft	2–6 ft	> 6 ft

Table 2 presents the distribution of roadway mileage based on shoulder width adequacy across different road types in Lincoln County:

- **Secondary Collector and Local Roads** – The majority (99.8%) have inadequate shoulder width, highlighting a serious deficiency in shoulder design for minor collector and local roads.
- **Secondary Arterials & Major Collectors** – A significant portion 83.2% have inadequate shoulders, but some 12.0% exceed the required width.
- **High-Speed, High-Volume Roads (Interstate and Principal Arterials)** – 83.8% meet the required width, with 16.2% falling short.

Figure 1, Figure 2, and Figure 3 show the three categories of shoulder width adequacy for each roadway type, visually illustrating the distribution of shoulder conditions across Lincoln County road network.

Table 2: Distribution of Roadway Types by Shoulder Condition in Lincoln County

Road Type	Shoulder Width		
	Mileage with Adequate Width (Mile)	Mileage with Inadequate Width (Mile)	Mileage with More than Adequate Width (Mile)
	Number (%)		
Secondary Collector and Local Roads	2.43 (2.54%)	1,397.79 (79.68%)	0 (0%)
Secondary Arterials & Major Collectors	50.01 (52.32%)	348.05 (19.84%)	27.12 (100%)
High-Speed, High-Volume Roads (Interstate and Principal Arterial)	43.14 (45.13%)	8.36 (0.48%)	0 (0%)
Total	95.58 (100%)	1,754.20 (100%)	27.12 (100%)

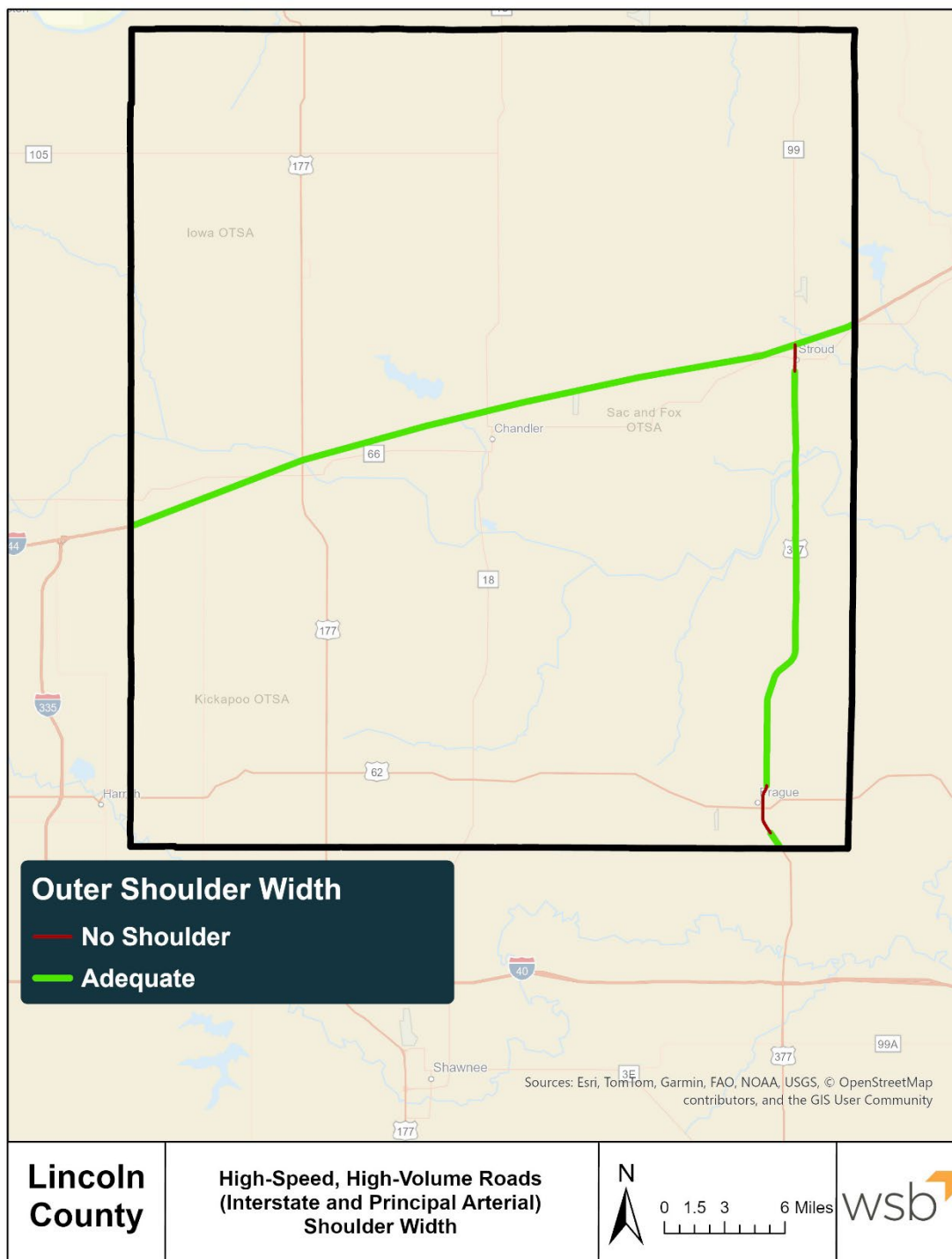


Figure 1: Interstate and Principal Arterial Roads Shoulder Width

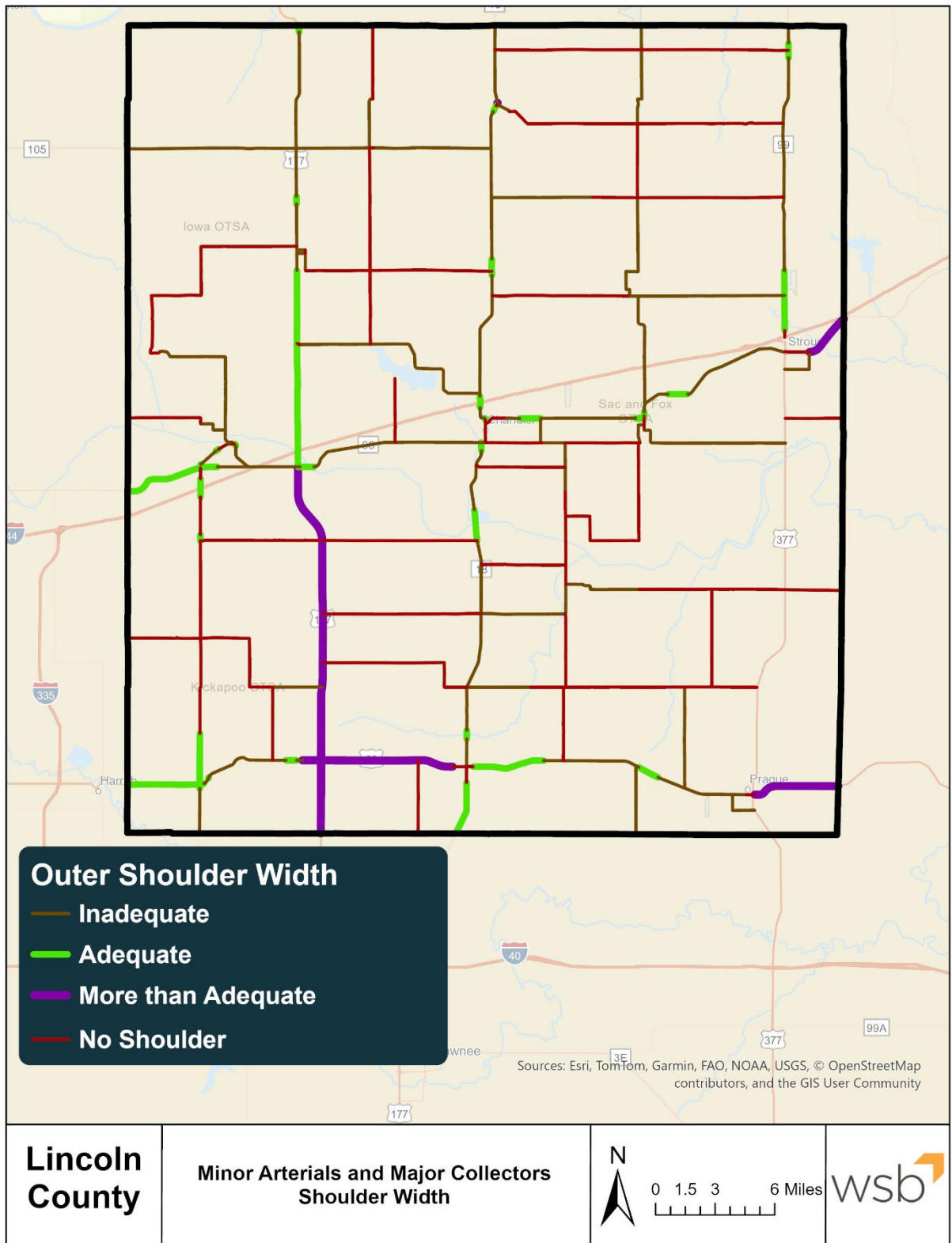


Figure 2: Secondary Arterial and Major Collector Roads Shoulder Width

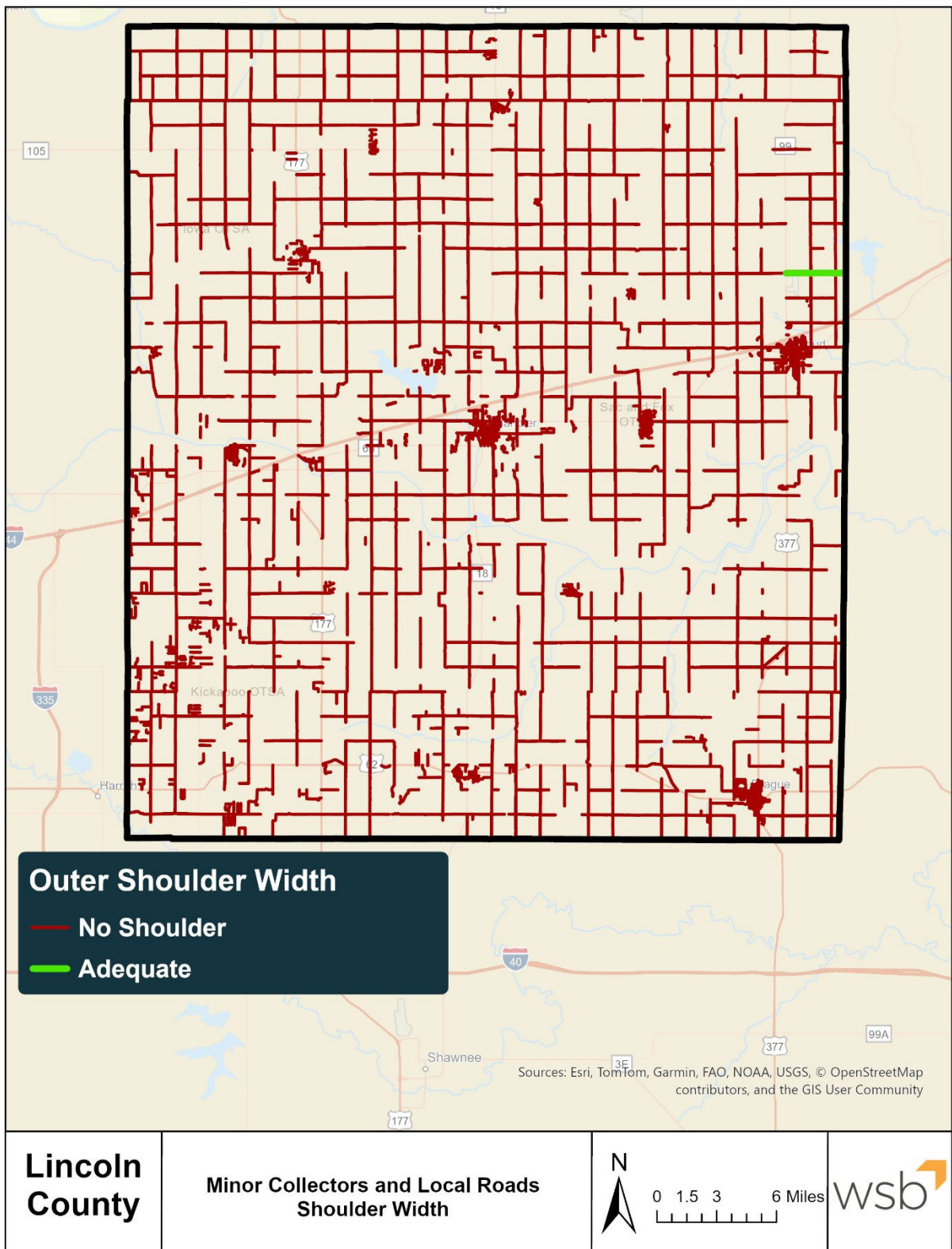
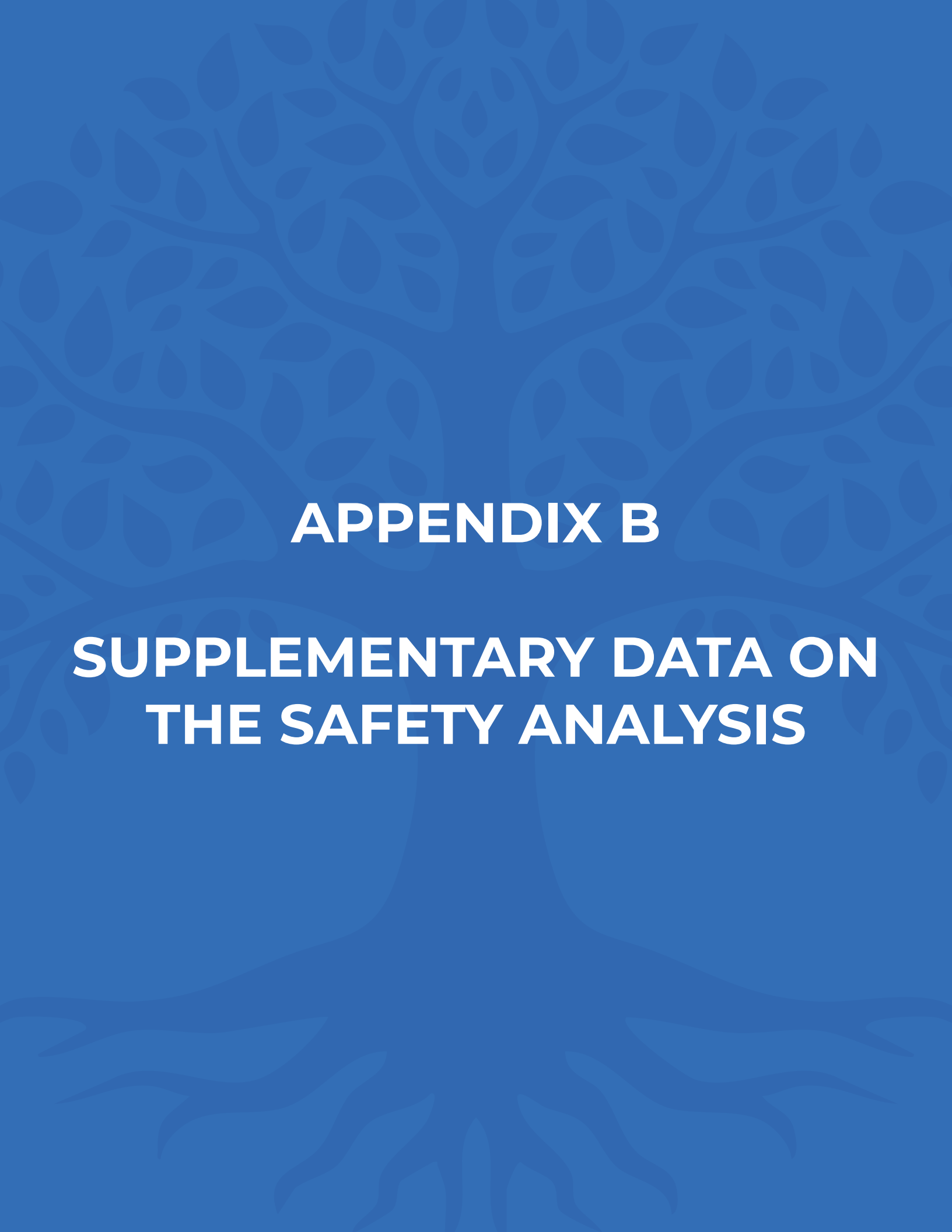


Figure 3: Secondary Collector and Local Roads Shoulder Width



APPENDIX B

SUPPLEMENTARY DATA ON THE SAFETY ANALYSIS

B.1 Data Filtering and Integration Process

The data used in this study consists of a 5-year historical crash dataset from January 1, 2017, to December 31, 2021. This data was requested and collected from the Oklahoma Department of Transportation (ODOT) Collision Data Request Portal on September 30th, 2024. The raw dataset contained 6,198 records, each representing an individual involved in a crash, such as a driver, passenger, or pedestrian, rather than a unique crash event. After filtering, the dataset was narrowed down to 1,893 unique crashes. Incomplete data was addressed by removing 2 crashes that lacked severity information, and 110 crashes with incorrect or missing latitude or longitude values were also eliminated, leaving 1,783 crash records.

ODOT provides a valuable dataset for vehicle crashes; however, its coverage of pedestrian and bicycle crashes is limited, containing 6 records involving pedestrians or cyclists. In contrast, the Oklahoma Highway Safety Office (OHSO) dataset reports a higher number of pedestrian and bicycle crashes, totaling 9, and includes additional details such as age, sex, injury type, and the conditions of both the driver and pedestrian. While ODOT categorizes pedestrian crashes as one of many crash types, OHSO reports them separately with more detailed attributes. A quality control process was conducted by overlaying ODOT data onto OHSO data, confirming that OHSO comprehensively covers the pedestrian and bicycle crash records found in ODOT, making the ODOT data redundant. To prevent double-counting, pedestrian and bicycle crashes were removed from the ODOT dataset, and the OHSO dataset from 2017 to 2021 was used for pedestrian crash analysis, while ODOT data was used for vehicle crash analysis.

After integrating the OHSO dataset and removing duplicate pedestrian and bicycle crashes from the ODOT dataset, the final dataset for analysis 1,777 unique vehicle crashes from ODOT and 9 pedestrian and bicycle crashes from OHSO, resulting in a total of 1,786 unique crashes for analysis.

B.2 Crash Analysis for Major Cities

B.2.1 Crash Rates Normalized by Population

To account for population density and prevent bias from cities that rank higher solely due to their population size, the total and fatal crashes were normalized by population as well. **Table 3** presents the number of total and fatal crashes per 100,000 individuals, ordered from the highest to the lowest total crashes per 100,000 individuals. According to this table:

- Rural areas have the highest crash rates by population, with 60.55 total crashes per 1,000 individuals and 1.48 fatal crashes per 1,000 individuals, reflecting a significant concentration of crashes relative to their population.
- Among cities, Stroud has the highest crash rate at 37.54 per 1,000, with a fatal crash rate of 0.37.
- Chandler follows with 32.70 total crashes and 0.34 fatal crashes per 1,000 individuals.
- Prague reports a total crash rate of 30.75 and a slightly higher fatal crash rate of 0.57, despite a smaller population.
- Meeker has the lowest total crash rate at 18.77 per 1,000 individuals, with no reported fatal crashes.

Table 1 - Normalized Total and Fatal Crashes per Population by Major Communities

Communities	Fatal	Total Crashes	Population	Total Crash Per 1,000 Individuals	Fatal Crash Per 1,000 Individuals
Rural Areas	37	1,510	24,940	60.55	1.48
Stroud	1	102	2,717	37.54	0.37
Chandler	1	95	2,905	32.70	0.34
Prague	1	54	1,756	30.75	0.57
Meeker	0	25	1,332	18.77	0.00

B.2.2 Crash Rates Normalized by Area

Similar to the normalization by population, the data has been normalized by area to account for the impact of larger geographic regions. **Table 3** presents the number of total and fatal crashes per unit area, ordered from the highest to the lowest total crashes per unit area. According to this table:

- Prague has the highest crash density, with 16.02 total crashes per square mile and 0.30 fatal crashes per square mile, reflecting a high concentration of crashes in a small geographic area.
- Chandler follows with 10.14 total crashes per square mile and a lower fatal crash density of 0.11.
- Meeker and Stroud show total crash densities of 8.31 and 8.16, respectively, with Stroud reporting a fatal crash density of 0.08 and Meeker reporting none.
- Rural areas, despite covering the vast majority of land in Lincoln County, have a significantly lower crash density of 1.61 total crashes and 0.04 fatal crashes per square mile.

While fatal crash rates appear higher in cities like Prague, Chandler, and Stroud when measured per unit area, it's important to note that each city recorded only one fatal crash, and these rates are amplified due to their relatively small geographic size. This suggests that while the severity appears concentrated, the actual number of fatal events remains low in urban areas compared to rural regions.

Table 2 - Normalized Total and Fatal Crashes per Unit Area by Major Communities

Community	Fatal Crashes	Total Crashes	Area (mile ²)	Total Crash Per Unit Area	Fatal Crash Per Unit Area
Prague	1	54	3.37	16.02	0.30
Chandler	1	95	9.37	10.14	0.11
Meeker	0	25	3.01	8.31	0.00
Stroud	1	102	12.5	8.16	0.08
Rural Areas	37	1,510	937.53	1.61	0.04

B.2.3 Contributing Crash Causes Across Major Communities

Different areas within Lincoln County experience varying contributing factors to crashes, with some factors being more prevalent in certain areas. **Figure 4** provides an overview of the key contributing crash causes across major communities within Lincoln County.

Failure to yield is the leading crash factor in Prague, Stroud, and Chandler, pointing to frequent intersection-related incidents and possible issues with signage or right-of-way clarity. Distraction is also a significant contributor in Chandler (20%) and Prague (20.37%), suggesting a need for public education and enforcement campaigns. Poor lighting stands out in Stroud (11.76%) and Meeker (12%), indicating ongoing challenges with nighttime visibility. In Meeker, crashes are also strongly linked to distraction, failure to yield, and following too closely—each at 16%—reflecting issues with attentiveness and driver behavior in low-traffic environments.

In **rural areas**, **poor lighting** (34.57%) and **speeding** (21.19%) are the top crash factors, emphasizing infrastructure and enforcement challenges along high-speed, low-visibility roadways. **Alcohol or drug involvement** is more prevalent in rural areas (7.81%) and **Prague** (5.56%), pointing to impaired driving risks outside dense urban centers. While urban cities like **Chandler** and **Stroud** face more intersection-related crashes and distraction, smaller towns like **Meeker** and broader **rural areas** contend with lighting, speed, and behavioral factors—underscoring the need for geographically targeted safety countermeasures.

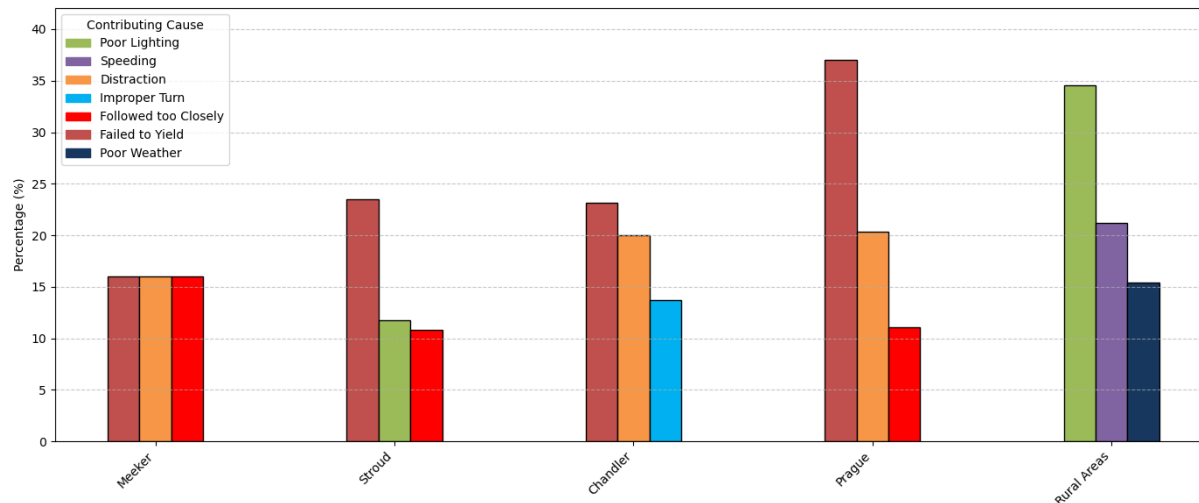


Figure 4: Top Three Contributing Crash Factors by Communities in Lincoln County

Failed to Yield-Related Crashes:

Failure to yield remains a significant contributing factor in crash occurrences across Lincoln County. Prague has the highest percentage of crashes related to this factor, with 37.04% of all crashes involving a failure to yield, followed by Stroud (23.53%) and Chandler (23.16%). While these cities show high proportions of such crashes, none reported fatal crashes attributed to failure to yield. In rural areas, failure to yield contributed to 4.83% of all crashes and 2.7% of fatal crashes. These trends highlight the ongoing safety risk associated with failure-to-yield violations, particularly in urban settings with frequent intersection activity.

Speed-Related Crashes:

Speeding continues to be a notable contributing factor in Lincoln County crashes, particularly in rural areas, where 21.19% of all crashes and 21.62% of fatal crashes are attributed to unsafe speed—underscoring the heightened risks on high-speed, low-visibility roadways. Among cities, Stroud (5.88%), Chandler (4.21%), Meeker (4%), and Prague (3.7%) report relatively low percentages of speed-related crashes. However, Chandler stands out with 100% of its fatal crashes linked to speeding, although this is based on a single fatal incident and should be interpreted with caution. The data highlights the persistent threat of speeding in rural settings, where roadway conditions often amplify crash severity.

Poor Lighting-Related Crashes:

Poor lighting remains a key contributing factor, particularly in rural areas, where it accounts for 34.57% of all crashes and 43.24% of fatal crashes—highlighting serious visibility challenges on rural roadways. Among the cities, Meeker (12%) and Stroud (11.76%) report the highest proportions of crashes involving poor lighting, though neither recorded any related fatalities. Prague and Chandler each had one fatal crash, and in both cases, poor lighting was a contributing factor—resulting in a 100% fatal crash share for this factor in those cities. While the total numbers are small, the data points to the elevated risk associated with low-light conditions, especially in areas with limited street lighting and higher-speed travel.

Poor Weather-Related Crashes:

Rural areas report the highest number of poor weather-related crashes in Lincoln County, with **15.43%** of

all crashes and **8.11%** of fatal crashes linked to adverse weather conditions—highlighting weather as a meaningful risk factor on open roads. Among the cities, **Chandler** shows the highest weather-related crash percentage (**12.63%**) and is the only city where a fatal crash was attributed to this factor, accounting for **100%** of its fatal crashes. **Meeker** also reports **12%** of its crashes as weather-related but no associated fatalities. **Stroud** and **Prague** show lower percentages (7.84% and 7.41%, respectively) with no weather-related fatalities. These patterns suggest that while poor weather contributes to crashes across both rural and urban areas, the consequences can be more severe in rural settings or where road conditions are less controlled.

Distraction-Related Crashes:

Distraction is a notable contributing factor in several Lincoln County communities. Prague (20.37%) and Chandler (20%) report the highest proportions of distraction-related crashes, followed by Meeker (16%). Despite these elevated rates, none of the cities recorded any fatalities attributed to distraction. Stroud shows a lower proportion at 5.88%, also with no fatal crashes from this cause. In rural areas, distraction accounts for 9.27% of all crashes and 5.41% of fatal crashes, indicating more severe consequences in less controlled driving environments. While distraction leads to a significant share of crashes in urban areas, the rural setting appears to amplify the severity of such incidents.

Followed Too Closely Related Crashes:

Crashes resulting from following too closely are most prominent in Meeker (16%), followed by Prague (11.11%) and Stroud (10.78%). Chandler reported a lower proportion at 5.26%, while rural areas had the lowest at 4.24%. Notably, none of the communities, including rural areas, recorded any fatalities related to this factor. While this behavior is relatively common, especially in urban areas with frequent stop-and-go traffic, the absence of fatal outcomes suggests that such crashes tend to result in lower severity compared to other contributing factors.

Alcohol/Drug Intoxication-Related Crashes:

Fatal crashes involving alcohol or drug intoxication remain a serious concern in Lincoln County, particularly in rural areas, where 7.81% of all crashes and 24.32% of fatal crashes are linked to substance use. Among cities, Prague stands out with 100% of its single fatal crash involving alcohol or drugs, though the small sample size should be interpreted with caution. Chandler (4.21%) and Stroud (3.92%) report modest shares of substance-related crashes, but no associated fatalities. Meeker recorded no such incidents. Overall, while alcohol and drug involvement in crashes is less frequent in cities, the higher fatality rates in rural areas highlight the disproportionate risk and severity associated with impaired driving outside urban centers.

Change Lanes Unsafely Related Crashes:

Crashes due to unsafe lane changes are relatively infrequent across Lincoln County. Meeker has the highest share among local communities, with 4% of its crashes attributed to this factor, followed by Stroud at 1.96%. Chandler and Prague reported no such incidents. In rural areas, unsafe lane changes account for 2.19% of all crashes. Notably, none of these crashes—urban or rural—resulted in fatalities. These findings suggest that while unsafe lane changes do contribute to crash totals, they rarely lead to severe or fatal outcomes in the region.

Failed to Stop-Related Crashes:

Crashes involving failure to stop are relatively uncommon across Lincoln County communities. Meeker reports the highest share, with 4% of its crashes attributed to this factor, followed by Chandler (2.11%), Prague (1.85%), and Stroud (0.98%). Rural areas show the lowest proportion at 0.93%. Importantly, none

of the crashes related to failure to stop in either urban or rural areas resulted in fatalities. This suggests that while such violations contribute to crash occurrences, they rarely lead to severe outcomes in this region.

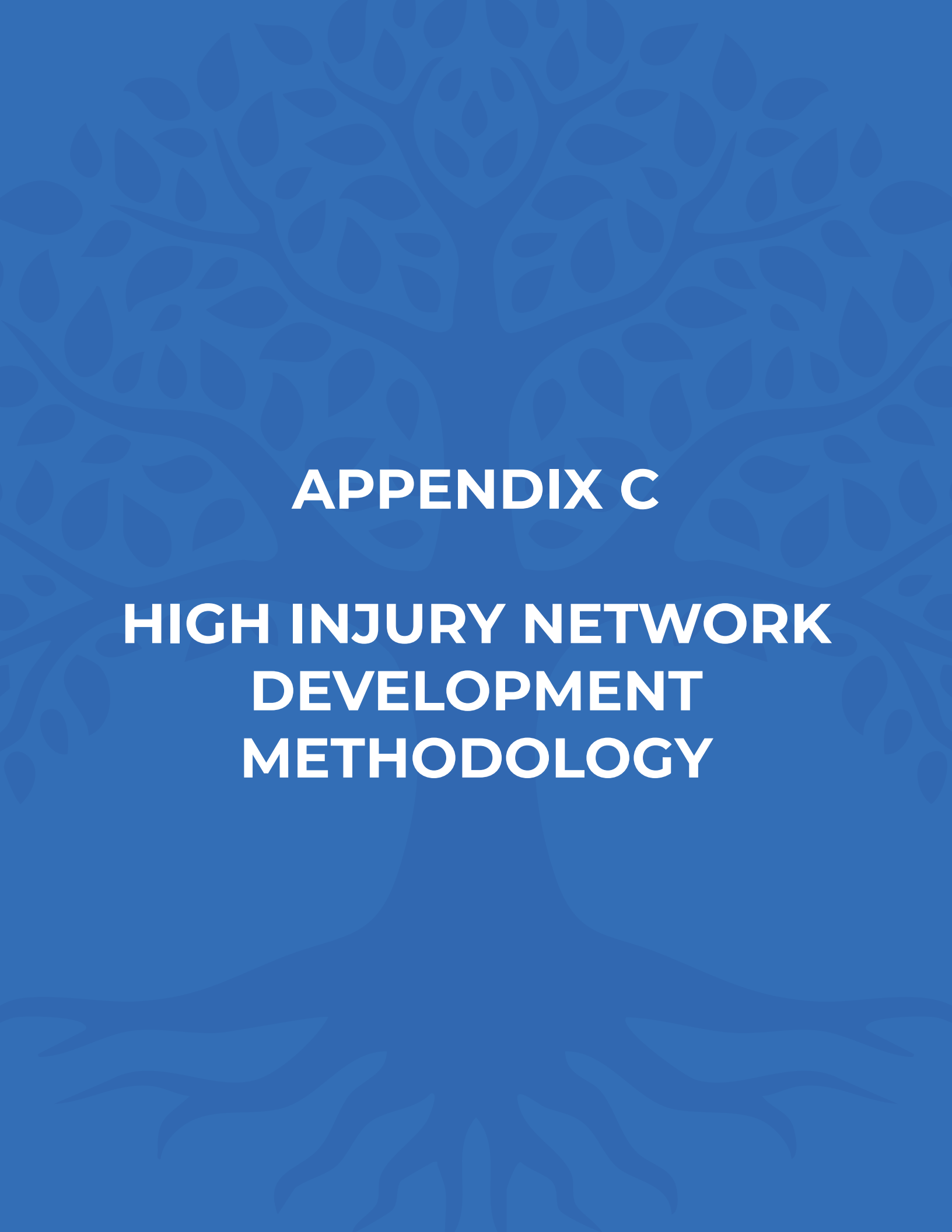
B.2.4 Impact of Protective Devices on Fatalities Across Major Communities:

Table 4 presents the number of unrestrained fatalities, total fatalities, and the unrestrained fatality rate for different areas within Lincoln County. The unrestrained fatality rate is calculated by dividing unrestrained fatalities by total fatalities.

As shown in the table, Chandler, Prague, and Stroud each have a 100% unrestrained fatality rate, though this is based on a single fatal crash in each city and should be interpreted cautiously. In contrast, rural areas, which account for the majority of fatal crashes in Lincoln County, show a 38.1% unrestrained fatality rate. While lower than the urban figures, the higher number of total fatalities in rural areas highlights the ongoing risk associated with not using seatbelts. These findings underscore the importance of targeted enforcement and public education efforts to improve seatbelt use, particularly in rural parts of the county where crash severity is higher and protective device usage remains inconsistent.

Table 3 - Unrestrained Fatalities and Fatality Rates by Major Communities

Community	Unrestrained Fatalities	All Fatalities	Unrestrained Fatality Rate
Chandler	1	1	100.0%
Prague	1	1	100.0%
Stroud	1	1	100.0%
Meeker	0	0	-
Rural Areas	16	42	38.1%



APPENDIX C

HIGH INJURY NETWORK DEVELOPMENT METHODOLOGY

Technical Memorandum

High Injury Network Development

To: Chassary Goodmon

From: Antony Atencio

Date: 03/11/2025

Re: Safe Street for All – Lincoln County



Introduction

This memorandum outlines the methodology used to develop High Injury Networks (HIN) for the Lincoln County SS4A Safety Action Plan. A HIN identifies roads, streets, or corridors within a specific area that experience a disproportionate number of traffic fatal and serious injury crashes based on crash data analysis.

Methodology

- **Crash Severity:**

The development of the HIN involved reviewing crash data, focusing on three (3) of the five (5) crash severity levels—**fatal, incapacitating injury, and non-incapacitating injury** crashes— and excluding possible injury and property damage-only crashes from the analysis.

- **Roadway Segments and Intersections**

Within the MCN roadway network, only roadway segments and intersections with fatality, incapacitating injury, or non-incapacitating injury crashes were selected for analysis and inclusion in the HIN determination.

The following is the approach to creating the High Injury Network (HIN):

- **Calculate the Crash Rate for each Roadway Segment and Intersection:**

The crash rate is a measure of how frequent crashes occur within a specific area, time period, or roadway segment, typically normalized by traffic volume, length, or population to assess roadway safety. When calculating crash rates, crashes are weighted according to their severity, using direct conversion crash unit cost coefficients sourced from the Federal Highway Administration (**Table 1**). In this table, rows K to O represent the costs associated with different crash severity levels as follows:

- K: Fatal
- A: Incapacitating Injury
- B: Non- Incapacitating Injury
- C: Possible Injury
- O: Property Damage Only

In developing the High Injury Network for Lincoln County, various methods were evaluated to ensure the crash rate accurately reflects crash severity and density across the roadway network. This evaluation

considered multiple approaches, both with and without the inclusion of Annual Average Daily Traffic (AADT) and road segment lengths. Normalizing the crash rate based on AADT was determined to be the most effective approach for developing the HIN crash rate. The formula for the crash rate used in the development of HIN is as follows:

$$\text{Crash Rate} = \frac{\sum(C_s \times N_s) \times 100,000,000}{365 \times Y \times \text{AADT} \times \sum C_s} \text{ (Crashes per 100 million vehicle-miles)}$$

Cs = Cost assigned to each crash severity level (KABCO Crash Unit Costs - 2016 Dollars)

Ns = Number of crashes at each severity level (Crashes)

Y = Study period in years (5)

AADT = Average Annual Daily Traffic (Vehicles/day)

Table 1 - KABCO Crash Unit Costs (2016 Dollars)

KABCO	Crash Unit Cost (\$)
K	9,600,000
A	2,553,600
B	451,200
C	28,800
O	4,200

- **Tier 1 Classification: Classification Based on AADT**

For the purposes of this study, AADT is defined as follows:

- **AADT for Roadway Segments:**
The raw AADT data sourced from the ODOT roadway network which is an estimate of the average number of vehicles that pass a specific roadway segment each day over the course of a year.
- **AADT for Intersections:**
The AADT for an intersection is calculated as the sum of the AADT values of all the roadway approaches that intersect at that location.

Locations (roadway segments and intersections) with AADT below the identified 25th percentile threshold of the AADT distribution were adjusted to their threshold values:

- Threshold for roadway segments: AADT=65
- Threshold for intersections: AADT=130

This adjustment prevents disproportionately influencing the results by locations with very low AADT.

The AADT for roadway segments in Lincoln County that have experienced at least one crash within the top three severity levels (fatal, incapacitating injury, and non-incapacitating injury) ranges from 65 to 28,700, with a skewed distribution, as shown in **Figure 1**. For intersections with at least one crash of these severity levels, the AADT distribution ranges from 130 to 7,800, as illustrated in **Figure 2**. Normalizing based on these ranges leads to significant disparities in crash rates across segments and intersections with different traffic volumes. Therefore, both roadway segments and intersections were categorized into Low, Medium, and High AADT

using the Jenks Natural Breaks algorithm (Reference: Jenks, G. F. (1967). "The Data Model Concept in Statistical Mapping," International Yearbook of Cartography, 7, 186–190).

The AADT thresholds for roadway segments are as follows:

- Low AADT: Less than 1,800
- Medium AADT: Between 1,800 and 26,700
- High AADT: Greater than 26,700

The AADT thresholds for intersections are as follows:

- Low AADT: Less than 2,240
- Medium AADT: Between 2,240 and 4,605
- High AADT: Greater than 4,605

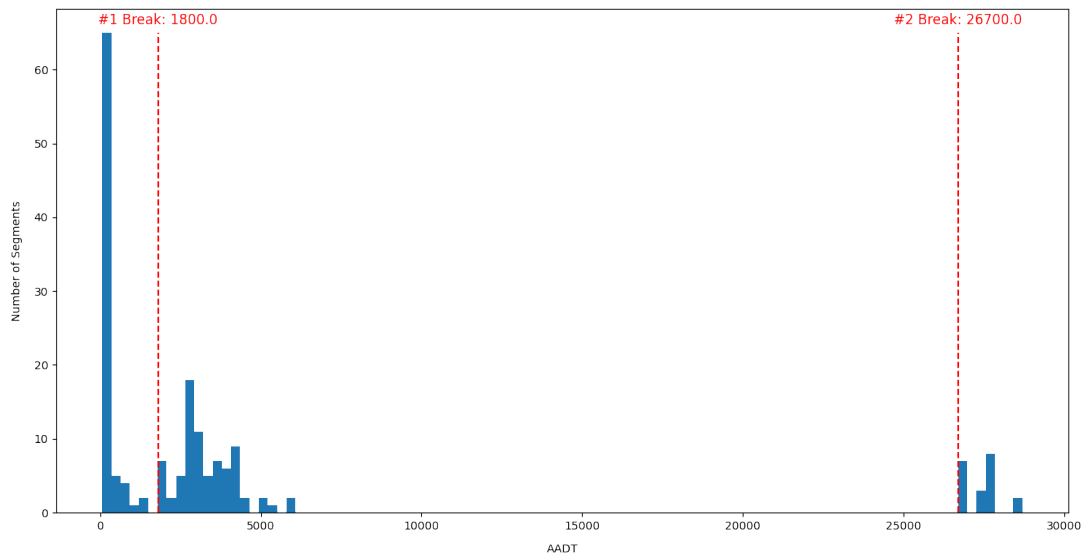


Figure 1 - Distribution of Roadway Segments by AADT

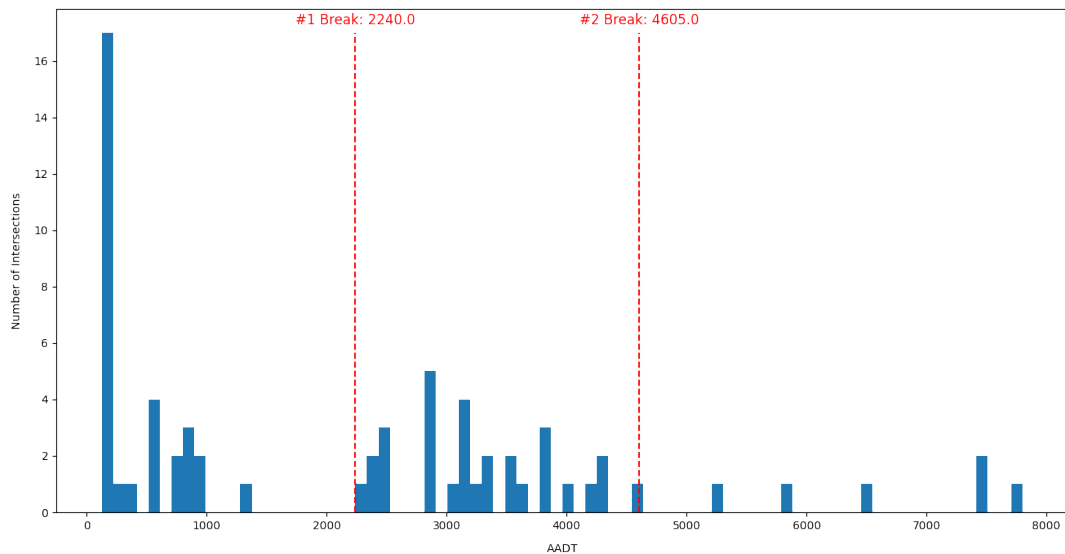


Figure 2 - Distribution of Intersections by AADT

- **Tier 2 Classification: Roadway Classification Based on Crash Rate**

Separate Injury network maps were created for each AADT category for both roadway segments and intersections based on calculated crash rates. To classify crash rates into three groups within each AADT category, the crash rate distribution was analyzed as shown in **Figure 3**, **Figure 4** and **Figure 5** for roadway segments and **Figure 6**, **Figure 7** and **Figure 8** for intersections. The following thresholds were selected to best represent different crash rate categories:

- Low Crash Rate: Roadway segments with a crash rate below the 50th percentile (median) threshold.

- Medium Crash Rate: Roadway segments with a crash rate between the median and the 90th percentile.
- High Crash Rate: Roadway Segments with a crash rate above the 90th percentile (top 10%) threshold.

Table 2 shows the distribution of roadway segments across different AADT and crash rate categories, along with the corresponding crash rate ranges and the total mileage of segments within each category. **Table 3** presents the same information for intersections, replacing segment mileage with the number of intersections.

Figure 9, Figure 10 and **Figure 11** show the injury network maps for roadway segments across different AADT categories. **Figure 12, Figure 13** and **Figure 14** display the corresponding injury network maps for intersections:

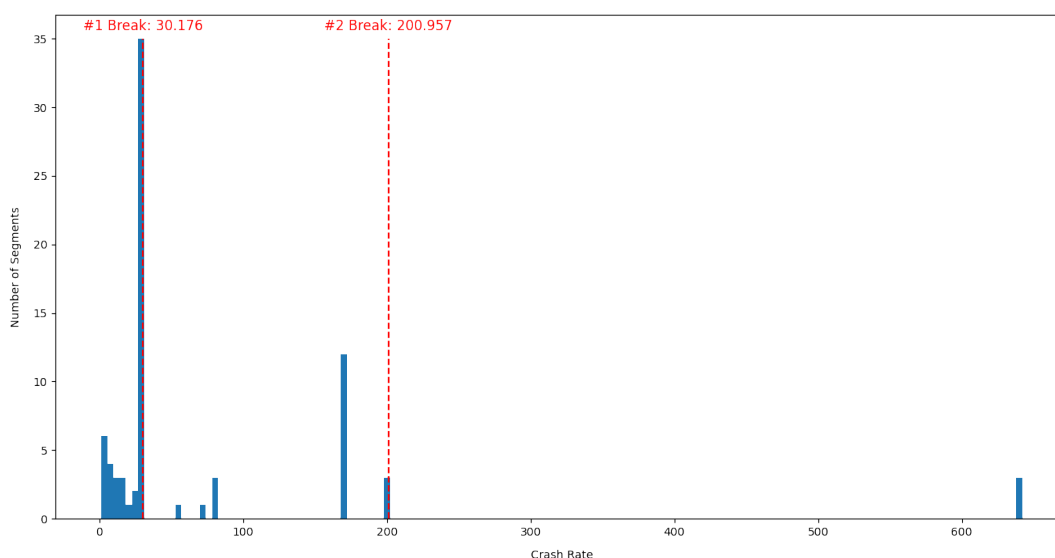


Figure 3 - Roadway Segment Crash Rate Distribution (Low AADT Category)

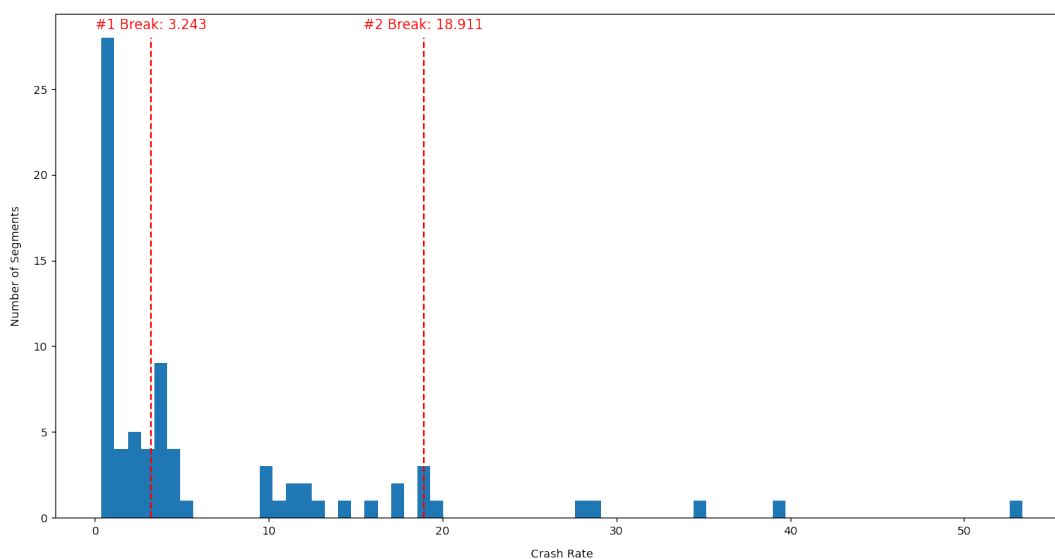


Figure 4 - Roadway Segment Crash Rate Distribution (Medium AADT Category)

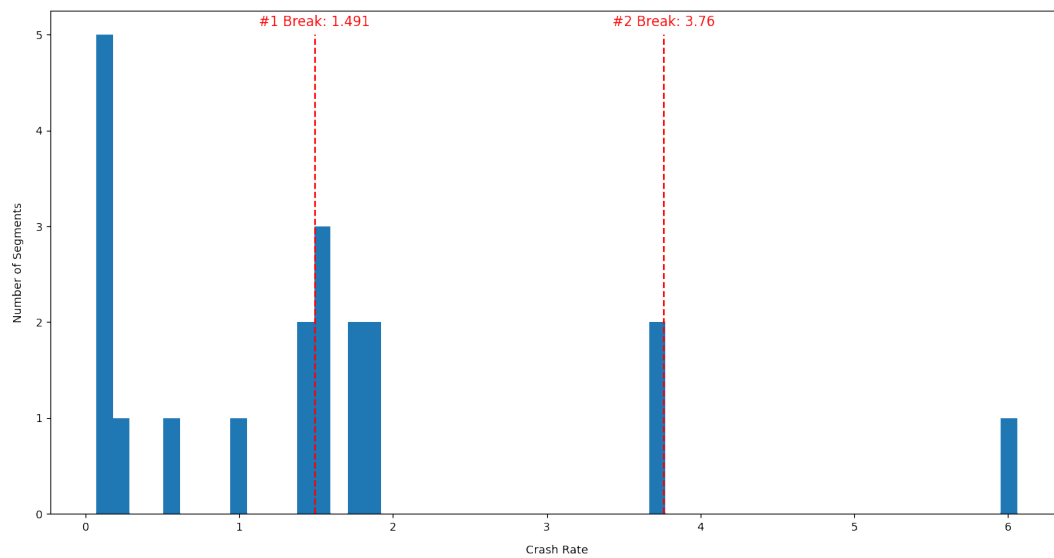


Figure 5 - Roadway Segment Crash Rate Distribution (High AADT Category)

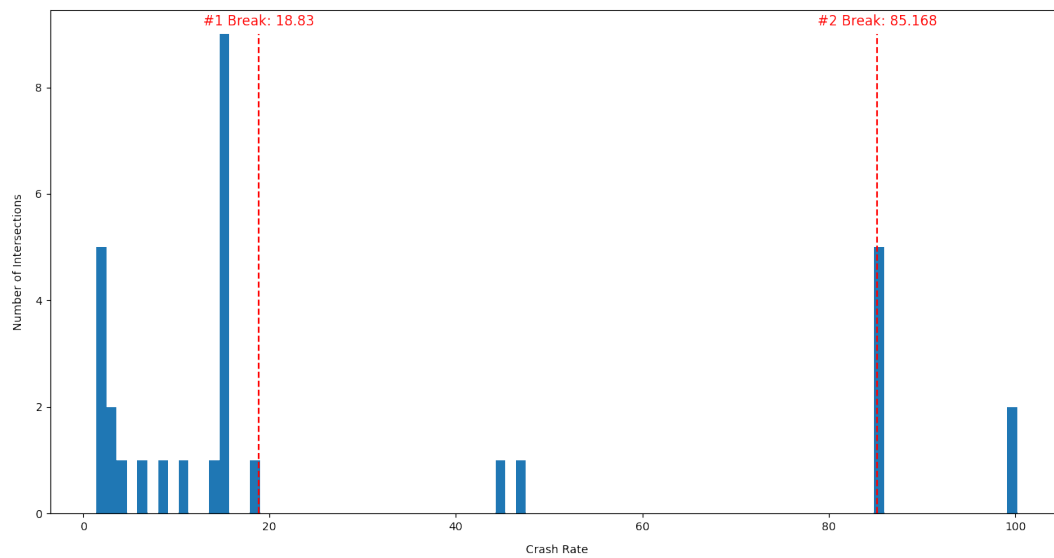


Figure 6 - Intersection Crash Rate Distribution (Low AADT Category)

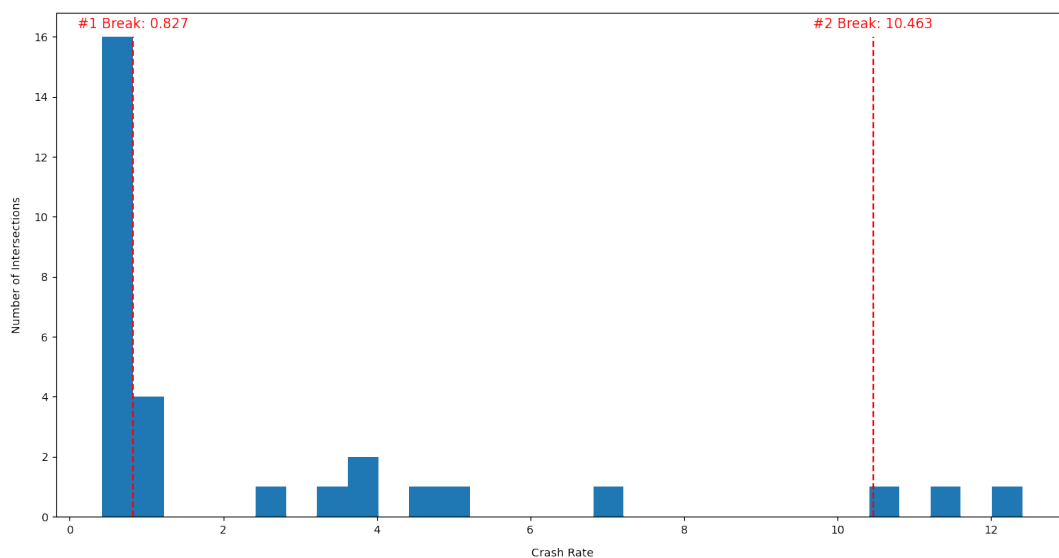


Figure 7 - Intersection Crash Rate Distribution (Medium AADT Category)

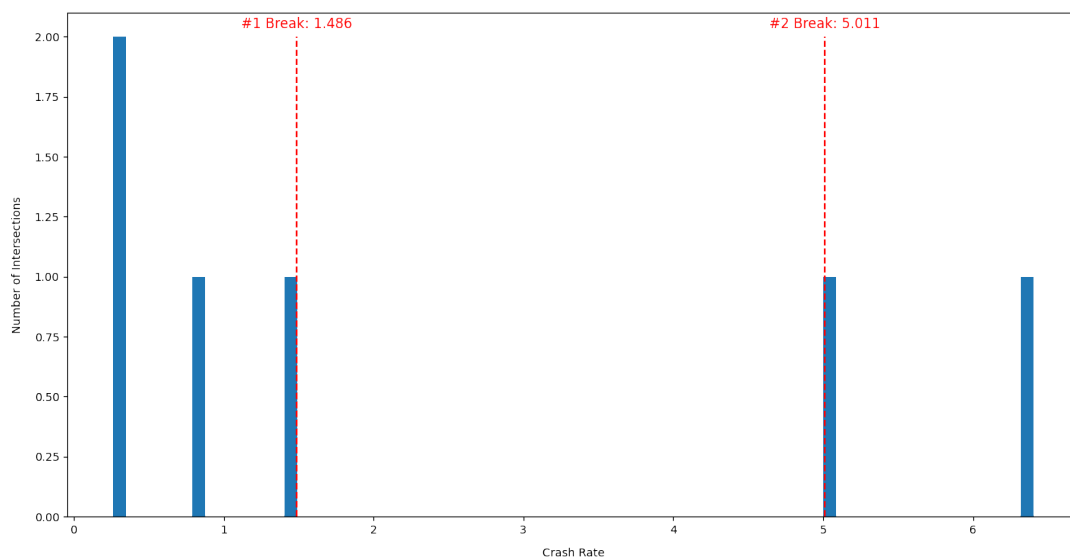


Figure 8 - Intersection Crash Rate Distribution (High AADT Category)

Table 2 - Distribution of Roadway Segments by AADT and Crash Rate Categories

AADT Category	AADT Range	Crash Rate Category	Crash Rate Range	Roadway Miles
Low	65 - 1,800	Low	1.4 - 30.18	88
		Medium	30.18 - 200.96	39
		High	200.96 - 642.03	10
Medium	1,800 - 26,700	Low	0.37 - 3.24	34
		Medium	3.24 - 18.91	62
		High	18.91 - 53.34	18
High	26,700 - 28,700	Low	0.07 - 1.49	6
		Medium	1.49 - 3.76	12
		High	3.76 - 6.06	9

Table 3 - Distribution of Intersections by AADT and Crash Rate Categories

AADT Category	AADT Range	Crash Rate Category	Crash Rate Range	Number of Intersections
Low	130 - 2,240	Low	1.43 - 18.83	21
		Medium	18.83 - 85.17	8
		High	85.17 - 100.22	2
Medium	2,240 - 4,605	Low	0.42 - 0.83	16
		Medium	0.83 - 10.5	11
		High	10.5 - 12.41	3
High	4,605 - 7,800	Low	0.26 - 1.49	3
		Medium	1.49 - 5.01	2
		High	5.01 - 6.4	1

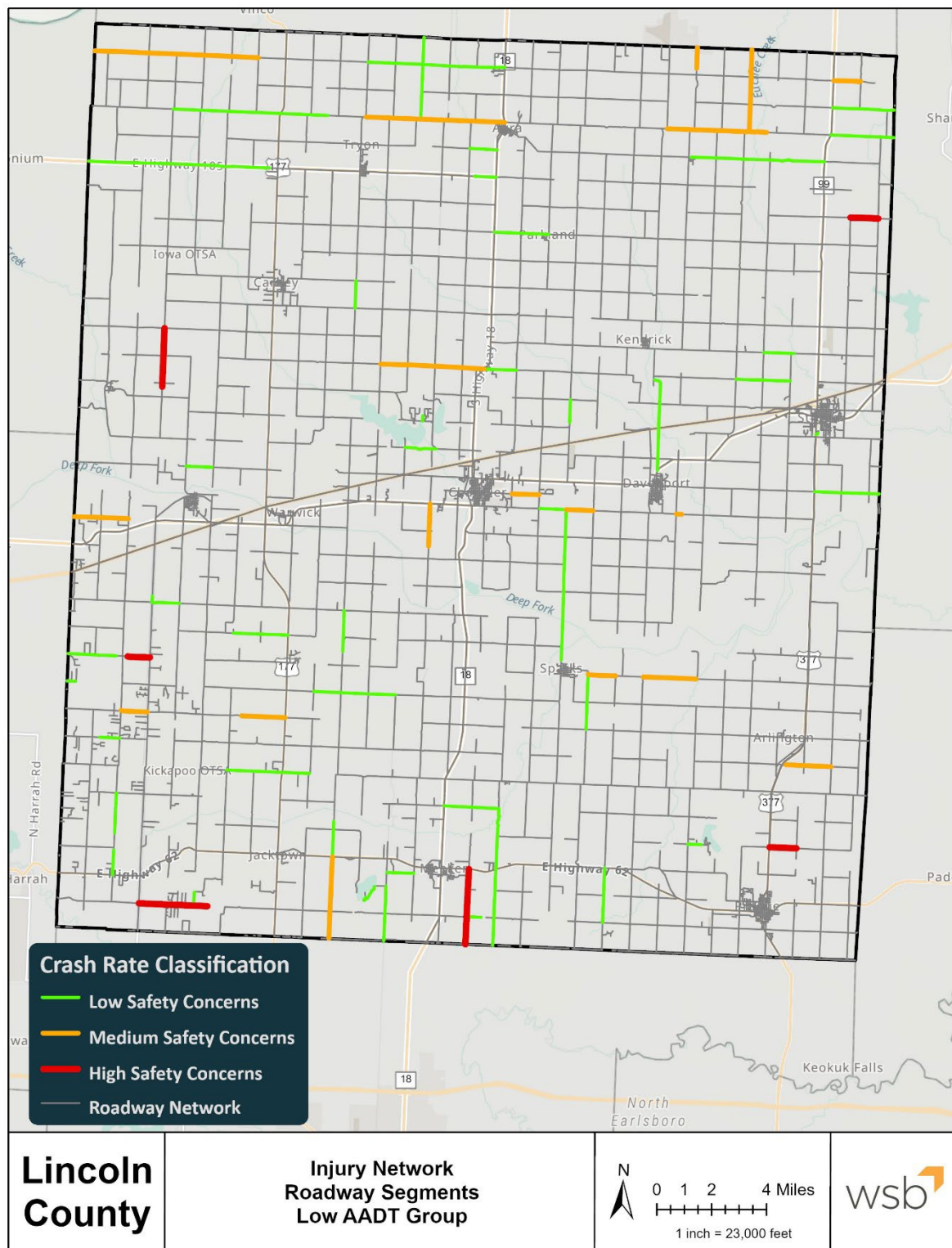


Figure 9 - Roadway Segment Injury Network with Low AADT

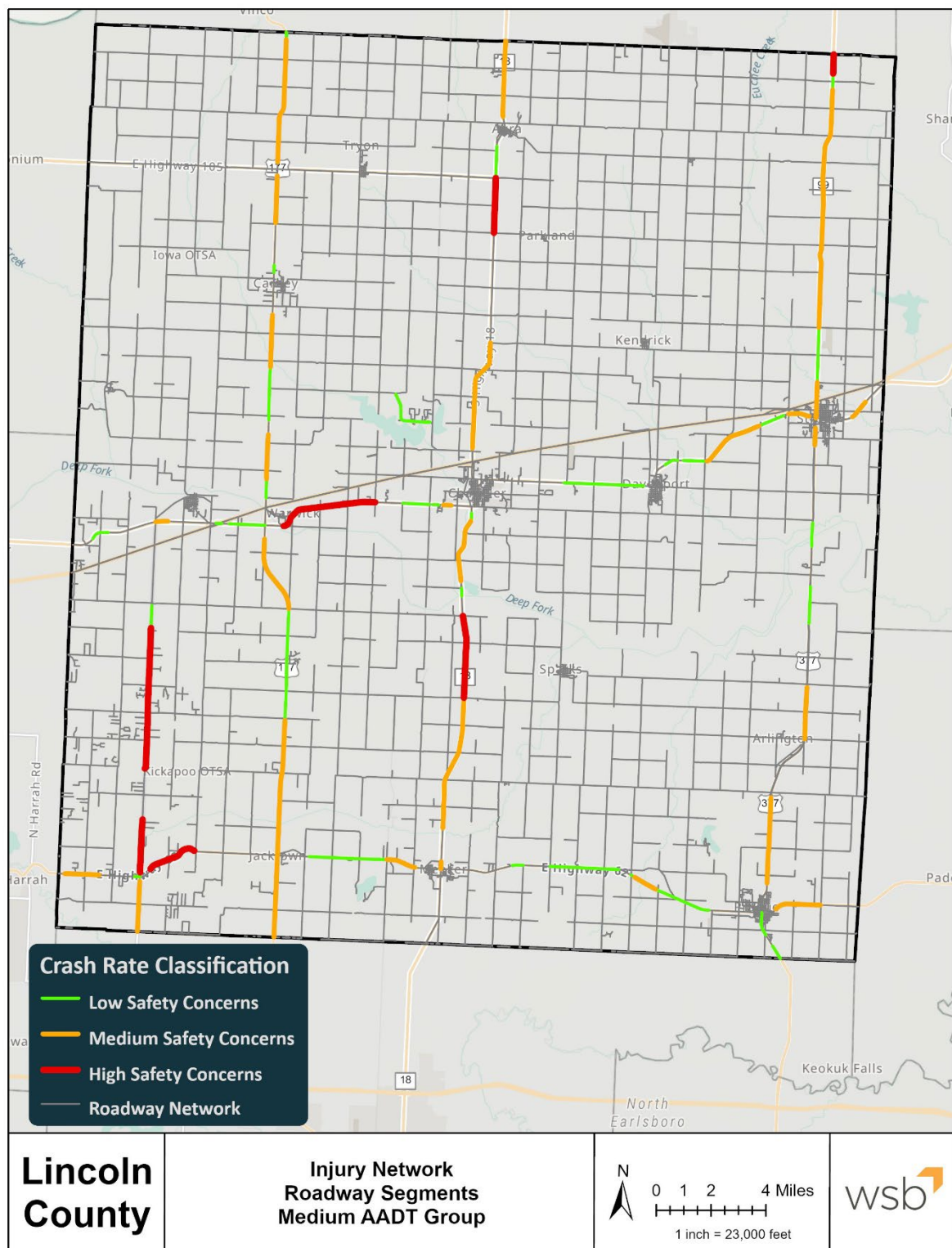


Figure 10 - Roadway Segment Injury Network with Medium AADT

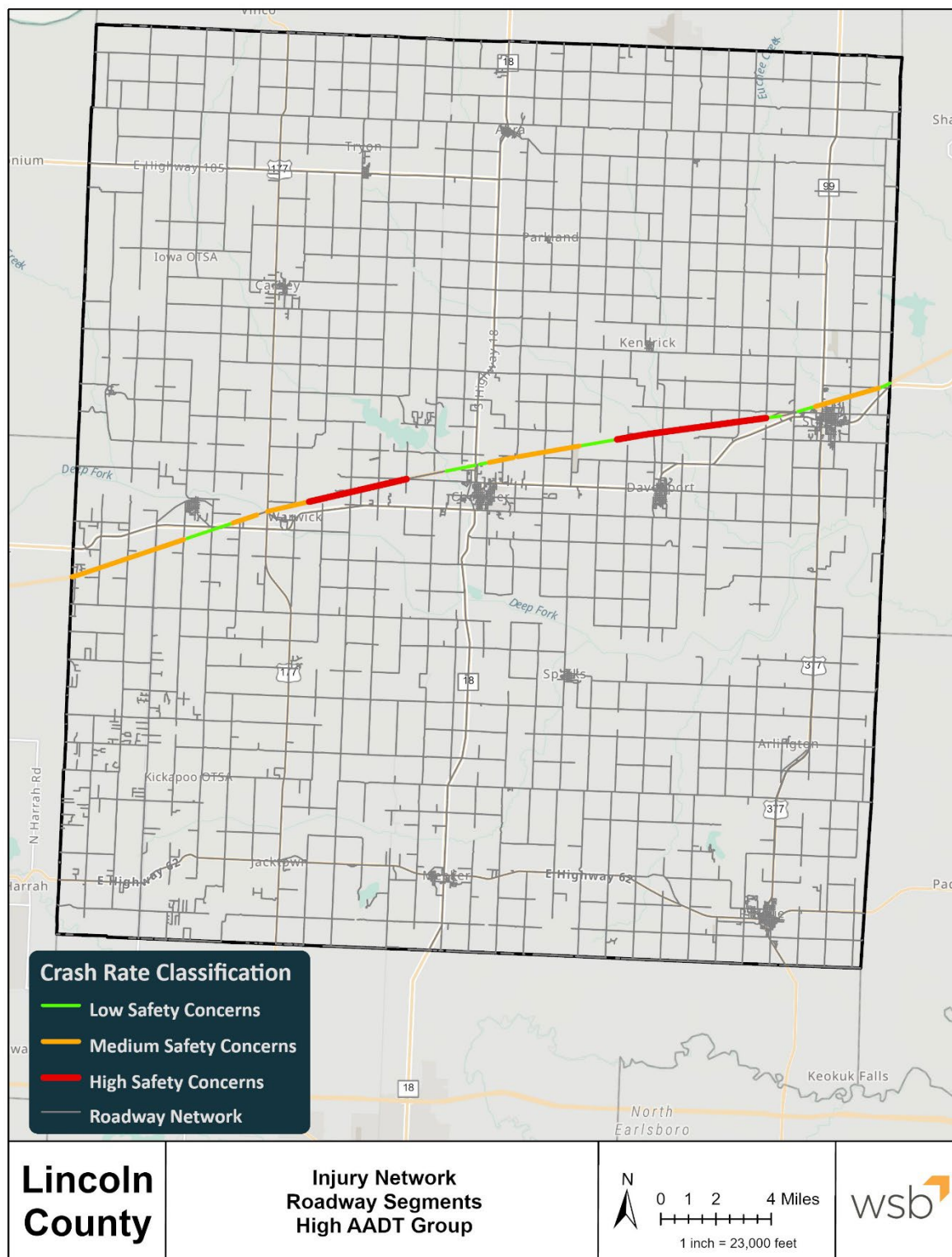


Figure 11 - Roadway Segment Injury Network with High AADT

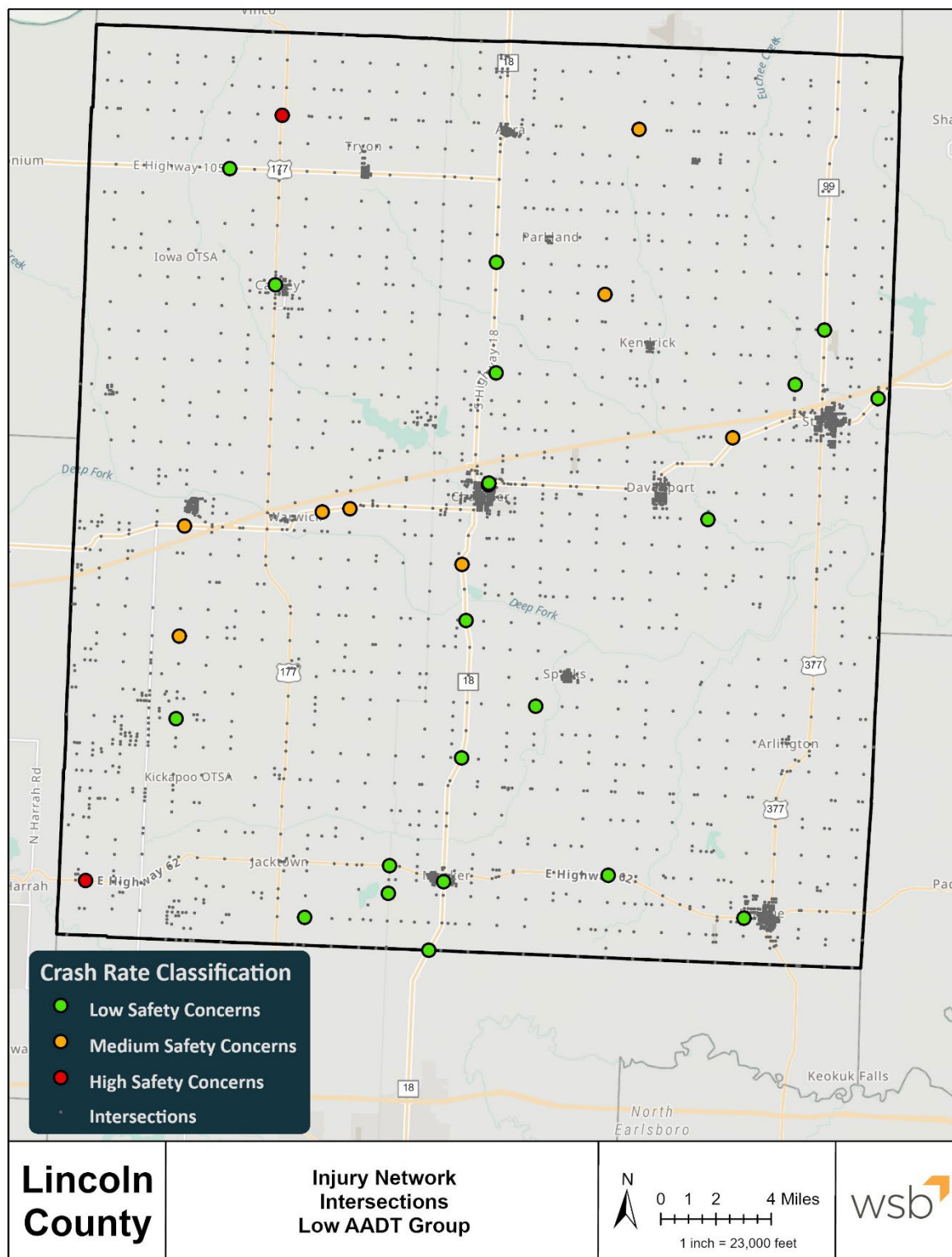


Figure 12 - Intersection Injury Network with Low AADT

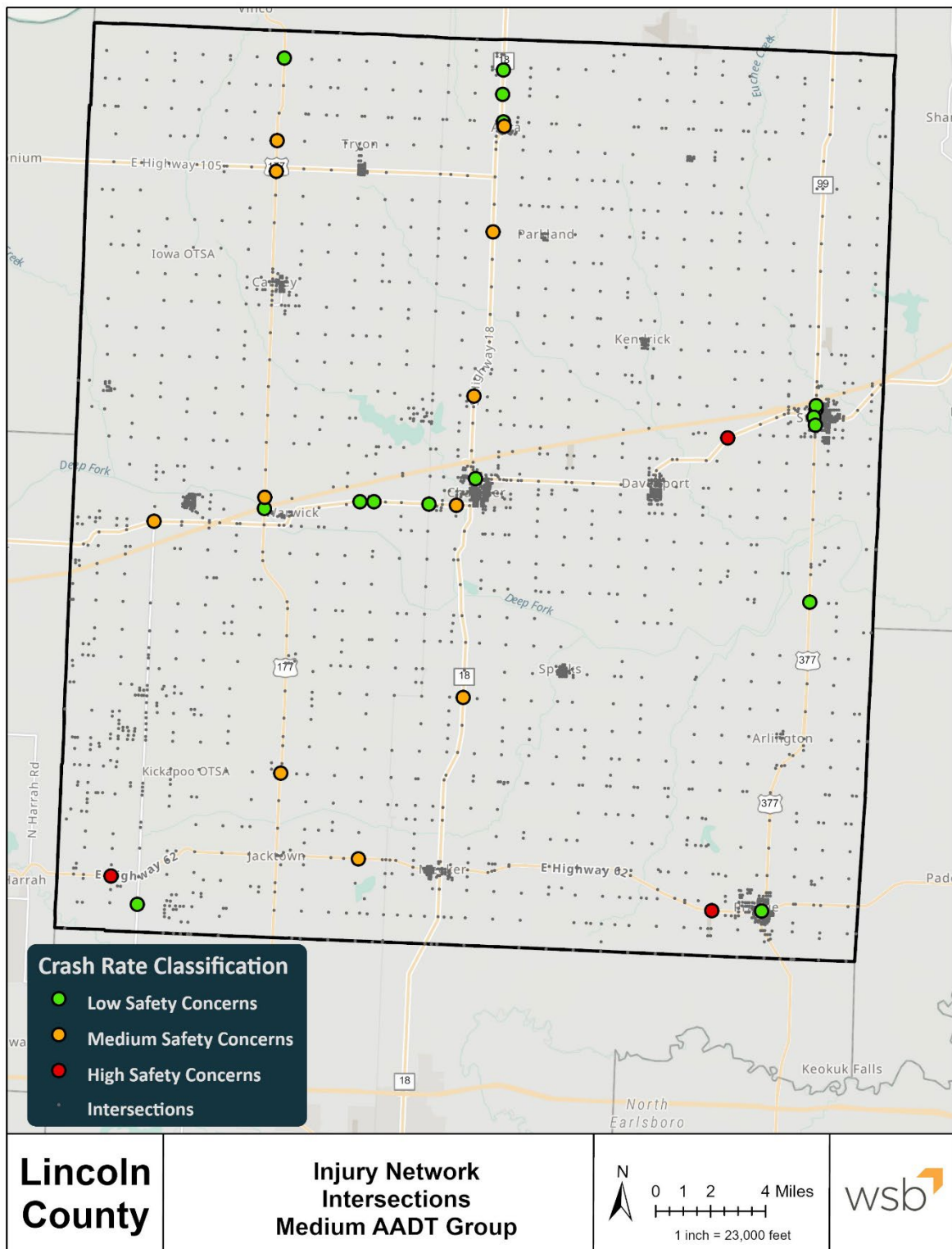


Figure 13 - Intersection Injury Network with Medium AADT

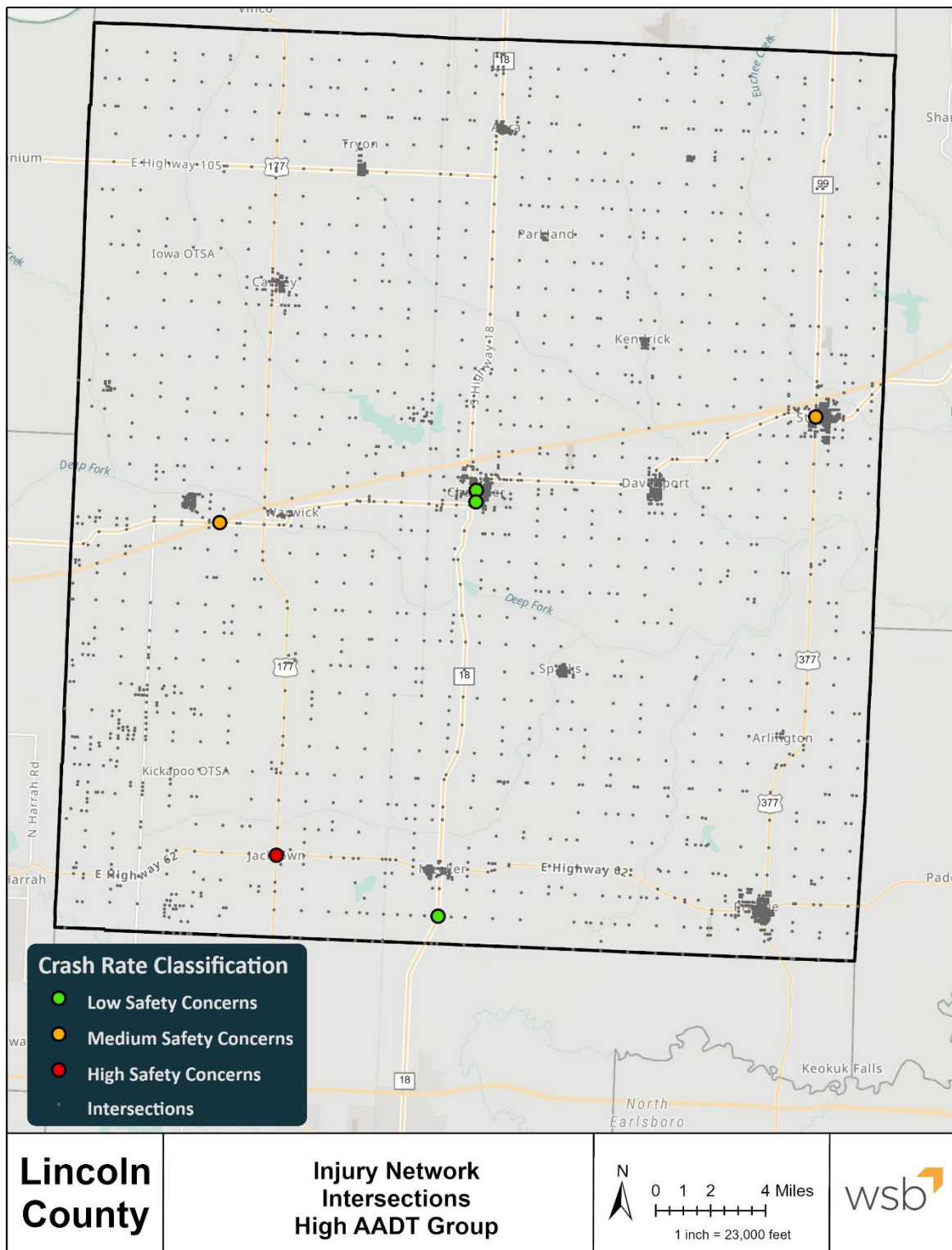


Figure 14 - Intersection Injury Network with High AADT

Injury Network Map Results for Lincoln County

The three AADT specific injury network maps for roadway segments were combined into a single roadway segment injury network map (**Figure 15**), and the same process was applied to intersections to create intersection injury network map (**Figure 16**) Finally, the intersection injury network map and roadway segment injury network map were merged to create the final HIN map (**Figure 17**).

Table 4 shows the distribution of roadway segments by crash rate categories (Low, Medium, and High), including segment mileage and the corresponding percentages and number of total, fatal, incapacitating, and non-incapacitating crashes.

Table 5 presents a similar breakdown for intersections, detailing the number of intersections in each crash rate category along with their associated crash frequencies and severity percentages.

Table 4 - Distribution of Roadway Segments by Crash Rate Categories and Severity

Crash Rate Categories (from three AADT categories)	Roadway Miles % (#)	Total Crashes* % (#)	Fatal Crashes % (#)	Incap Injury Crashes % (#)	Non-Incap Injury Crashes % (#)
Low	46.04% (128)	36.75% (129)	2.78% (1)	20.48% (17)	47.84% (111)
Medium	40.65% (113)	42.17% (148)	47.22% (17)	59.04% (49)	35.34% (82)
High	13.31% (37)	21.08% (74)	50.0% (18)	20.48% (17)	16.81% (39)
Total	100% (278)	100% (351)	100% (36)	100% (83)	100% (232)

* Note: Total number and percentage of crashes related to the three injury severity categories: fatal, incapacitating injuries, and non-incapacitating injuries.

Table 5 - Distribution of Intersections by Crash Rate Categories and Severity

Crash Rate Categories (from three AADT categories)	Number of Intersections % (#)	Total Crashes* % (#)	Fatal Crashes % (#)	Incap Injury Crashes % (#)	Non-Incap Injury Crashes % (#)
Low	59.70% (40)	45.65% (42)	0% (0)	13.64% (3)	59.09% (39)
Medium	31.34% (21)	44.57% (41)	0% (0)	77.27% (17)	36.36% (24)
High	8.96% (6)	9.78% (9)	100% (4)	9.09% (2)	4.55% (3)
Total	100% (67)	100% (92)	100% (4)	100% (22)	100% (66)

* Note: Total number and percentage of crashes related to the three injury severity categories: fatal, incapacitating injuries, and non-incapacitating injuries.

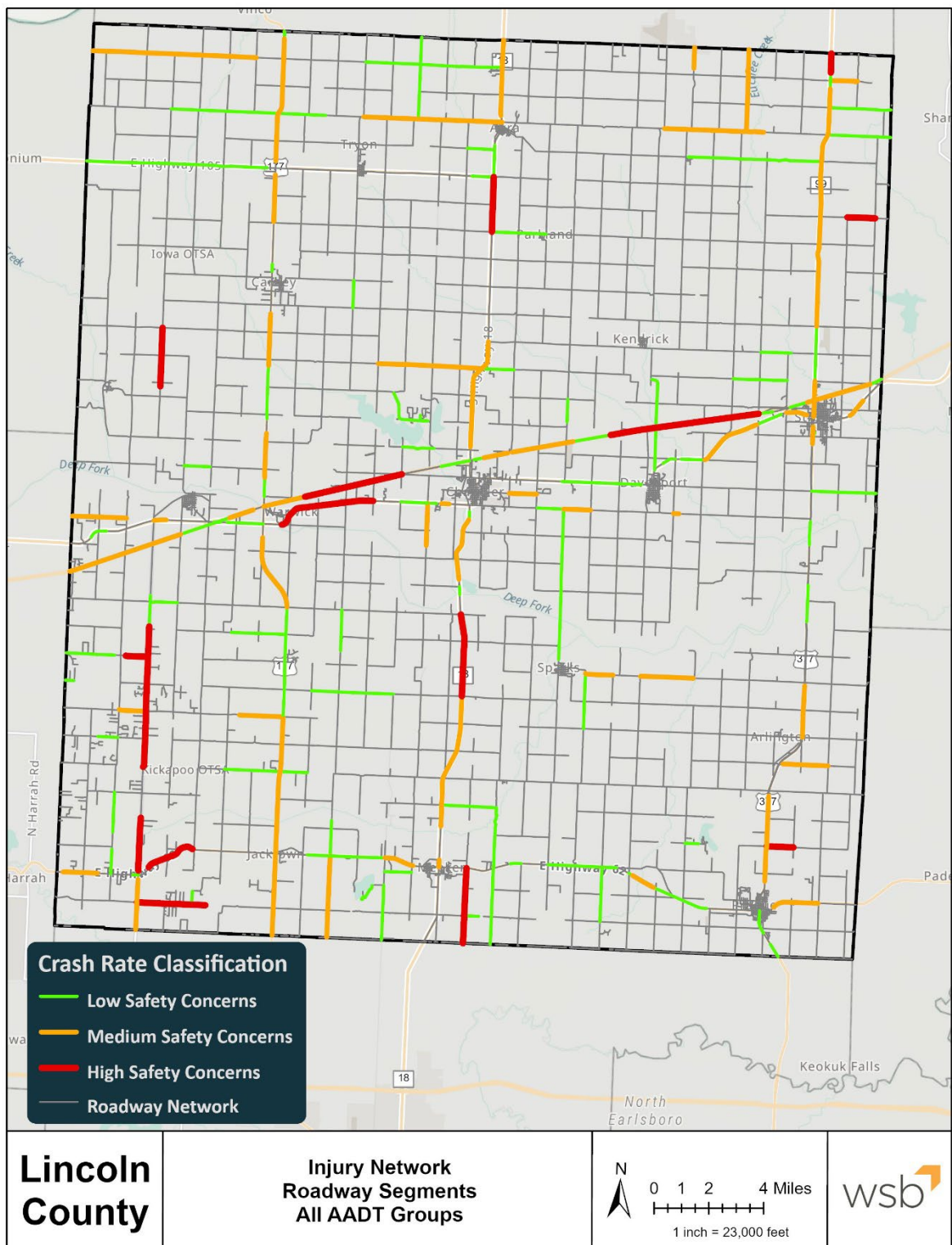


Figure 15 – Roadway Segment Injury Network Map (all AADT categories)

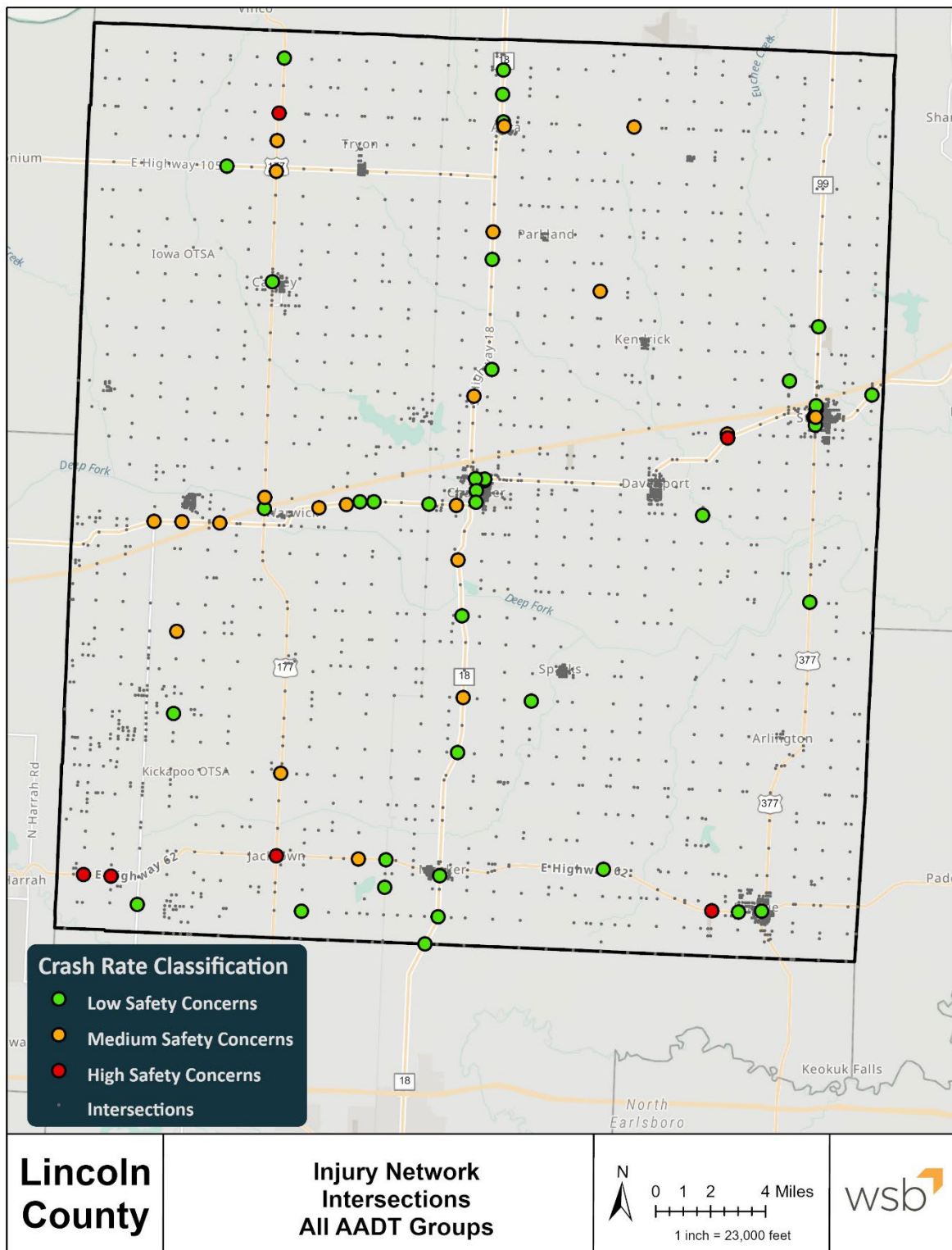


Figure 16 – Intersection Injury Network Map (all AADT categories)

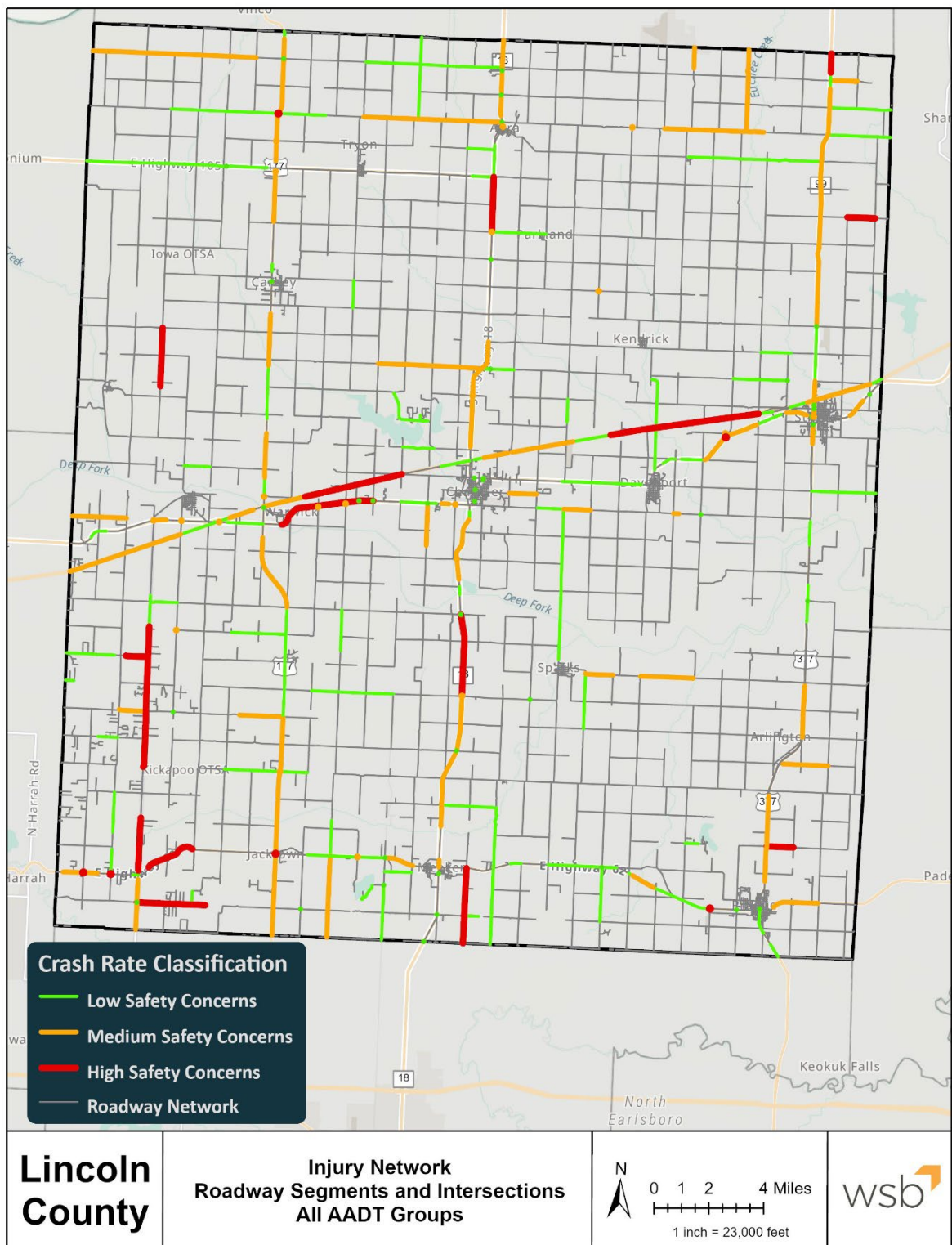


Figure 17 - Injury Network Map (Merged Intersection and Roadway Segment HIN Networks)

Proposed High Injury Network (HIN)

An analysis of injury networks and crash distribution reveals that a significant percentage of crashes occur in the Medium and High crash rate categories. **Table 6** and **Table 7** present the crash percentages for roadway segments and intersections, respectively, while **Table 8** provides the combined crash statistics for both.

Table 6: Crash Distribution by Severity for High and Medium Crash Rate Roadway Segments

Crash Rate Categories (from three AADT categories)	Roadway Miles % of all (#)	Total Crashes* % (#)	Fatal Crashes % (#)	Incap Injury Crashes % (#)	Non-Incap Injury Crashes % (#)
Medium	6.02% (113)	42.17% (148)	47.22% (17)	59.04% (49)	35.34% (82)
High	1.97% (37)	21.08% (74)	50.0% (18)	20.48% (17)	16.81% (39)
Total Roadways	7.99% (150)	63.25% (222)	97.22% (35)	79.52% (66)	52.15% (121)

* Note: Total number and percentage of crashes related to the three injury severity categories: fatal, incapacitating injuries, and non-incapacitating injuries.

Table 7: Crash Distribution by Severity for High and Medium Crash Rate Intersections

Crash Rate Categories (from three AADT categories)	Number of Intersections % of all (#)	Total Crashes* % (#)	Fatal Crashes % (#)	Incap Injury Crashes % (#)	Non-Incap Injury Crashes % (#)
Medium	0.89% (21)	44.57% (41)	0% (0)	77.27% (17)	36.36% (24)
High	0.25% (6)	9.78% (9)	100% (4)	9.09% (2)	4.55% (3)
Total Intersections	1.14% (27)	54.35% (50)	100% (4)	86.36% (19)	40.91% (27)

* Note: Total number and percentage of crashes related to the three injury severity categories: fatal, incapacitating injuries, and non-incapacitating injuries.

Table 8: Crash Distribution by Severity for High and Medium Crash Rate Roadways and Intersections

Crash Rate Categories (from three AADT categories)	Total Crashes* % (#)	Fatal Crashes % (#)	Incap Injury Crashes % (#)	Non-Incap Injury Crashes % (#)
Total Roadways	50.11% (222)	87.5% (35)	62.86% (66)	40.60% (121)
Total Intersections	11.29% (50)	10.0% (4)	18.09% (19)	9.06% (27)
Grand Total	61.4% (272)	97.5% (39)	80.95% (85)	49.66% (148)

* Note: Total number and percentage of crashes related to the three injury severity categories: fatal, incapacitating injuries, and non-incapacitating injuries.

As shown in Table 8, **97.5% of fatal crashes, 80.95% of incapacitating injury crashes, and 49.66% of non-incapacitating injury** crashes occurred within the high and medium crash rate categories for roadway segments and intersections. Accordingly, the proposed HIN is defined by these two categories, excluding the low crash rate category. **Figure 18** and **Figure 19** depict the proposed HIN for roadway segments and intersections, respectively, while **Figure 20** illustrates the combined proposed HIN.

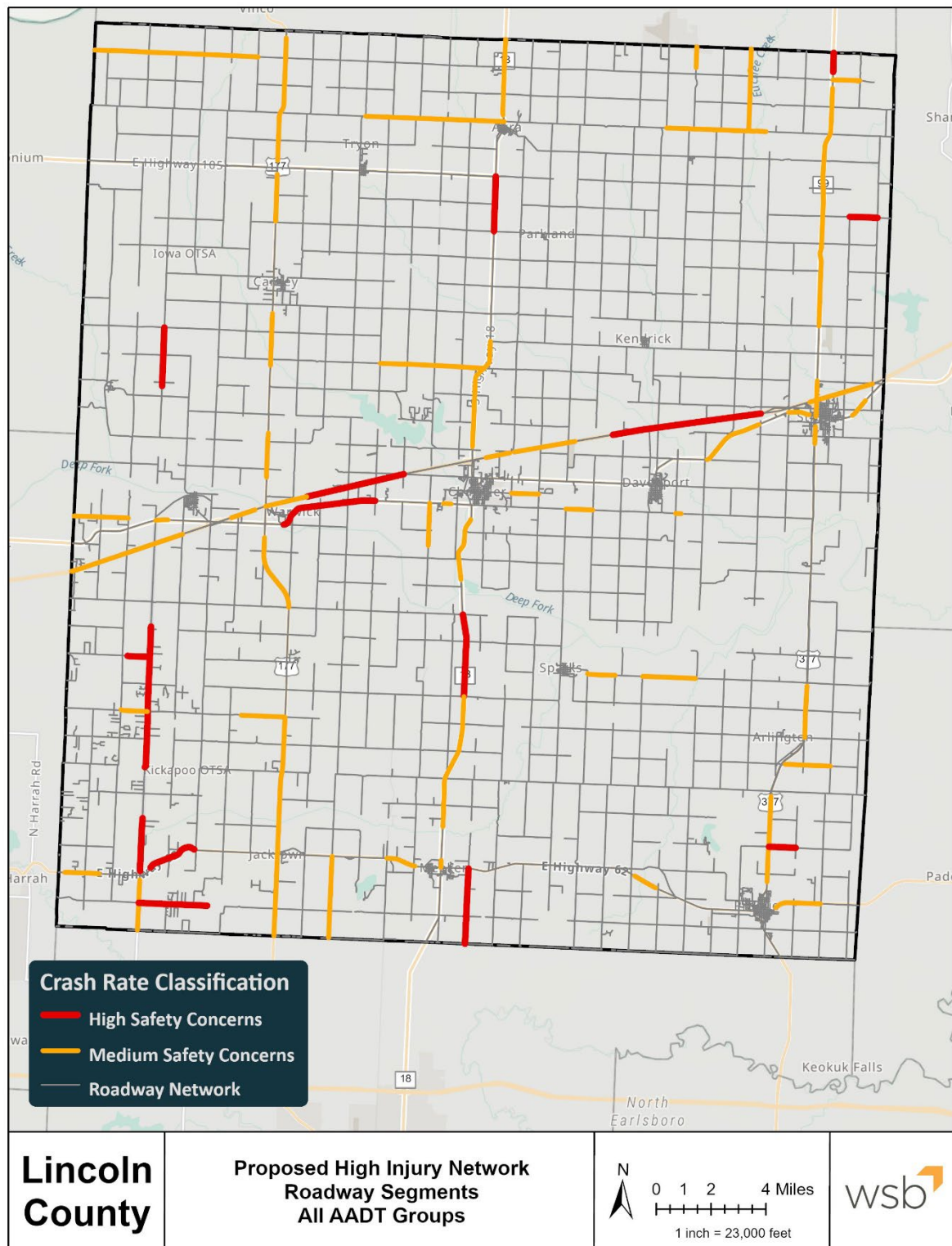


Figure 18: Roadway Segments - Proposed High Injury Network Map (all AADT categories)

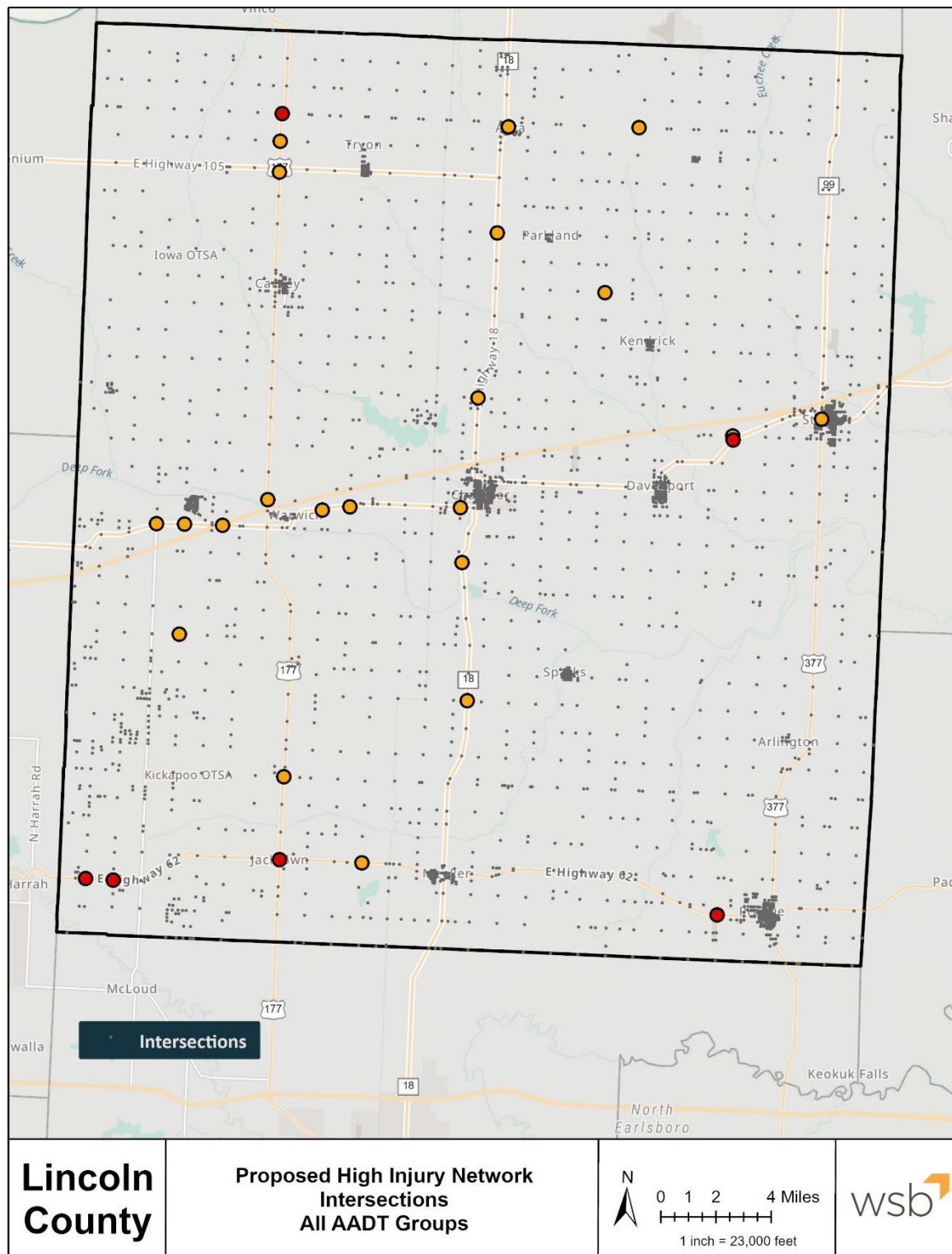


Figure 19: Intersections - Proposed High Injury Network Map (all AADT categories)

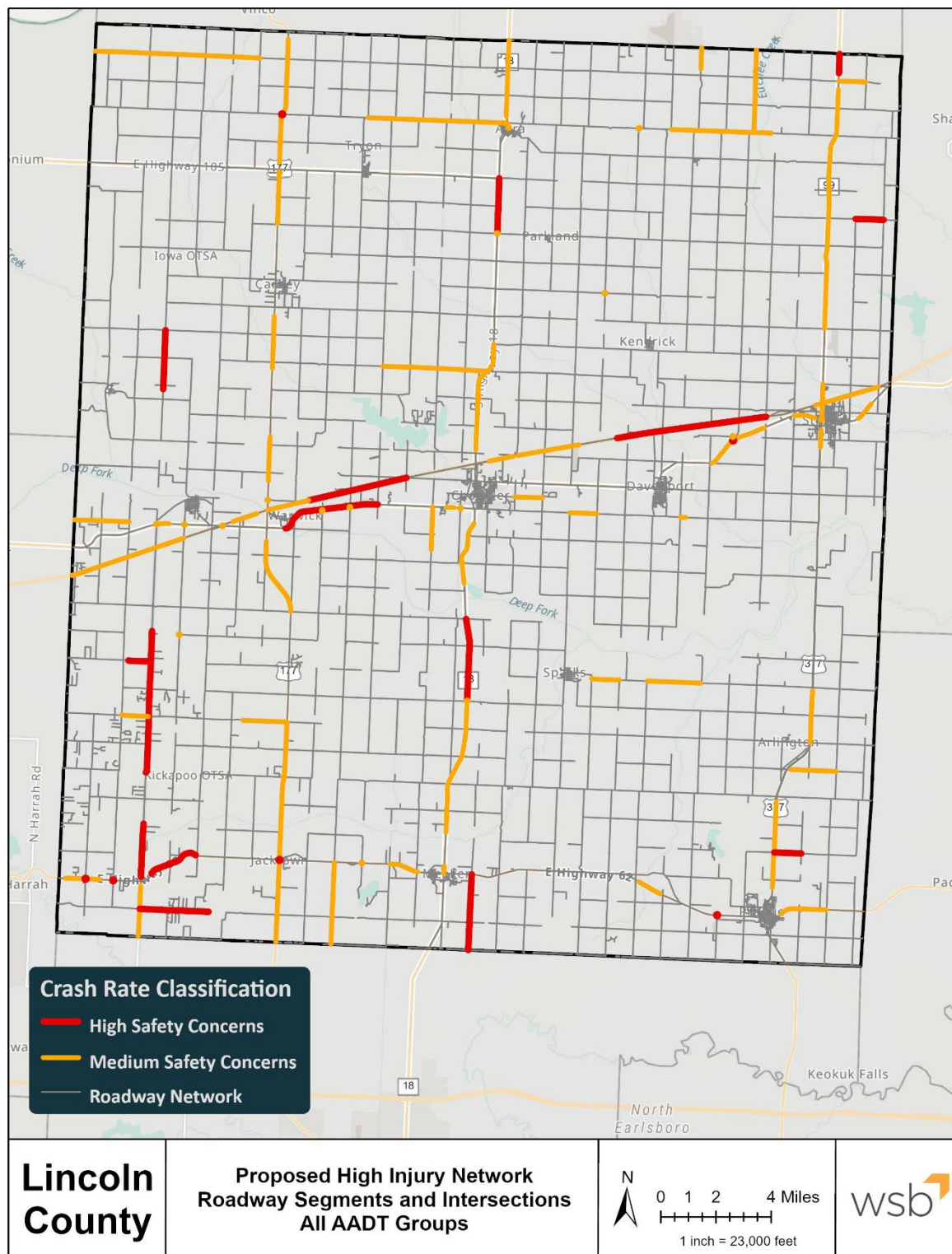
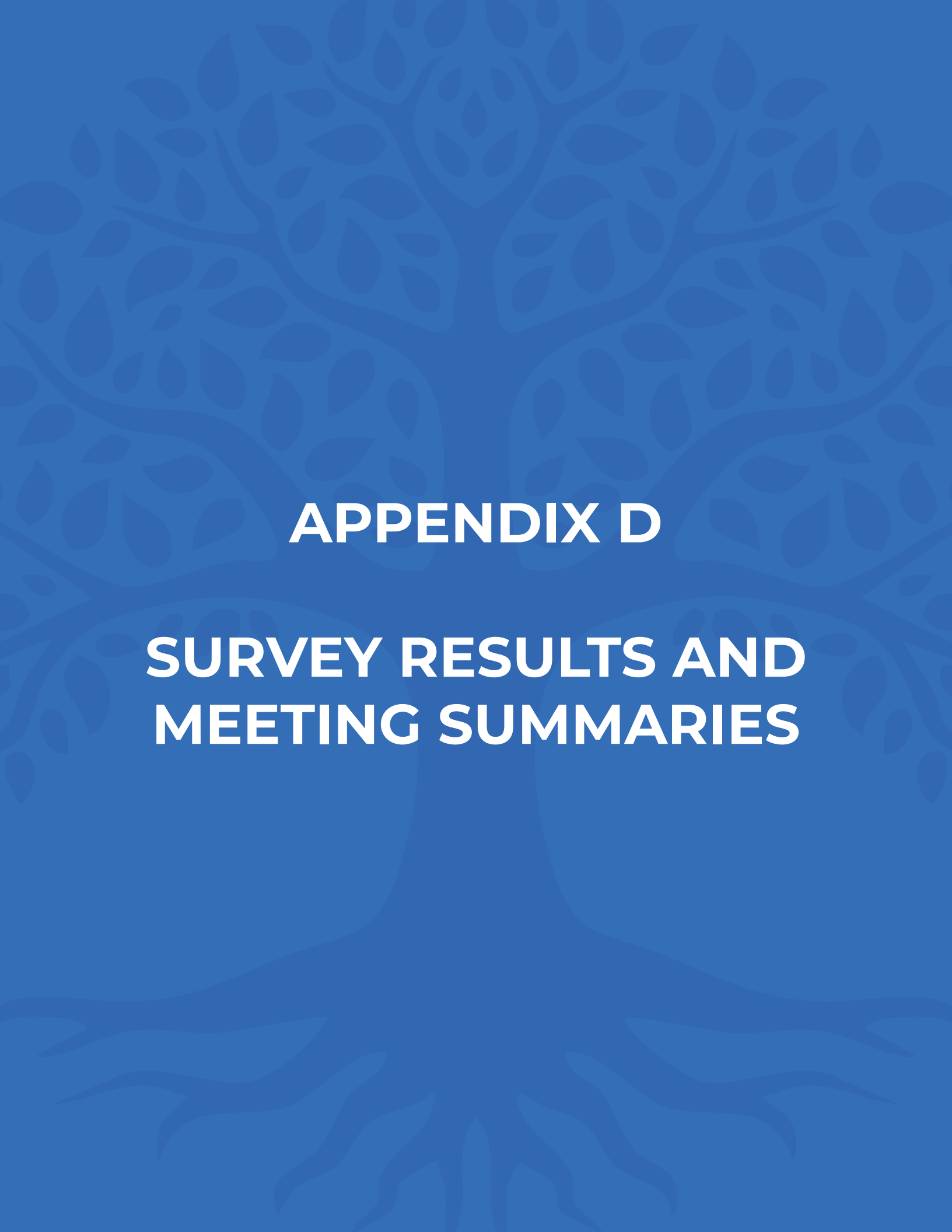


Figure 20: Proposed High Injury Network Map (Merged Intersections and Roadway Segments)

NOTE: The definition of the HIN can be modified based on further review of thresholds.



APPENDIX D

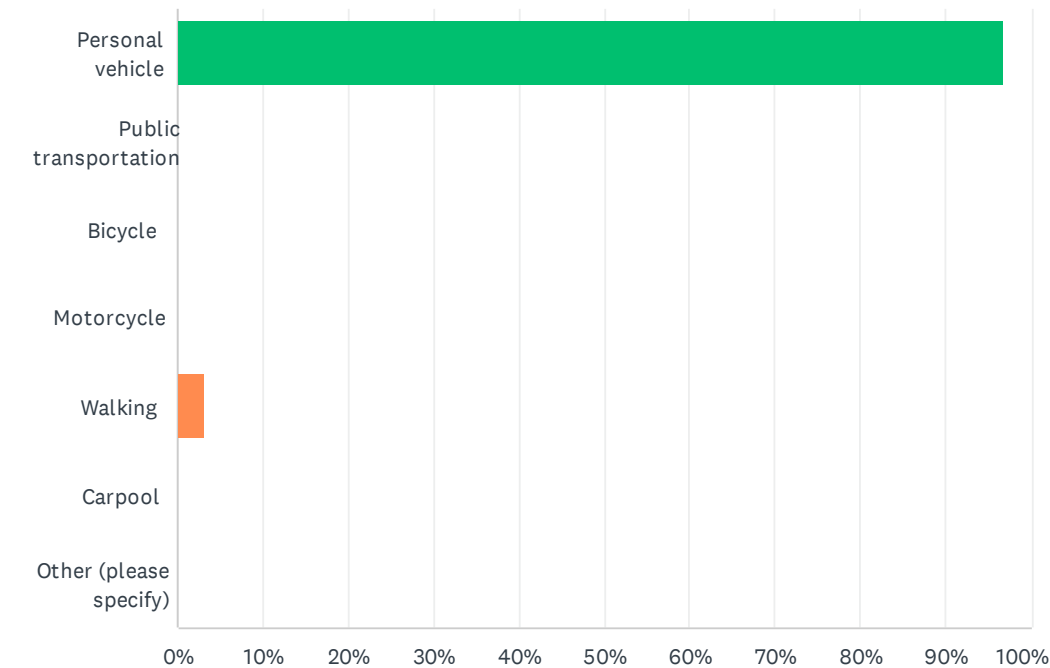
SURVEY RESULTS AND MEETING SUMMARIES

Appendix D

Survey Results and Meeting Summaries

Q1 What is your primary mode of transportation?

Answered: 32 Skipped: 2

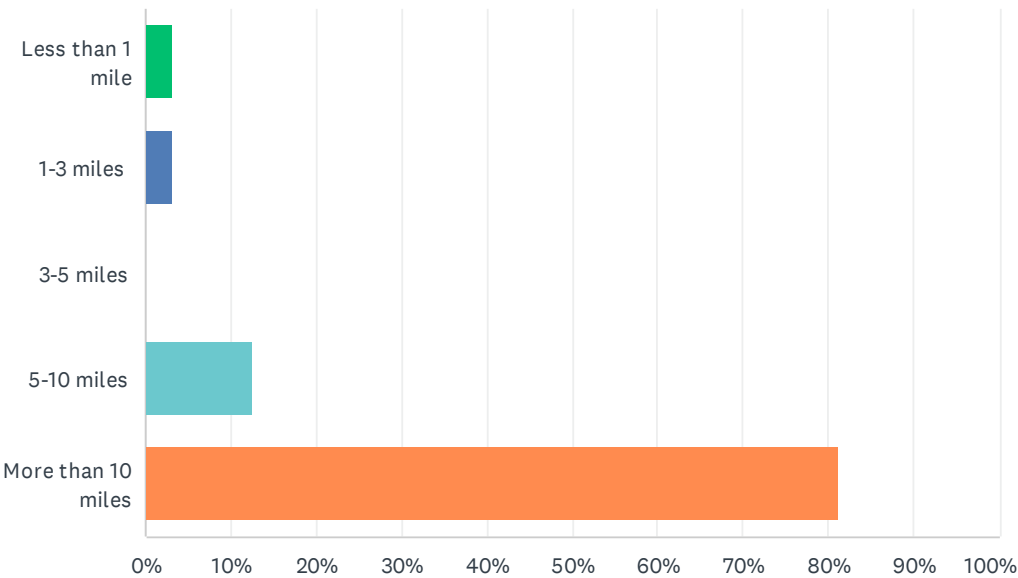


ANSWER CHOICES		RESPONSES	
Personal vehicle		96.88%	31
Public transportation		0.00%	0
Bicycle		0.00%	0
Motorcycle		0.00%	0
Walking		3.13%	1
Carpool		0.00%	0
Other (please specify)		0.00%	0
TOTAL			32

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q2 How many miles do you travel on an average day?

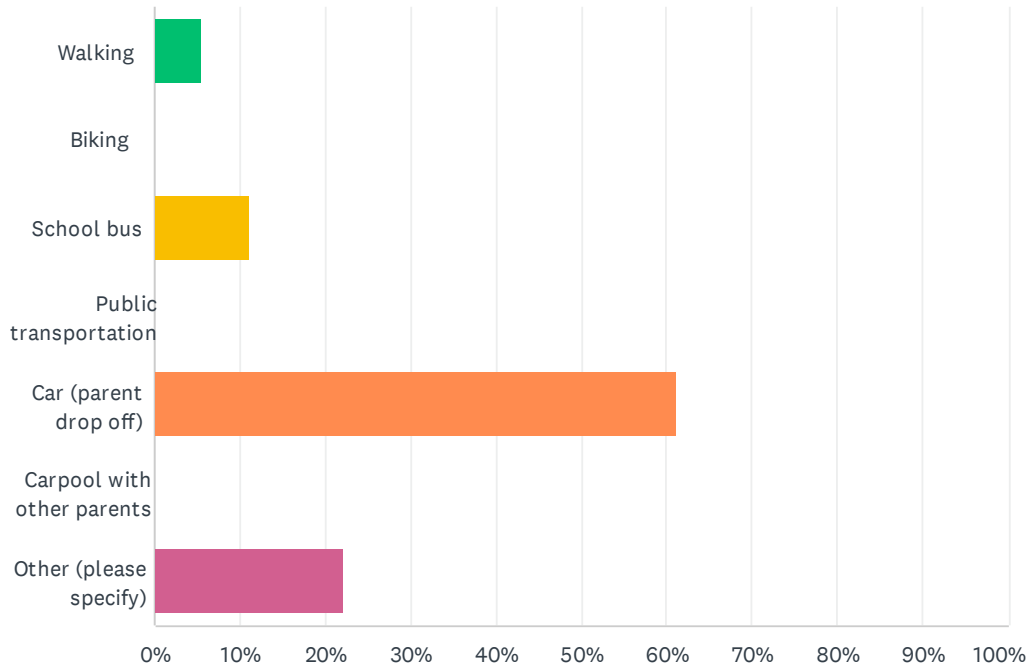
Answered: 32 Skipped: 2



ANSWER CHOICES		RESPONSES	
Less than 1 mile		3.13%	1
1-3 miles		3.13%	1
3-5 miles		0.00%	0
5-10 miles		12.50%	4
More than 10 miles		81.25%	26
TOTAL			32

Q3 If you have children going to school, what is their mode of transportation to and from school?

Answered: 18 Skipped: 16

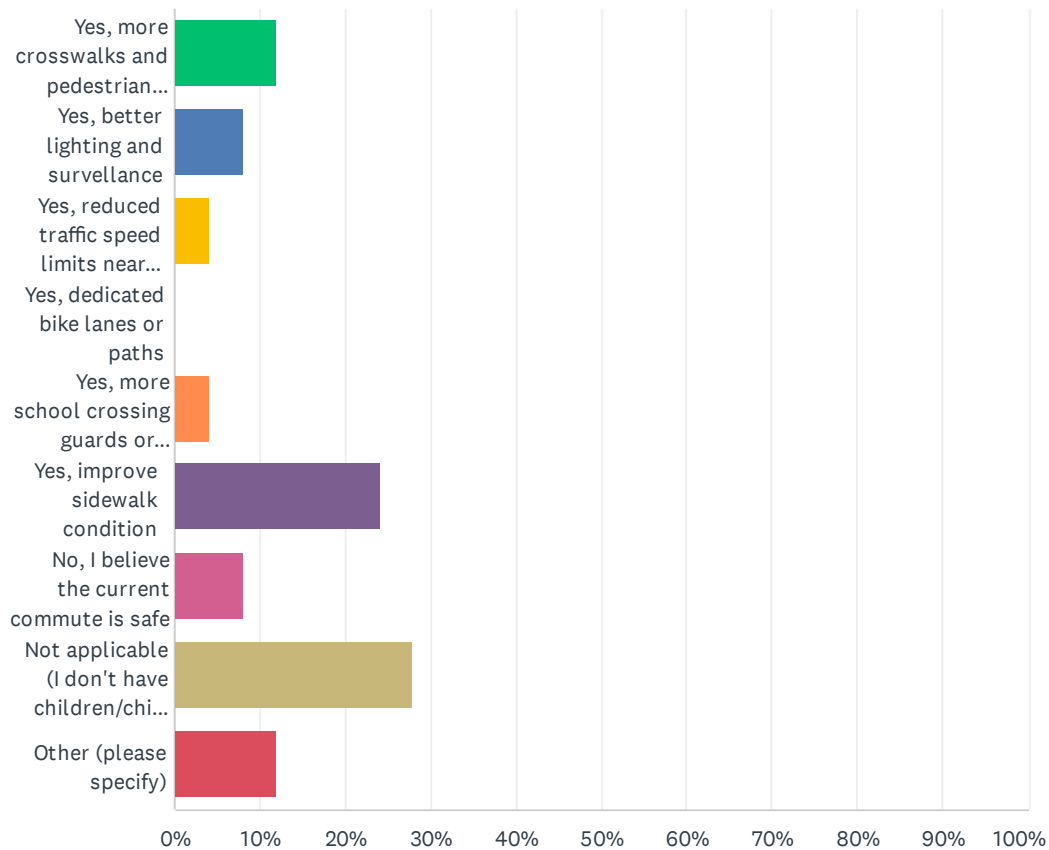


ANSWER CHOICES	RESPONSES
Walking	5.56% 1
Biking	0.00% 0
School bus	11.11% 2
Public transportation	0.00% 0
Car (parent drop off)	61.11% 11
Carpool with other parents	0.00% 0
Other (please specify)	22.22% 4
TOTAL	18

#	OTHER (PLEASE SPECIFY)	DATE
1	driver	2/14/2025 5:55 AM
2	We live on the Prague School Bus Route	2/12/2025 7:49 AM
3	Car (Student Driver)	2/10/2025 4:12 PM
4	Car (Student Driver)	2/10/2025 4:04 PM

Q4 Are there ways to make your children's commute to school safer?

Answered: 25 Skipped: 9



ANSWER CHOICES	RESPONSES	
Yes, more crosswalks and pedestrian signals	12.00%	3
Yes, better lighting and surveillance	8.00%	2
Yes, reduced traffic speed limits near schools	4.00%	1
Yes, dedicated bike lanes or paths	0.00%	0
Yes, more school crossing guards or volunteers	4.00%	1
Yes, improve sidewalk condition	24.00%	6
No, I believe the current commute is safe	8.00%	2
Not applicable (I don't have children/children in school)	28.00%	7
Other (please specify)	12.00%	3
TOTAL		25

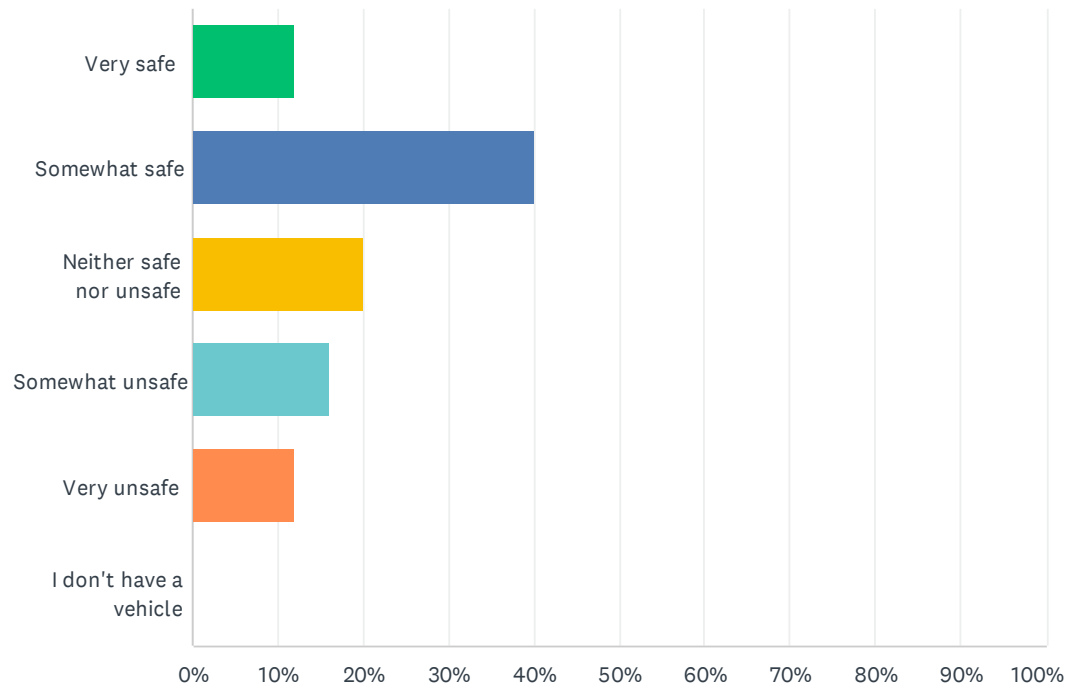
#	OTHER (PLEASE SPECIFY)	DATE
1	Pave dirt roads	2/10/2025 4:12 PM

Lincoln County Safe Streets for All Plan

2	Pave dirt roads	2/10/2025 4:04 PM
3	All the "yes" responses above	2/5/2025 9:28 AM

Q5 How safe do you feel while traveling in a vehicle?

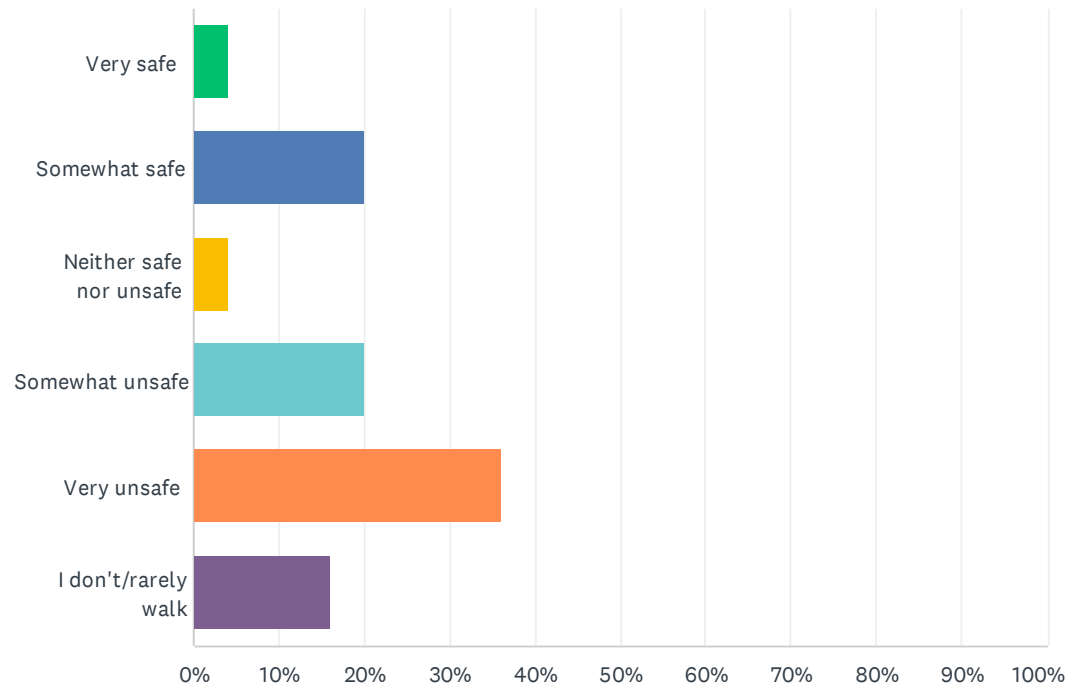
Answered: 25 Skipped: 9



ANSWER CHOICES	RESPONSES	
Very safe	12.00%	3
Somewhat safe	40.00%	10
Neither safe nor unsafe	20.00%	5
Somewhat unsafe	16.00%	4
Very unsafe	12.00%	3
I don't have a vehicle	0.00%	0
TOTAL		25

Q6 How safe do you feel when walking?

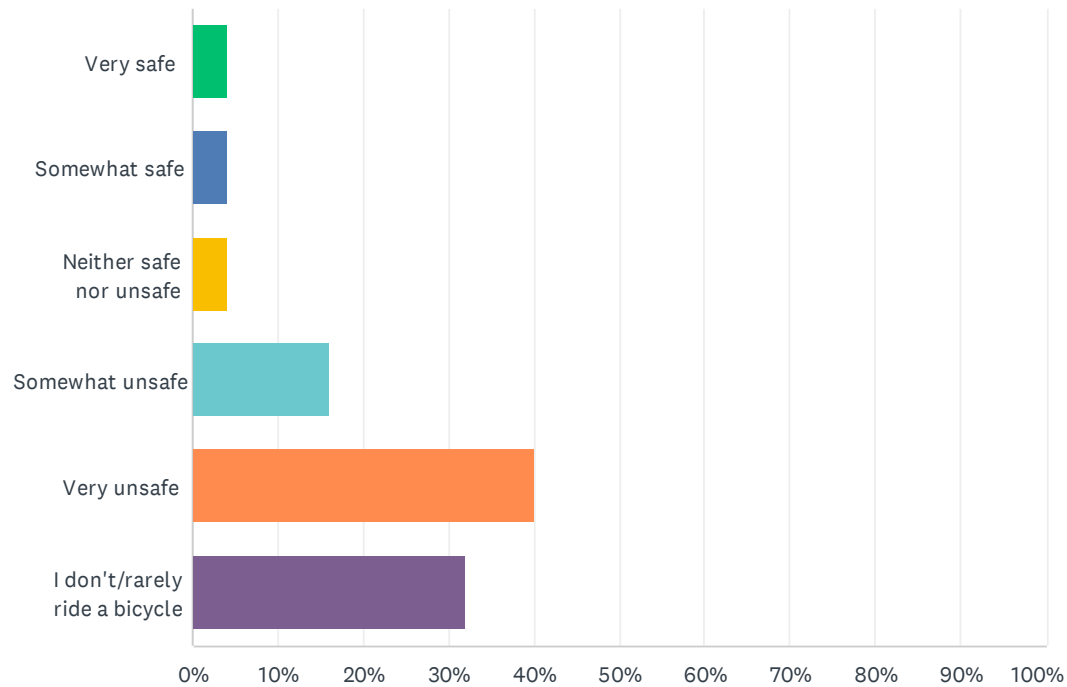
Answered: 25 Skipped: 9



ANSWER CHOICES	RESPONSES	
Very safe	4.00%	1
Somewhat safe	20.00%	5
Neither safe nor unsafe	4.00%	1
Somewhat unsafe	20.00%	5
Very unsafe	36.00%	9
I don't/rarely walk	16.00%	4
TOTAL		25

Q7 How safe do you feel when riding a bicycle?

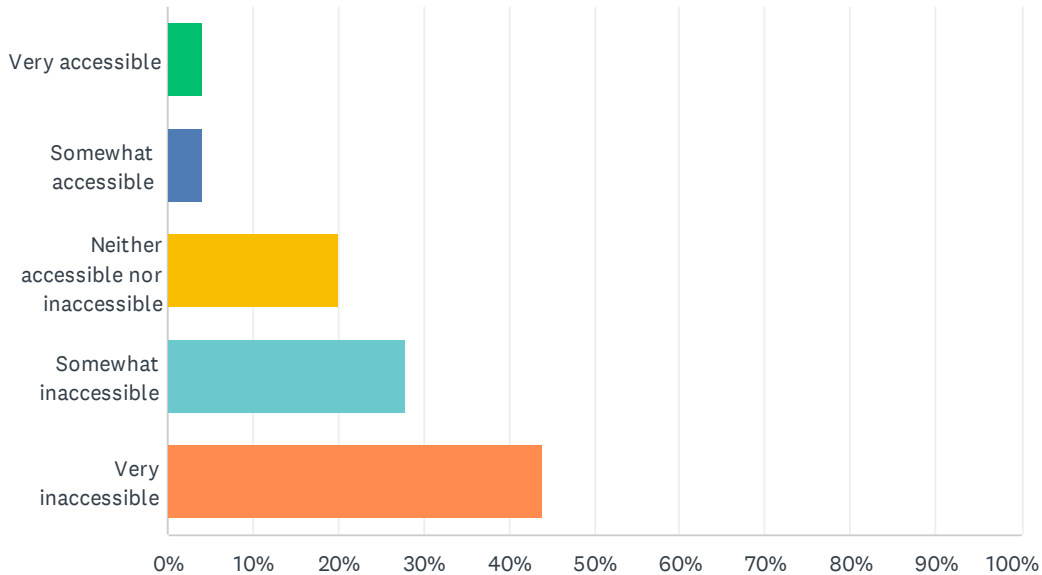
Answered: 25 Skipped: 9



ANSWER CHOICES	RESPONSES	
Very safe	4.00%	1
Somewhat safe	4.00%	1
Neither safe nor unsafe	4.00%	1
Somewhat unsafe	16.00%	4
Very unsafe	40.00%	10
I don't/rarely ride a bicycle	32.00%	8
TOTAL		25

Q8 How accessible do you feel the streets are for all users, including those with disabilities?

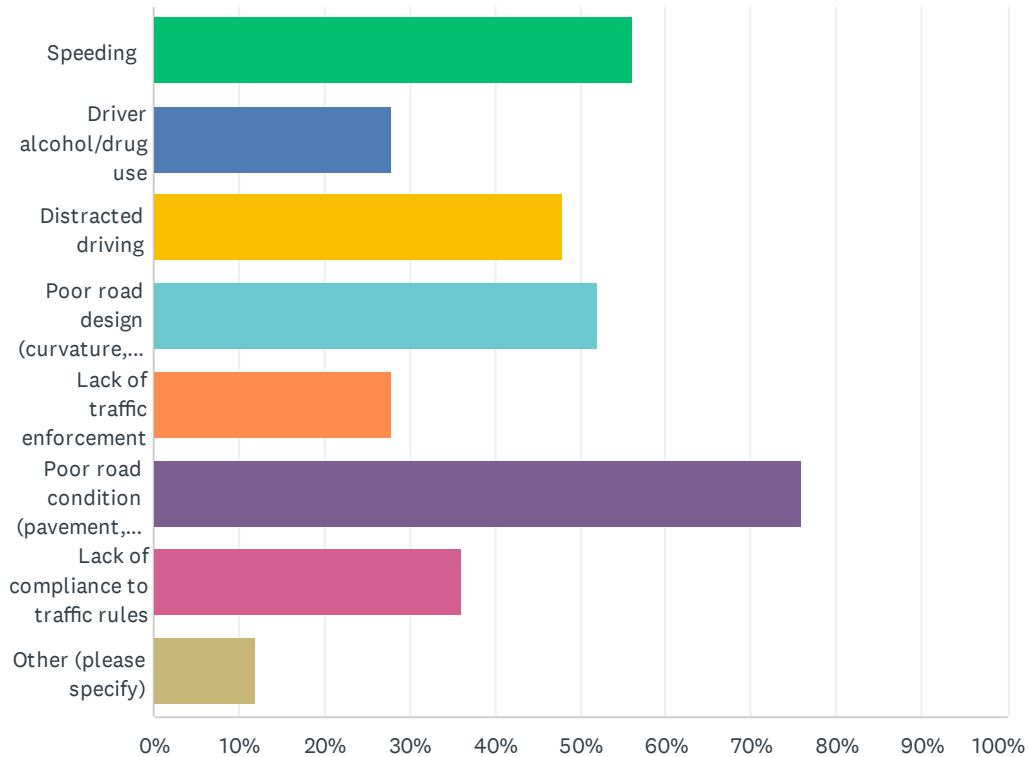
Answered: 25 Skipped: 9



ANSWER CHOICES	RESPONSES	
Very accessible	4.00%	1
Somewhat accessible	4.00%	1
Neither accessible nor inaccessible	20.00%	5
Somewhat inaccessible	28.00%	7
Very inaccessible	44.00%	11
TOTAL		25

Q9 What are the factors that negatively impact transportation safety in your community? (select all that apply)

Answered: 25 Skipped: 9

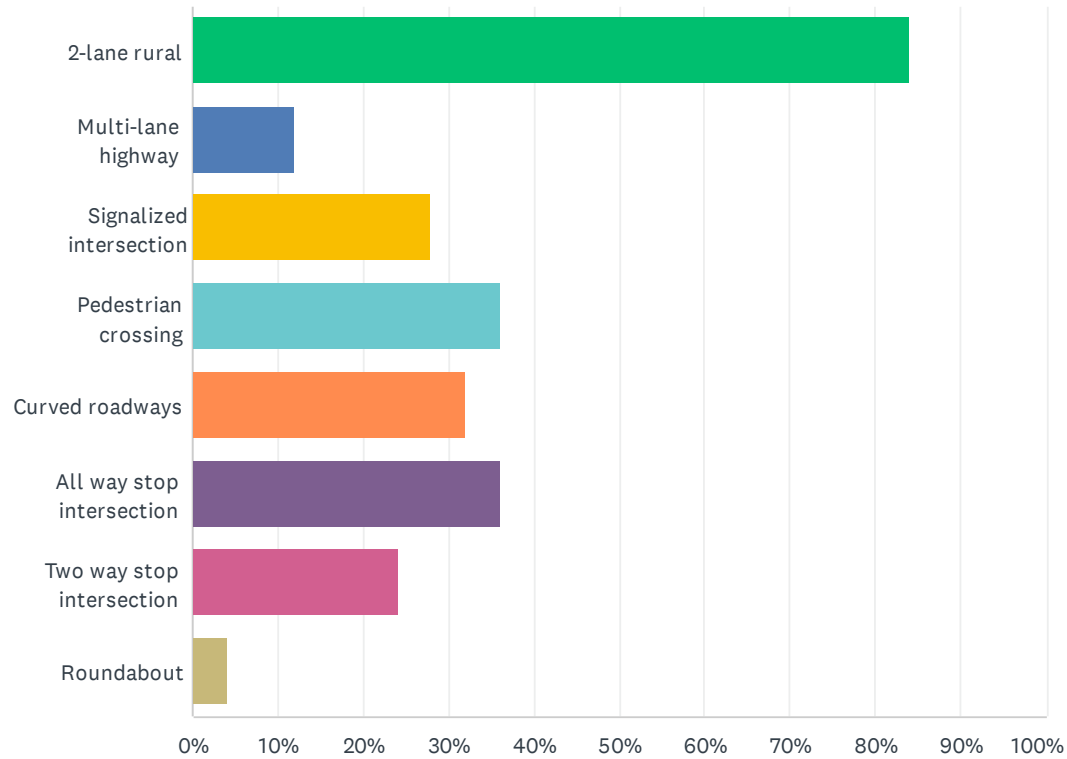


ANSWER CHOICES	RESPONSES	
Speeding	56.00%	14
Driver alcohol/drug use	28.00%	7
Distracted driving	48.00%	12
Poor road design (curvature, line of sight, etc.)	52.00%	13
Lack of traffic enforcement	28.00%	7
Poor road condition (pavement, weather, etc.)	76.00%	19
Lack of compliance to traffic rules	36.00%	9
Other (please specify)	12.00%	3
Total Respondents: 25		

#	OTHER (PLEASE SPECIFY)	DATE
1	The lack of an adequate shoulder on SH-62, from the west side of Prague to SH-102	2/13/2025 9:24 PM
2	Dirt roads	2/10/2025 4:13 PM
3	Dirt roads are unsafe	2/10/2025 4:11 PM

Q10 Which intersection(s) or road segments do you believe need safety improvements in your community? (select all that apply)

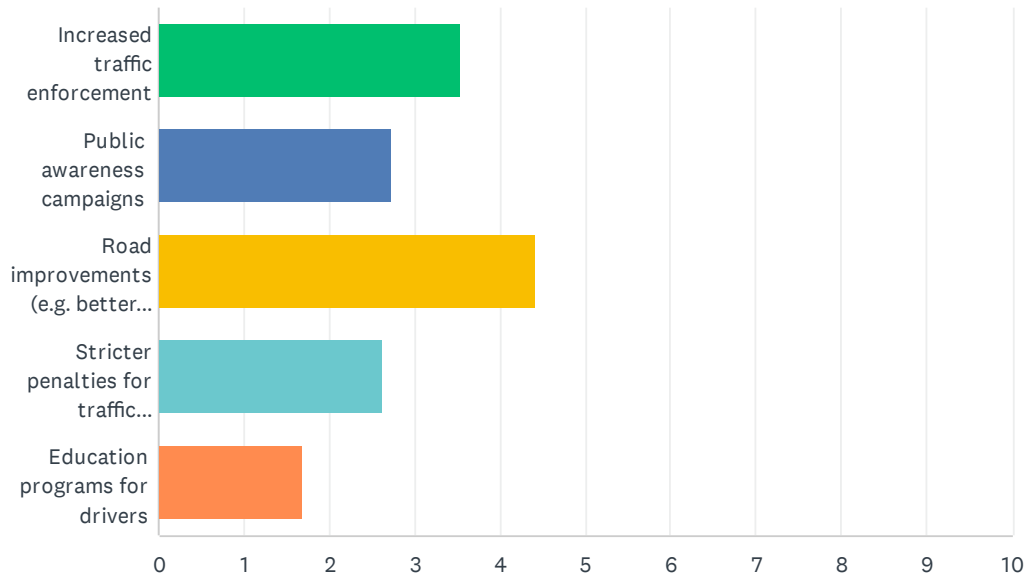
Answered: 25 Skipped: 9



ANSWER CHOICES	RESPONSES	
2-lane rural	84.00%	21
Multi-lane highway	12.00%	3
Signalized intersection	28.00%	7
Pedestrian crossing	36.00%	9
Curved roadways	32.00%	8
All way stop intersection	36.00%	9
Two way stop intersection	24.00%	6
Roundabout	4.00%	1
Total Respondents: 25		

Q11 What types of improvements do you think are going to be most effective in improving transportation safety? Rank the following options from 1 to 5, with 1 being the most preferred and 5 being the least preferred.

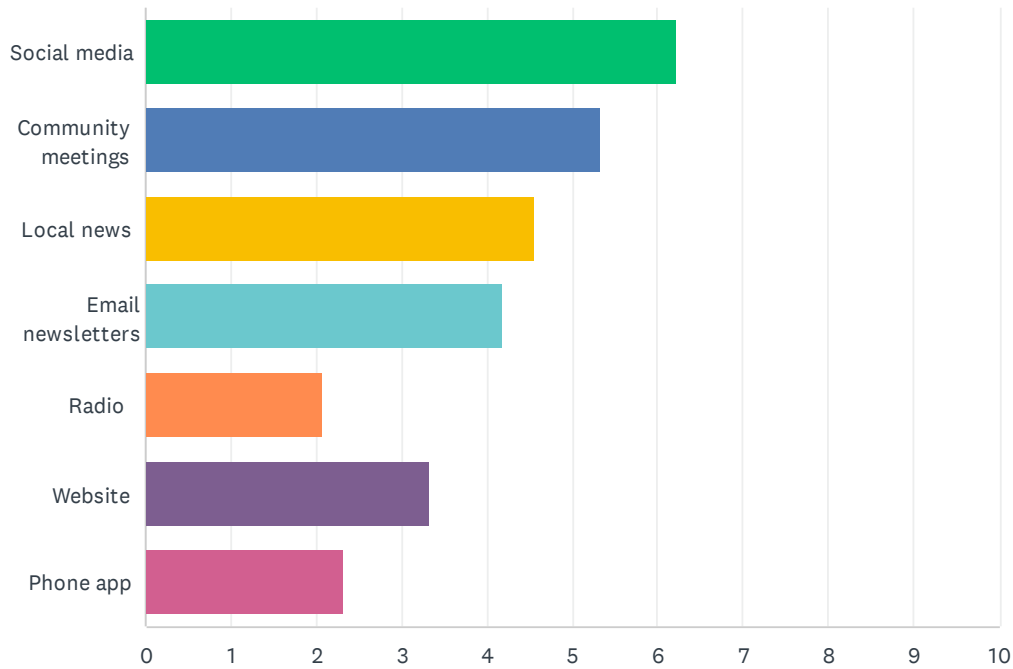
Answered: 26 Skipped: 8



	1	2	3	4	5	TOTAL	SCORE
Increased traffic enforcement	26.92% 7	38.46% 10	11.54% 3	7.69% 2	15.38% 4	26	3.54
Public awareness campaigns	7.69% 2	15.38% 4	26.92% 7	42.31% 11	7.69% 2	26	2.73
Road improvements (e.g. better signage, lighting)	61.54% 16	23.08% 6	11.54% 3	3.85% 1	0.00% 0	26	4.42
Stricter penalties for traffic violations	3.85% 1	11.54% 3	42.31% 11	26.92% 7	15.38% 4	26	2.62
Education programs for drivers	0.00% 0	11.54% 3	7.69% 2	19.23% 5	61.54% 16	26	1.69

Q12 How would you like local authorities to communicate traffic safety information to you? Rank the following options from 1 to 7, with 1 being the most preferred and 7 being the least preferred.

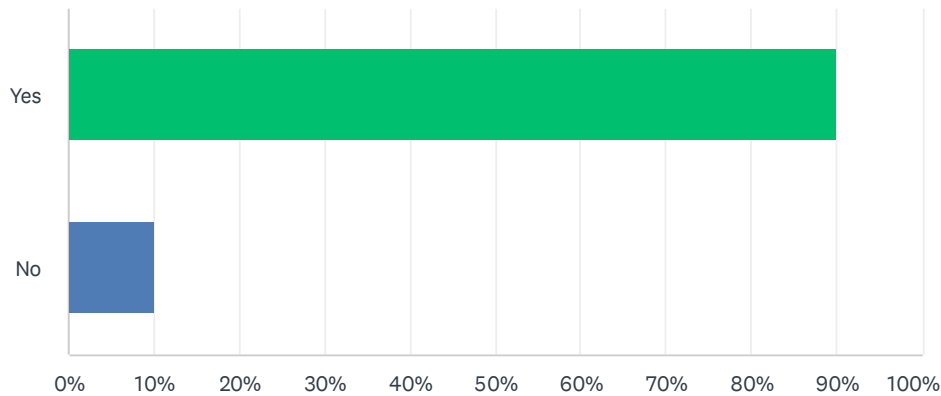
Answered: 18 Skipped: 16



	1	2	3	4	5	6	7	TOTAL	SCORE
Social media	50.00% 9	44.44% 8	0.00% 0	0.00% 0	0.00% 0	0.00% 0	5.56% 1	18	6.22
Community meetings	33.33% 6	16.67% 3	22.22% 4	11.11% 2	11.11% 2	5.56% 1	0.00% 0	18	5.33
Local news	5.56% 1	22.22% 4	33.33% 6	16.67% 3	5.56% 1	16.67% 3	0.00% 0	18	4.56
Email newsletters	0.00% 0	5.56% 1	16.67% 3	66.67% 12	11.11% 2	0.00% 0	0.00% 0	18	4.17
Radio	0.00% 0	0.00% 0	0.00% 0	0.00% 0	38.89% 7	27.78% 5	33.33% 6	18	2.06
Website	11.11% 2	5.56% 1	11.11% 2	5.56% 1	22.22% 4	33.33% 6	11.11% 2	18	3.33
Phone app	0.00% 0	5.56% 1	16.67% 3	0.00% 0	11.11% 2	16.67% 3	50.00% 9	18	2.33

Q13 Do you think forming a committee to enhance existing efforts to make our roads safe would be a good idea?

Answered: 20 Skipped: 14



ANSWER CHOICES	RESPONSES	
Yes	90.00%	18
No	10.00%	2
TOTAL		20

Q14 Do you have additional comments or suggestions for improving traffic safety in our community?

Answered: 12 Skipped: 22

#	RESPONSES	DATE
1	ENFORCE ENFORCE ENFORCE!	2/14/2025 7:13 AM
2	Providing wide enough roads with shoulders and proper drainage during weather events.	2/13/2025 10:43 PM
3	The committee and Town halls help, but as more and more people move here from a metro area, we must make our roads safer. Improved surfaces, traffic signs and patrols on county roads.	2/12/2025 4:59 PM
4	Our specific road (980 West of OK-99) needs to have several inches of gravel laid on it. Continual grading has exposed large sub-rock and drainage pipes. Each time it rains / snows, we have a muddy, slippery mess that is difficult to pass with a standard car due to the size of the ruts created. The Commissioner is not very responsive to our complaints.	2/12/2025 7:55 AM
5	Hwy 66 between Stroud and Chandler needs markings.	2/11/2025 11:33 AM
6	Keep lines freshly painted at stop signs to maintain visibility.	2/11/2025 11:04 AM
7	Until dirt roads are addressed, the other roads should be maintained.	2/10/2025 4:14 PM
8	My issue is with the county dirt/mud roads.	2/10/2025 7:54 AM
9	Remove blind hills and narrow roads with soft shoulders	2/9/2025 8:18 PM
10	I think rural roads should definitely be considered in planning or as part of conversation, not just town roads.	2/5/2025 9:32 AM
11	No	2/1/2025 9:29 PM
12	no	12/19/2024 10:23 AM

Q15 What county do you live in? (please specify)

Answered: 15 Skipped: 19

#	RESPONSES	DATE
1	Lincoln	2/14/2025 7:14 AM
2	Lincoln	2/14/2025 5:58 AM
3	Lincoln	2/13/2025 9:26 PM
4	Lincoln	2/13/2025 7:59 PM
5	lincoln	2/13/2025 6:56 PM
6	Lincoln	2/12/2025 7:56 AM
7	Lincoln	2/11/2025 11:33 AM
8	Lincoln	2/11/2025 11:05 AM
9	Lincoln	2/11/2025 9:38 AM
10	Lincoln	2/10/2025 7:55 AM
11	Lincoln	2/9/2025 8:19 PM
12	Lincoln	2/9/2025 4:18 PM
13	Lincoln	2/5/2025 9:32 AM
14	Lincoln	2/4/2025 6:24 PM
15	lincoln	12/19/2024 10:23 AM

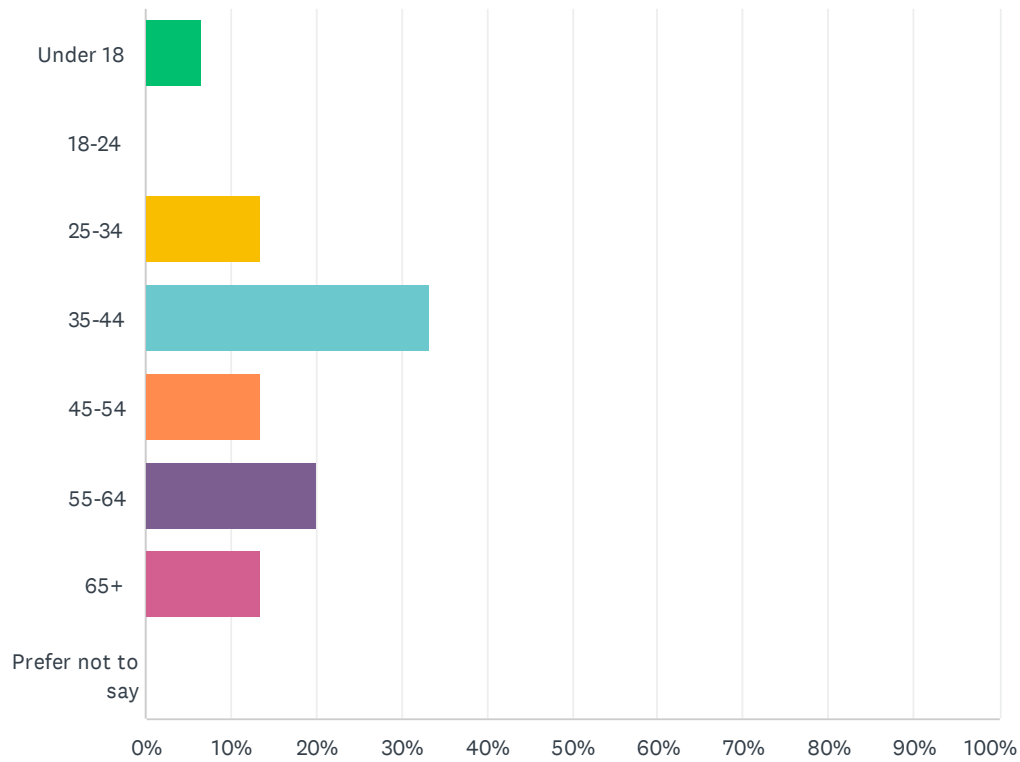
Q16 What city/town do you live in? (please specify)

Answered: 15 Skipped: 19

#	RESPONSES	DATE
1	Stroud	2/14/2025 7:14 AM
2	Stroud	2/14/2025 5:58 AM
3	Prague	2/13/2025 9:26 PM
4	Stroud	2/13/2025 7:59 PM
5	wellston	2/13/2025 6:56 PM
6	Sparks	2/12/2025 7:56 AM
7	Stroud, Ok	2/11/2025 11:33 AM
8	Chandler	2/11/2025 11:05 AM
9	Chandler	2/11/2025 9:38 AM
10	Prague/Stroud	2/10/2025 7:55 AM
11	Meeker	2/9/2025 8:19 PM
12	Chandler	2/9/2025 4:18 PM
13	Chandler	2/5/2025 9:32 AM
14	Wellston	2/4/2025 6:24 PM
15	lincoln	12/19/2024 10:23 AM

Q17 What is your age?

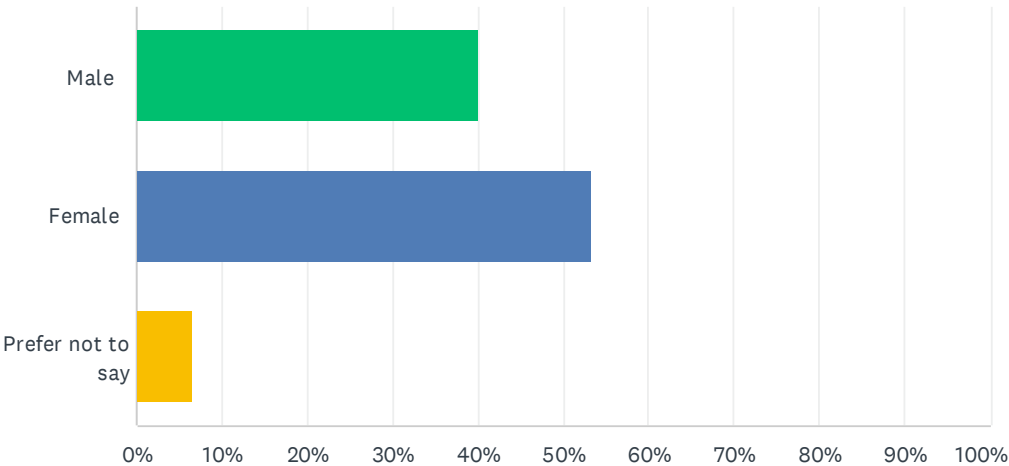
Answered: 15 Skipped: 19



ANSWER CHOICES	RESPONSES	
Under 18	6.67%	1
18-24	0.00%	0
25-34	13.33%	2
35-44	33.33%	5
45-54	13.33%	2
55-64	20.00%	3
65+	13.33%	2
Prefer not to say	0.00%	0
TOTAL		15

Q18 What is your gender?

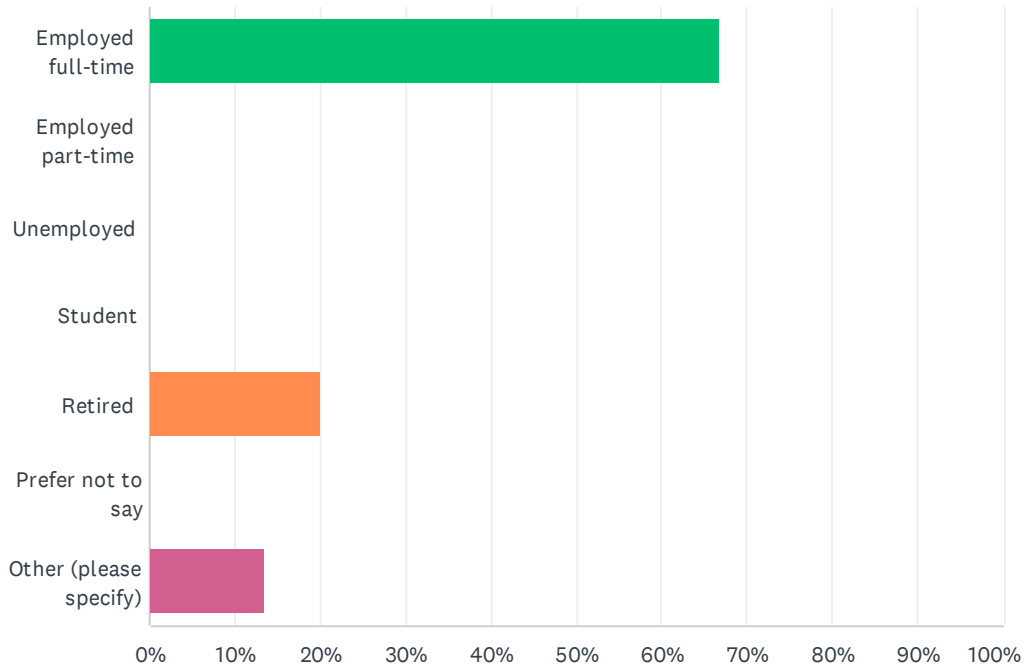
Answered: 15 Skipped: 19



ANSWER CHOICES	RESPONSES	
Male	40.00%	6
Female	53.33%	8
Prefer not to say	6.67%	1
TOTAL		15

Q19 What is your employment status?

Answered: 15 Skipped: 19



ANSWER CHOICES	RESPONSES	
Employed full-time	66.67%	10
Employed part-time	0.00%	0
Unemployed	0.00%	0
Student	0.00%	0
Retired	20.00%	3
Prefer not to say	0.00%	0
Other (please specify)	13.33%	2
TOTAL		15

#	OTHER (PLEASE SPECIFY)	DATE
1	Full time parent	2/14/2025 7:14 AM
2	Small Business Owner	2/11/2025 11:05 AM



Safe Streets for All (SS4A) Plan Meeting Summary

February 10, 2025

Background

Lincoln County partnered with WSB in October 2024 to develop an SS4A Comprehensive Safety Action Plan to identify roads that need safety improvements. It will focus on creating an inclusive, accessible, and safe transportation environment for all roadway users.

For this project, stakeholders are defined as government agencies, first responders, area schools, businesses, transportation groups, casinos, and planning organizations. The public are defined as community members, citizens, and neighborhood groups.

Purpose

A hybrid (in-person and virtual) public meeting was held by the County to explain why the SS4A Plan is needed, what it entails, and to request input on areas in Lincoln County that could benefit from safety improvements. The hybrid format was used to provide flexibility for participation from maximum attendees.

Date	Time	Location
February 10, 2025	4-5 p.m.	Lincoln County Courthouse, 811 Manvel Ave #5, Chandler, OK 74834 and via zoom

A welcome board and information board on the SS4A Plan were displayed to help in person attendees find their way and to review prior to the start of the meeting to help set the stage. A welcome slide was used to let online attendees know the meeting would begin shortly. All attendees were asked to sign in. In person attendees were provided handouts with easy to digest details on the SS4A Plan to reference throughout and comment cards. These materials can be found in Appendix A.

The meeting was kicked off with a warm welcome from the Lincoln County oversight team, followed by, Antony Atencio, WSB, providing some ground rules for in person and virtual attendees, and Hamideh Etemadnia, WSB, shared what the Plan entailed and how feedback was being collected. At the conclusion of the presentation, time was provided for attendees to ask questions or share comments.



Photos of this meeting can be found in Appendix C.

Promotion

The following tactics were used to build awareness about the SS4A Plan and meeting. These materials can be found in Appendix B.

1. **Project website** – A custom ArcGIS website that includes event information, background information, survey, comment map, pertinent documents, answers to frequently asked questions, and helpline information. A custom URL (LincolnCountySS4A.com) and QR code were included in all informational materials to direct people to the website.
2. **Invitation flyer** - Emailed four weeks prior to the meetings to around 70 stakeholders and printed copies were distributed around Lincoln County.
3. **Business card** – Included general project information and were handed out around town to build awareness about the Plan and to solicit public feedback. These were brought to 14 businesses:
 - a. Sac & Fox Pow Wow & RV Park
 - b. 99 Roping Arena
 - c. Iowa Tribe Pow Wow
 - d. Chandler Interpretive Center
 - e. Hawk Haven
 - f. White Rock Schools
 - g. Lakeview Ridge Event Venue
 - h. Service King Mfg.
 - i. Oak Glen RV Park
 - j. Pine Crest & 1040 Road RV Park
 - k. 3310rd & 66 RV Park
 - l. Fair Grounds
 - m. Stroud Lake Road
 - n. Sparks America Biker Rally & Campgrounds
4. **Pop up events** – Project business cards and invitation flyers were distributed at a City of Chandler’s Council meeting and during the holiday parade in Chandler.
5. **County website** – Meeting details were listed in the bulletin section, on the county calendar, on a ribbon on the home page, and in the forms section. The project website was also listed in the other links section.
6. **Facebook promotion** – A post was made by Lincoln County’s Sheriff Office one week prior to the meeting on February 3, 2025. This included a graphic with meeting details, a call for community members to join the meeting, and a link to the project website. This post received high traction with 17 likes, 2 comments, and 20 shares.



7. **Newspaper ad** – A quarter page, color ad was included in the February 6, 2025, publication of The Lincoln County News.

Attendees

In total, 8 in-person attendees signed in and there was 1 virtual attendee.

Comments/questions

1. Are there more dirt roads or paved roads in Lincoln County?
 - a. Most are dirt roads.
 - b. Worried about dirt roads because of poor visibility and poor conditions when driving (especially after it rains/poor weather).
 - c. Don't want sidewalks, want paved roads instead of dirt roads.
 - d. The following two road pavement requests were made:

Road Pavement Request

Kinnear Street and Kaycie Circle
 1,428 Linear Feet + 801 Linear Feet = 2,229 Linear Feet
 12 Houses
 School Bus Route

Road Pavement Request

S 3400 Road (Hwy 62 to Meeker Lake)
 4,562 Linear Feet
 20 Houses
 School Bus Route and School Bus Turn Around

2. Interested in crash info on age, time of day/night, time of week, if drivers have been in repeated accidents, if they have car insurance, what type of intersections the crashes happened at (dirt vs paved road)
3. Wondering if the county can do anything with intersections that are in the state's right of way.



- a. The state will take care of everything up to the white line. The county is responsible for the rest.
4. Will look at projects in progress or that have already been completed when selecting what projects from the SS4A Plan to bring to fruition.
5. To put a blue reflective light at every intersection to make it easier to see the intersections as a driver.
6. The data is everything for this plan.
7. Is there a set amount of money for the implementation phase?
 - a. No. The highest grant awarded was around 22 million dollars.
8. Kendrick Road—from 99 to Kendrick
 - a. Many people have died on this road and foresee more deaths in the future because it's a rough road and people drive recklessly.
9. Create safer bus rides for kids to and from school.
10. State, county and tribal should work together—this is huge for applying for money and being on the same page.
11. Interested in being able to filter the data—can be filtered with the GIS tool
12. The data being used so far is from ODOT, reported from highway patrol accident reports
13. Mentioned there are many unreported accidents that happen because people tend to call family/friend with a tractor to pull them out
 - a. Project team encouraged community to report these on the comment map—to have accurate data for knowing what areas to prioritize for the plan

A 'Thank you' email

The next day, an email was sent to thank those who attended and provide information for those who were unable to attend. The email shared about the Plan's development process, provided directions on where to find the presentation on the project website, and promoted providing feedback through the online survey and comment map. This was sent to the stakeholder contact list and the individuals who left an email address, either on the sign in sheets or via zoom.

Next steps

The survey and comment map will close on February 24, 2025. At this point, the project team will incorporate the feedback received into a summary that will be published on the project website and included in the final plan. A second public meeting will happen on April 8, 2025. At this meeting, the project team will share their research and ask for final feedback before the Plan is finalized.



Appendix A: Meeting materials

Welcome!

Safe Streets for All (SS4A) Plan

OPEN HOUSE



SCAN TO LEARN MORE
& SHARE YOUR FEEDBACK!



Figure 1 Welcome board

SS4A Plan Background & Importance

SAFE STREETS FOR ALL
(SS4A) PLAN OPEN HOUSE



BACKGROUND

Lincoln County was awarded a **Safe Streets for All (SS4A) planning grant** from the US Department of Transportation to create a roadway safety action plan.

GOAL

Identify projects and strategies to reduce roadway fatalities and serious injuries within Lincoln County's roadway network.

WHY IS A SS4A PLAN IMPORTANT?

-  Prevent serious injury & fatal crashes
-  Infrastructure improvements
-  Traffic management
-  Community engagement
-  Future funding for improvements



Figure 2 SS4A Plan background & importance board



Welcome to the In-person & Virtual Public Meeting for the Safe Streets for All Project

Lincoln County, Oklahoma
February 10, 2025, 4-5 PM

Project Website: LincolnCountySS4A.com
Project helpline: Call (405) 815-3649 or email LincolnCountySS4A@wsbeng.com

Thank you for your participation! For those joining via Zoom, the host will let you into the meeting shortly.

Figure 3 Welcome slide



Safe Streets for All

COMPREHENSIVE SAFETY ACTION PLAN FOR LINCOLN COUNTY, OK



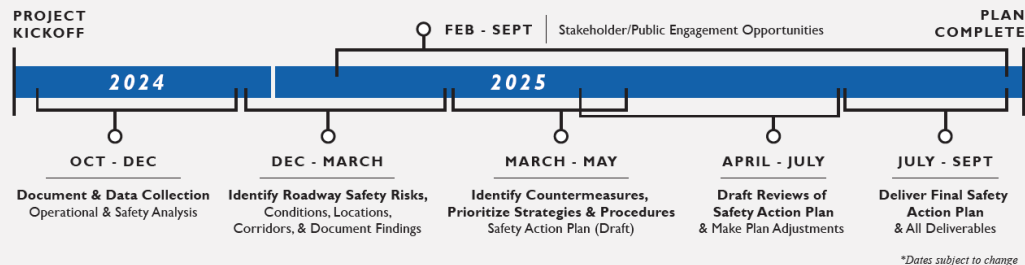
Plan overview and purpose

- Through the SS4A grant program, a Comprehensive Safety Action Plan is being created to improve roadway safety in Lincoln County.
- The Plan is aimed at reducing serious-injury and fatal crashes that affect all roadway users.
- The Safe System Approach's roadway safety guidelines are being used to guide the creation of the Plan.
- Crash data research is being done to categorize roadway safety issues. This will strengthen the community's approach to address the most significant safety risks and locations.
- Hearing from the experiences of community members and stakeholders will help outline a list of projects to improve the design of the roads to make them safer and to make locations around Lincoln County more accessible.

Principles of a Safe System Approach



Project Timeline:



The benefits and why you should contribute

- Save lives and prevent serious injuries in your community.
- Understand your communities traffic safety concerns and priorities.
- Improve roadway safety and build a network of support.
- Create a prioritized list of traffic safety strategies and projects well into the future.

Scan to share
your feedback by
February 24, 2025
LINCOLNCOUNTYSS4A.COM



Figure 4 Handout



LINCOLN COUNTY ROADWAY SAFETY PLAN



Please print your information below.

Name _____ Phone _____

Email _____

Address _____

**GET INVOLVED
& LEARN MORE!**

For more information, visit LincolnCountySS4A.com or scan the QR code. For additional comments or questions, call **(405) 815-3649** or email LincolnCountySS4A@wsbeng.com.



Figure 5 Comment card

Appendix B: Promotional materials

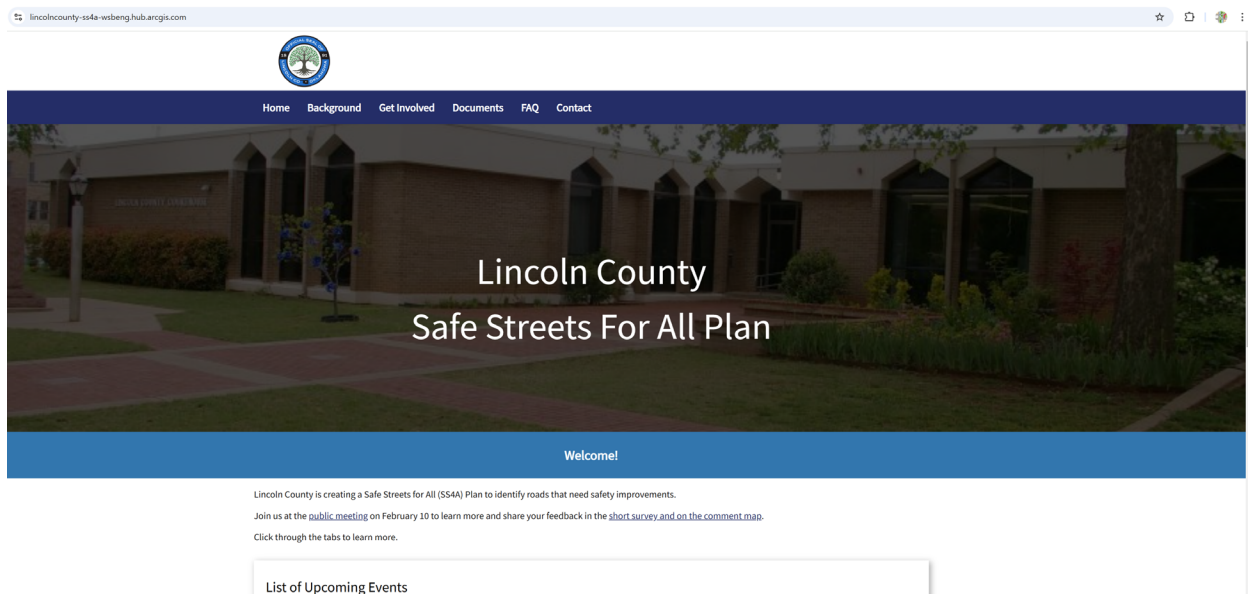


Figure 6 Project website



Safe Streets for All

COMPREHENSIVE SAFETY ACTION PLAN FOR LINCOLN COUNTY



YOU ARE INVITED!

Lincoln County, Oklahoma was awarded a Safe Streets for All (SS4A) planning grant from the US Department of Transportation to create a roadway safety action plan following the principles of a Safe System Approach. The plan will identify projects and ways to reduce roadway fatalities and serious injuries within the Lincoln County roadway network.

You are invited to a public meeting to learn more and provide feedback on areas in Lincoln County that could benefit from safety improvements.

SAFE SYSTEM APPROACH:

**From the US Department of Transportation*



YOUR FEEDBACK WILL:



Help create safer roads and mobility



Help reduce fatal and serious injury crashes to save lives



DATE, TIME, AND LOCATION:

February 10th, 2025

4:00pm - 5:00pm

In-person: Lincoln County Courthouse 811 Manvel Ave
#5, Chandler, OK 74834

Zoom: <https://bit.ly/LincolnCountySS4A>



Scan to learn more
& share your feedback!

[LINCOLNCOUNTY-SS4A-WSBENG.HUB.ARCGIS.COM](https://lincolncounty-ss4a-wsbeng.hub.arcgis.com)

Figure 7 Invitation Flyer



Safe Streets for All

COMPREHENSIVE SAFETY ACTION PLAN FOR LINCOLN COUNTY, OK



Lincoln County is creating a plan to identify roads that need safety improvements and we need your suggestions.

HELPLINE:

PHONE: (405) 815-3649

EMAIL: LINCOLNCOUNTYSS4A@WSBENG.COM

Figure 1 Business card side 1



Scan to learn
more & share
your feedback!

LINCOLNCOUNTYSS4A.COM

Figure 8 Business card side 2

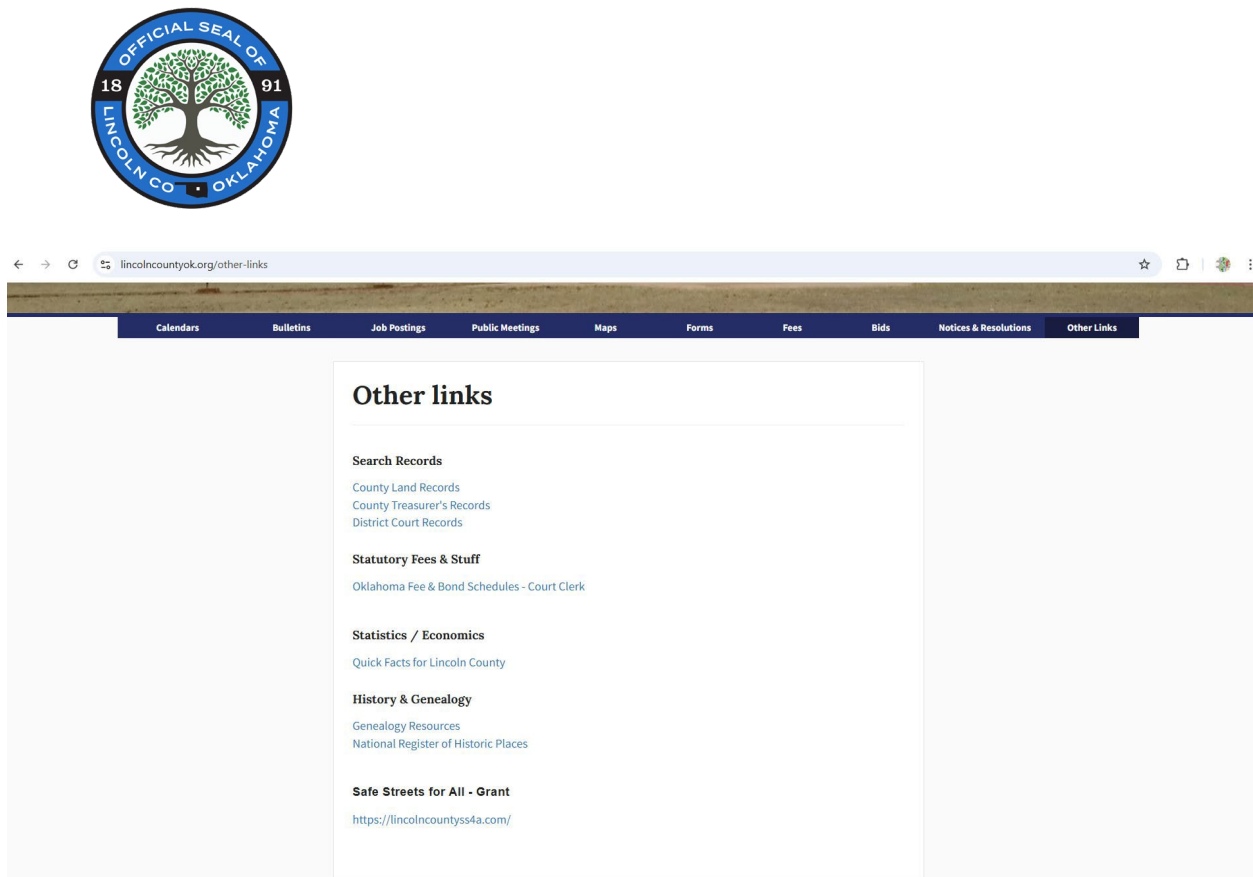


Figure 9 Project website listed in the Other Links section on the County website

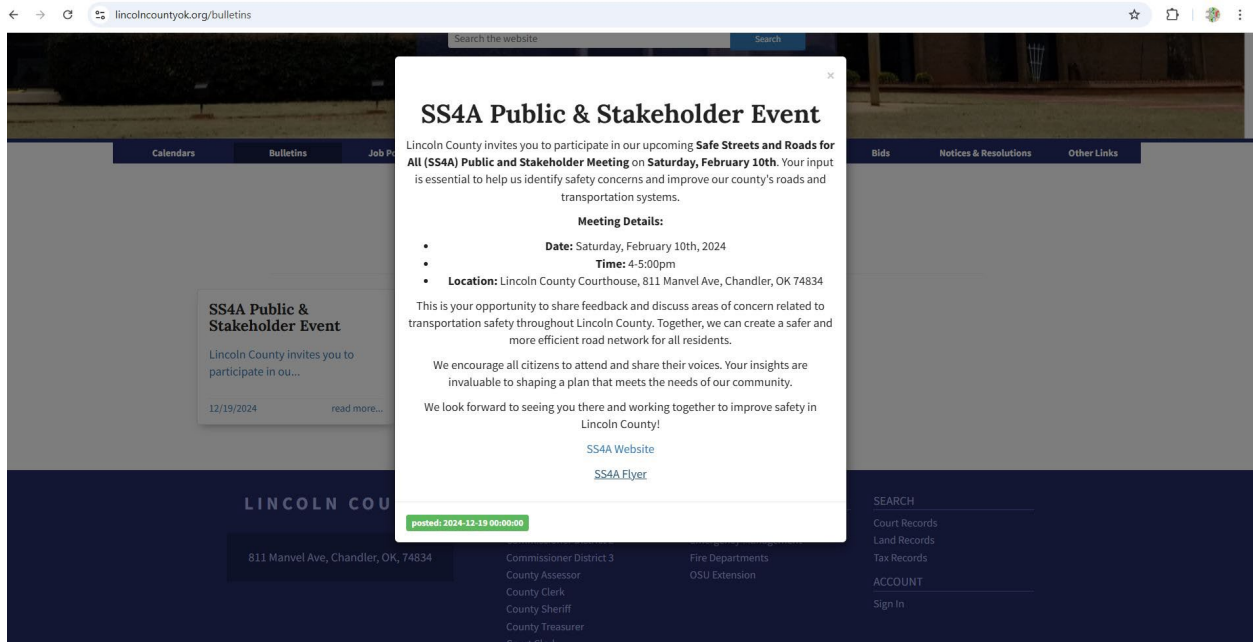


Figure 10 Meeting details listed on the County website



Figure 11 Meeting highlighted on a banner on the home page of the County website

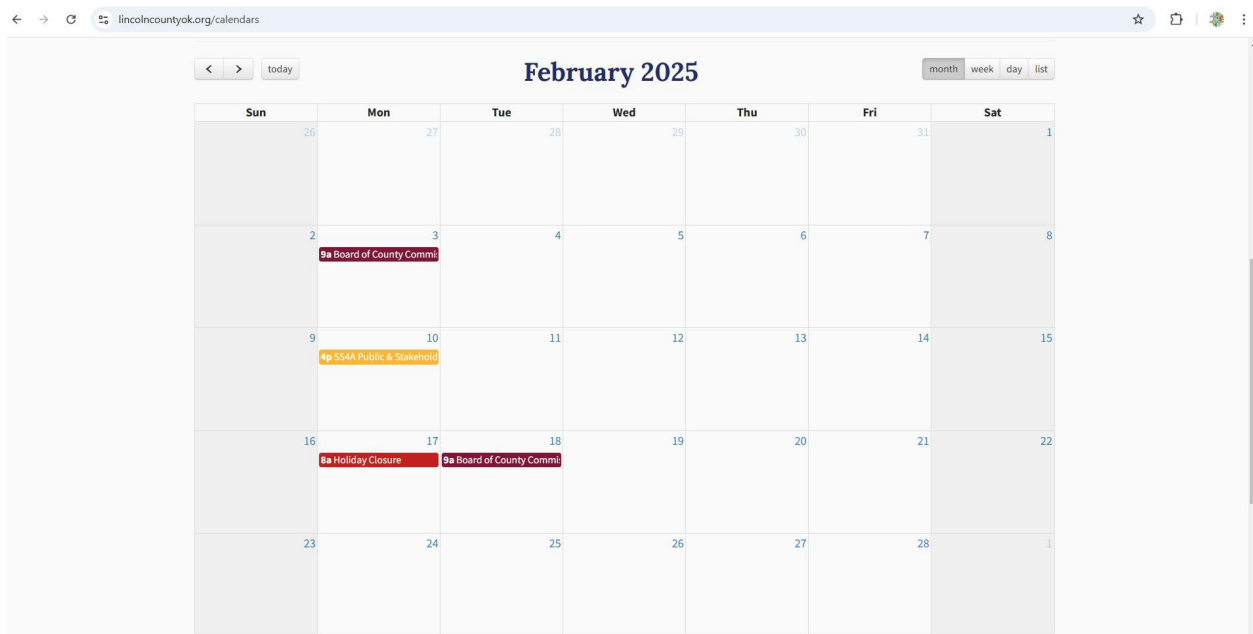


Figure12 Meeting listed on the County calendar



← → 🔍 lincolncountyok.org/forms ☆ 📄 🌐

Search the website Search

Calendars Bulletins Job Postings Public Meetings Maps Forms Fees Bids Notices & Resolutions Other Links

Forms

For renewal of Agriculture Permit, please visit [here](#).

FORM #	FORM NAME	
921	Homestead Exemption Form	View Download
JTWD	Joint Tenancy Warranty Deed	View Download
OAG 2024-1	Individual Affidavit of Land Ownership	View Download
OAG 2024-2	Non-Exempt Business Trust Affidavit of Land Ownership	View Download
OAG 2024-3	Business/Trust Affidavit of Land Ownership	View Download
QCD	Quit Claim Deed	View Download
QCD-JT	Joint Tenancy Quit Claim Deed	View Download
RC-2024	Road Crossing Permit Application	View Download
SS4A	SS4A Flyer	View Download
WD	Warranty Deed	View Download

Figure 13 Invitation flyer on the Forms page of the County website



Lincoln County Sheriff's Office - Oklahoma

February 3 at 2:00 PM · 🌐

🚧 Join us to learn about the SS4A plan being created and to share your suggestions on roads in Lincoln County that need safety improvements. 🚧

www.LincolnCountySS4A.com



**LINCOLN COUNTY SAFE
STREETS FOR ALL (SS4A)
SAFETY ACTION PLAN
PUBLIC MEETING**



DATE:
February 10, 2024



TIME:
4:00 - 5:00 pm



LOCATION:
Lincoln County Courthouse 811 Marvel Ave #5,
Chandler, OK 74834

👍 17

2 comments 20 shares

👍 Like

💬 Comment

➦ Share

Most relevant ▼



Cindy Peterson

Yes I agree on rural roads, I am off highway 102 East on 1020 road when it rains or snows it is horrible sometimes very unpassable around people. But I am very very very grateful for the black topping west of 102 to Pot county road thank you so much, I even stopped on my way to work and told the workers out there how grateful and what a great job they were doing. But these rural roads need it really bad

1w Like Reply



David Hunt

All the roads in SW part of the county need major work. Maybe not blacktopped but better maintaince. I think that is what people out in this are asking.

1w Like Reply

Figure 14 Facebook post

[LINK](http://www.LincolnCountySS4A.com)



Rotarians of the Month

Cali Hilgenfeld and Hali Murray were selected as the Rotarians of the Month for February by the Chandler Rotary Club.

Cali Hilgenfeld is the daughter of Drew and Holly Hilgenfeld and a senior at Chandler High School. She has maintained a 4.0 grade point average (GPA) throughout her high school career and has earned the title of valedictorian. She has been a member of the varsity point and track teams for four years and was also an American Legion Girls State delegate this past summer.

Hilgenfeld is actively involved in the Student Council, where she holds the office of reporter. She is the National Honor Society vice president and a member of the Oklahoma State Honor Society. Hilgenfeld is a member of the Banefirst Student Board, Positive Peers, Gifted and Talented, Peer Mentors, FCA and Fish Club. She is also the Senior Class Sec-

retary.

While involved in Pom, Hilgenfeld has helped her team earn five state championship titles and two state runner-up titles. She received the OSDTDA Academic All-State award from 2021 to 2024. Her team also won the OSDTDA "BE BOLD" award in 2022 for their jazz performance.

Hilgenfeld has also been very successful in track. She has qualified for the state track meet each year of high school and has received nine state medals. In her freshman year, she was part of the state runner-up 4x400 relay team.

She has placed in the top five for class 3A 100m dash the past two seasons. Hilgenfeld is an active member of the Chandler First Baptist Church and Catalyst Youth Group. Through the church, she has served on several mission trips and helped with VBS.

She has volunteered at the God and People's

Food Pantry, Chandler Recycles, the Lincoln County Partnership for Child Well Being and the Wise Guys and Girl Power Conference.

After graduation, Hilgenfeld plans to attend the University of Arkansas in Fayetteville to earn a Bachelor's in Biology and then apply for medical school to become a pediatrician.

Hali Murray is a senior at Chandler High School with a 4.0 GPA and is currently ranked first in the Class of 2025. She has been on the A Honor Roll for seven semesters.

Murray has also won Academic Excellence awards since 2021 and received the Chandler Christmas Parade and Christmas Tree Lighting Festival Queen Scholarship in 2023.

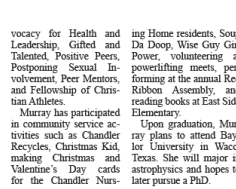
Murray is the president of the National Honor Society and a member of the Oklahoma Honor Society. She made OSDTDA Academic All-State, third place in Hip-Hop, and

second place in Jazz in 2021 with the Chandler Varsity Pom Squad.

In 2022, 2023, and 2024, she and her team won first place in Jazz Class 3A-4A, as well as first in Hip-Hop in 2022 and 2023 at the OSDTDA state competition. She won an individual Academic All-State Award from OSDTDA from 2021 to 2024. In 2022, she and her team won the OSDTDA "BE BOLD" Award Team Scholarship for their jazz routine.

Murray has been involved in many activities. She is the Student Council treasurer and Senior Class treasurer. She was also class treasurer in both her sophomore and junior years.

She is a member of the Banefirst Student Board of Directors, Youth Ad-



Flu...

work," she said.

McLoud is currently rescheduling boys basketball with North Rock Creek from Friday. Hockenbury added that their head of custodial meets with custodians to remind them of some best practices and they do some evening and weekend fogging of buildings. She said classroom teachers also pitch in to keep surfaces clean and remind kids of good hand washing.

Chandler Superintendent Scott Baade said their numbers were also worse. He said as of last Friday, their last count was 206 kids that were out. The school district went virtual on Monday due to the large number of cases.

"It hasn't been this bad since I think, since I've been superintendent... so, of course, that hasn't been very long," he said, adding he's currently in his third year. "I do remember times in the past, we've had rough seasons, but it kind of goes in cycles."

Additionally, on Friday, they had about 12 teachers and staff call in, which is a little over 10 percent.

Wellston Superintendent Dwayne Danker said flu cases didn't hit his schools very hard until about the middle of last week. On Jan. 31, they had 44 absences in the elementary school and 38 at the middle school and high school. They also had about three or four teachers out each day for the last few days.

Luckily, the illnesses haven't impacted any club or sports activities. "Following the old tried and true recommendations will always help slow down the spread of flu: stay home when you are sick; wash your hands frequently with soap and warm water, and disinfect surfaces," Danker said.

CHANDLER

TEACHER OF THE WEEK

TEACHERS

Shape the FUTURE

Shawn Blankenship

Hometown: Seminole
College: OU
Degrees: BA in accounting
Years taught: 18
Years taught at Chandler: 5

Currently teaching: Algebra, golf, softball, basketball.
Family: Single, with two dogs.

Why is teaching important to you? I think it's important for kids to learn all they can to be productive adults and good decision-makers to make our world better.

Proud supporter of our educators!
STROUD | WILLETTS | PERKINS
(877) 974-2285 | www.fibank.com

Proud supporter of our educators!
409 S. Dawson St., Meeker, OK
405-279-4600 | www.visionbank.bank

Check out our lunch buffet on Sundays from 11-4
Closed Monday, Tuesday, Thursday & All - 8 PM
Friday - Sunday 9 AM - 8 PM, Sunday 9 AM - 4 PM

STROUD | CHANDLER | MEERER
PRINCE LUTHER | CANNON
DAVENPORT (LATE ONLY)
BANCFIRST BANK

913 Marvel, Chandler
405-258-1218

Proud to support our local teachers!
918-277-2241
223 Broadway, Davenport

Thank you!

YOU'RE INVITED!

Help Make Our Streets Safer

Lincoln County Safe Streets for All (SS4A) Safety Action Plan Public Meeting.

Join us to learn about the SS4A plan being created and to share your suggestions on roads in Lincoln County that need safety improvements.

DATE: February 10, 2025

TIME: 4:00 - 5:00 pm

IN-PERSON: Lincoln County Courthouse 811 Marvel Ave #5, Chandler, OK 74834

ZOOM: <https://bit.ly/LincolnCountySS4A>

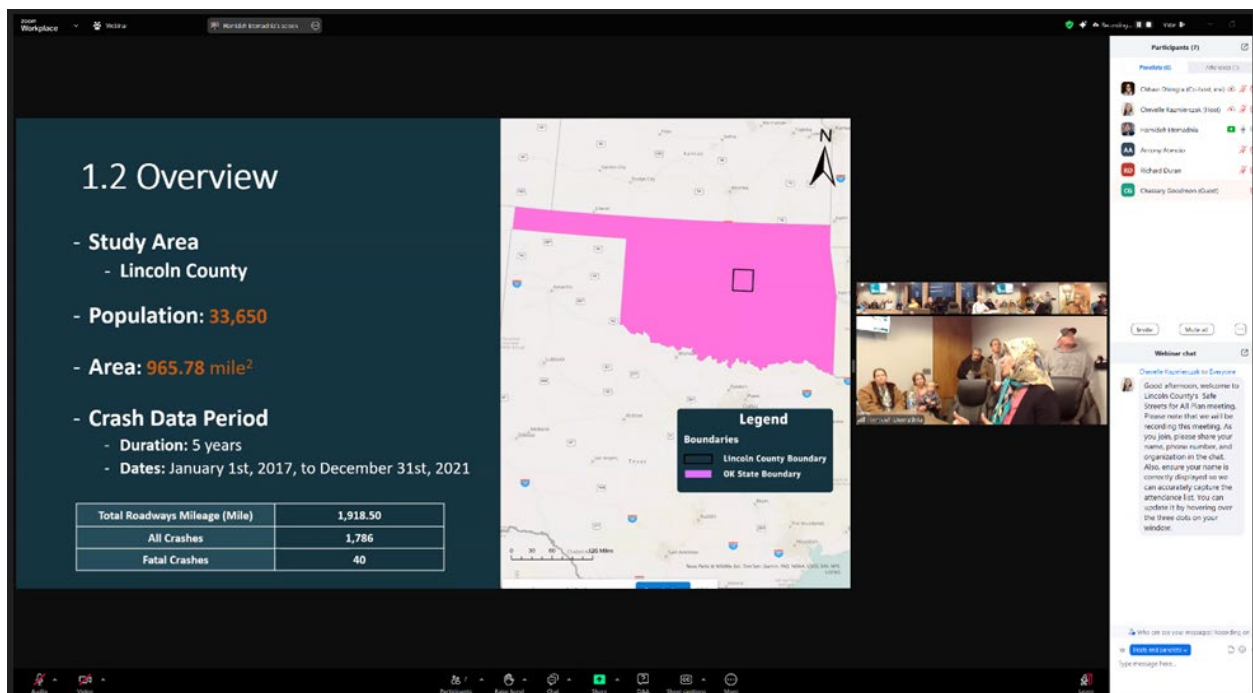
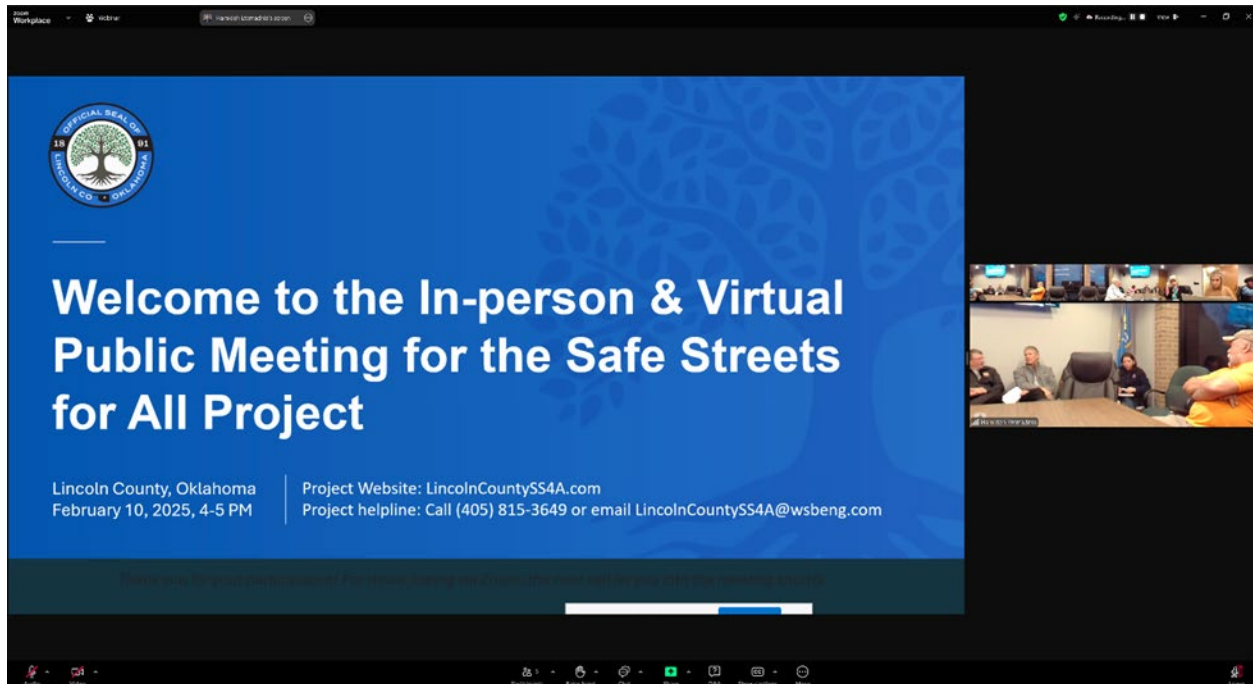
SCAN TO LEARN MORE
LINCOLNCOUNTYSS4A.COM

Subscribe today!

Figure 15 Newspaper ad



Appendix C: Photos





Safety Plan Elements & Timeline: Plan Elements

- Leadership commitment and goal setting
(Adopting Vision Zero – Applying safe system approach)
- Planning structure
- Safety analysis
- Engagement and collaboration
- Equity considerations
- Policy and process changes
- Strategy and project selections
- Progress and transparency



3. How you can get involved and help!

- Takeaway information sheet
- Comment Cards
- Survey
- Comment Map





Safe Streets for All (SS4A) Plan Meeting Summary

April 8, 2025

Background

Lincoln County partnered with WSB in October 2024 to develop an SS4A Comprehensive Safety Action Plan to identify roads that need safety improvements. It will focus on creating an inclusive, accessible, and safe transportation environment for all roadway users.

For this project, stakeholders are defined as government agencies, first responders, area schools, businesses, transportation groups, casinos, and planning organizations. The public are defined as community members, citizens, and neighborhood groups.

The first community meeting happened on February 10, 2025, and the purpose was to explain why the plan is needed, what it entails and to request input on areas in Lincoln County that could benefit from safety improvements.

Purpose

This was the second public meeting for the SS4A Plan, and the purpose was to share community feedback received and crash data findings for Lincoln County. It was offered in a hybrid format (in-person and virtual) to provide flexibility for participation from maximum attendees.

Date	Time	Location
April 8, 2025	4-5 p.m.	Lincoln County Courthouse, 811 Manvel Ave #5, Chandler, OK 74834 and via zoom

A welcome board, information board on the SS4A Plan, and High Injury Network board were displayed to give background information on the project prior to the presentation. A welcome slide was used to let online attendees know the meeting would begin shortly. All attendees were asked to sign in. In person attendees were provided handouts with easy to digest details on the SS4A Plan to reference throughout and comment cards to provide input. These materials can be found in Appendix A.

Saeed Sobhi, WSB, shared crash data findings and the feedback gathered from community members. At the conclusion of the presentation, time was provided for attendees to ask questions or share comments.



Photos of this meeting can be found in Appendix C.

Promotion

The following tactics were used to build awareness about the SS4A Plan and meeting. These materials can be found in Appendix B.

1. **Project website** – A custom ArcGIS website that includes event information, background information, survey, comment map, pertinent documents, answers to frequently asked questions, and helpline information. A custom URL (LincolnCountySS4A.com) and QR code were included in all informational materials to direct people to the website.
2. **Invitation flyer** - Emailed four weeks prior to the meetings to around 70 stakeholders and printed copies were distributed around Lincoln County.
3. **County website** – Meeting details were listed on the home page banner, forms page, and other resources section.
4. **Facebook promotion** – A post was made by Lincoln County's Sheriff Office one week prior to the meeting on March 26, 2025. This included a graphic with meeting details, a call for community members to join the meeting, and a link to the project website. This post received 11 likes, 2 comments, and 7 shares.
5. **Newspaper ad** – A quarter page, color ad was included in the April 3, 2025, publication of The Lincoln County News.

Attendees

In total, there were 6 attendees who signed in. All were in-person.

Comments/questions

Broad Concerns

- Worries about Covid years being a large amount of time that data was collected from. WSB clarified both pre- and post-Covid data were analyzed to ensure the trends reflected long-term patterns rather than temporary disruptions.
- Concerns of bad lighting, no shoulders, and blind intersections specifically along U.S. Route 66 were raised.
- Broad concerns of bad signing and striping across the entire county were flagged.

Chandler

- Semi-trucks traveling on the turnpike get off at the Chandler exit looking for gas/ rest stop. With no truck route they cause accidents and other issues like hitting mailboxes.



- When a train passes through Chandler traffic from E 1st Street from people trying to go from the turnpike to U.S. Route 66 or vice versa severely backs up traffic sometimes all the way to the turnpike on/ off ramp.

1st & Blaine Ave Intersection

- Train in previous comment causes congestion in intersection.
- Curve on U.S. Route 66 causes blindness to incoming traffic causing accidents.
- Members of the community talked about adding some kind of barrier along intersection.

Thank you email

The next day, an email was sent to thank those who attended and provide information for those who were unable to attend. The email shared the Plan's development process and provided directions on where to find the presentation on the project website. This was sent to the stakeholder contact list and the individuals who left an email address on the sign in sheet.

Next steps

The comment map closed on April 10, 2025. The project team will incorporate the feedback received into the final plan. A stakeholder virtual meeting is scheduled for September 16, 2025 to deliver the final SS4A Safety Action Plan.



Appendix A: Meeting materials

Welcome!

Safe Streets for All (SS4A) Plan

MEETING



SCAN TO LEARN MORE
& SHARE YOUR FEEDBACK!



Figure 1 Welcome board

SS4A Plan Background & Importance

SAFE STREETS FOR ALL
(SS4A) PLAN MEETING



BACKGROUND

Lincoln County was awarded a **Safe Streets for All (SS4A) planning grant** from the US Department of Transportation to create a roadway safety action plan.

GOAL

Identify projects and strategies to reduce roadway fatalities and serious injuries within Lincoln County's roadway network.



WHY IS A SS4A PLAN IMPORTANT?

-  Prevent serious injury & fatal crashes
-  Infrastructure improvements
-  Traffic management
-  Community engagement
-  Future funding for improvements

Figure 2 SS4A Plan background & importance board



SS4A Plan High Injury Network

SAFE STREETS FOR ALL
(SS4A) PLAN MEETING



HIGH INJURY NETWORK (HIN) DEVELOPMENT

- Uses crash data (police reports, hospital records) & AADT (Average Annual Daily Traffic).
- Identifies locations with severe injuries/fatalities, not just total crashes.
- Visually highlights high-crash locations on a network map.
- Considers a combination of factors including pedestrians, bikes, road design, speed, and vulnerable populations.

HIN PURPOSE & USE

- **Prioritizes Improvements:** Focuses resources on the most unsafe areas.
- **Guides Roadway Changes:** Informs decisions on signals, crosswalks, lighting, speed limits, etc.
- **Enhances Pedestrian/Bike Safety:** Targets improvements for vulnerable road users.
- **Data-Based Decisions:** Ensures effective, evidence-backed safety measures.
- **Community Engagement:** Provides transparency and helps invite public input.

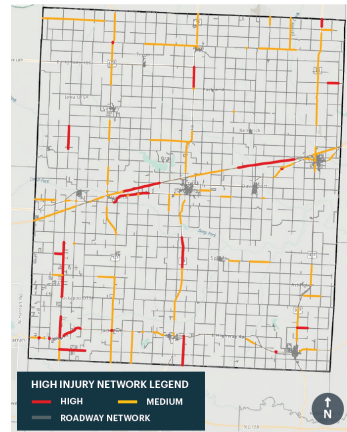


Figure 3 High Injury Network board



Welcome to the In-person & Virtual Public Meeting for the Safe Streets for All Project

Lincoln County, Oklahoma
April 8, 2025, 4-5 PM

Project Website: LincolnCountySS4A.com
Project helpline: Call (405) 815-3649 or email LincolnCountySS4A@wsbeng.com

Thank you for your participation! For those joining via Zoom, the host will let you into the meeting shortly.

Figure 4 Welcome slide



Safe Streets for All

COMPREHENSIVE SAFETY ACTION PLAN FOR LINCOLN COUNTY, OK



Plan overview and purpose

- Through the SS4A grant program, a Comprehensive Safety Action Plan is being created to improve roadway safety in Lincoln County.
- The Plan is aimed at reducing serious-injury and fatal crashes that affect all roadway users.
- The Safe System Approach's roadway safety guidelines are being used to guide the creation of the Plan.
- Crash data research is being done to categorize roadway safety issues. This will strengthen the community's approach to address the most significant safety risks and locations.
- Hearing from the experiences of community members and stakeholders will help outline a list of projects to improve the design of the roads to make them safer and to make locations around Lincoln County more accessible.

Principles of a Safe System Approach



**From the US Department of Transportation*

Project Timeline:



**Dates subject to change*

The benefits and why you should contribute

- Save lives and prevent serious injuries in your community.
- Understand your communities traffic safety concerns and priorities.
- Improve roadway safety and build a network of support.
- Create a prioritized list of traffic safety strategies and projects well into the future.

Scan to share
your feedback!

LINCOLNCOUNTYSS4A.COM



Figure 5 Handout



LINCOLN COUNTY ROADWAY SAFETY PLAN



Please print your information below.

Name _____ Phone _____

Email _____

Address _____

**GET INVOLVED
& LEARN MORE!**

For more information, visit LincolnCountySS4A.com or scan the QR code. For additional comments or questions, call **(405) 815-3649** or email LincolnCountySS4A@wsbeng.com.



Figure 6 Comment card

Appendix B: Promotional materials



Figure 7 Project website



Safe Streets for All

COMPREHENSIVE SAFETY ACTION PLAN FOR LINCOLN COUNTY



YOU ARE INVITED!

Join us for the second Safe Streets for All (SS4A) Safety Action Plan public meeting for Lincoln County. We will present the feedback we have received from the community and our crash data findings for Lincoln County. This is an opportunity for community members to ask questions and leave feedback on the areas in Lincoln County that should be included in the final plan for roadway safety improvements.

Some of what we've heard so far includes feedback on specific locations with blind spots, narrow roads, needed intersection improvements, and paving. If you would like to bring a location to our attention that could use safety improvements, please visit the comment map feature on our project website.

SAFE SYSTEM APPROACH:

**From the US Department of Transportation*



YOUR FEEDBACK WILL:



Help create safer roads and mobility



Help reduce fatal and serious injury crashes to save lives



DATE, TIME, AND LOCATION:

April 8th, 2025

4:00pm - 5:00pm

In-person: Lincoln County Courthouse 811 Manvel Ave
#5, Chandler, OK 74834

Zoom: <https://bit.ly/LincolnCoSS4A>



Scan to learn more
& share your feedback!

[LINCOLNCOUNTYSS4A.COM](https://lincolncountyss4a.com)

Figure 8 Invitation Flyer



lincolncountyok.org/other-links

Other Resources

Search Records

- [County Land Records](#)
- [County Treasurer's Records](#)
- [District Court Records](#)

Statutory Fees & Stuff

- [Oklahoma Fee & Bond Schedules - Court Clerk](#)

Statistics / Economics

- [Quick Facts for Lincoln County](#)

History & Genealogy

- [Genealogy Resources](#)
- [National Register of Historic Places](#)

Safe Streets for All - Grant

- <https://lincolncountyss4a.com/>

Road Crossing

- [Fillable Road Crossing Application](#)
- [Pay for your Permit Now](#)

Figure 9 Project website listed in the Other Resources section on the County website

lincolncountyok.org

JOIN US FOR THE SS4A PUBLIC & STAKEHOLDER MEETING - APRIL 8TH 4PM
For more information you can visit the SS4A website at www.LincolnCountySS4A.com or go to our forms page to view the flyer.

LINCOLN COUNTY OFFICES - DEPARTMENTS - CONTACT WHERE DO I? ABOUT

Welcome to
LINCOLN COUNTY

Search the website Search

Calendars Bulletins Job Postings Public Meetings Maps Forms Fees Bids Notices & Resolutions Other Resources

Figure 10 Meeting highlighted on a banner on the home page of the County website



Calendars	Bulletins	Job Postings	Public Meetings	Maps	Forms	Fees	Bids	Notices & Resolutions	Other Resources
Forms For renewal of Agriculture Permit, please visit here.									
FORM #	FORM NAME								
41-RC	Petition for Road Crossing/Paralleling Determination of Floodplain & Fee Schedule					View	Download		
921	Homestead Exemption Form					View	Download		
JTWD	Joint Tenancy Warranty Deed					View	Download		
OAG 2024-1	Individual Affidavit of Land Ownership					View	Download		
OAG 2024-2	Non-Exempt Business Trust Affidavit of Land Ownership					View	Download		
OAG 2024-3	Business/Trust Affidavit of Land Ownership					View	Download		
QCD	Quit Claim Deed					View	Download		
QCD-JT	Joint Tenancy Quit Claim Deed					View	Download		
RC-2024	Road Crossing Permit Application					View	Download		
SS4A	SS4A Flyer					View	Download		
WD	Warranty Deed					View	Download		

Figure 11 Invitation flyer on the Forms page of the County website

**Lincoln County Sheriff's Office - Oklahoma**
23h · 🌐

Lincoln County invites you to join us for our second Safe Streets for All (SS4A) Safety Action Plan meeting on April 8, 2025, where we will review and share community feedback, results of data analyses, and key insights gained since our last meeting in February. This is an opportunity for you to ask questions and highlight any additional concerns regarding roads in Lincoln County that need safety improvements.



YOU ARE INVITED!

LINCOLN COUNTY SAFE STREETS FOR ALL (SS4A) SAFETY ACTION PLAN PUBLIC MEETING

**DATE:**
April 8, 2025

**TIME:**
4:00 - 5:00 pm

**IN-PERSON:**
Lincoln County Courthouse 811 Marvel Ave #5, Chandler, OK 74834

**ZOOM:**
<https://bit.ly/LincolnCoSS4A>

 9

2 comments 7 shares

Figure 12 Facebook post

[LINK](#)



County students graduate from L.E.A.D.

EMILY KALKA
Staff Writer

About 450 students from Lincoln and Payne counties recently completed the L.E.A.D. program, according to a press release. The students are sixth and eighth graders from Ripley Middle School, Perkins-Troyen Middle School, Carney Middle School, Carney High School and Perkins-Troyen High School.

L.E.A.D. stands for Law Enforcement Against Drugs & Violence. This program was led by Assistant Chief of Police Charles Danker and Officer Bailey Tucker from the Iowa Tribe Police Department.

It's a 10-week course that teaches kids why it's important to stay away from drugs and violence while also teaching them how to set goals, manage emotions and make wise decisions, according to the press release.

"It was great to see the kids jump right into something that was unfamiliar to them," Danker said. "They were attentive and actively engaged in participating in all areas of the program."

He added that the students learned a

lot, saying the difference between the pre-test and post-test was significant. It was clear that many of the students knew very little about the serious effects drugs have on the body. However, their attentiveness and participation paid off, he said.

"Now that the students are better educated on the dangers of alcohol and drugs, I believe that they'll be able to make better decisions in moments of peer pressure," he said.

Danker said there's been a positive response to the program from students, teachers and parents. The kids enjoyed it and were sad when the program ended. He added that they got the chance to have positive interactions with law enforcement, who were doing something caring rather than only being there for their worst day.

"It was extremely rewarding to help the students learn how to make healthy decisions, arming them with the knowledge to be outstanding citizens and preparing them for what they may face in the world," Danker said.

For 10 years, L.E.A.D. has provided the services "On the Street" and "In



the Classroom," which bring together

law enforcement and communities, the press release said. "In the Classroom" is taught by 6,000 trained instructors in 46 states. It is a law enforcement-focused anti-drug, anti-violence curriculum for K through 12 students.

Nick DeMeo, CEO of L.E.A.D., congratulated the recent grads from Lincoln and Payne counties on their hard

work.

"We look forward to seeing how the students will use their newfound skills to set themselves up for successful futures, and we thank Asst. Chief Danker and Officer Tucker for their dedication to teaching L.E.A.D., helping us to continue accomplishing our goal of advancing the relationship between police officers and communities," DeMeo said.

Alpha Iota Chapter hosts Chandler senior girls

The Alpha Iota Chapter of the Delta Kappa Gamma Society International hosted its annual Senior Girls' Night on Tuesday, March 4, 2025, at the United Methodist Church in Chandler.

Rachel Karger, Alpha Iota Chapter president, welcomed twenty-two senior girls and gave them a short history of the organization of the Delta Kappa Gamma Society International and the Alpha Iota Chapter. Cynthia Snider, chapter member, gave the devotional.

Hostess, Shannon Freeman, Jean Telford and Marilyn Young served a pizza and salad buffet. Each of the senior girls was introduced by her sponsoring Alpha Iota Chapter member.

Debbie Terrence and Rachel Karger lead the girls in a game of Senior Bingo with prizes.

The next meeting of the Alpha Iota Chapter will be April 17, 2025, at 6:30 p.m. in the Media Center of the Chandler High School when the seventh and eighth grade essay winners will read their essays to the chapter.



Front Row: Shelby Knight, Alesh McLean, Makenna Miller, Macarlin Marcus, Meira Davis, Madelyn Ledford, Elizabeth Myers; Middle Row: Lauren Dollachite, Emilia Phipps, Alexander Chatman, Tiffany Thompson, Lilian Sana, Kaylee Choate, Macie Miller Back Row: Jordyn Wayland, Alexia Jaki, Brynn Lewis, Hadlee Masengale, Payton Godlier, Taylor Vazna, Cali Hilgenfeld, Halle Murray
Photo/Vernon Smith

Subscribe today!

YOU'RE INVITED!

Help Make Our Streets Safer

Lincoln County Safe Streets for All (SS4A) Safety Action Plan Public Meeting

Join us for our second SS4A Safety Action Plan public meeting to review the community feedback we have received and our crash data findings. You'll be able to ask questions and leave suggestions on roads in Lincoln County that need safety improvements.

DATE: April 8, 2025
TIME: 4:00 - 5:00 pm

IN-PERSON:

Lincoln County Courthouse 811
Manvel Ave #5, Chandler, OK 74834

ZOOM:

<https://bit.ly/LincolnCoSS4A>



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- ★ 24 Hour Video Monitoring
- ★ Electronically Controlled Access
- ★ U Driveway & Carts for Easy Loading & Unloading
- ★ 28 Sizes from 3 x 4 to 17 x 21



ROCK STORAGE 405-664-5704
206 W. 2nd Street
Chandler, OK 74834
Rock-ND Residential Services
Randy & Debbie Martin

Figure 13 Newspaper ad



Appendix C: Photos





Comment type	Date received	Method received	Map location
Question	2/12/2025	Email	
Comment	2/12/2025	Email	
Comment	2/12/2025	Comment map	900816-900998 S 3400 Rd, Chandler, Oklahoma, 74834
Comment	2/12/2025	Comment map	340020 E 900 Rd, Chandler, Oklahoma, 74834
Comment	2/12/2025	Comment map	74834, Chandler, Oklahoma

Comment	2/12/2025	Comment map	340600-341498 E Highway 66, Chandler, Oklahoma, 74834
Comment	2/12/2025	Comment map	316-322 W 15th St, Chandler, Oklahoma, 74834
Comment	2/13/2025	Comment map	100-120 E Carl Hubbell Blvd, Meeker, Oklahoma, 74855
Comment	2/13/2025	Comment map	104000-104998 S 3400 Rd, Meeker, Oklahoma, 74855
Comment	2/13/2025	Comment map	101-107 S Dawson St, Meeker, Oklahoma, 74855
Comment	2/13/2025	Comment map	40001-40099 E 0896 Rd, Chandler, Oklahoma, 74834
Comment	2/13/2025	Comment map	40001-40099 E 0896 Rd, Chandler, Oklahoma, 74834
Comment	2/13/2025	Comment map	N 3540 Rd, Stroud, Oklahoma, 74079
Comment	2/14/2025	Comment map	1023 N 2nd Ave, Stroud, Oklahoma, 74079
Comment	2/14/2025	Comment map	310 W 10th St, Stroud, Oklahoma, 74079
Comment	2/14/2025	Comment map	403-499 W 9th St, Stroud, Oklahoma, 74079
Comment	2/14/2025	Comment map	300-398 E 10th St, Stroud, Oklahoma, 74079

Comment	2/14/2025	Comment map	628-1398 E 7th St, Stroud, Oklahoma, 74079
Comment	2/14/2025	Comment map	500-560 E 7th St, Stroud, Oklahoma, 74079
Comment	2/16/2025	Comment map	300-398 N Allied Rd, Stroud, Oklahoma, 74079
Comment	2/18/2025	Comment map	347525-347699 E 870 Rd, Chandler, Oklahoma, 74834
Comment	2/19/2025	Comment map	331301-331387 E 1000 Rd, Wellston, Oklahoma, 74881
Question	2/19/2025	Email	
Comment	3/12/2025	Comment map	890204-890468 Mascho Rd, Chandler, Oklahoma, 74834
Comment	3/12/2025	Comment map	Historic Route 66, Stroud, Oklahoma, 74079
Comment	3/14/2025	Comment map	334000-334498 E 930 Rd, Wellston, Oklahoma, 74881
Comment	3/14/2025	Comment map	400-498 Fir St, Wellston, Oklahoma, 74881

Comment	3/14/2025	Comment map	910701-910883 S 3444 Rd, Chandler, Oklahoma, 74834
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Inquiry summary	Outcome summary
Wondering if the comment map works. Added two comments and didn't see them and didn't see other user comments.	Comment map is working. Our records don't indicate he tried to submit comments. Tried calling to walk him through the process and sent a follow up email to let him know I'd be happy to walk him through the process.
Figured out how to use the comment map and posted a link a local FB group to hopefully get more participation.	Thanked resident for his feedback and for spreading the word.
Approach to hwy 66 is dangerous. It is at the bottom of a hill. The view to the east is blocked by trees. The county road is narrow so if one is waiting for a clearing to go onto 66 and someone turns onto 3400, there is barely room. There are no shoulders on route 66. There is no pavement on 3400rd so there are huge holes where vehicles attempting to enter the hwy spin out.	Included in final plan documentation
Southbound, this intersection is deadly. You cannot see cars coming northbound and the road shifts over making a head on collision inevitable.	Included in final plan documentation
Finishing this 1/3 mile of road will reduce traffic on other low maintenance roads. The county owns the lands, it just needs to be finished.	Included in final plan documentation

The section of route 66 from Warwick to Chandler is narrow, hilly, full of no passing zones, has dozens of blind intersections and has no shoulders. I encounter bicyclist weekly and pedestrians several times a month, none of these folks have a safe place to travel. It is also the chosen path to a casino and VFW both which serve liquor. The speed limit is too high and the vegetation over growth has not been trimmed back in a decade.	Included in final plan documentation
This intersection needs traffic control and turn lanes. It is a death trap.	Included in final plan documentation
Hwy 18 and Hwy 62 Needs a Traffic Light	Included in final plan documentation
Road needs to be paved! 20 Houses and School Bus Route	Included in final plan documentation
Traffic Light Needed at H18 and h62	Included in final plan documentation
Runway Protection Zone - Road Needs to be Moved	Included in final plan documentation
Resident Access Road - Chandler Airport	Included in final plan documentation
Monument and 66, Industrial road access	Included in final plan documentation
Increased speed limits outside of school time	Included in final plan documentation
resurface needed	Included in final plan documentation
resurfacing needed	Included in final plan documentation
road needs paved.gravel is dangerous on the curve	Included in final plan documentation

excessive size of speed bump. going over slow still jars your whole car	Included in final plan documentation
The hill on 7th needs addressed. The communities below the hill do not feel safe leaving their neighborhoods.	Included in final plan documentation
road between 66hwy & 7th street needs to be widen for school busses to pass safely.	Included in final plan documentation
Road is verry narrow and has a deep ditch. It is mostly one lane and there is hourly oilfield traffic. There is no room for a school buss and an oncoming truck. It is also verry slippery and muddy when wet.	Included in final plan documentation
You repaved this road. Thank you a bunch. Used to drive miles around to avoid it.	Included in final plan documentation
Contractor in Lincoln County who is wondering if there is a way he can see and bid on any county jobs.	Gave him a call.
Economic growth: Relocate and pave this road to expand the airport.	Included in final plan documentation
This corner is too sharp, make safer	Included in final plan documentation
The Spring Creek bridge on E 930 Rd between N 3350 Rd & S 3340 Rd is a single vehicle timber bridge. This bridge has seen an influx of traffic for the Wellston turnpike bridge construction. The construction will last for an estimated two years. This bridge should be considered for updating or replacement.	Included in final plan documentation
Large trench in the pavement. It appears to have been patched in the past but is now crumbling apart. The whole town of Wellston's roads are narrow and in need of attention.	Included in final plan documentation

Reckless drivers are a constant threat to law-abiding drivers. I'm tired of feeling like I have to fight for my life for driving the speed limit. Speed Cameras on all roads with significant traffic.	Included in final plan documentation
--	--------------------------------------

APPENDIX E

**EXISTING PLANS AND
DOCUMENT REVIEW
ANALYSIS**

Oklahoma Statewide Plans & Documents

Oklahoma Triennial Highway Safety Plan - 2024			
Summary: The Oklahoma Triennial Highway Safety Plan (FY2024-FY2026) outlines a comprehensive and proactive approach to improving road safety. By leveraging enforcement, education, engineering, and emergency response strategies, the plan aims to make Oklahoma's roadways safer for all users. Through ongoing collaboration and data-driven interventions, the state is committed to reducing traffic-related fatalities and injuries in the coming years.			
Transportation Safety Issues	Safety Category	Safe System Principles	Alignment with SS4A Plan
High-Visibility Enforcement (HVE): Sobriety checkpoints and saturation patrols targeting impaired drivers	Emergency Response and Law Enforcement Coordination	Safer People	X
Public Education and Awareness: Campaigns such as "ENDUI" to inform the public about the dangers of impaired driving	Public Education Safety Initiatives	Safer People	
Judicial and Law Enforcement Training: Specialized programs to improve DUI enforcement and prosecution effectiveness	Future Safety-Focused Transportation Projects		
Improved Drug and Alcohol Testing: Enhanced laboratory capabilities for accurate detection and processing of DUI cases	Future Safety-Focused Transportation Projects		
Seat Belt Enforcement Campaigns: Programs like "Click It or Ticket" to increase compliance	Emergency Response and Law Enforcement Coordination	Safer People	X
Child Passenger Safety Programs: Distribution of car seats and child restraint inspections	Public Education Safety Initiatives	Safer People	
Public Awareness and Training: Educating communities on the importance of seat belt and child restraint use	Public Education Safety Initiatives	Safer People	X
Automated Enforcement Technologies: Red-light cameras and speed monitoring devices	Roadway Safety and Infrastructure	Safer Roads	X
Targeted Enforcement Programs: Increased patrols in high-crash zones	Emergency Response and Law Enforcement Coordination	Safer Speeds	X
Public Education Campaigns: Messaging to promote responsible driving behavior	Public Education Safety Initiatives	Safer People	
Infrastructure Improvements: Installation of crosswalks, pedestrian signals, and bike lanes	Bicycle and Pedestrian Safety Initiatives	Safer Roads	X
Community Engagement: Programs to educate road users on safe walking and cycling practices	Bicycle and Pedestrian Safety Initiatives	Safer People	X
Law Enforcement Support: Targeted enforcement in areas with high pedestrian and cyclist activity	Bicycle and Pedestrian Safety Initiatives	Safer Speeds	
Graduated Driver Licensing (GDL) Support: Strengthening laws and enforcement for new drivers	Public Education Safety Initiatives	Safer People	
Teen Driver Education Initiatives: School-based programs and parental involvement strategies	Public Education Safety Initiatives	Safer People	
Awareness Campaigns: Efforts to reduce risky behaviors such as texting while driving	Public Education Safety Initiatives	Safer People	

Oklahoma Statewide Plans & Documents

Oklahoma DOT Strategic Highway Safety Plan - 2023

Summary: The 2023-2028 SHSP provides a comprehensive, data-driven framework to enhance traffic safety across Oklahoma. By focusing on key emphasis areas and leveraging advanced technologies, enforcement strategies, and public engagement, the state aims to significantly reduce fatalities and serious injuries. Ultimately, moving toward a safer roadway system for all users.

Transportation Safety Issues	Safety Category	Safe System Principles	Alignment with SS4A Plan
Lane Departures: Most common type of crash in Oklahoma	Roadway Safety and Infrastructure		
Lane Departures: Strategies include installing cable barriers, rumble strips, high-friction surface treatments, and improving road design to mitigate risks	Roadway Safety and Infrastructure	Safer Roads	X
Impaired Driving: Education programs like AlcoholEdu for high school	Public Education Safety Initiatives	Safer People	
Impaired Driving: Law enforcement efforts such as high-visibility patrols and sobriety checkpoints	Emergency Response and Law Enforcement Coordination	Safer Speeds	X
Occupant Protection: Programs like "Click It or Ticket" and legislative efforts to expand seat belt requirements aim to increase compliance	Emergency Response and Law Enforcement Coordination	Safer People	
Occupant Protection: Public education campaigns target high-risk groups, including young drivers and pickup truck occupants, who have lower seat belt usage rates	Public Education Safety Initiatives	Safer People	
Unsafe Speeds: Strategies to manage speed include engineering solutions, public awareness campaigns, and strict law enforcement	Emergency Response and Law Enforcement Coordination	Safer Speeds	
Intersections: Countermeasures include installing roundabouts, improving signage and lighting, and using Intersection Control Evaluation to select optimal designs	Roadway Safety and Infrastructure	Safer Roads	X
Commercial Motor Vehicles (CMVs) and Work Zones: Enforcement focuses on addressing risky driver behavior, such as speeding and following too closely	Emergency Response and Law Enforcement Coordination	Safer Speeds	
Commercial Motor Vehicles (CMVs) and Work Zones: ODOT has implemented educational programs targeting teen drivers & CMV operators to promote work zone safety	Public Education Safety Initiatives	Safer People	
Motorcycle and All-Terrain Vehicle (ATV) Crashes: Safety programs emphasize helmet use, rider education, and public awareness initiatives	Public Education Safety Initiatives	Safer People	
Vulnerable Road Users (VRU) Safety: Strategies to enhance VRU safety include improved crosswalks, better lighting, reduced speed limits, and targeted law enforcement	Roadway Safety and Infrastructure	Safer Roads	X
Vulnerable Road Users Education: Public education campaigns focus on safe crossing behaviors and driver awareness	Public Education Safety Initiatives	Safer People	X

Oklahoma Statewide Plans & Documents

Oklahoma Public Transit Policy Plan - 2020

Summary: The Oklahoma Public Transit Policy Plan integrates various safety measures to reduce traffic-related incidents and enhance the overall security of transit users. By investing in infrastructure, driver training, technology, and emergency preparedness, the state aims to create a safer and more efficient public transportation system. Addressing existing challenges and leveraging new opportunities will be key to achieving long-term traffic safety goals.

Transportation Safety Issues	Safety Category	Safe System Principles	Alignment with SS4A Plan
Expansion of dedicated transit lanes to reduce conflicts between buses and private vehicles	Roadway Safety and Infrastructure	Safer Roads	
Enhanced lighting, signage, and visibility at transit stops to protect pedestrians and waiting passengers	Bicycle and Pedestrian Safety Initiatives	Safer Roads	X
Investments in bus shelters and designated pick-up/drop-off points to minimize unsafe boarding and exiting	Bicycle and Pedestrian Safety Initiatives	Safer Roads	X
Encouraging the use of public transportation to decrease the number of private vehicles on the road, thus reducing overall traffic accidents	Public Education Safety Initiatives	Safer People	
Enhancing collaboration between transit agencies and local law enforcement to identify high-risk areas and implement safety interventions	Emergency Response and Law Enforcement Coordination	Safer Speeds	X
Implementing speed management strategies around transit hubs and pedestrian-heavy areas	Bicycle and Pedestrian Safety Initiatives	Safer Roads	X
Comprehensive training programs for transit operators, including defensive driving and emergency response procedures	Public Education Safety Initiatives	Safer People	
Strict enforcement of drug and alcohol testing policies to ensure that transit operators maintain the highest levels of safety	Emergency Response and Law Enforcement Coordination	Safer People	
Ongoing safety audits and performance reviews for transit drivers to reinforce best practices and prevent unsafe driving behaviors	Public Education Safety Initiatives	Safer People	
Installation of collision avoidance systems, automatic braking, and onboard cameras to enhance passenger and driver safety	Future Safety-Focused Transportation Projects	Safer Vehicles	
Implementation of electronic fare collection and contactless payment options to reduce conflicts between passengers and drivers	Future Safety-Focused Transportation Projects	Safer Vehicles	
Designing transit routes with dedicated bicycle lanes and pedestrian pathways to minimize conflicts between different modes of transportation	Bicycle and Pedestrian Safety Initiatives	Safer Roads	
Promoting public awareness campaigns on transit safety, focusing on proper pedestrian behavior around buses and transit stops	Bicycle and Pedestrian Safety Initiatives	Safer People	X
Encouraging "complete streets" policies that prioritize safe access for all road users, including those relying on public transit	Future Safety-Focused Transportation Projects	Safer People	X

Oklahoma Statewide Plans & Documents

Development of emergency response protocols in coordination with local authorities and first responders	Emergency Response and Law Enforcement Coordination	Post Crash Care	X
Implementation of communication networks to alert passengers of emergencies and alternate routes in real-time	Future Safety-Focused Transportation Projects	Safer People	
Increased state and federal investment in transit safety programs	Future Safety-Focused Transportation Projects	Safer People	
Enhanced data collection and analysis to identify high-risk areas and deploy targeted safety measures	Roadway Safety and Infrastructure	Safer Roads	X
Public-private partnerships to support the adoption of innovative transit safety technologies	Public Education Safety Initiatives	Safer People	



APPENDIX F

PROJECT PRIORITIZATION CRITERIA MOE MEMO

Technical Memorandum

Prioritization Criteria & MOE

To: Chassary Goodman

From: Antony Atencio

Date: 3/6/2025

Re: SS4A Lincoln County



Introduction

This memo outlines the criteria and measures of effectiveness (MOEs) for project prioritization in the Safe Streets for All (SS4A) Safety Action Plan for Lincoln County. These criteria and MOEs will be applied to assess and prioritize intersections and roadway segments, helping to identify projects that improve safety and mobility within the Lincoln County roadway network.

Project Prioritization Criteria

To prioritize locations with safety issues for the SS4A Safety Action Plan, key criteria paired with associated MOEs have been established. **Table 1** shows the initial (draft) criteria and corresponding MOEs.

Table 1 – List of Criteria & MOEs

Criteria	MOE	Weight
#1. Safety	➤ Crash Rate (CR)	
	➤ Number of Total Crashes (NTC)	
	➤ Crash Reoccurrence (CR)	
	➤ High Crash Reoccurrence (CR)	
	➤ High Injury Network (HIN)	
#2. Equity and Environmental Justice	➤ Areas of Persistent Poverty (APP)	
	➤ Minority Population (MP)	
	➤ Vehicle Ownership (VO)	
	➤ Area of Disadvantaged Communities (ADC)	
#3. Community Engagement	➤ Public/Stakeholder Input (PSI)	
#4. Proximity	➤ Proximity to Casinos/Schools (PCS)	
#5. Vulnerable Users	➤ Pedestrian Crash Rate (PCR)	
	➤ Bicycle Crash Rate (BCR)	
#6. Synergy with Other Projects	➤ Addressed by Other Projects (AOP)	
#7. Traffic Volume	➤ Annual Average Daily Traffic (AADT)	
#8. Roadway Functional Classification	➤ Roadway Classification Type (RCT)	

Measures of Effectiveness (MOEs)

This section explains each MOE associated with the identified criteria in **Table 1**, outlining how each MOE is developed and its role in measuring the impact of that criterion.

Locations are categorized as “intersections” or “roadway segments” for crash analysis, with the following considerations for each.

Roadway Segment:

- Segment Length Threshold: To address variability in segment lengths, segments shorter than 0.2 miles are combined with adjacent segments to meet this threshold.

Intersections:

- To define intersection locations for identifying intersection-related crashes, a 350-foot radius buffer is applied around each roadway crossing. This approach includes a review of closely spaced intersections to eliminate redundancies.

Criterion #1: Safety

Five (5) MOEs have been developed to assess safety risks supporting project prioritization based on crash frequency, severity, and recurrence, which are explained below:

➤ **Crash Rate (CR):**

This MOE evaluates all crashes based on severity using the Equivalent Property Damage Only (EPDO) method, which assigns a cost to each location according to crash severity levels.

The EPDO method weighs crashes based on severity using direct cost coefficients for each crash type. **Table 2**, is derived from the Oklahoma method for calculating crash costs, as outlined by the Federal Highway Administration (FHWA) in its Safety Program focused on crash costs for highway safety analysis. In this table, rows K to O represent the costs associated with different crash severity levels as follows:

- K: Fatal
- A: Incapacitating Injury
- B: Non- Incapacitating Injury
- C: Possible Injury
- O: Property Damage Only

Table 2 – ODOT MAIS to KABCO Direct Conversion Crash Unit Costs (2016 Dollars)

KABCO	Crash Unit Cost (\$)
K	9,600,000
A	2,553,600
B	451,200
C	28,800
O	4,200

Source: Table 50 – Crash Costs for Highway Safety – FHWA

The EPDO crash rate for each road segment and each intersection is calculated using the following formulas:

EPDO Crash Rate (Roadway Segment)

$$= \frac{\sum(\text{Number of Crashes in each severity level} * \text{Their Coefficient from Table 2}) * 100,000,000}{365 * 5 (\text{Study period}) * AADT * \text{road segment Length} * \text{Sum all EPDO coefficients}}$$

EPDO Crash Rate (Intersection)

$$= \frac{\sum(\text{Number of Crashes in each severity level} * \text{Their Coefficient from Table 2}) * 100,000,000}{365 * 5 (\text{Study period}) * AADT * \text{Sum all EPDO coefficients}}$$

Measure:

A calculated EPDO crash rate will be assigned to each identified roadway segment and intersection location.

➤ Number of Total Crashes (NTC):

This MOE measures the total number of crashes (all severities) at each location. This value ensures that locations with higher total crash numbers are emphasized in the analysis for further evaluation.

Measure:

A total crash number will be assigned to each identified roadway segment and intersection.

➤ Crash Reoccurrence (CR):

Crash Recurrence (CR) measures whether crashes have occurred at a location in different years, regardless of their severity or frequency. Each year in which at least one crash occurs adds to the total score. For example, if a crash happens at a certain location once only in 2017, it receives a score of 1; if another crash occurs at that same location in 2018, the score will be 2, and so on.

Measure:

A value between Zero (0) and Five (5) is assigned to each location based on the number of years in which at least one crash occurred over a specified period:

- **5:** Crashes occurred in five years
- **4:** Crashes occurred in four years
- **3:** Crashes occurred in three years
- **2:** Crashes occurred in two years
- **1:** Crashes occurred in only one year
- **0:** No crashes occurred in any year

➤ **High Crash Reoccurrence (HCR):**

High Crash Reoccurrence (HCR) identifies locations where the total number of crashes, in a given year, meets or exceeds a pre-defined number of crashes as a threshold. HCR assigns a score only when the total number of crashes in a certain location surpasses that threshold. A location receives a score of 5 if it exceeds the threshold in all five years, 4 if it does so in four years out of five years, and so on, down to 0 if no years meet the pre-defined number of crashes as a threshold.

Measure:

A value between Zero (0) and Five (5) is assigned to each location based on the number of years in which crashes met or exceeded the pre-defined number of crashes as a threshold over a specified period:

- **5:** Crashes recurring in five years, meeting or exceeding the high-crash threshold
- **4:** Crashes recurring in four years, meeting or exceeding the high-crash threshold
- **3:** Crashes recurring in three years, meeting or exceeding the high-crash threshold
- **2:** Crashes recurring in two years, meeting or exceeding the high-crash threshold
- **1:** Crashes occurring in only one year, meeting or exceeding the high-crash threshold
- **0:** No years meeting the high-crash threshold

➤ **High Injury Network (HIN):**

This MOE focuses on injury severity crashes, considering these three severity levels: "fatal," "incapacitating," and "non-incapacitating" injuries. It employs a crash rate approach similar to the EPDO method but excludes possible injury and property damage only crashes and normalizes based on AADT without accounting for roadway length. The crash rate for each road segment and intersection is calculated using the following formula:

$$\text{Crash Rate (for HIN)} = \frac{\sum(\text{Number of Crashes in each severity level} * \text{Their Coefficient from Table 2}) * 100,000,000}{365 * 5 (\text{Study period}) * \text{AADT} * \text{Sum all EPDO coefficients}}$$

Measure:

A calculated crash rate, using the above formula, will be assigned to each location.

A detailed approach determining the HIN is provided in another memo (High Injury Network Development.)

Criterion #2: Equity and Environmental Justice

Four (4) MOEs have been developed to measure equity impact in safety project prioritization to address the equity component of the SS4A Safety Action Plan.

➤ Areas of Persistent Poverty (APP)

This MOE identifies areas of persistent poverty using USDOT data in conjunction with other national demographic data.

Measure:

A value of Zero (0) or One (1) is assigned to each location based on whether it falls within an area of persistent poverty, as follows:

- **1:** Falls within area of persistent poverty
- **0:** Falls outside area of persistent poverty

➤ Minority Population (MP)

This MOE identifies locations with minority population using national demographic datasets including American Community Survey (ACS) data. It focuses on areas with a high percentage of minority residents.

Measure:

A value of One (1) or Zero (0) is assigned to each location based on whether it falls within an area with a significant minority population, as follows:

- **1:** Falls within area with a significant minority population
- **0:** Falls outside of area with a significant minority population

➤ Vehicle Ownership (VO)

This MOE identifies locations with varying levels of vehicle ownership using American Community Survey (ACS) data. It focuses on areas where households have limited access to personal vehicles, which may impact transportation access and safety needs.

Measure:

A value between Zero (0) and Three (3) is assigned to each location based on the number of vehicles available per household, as follows:

- **0:** Falls within area where average households have 3 or more vehicles available
- **1:** Falls within area where average households have 2 vehicles available
- **2:** Falls within area where average households have 1 vehicle available
- **3:** Falls within area where average households have no vehicle available

➤ **Areas of Disadvantage Communities (ADC)**

This MOE identifies areas designated as disadvantaged communities using USDOT 2021 data, which considers factors such as income, transportation access, and environmental burdens. The goal is to assess areas that face greater challenges related to transportation equity, including economic hardship and limited access to safe and efficient transportation options.

Measure:

A value between Zero (0) and One (1) is assigned to each location based on whether it falls within a disadvantaged community, as follows:

- **1:** Falls within a disadvantaged community
- **0:** Falls outside of a disadvantaged community

Criterion # 3: Community Engagement

One (1) MOE has been developed to evaluate community engagement, ensuring that public and stakeholder perspectives are considered in the project prioritization process.

➤ **Public/Stakeholder Input (PSI)**

This MOE evaluates whether concerns about a location or safety issue have been raised by the public and stakeholders through meetings, surveys and/or comments.

Measure:

A value of either Zero (0) or One (1) is assigned to each location based on received public and stakeholder input:

- **0:** No public input received (no reported concerns)
- **1:** Public input received (community concerns reported)

Criterion # 4: Proximity

One (1) MOE has been developed to assess the proximity of crash locations to **casinos and schools**. This provides insight into certain locations due to their status as significant places or venues.

1. Proximity to Casinos/Schools (PCS)

This MOE evaluates if a crash location falls within vicinity of the following two (2) locations:

- Casinos
- Schools

Measure:

A value between Zero (0) and Five (4) is assigned to each location based on its proximity to these significant locations:

- **0:** No proximity to casinos, schools, or railroad crossings

- **1-4:** Proximity to one or more specified locations, with values increasing based on proximity to multiple types. (For example, a location near both a school and a casino would receive a value of 2).

Location Definitions:

- **Casinos, Schools:** a 1000-foot radius buffer is established around casinos and school locations to capture nearby crashes.

Criterion # 5: Vulnerable Users

Since consideration of vulnerable road users is another important part of the SS4A Safety Action Plan, two (2) MOEs have been developed to assess safety specifically for pedestrians and bicyclists. Identifying locations where enhanced safety measures may be beneficial for these groups.

➤ ***Pedestrian Crash Rate (PCR)***

The Pedestrian Crash Rate (PCR) is an MOE that evaluates the frequency of crashes involving pedestrians. This analysis utilizes the same approach to the Crash Rate Analysis (CRA) under the Safety Risk Assessment Criteria, but it focuses exclusively on pedestrian-related crashes. The PCR aims to identify locations with higher pedestrian crash rates, which may indicate safety concerns for vulnerable road users.

Measure:

A calculated pedestrian crash rate will be assigned to each location.

➤ ***Bicycle Crash Rate (BCR)***

This MOE assesses the frequency of crashes involving bicycles. Like the PCR, the BCR employs a methodology similar to the CRA focusing solely on crashes involving bicyclists. This MOE aims to highlight locations with elevated bicycle crash rates.

Measure:

A calculated bicycle crash rate will be assigned to each location.

Criterion # 6: Synergy with Other Projects

One (1) MOE has been developed to coordinate with ongoing or planned projects. High risk locations that are already addressed by other projects or partners, the SS4A Safety Action Plan, will be considered in the prioritization process.

➤ ***Addressed by Other Projects (AOP)***

This MOE evaluates whether the location is identified as part of an ongoing or planned project.

Measure:

A value of either One (1) or Two (2) is assigned to each location based on its status in relation to other ongoing or planned projects:

- 1: Location is addressed by other ongoing or planned projects
- 2: Location is not addressed by other ongoing or planned projects

Criterion #7: Traffic Volume

One (1) MOE has been developed to assess the impact of traffic volume on roadway segments and intersections.

2. Average Annual Daily Traffic (AADT)

This MOE evaluates the impact of the AADT on both roadway segments and intersections. The locations are categorized into Low, Medium, and High AADT levels using the Jenks Natural Breaks algorithm (Reference: Jenks, G. F. (1967). "The Data Model Concept in Statistical Mapping," International Yearbook of Cartography, 7, 186–190).

For the purposes of this study, AADT is defined as follows:

- **AADT for Roadway Segments:** The raw AADT data sourced from the ODOT roadway network, which is an estimate of the average number of vehicles that pass a specific roadway segment each day over the course of a year.
- **AADT for Intersections:** The AADT for an intersection is calculated as the sum of the AADT values of all the roadway segments that intersect at that location.

Measure:

Each location is assigned to one of the following AADT categories:

- High AADT
- Medium AADT
- Low AADT

Criterion #8: Roadway Functional Classification

One (1) MOE has been developed to assess the functional classification of roadways.

➤ Roadway Classification Type (RCT)

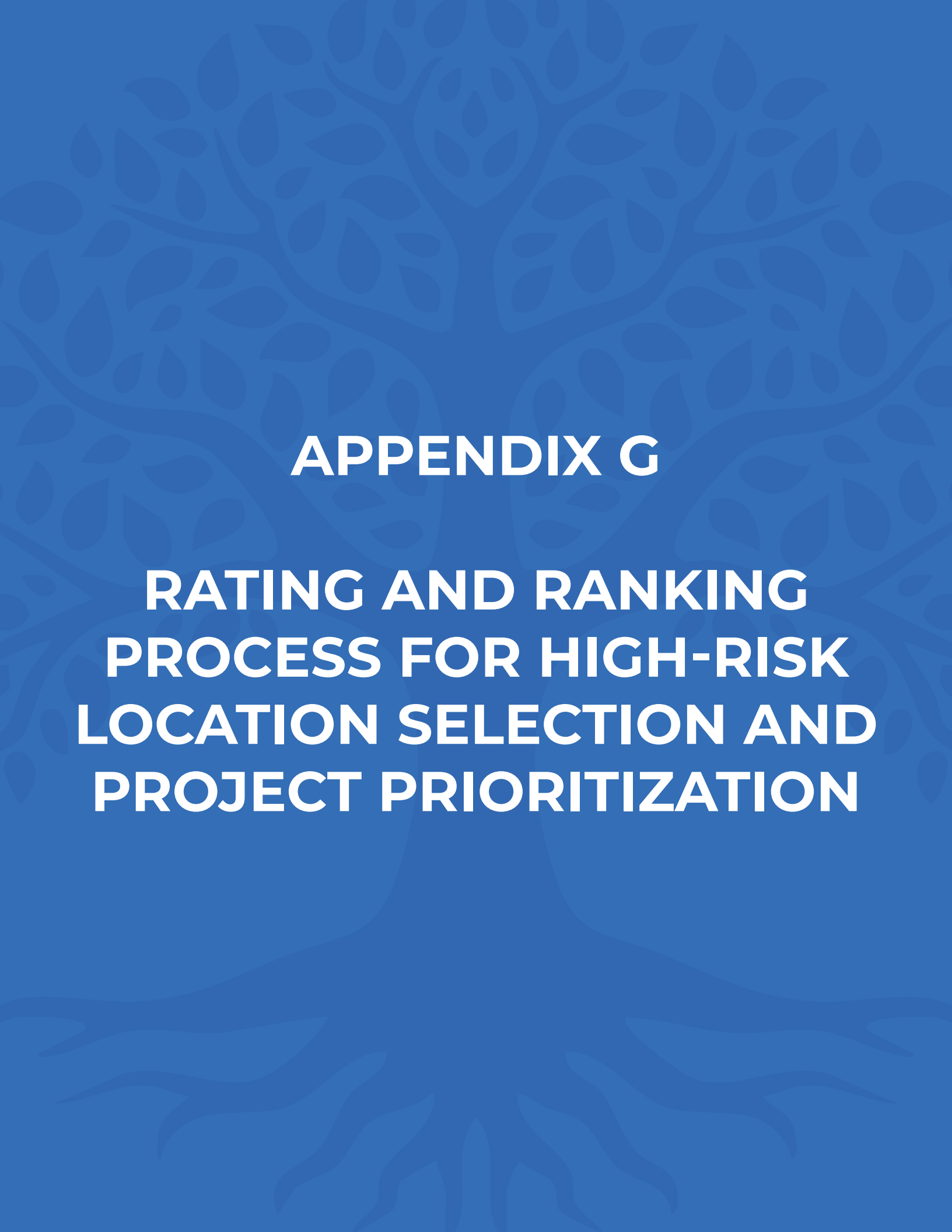
This MOE evaluates the functional classification of roadway segments, which is reported as one attribute for roadway segments in the ODOT database.

Measure:

Each location is assigned to one of the following functional classification categories:

- Freeway/Expressway
- Interstate
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector.

NOTE: *Once the criteria and MOEs are finalized, a weight for each MOE will be determined in collaboration with the Lincoln County oversight team. Following this, the rating and ranking process will be implemented to evaluate each location based on the weighted criteria/MOE. This systematic approach will ensure that the most impactful projects are prioritized, enhancing safety and mobility throughout the entire Lincoln County.*



APPENDIX G

RATING AND RANKING PROCESS FOR HIGH-RISK LOCATION SELECTION AND PROJECT PRIORITIZATION

Technical Memorandum

Rating and Ranking Process for Hotspot Location Selection and Project Prioritization

To: Chassary Goodman

From: Antony Atencio

Date: 07/03/2025

Re: Safe Streets for All – Lincoln County



Introduction

This memorandum outlines the methodology used for rating and ranking locations to identify a list of hotspot areas in the Safe Streets and Roads for All (SS4A) plan for Lincoln County. This methodology will be applied to prioritize locations, including roadway segments and intersections, that require safety improvements across the Nation.

Methodology for Identifying Hotspot Locations

To identify hotspot locations, roadway segments and intersections are evaluated based on the criteria and Measures of Effectiveness (MOEs) outlined in the Project Prioritization memo. An index is developed for each location based on how well it meets the defined MOEs and criteria. Locations are then ranked according to their index, with higher-scoring locations designated as hotspots. These locations will undergo further assessment to identify safety risks and serve as the foundation for potential improvement projects.

The ranking index for each roadway segment and intersection is calculated using the following formula:

$$Ranking\ Index = \left[\sum (CRA_i * W_{CRA_i}) \right] * \prod NCRA_i$$

Where:

- CRA: crash-related MOE
- W_{CRA} : weight assigned to each crash-related MOE
- NCRA: weighting multiplier (factor) of each non-crash-related MOE.
- Π : Product symbol, which calculates the multiplication of all non-crash-related MOEs factors.

➤ Impact of Crash-Related MOEs

For crash-related MOEs, there is a wide range of values; therefore, all values are normalized to the same scale before assigning weights. Normalization is done on a scale from one (1) to ten (10) prior to assigning the weights. After normalizing the values, each MOE is assigned a weight between one (1) to ten (10), based on its relative importance in assessing safety risks. Once weighed, the values are summed up to provide a base safety index for each location.

The impact of vulnerable road users is analyzed separately when calculating the safety factor. For one list of hotspot locations, the pedestrian and bicycle crash rate MOEs are not considered, while another list focuses only on vulnerable road users, using only the pedestrian and bicycle crash rate MOEs and setting all other MOEs to zero (0). **Table 1** outlines the crash-related MOEs and their corresponding weights for non-vulnerable road user's locations. **Table 2** presents the weights associated with pedestrian and bicycle crash rates, which are used for selecting locations related to vulnerable road users.

Table 1: Crash Related MOEs and Their Weight

Criteria	MOE	Weight
#1. Safety	➤ Crash Rate (CR)	5
	➤ Number of Total Crashes (NTC)	8
	➤ Number of Fatal/Incapacitating Injury Crashes (FIC)	10
	➤ High Crash Reoccurrence (CR)	5
#5. Vulnerable Users	➤ Pedestrian Crash Rate (PCR)	0
	➤ Bicycle Crash Rate (BCR)	0

Table 2: Bike and Pedestrian Crash Related MOEs and Their Weight

Criteria	MOE	Weight
#1. Safety	➤ Crash Rate (CR)	0
	➤ Number of Total Crashes (NTC)	0
	➤ Number of Fatal/Incapacitating Injury Crashes (FIC)	0
	➤ High Crash Reoccurrence (CR)	0
#5. Vulnerable Users	➤ Pedestrian Crash Rate (PCR)	10
	➤ Bicycle Crash Rate (BCR)	10

➤ Impact of non-crash related MOEs:

Non-crash-related MOEs are treated as binary factors, meaning they either apply or do not apply to a location. These factors either contribute to the safety index (if the condition is met) or have no effect (if the condition is not met). These MOEs adjust the final prioritization index by increasing the index for locations that meet specific conditions. For example, if two locations have similar safety scores, the location that falls within an Area of Persistent Poverty will receive a 10% increase in its final index. The non-crash-related MOEs and their weighting multipliers are shown in **Table 3**.

Table 3: Non-Crash Related MOEs and their Weighting Multipliers

Criteria	MOE	Weighting Multiplier
#1. Safety	➤ High Injury Network (HIN)	1.2
	➤ Minority Population (MP)	1.1
	➤ Vehicle Ownership (VO)	1.1
#3. Community Engagement	➤ Public/Stakeholder Input (PSI)	4
#4. Proximity	➤ Proximity to Casinos/Schools/Bus Routes (PCSB)	1.2/2*
#6. Traffic Volume	➤ Annual Average Daily Traffic (AADT)	1
#7. Roadway Functional Classification	➤ Interstate	1
	➤ Major Collector	8
	➤ Minor Arterial	8
	➤ Minor Collector	8
	➤ Principal Arterial	1

*: The proximity multiplier is set at 1.2 for casinos, and 2 for both buses and bus routes.

Initial Hotspot Location Analysis: 30 Locations

This section presents the results of the analysis identifying the top thirty (30) roadway segments and intersections with the greatest need for safety improvements. These locations were selected using a comprehensive ranking method that incorporates both crash-related and non-crash-related factors.

The Following assumption is considered when developing the list of the top 30 locations:

- Any location with fewer than three (3) total crashes was excluded from the list.

To support interpretation and guide data-driven decision-making, a series of maps is provided to display the top 30 prioritized locations. The maps are organized separately for vulnerable road users and non-vulnerable road users. Selected locations are shown in relation to key factors, including:

- Roadway classifications
- High Injury Network (HIN)
- Minority population
- Vehicle ownership
- Proximity to schools and casinos
- Inclusion in school bus routes

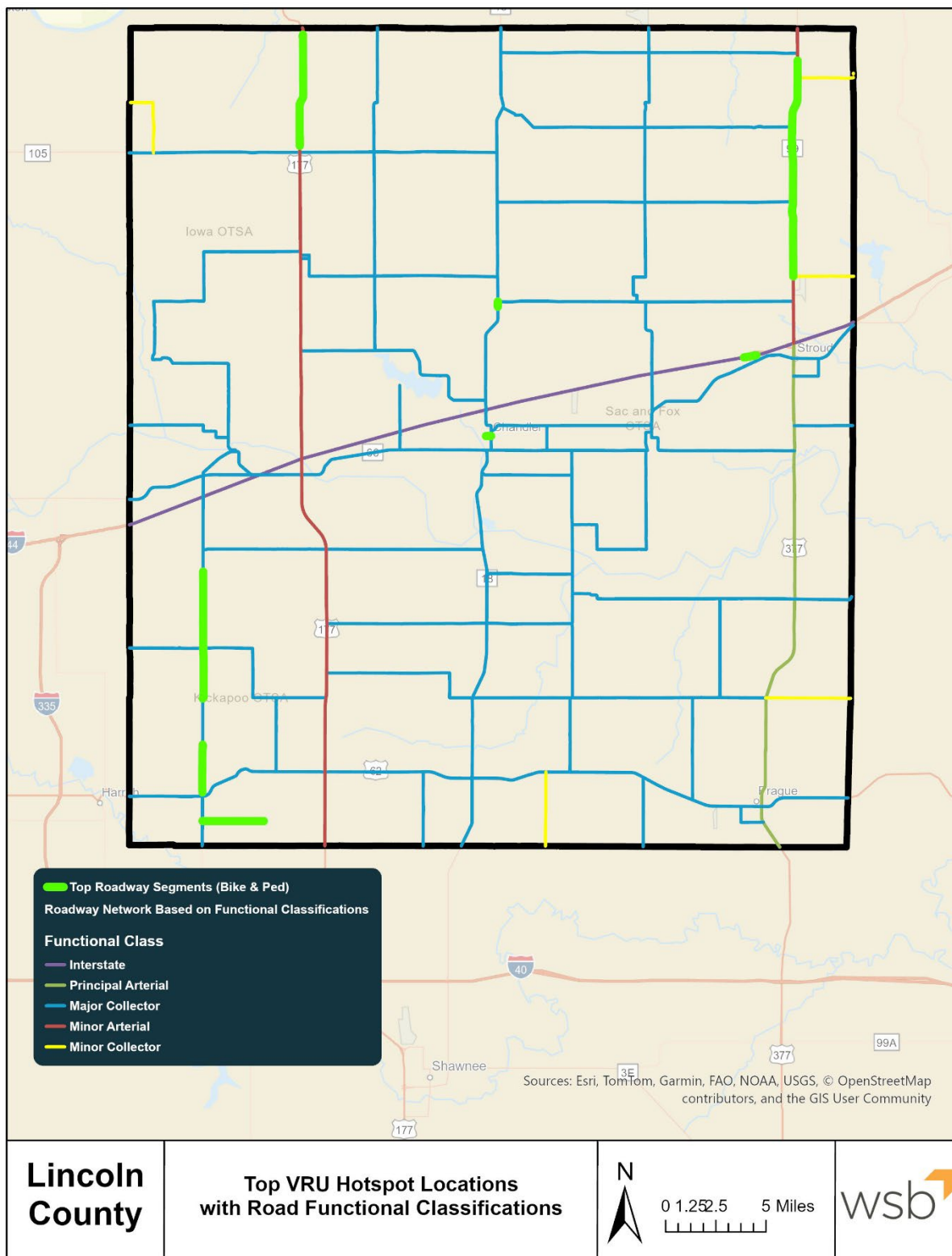


Figure 1: VRU 30 Hotspot Locations – With Road Classifications

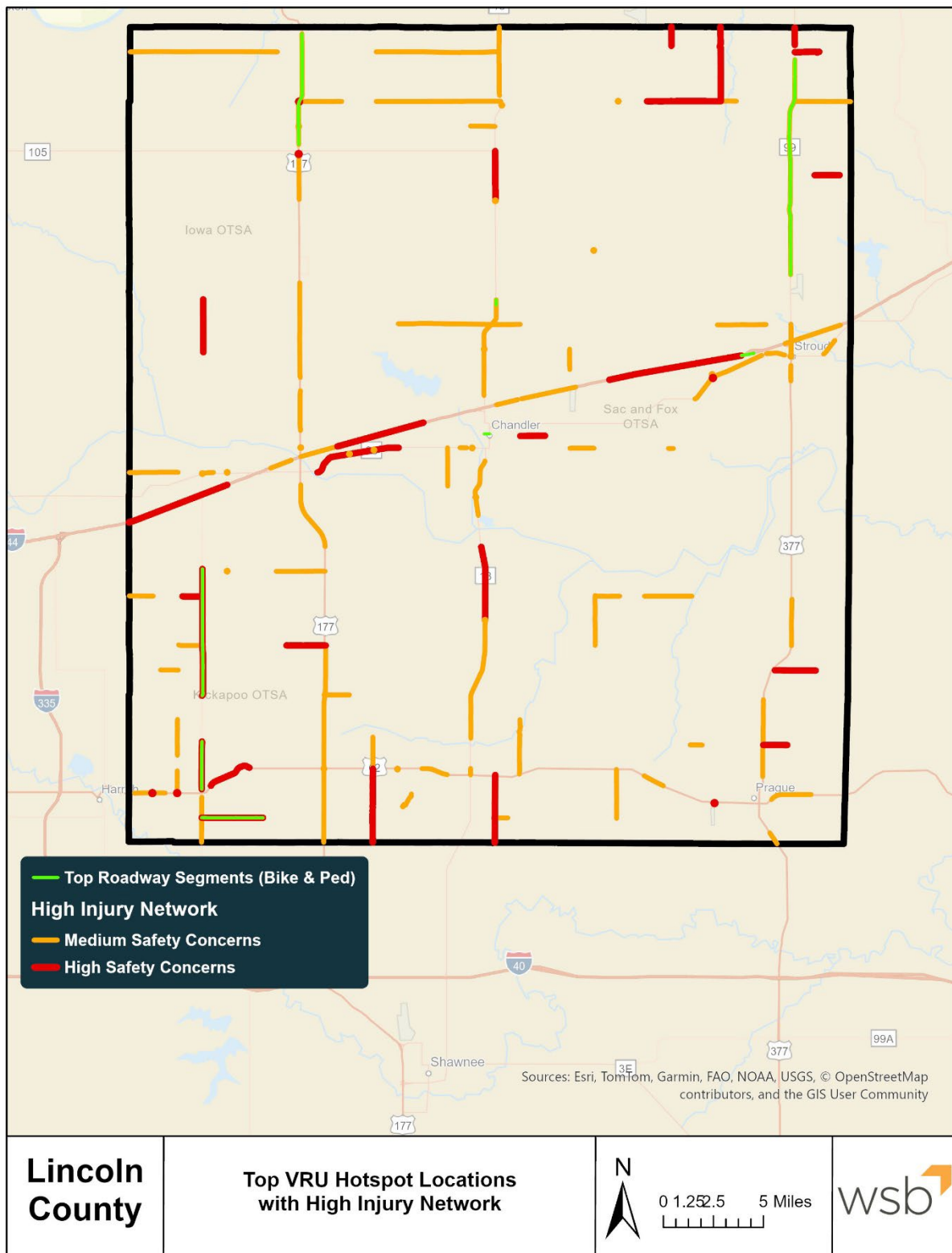


Figure 2: VRU 30 Hotspot Locations – With High Injury Network

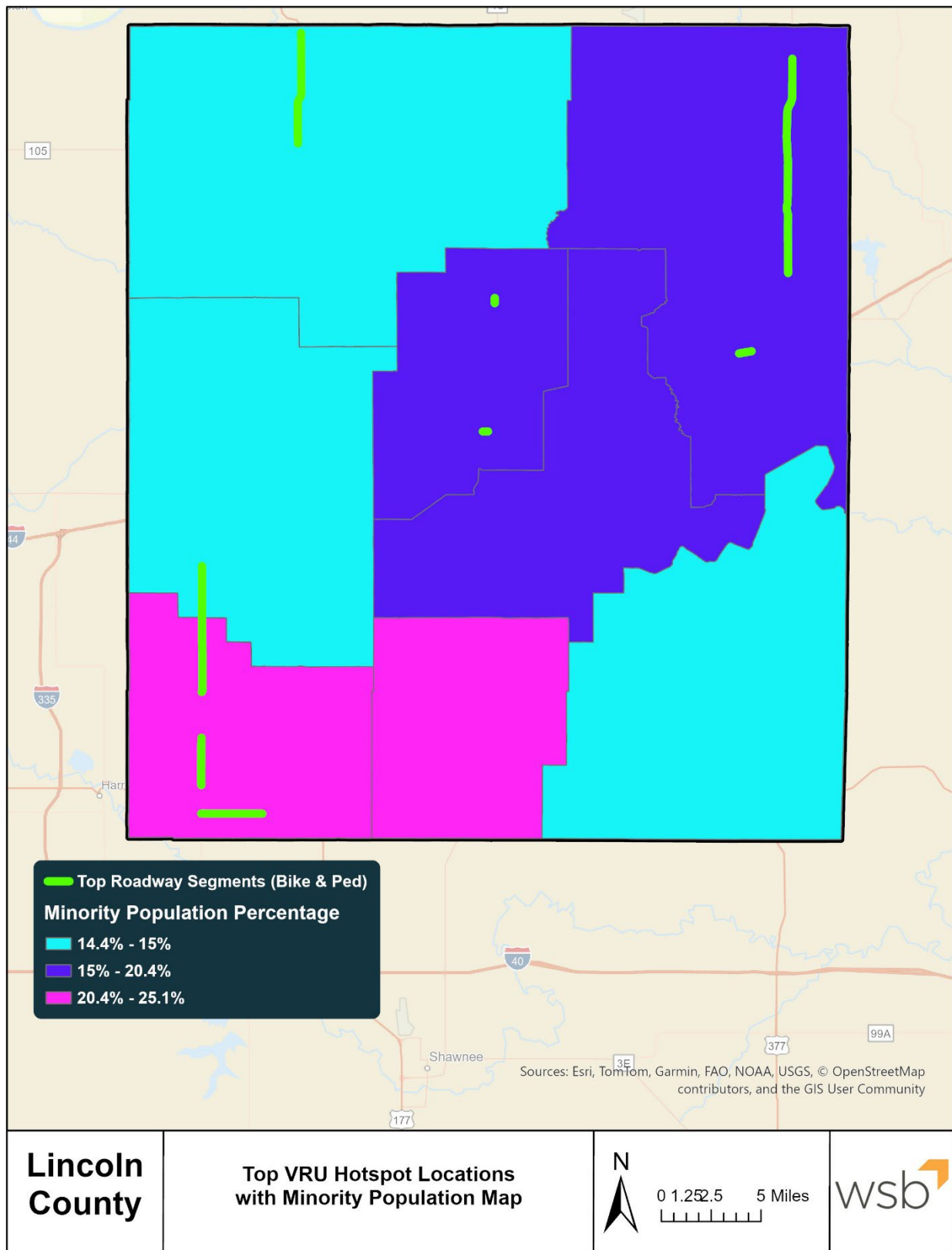


Figure 3: VRU 30 Hotspot Locations – With Minority Population

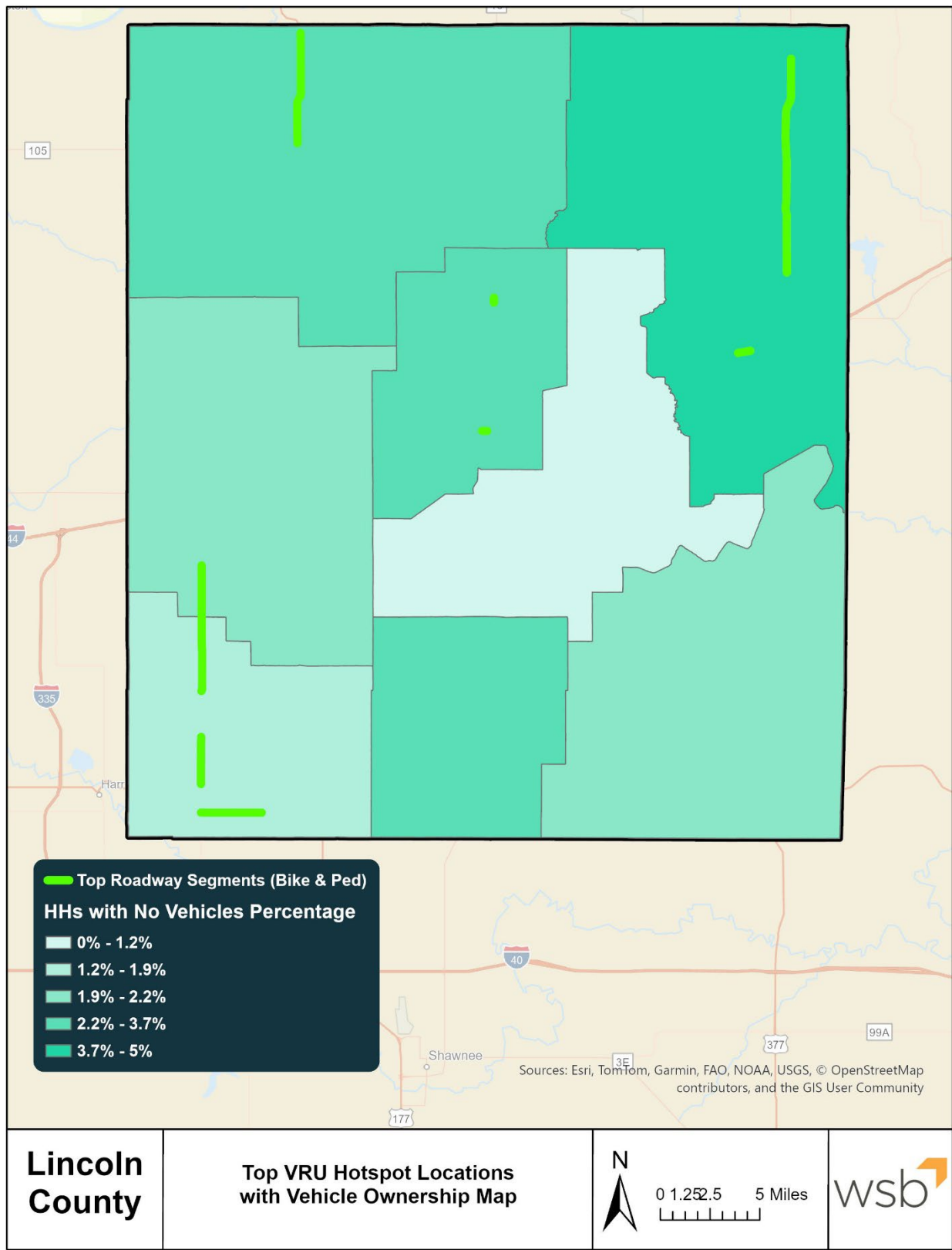


Figure 4: VRU 30 Hotspot Locations – With Vehicle Ownership

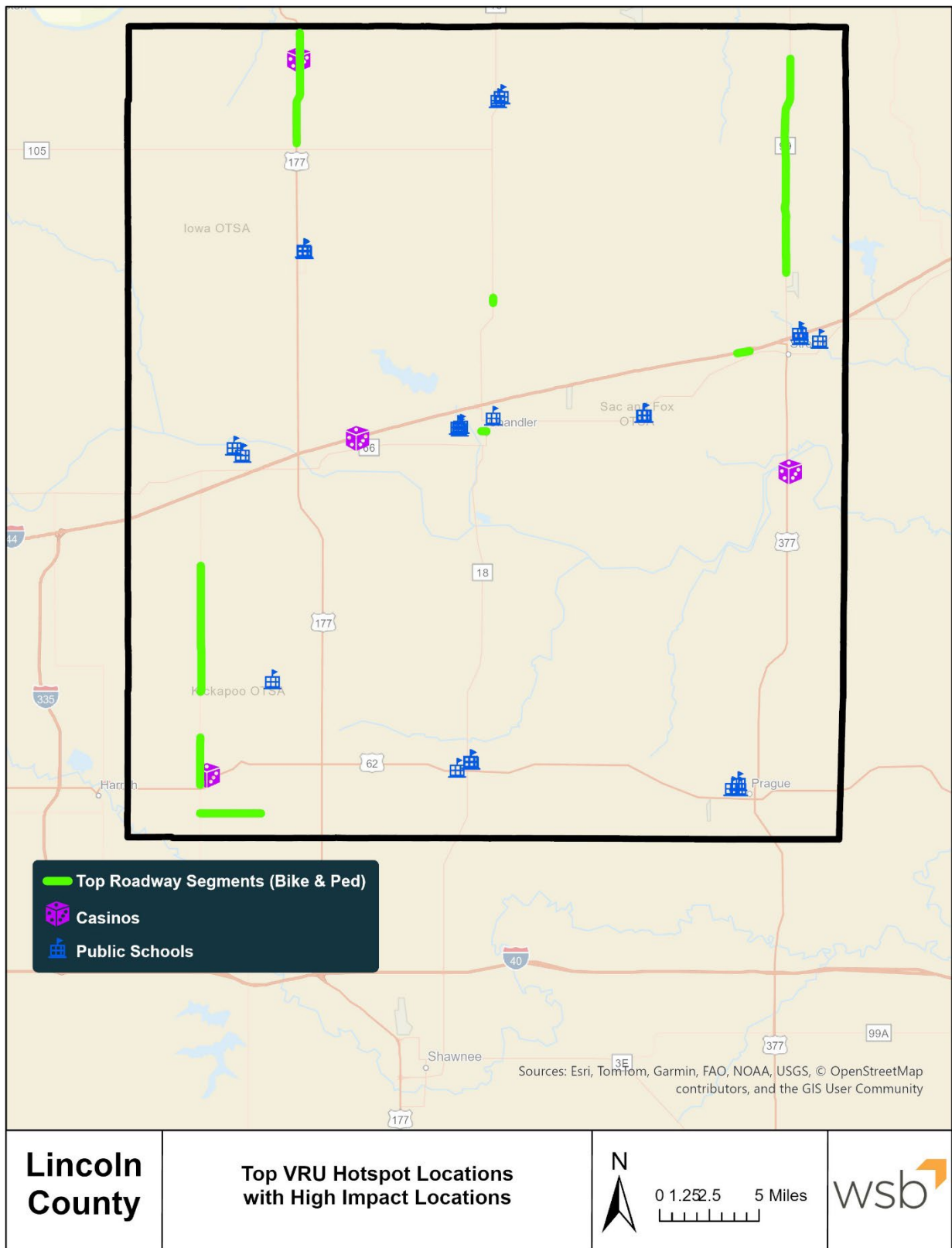


Figure 5: VRU 30 Hotspot Locations – With High Impact Locations

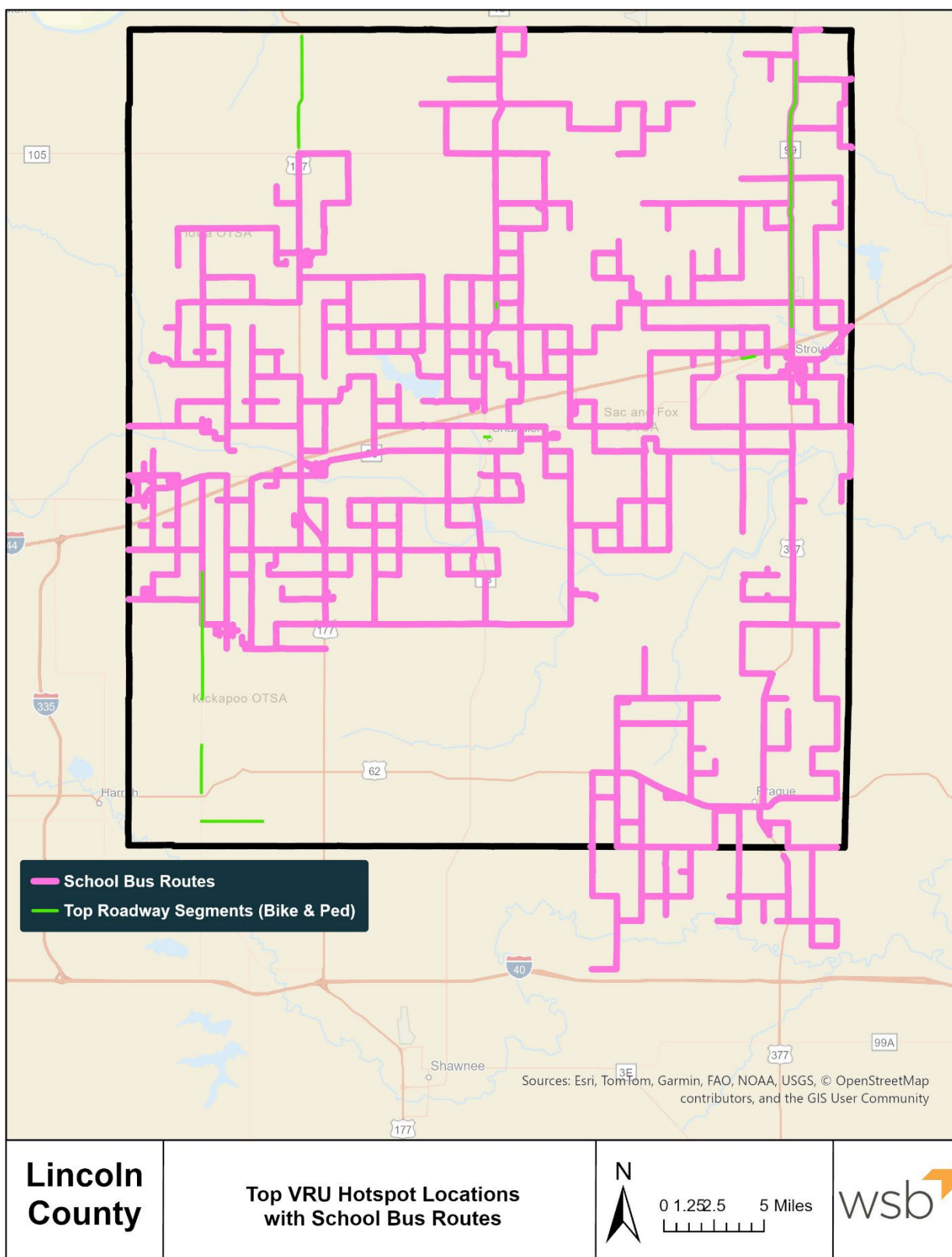


Figure 6: VRU 30 Hotspot Locations – With School Bus Routes

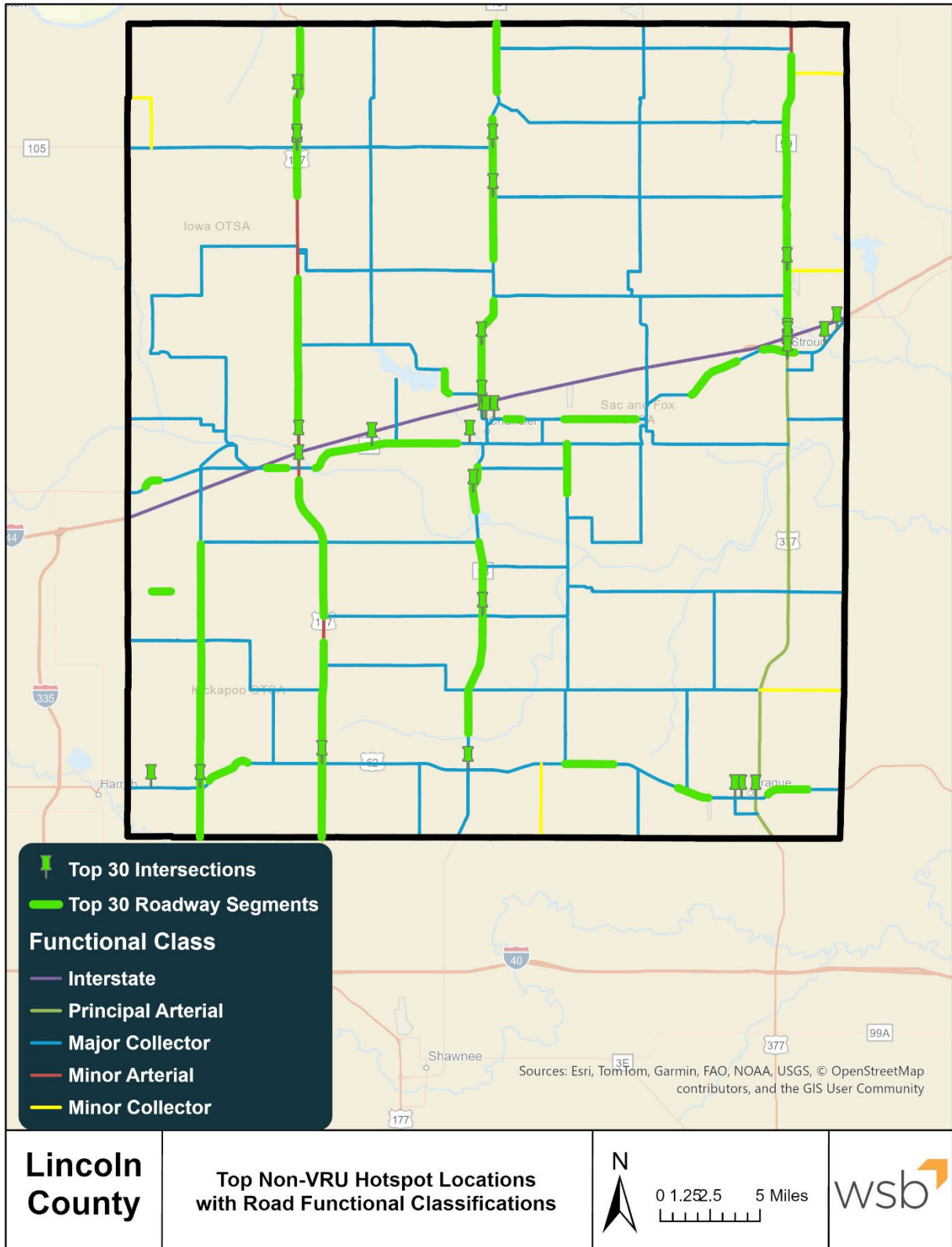


Figure 7: Non-VUR 30 Hotspot Locations – With Road Classifications

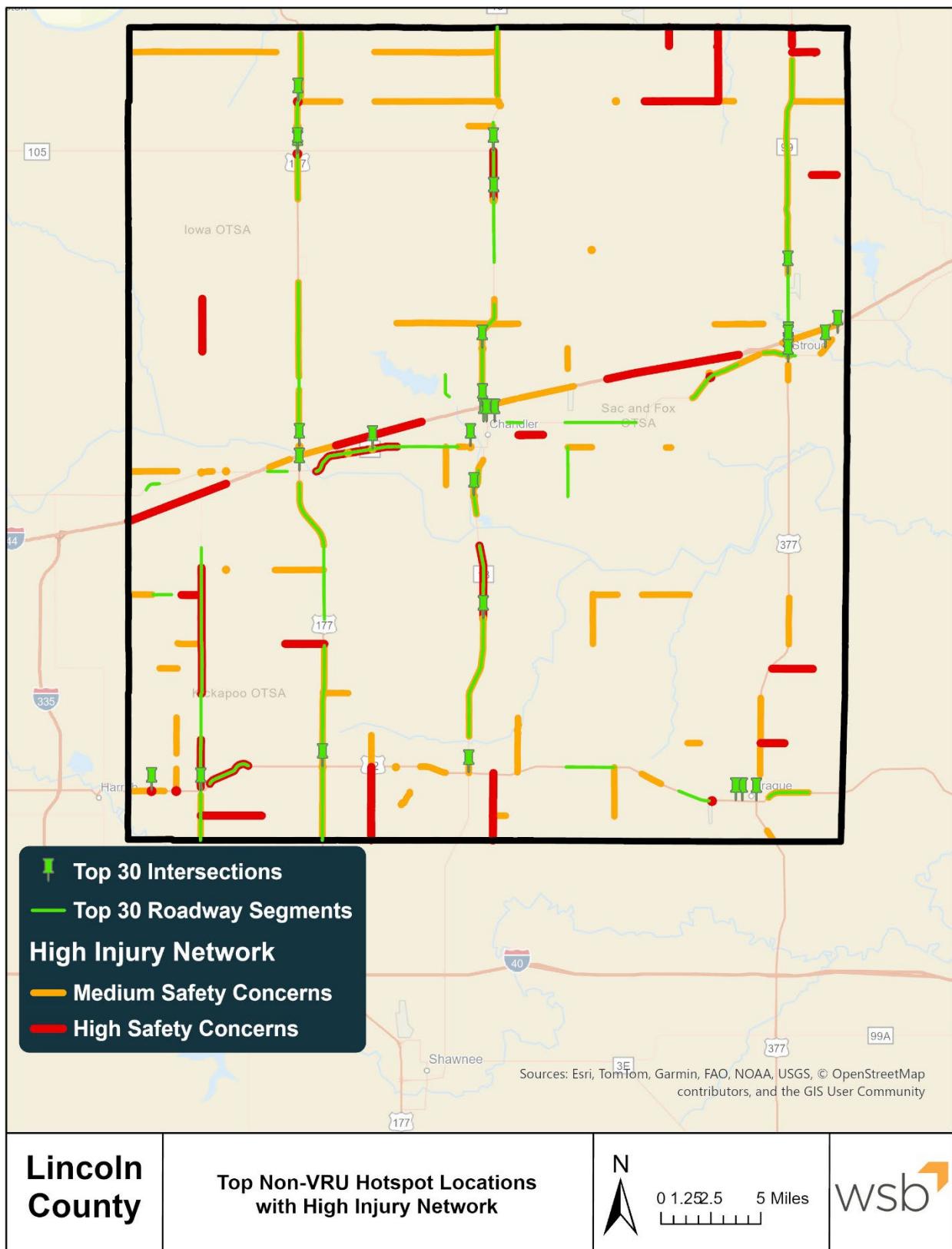


Figure 8: Non-VUR 30 Hotspot Locations – With Minority Population

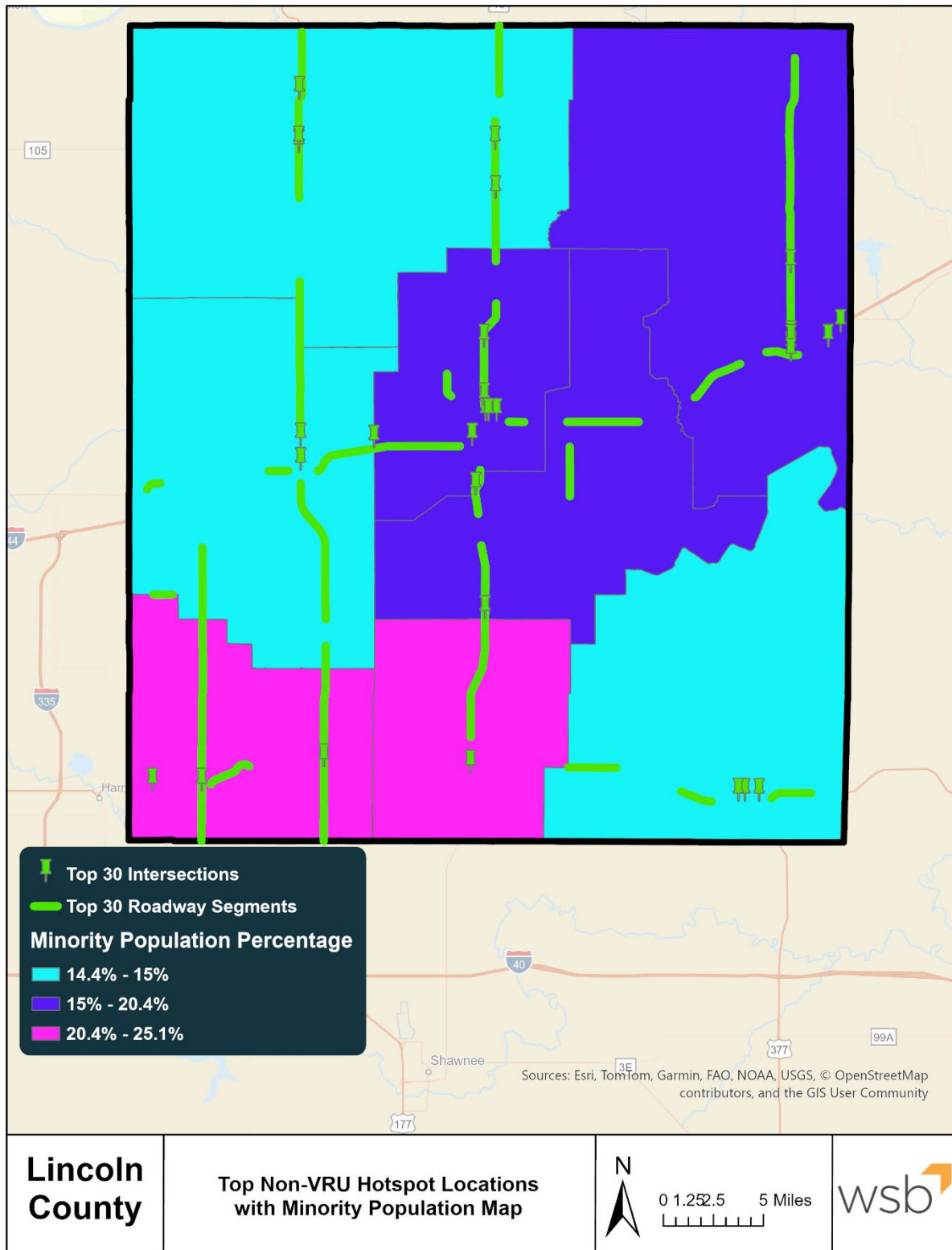


Figure 9: Non-VRU 30 Hotspot Locations – With Minority Population

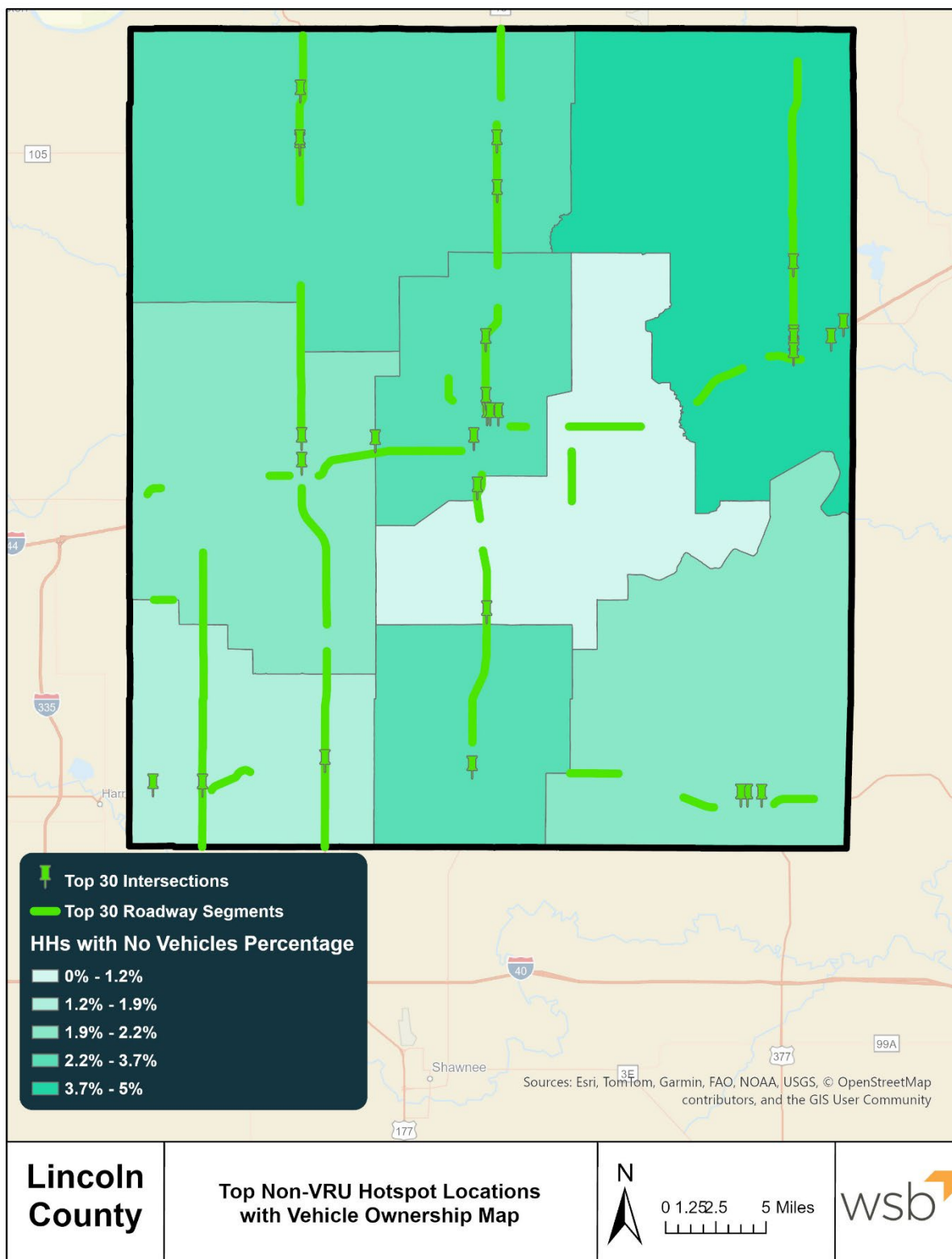


Figure 10: Non-VUR 30 Hotspot Locations – With Vehicle Ownership

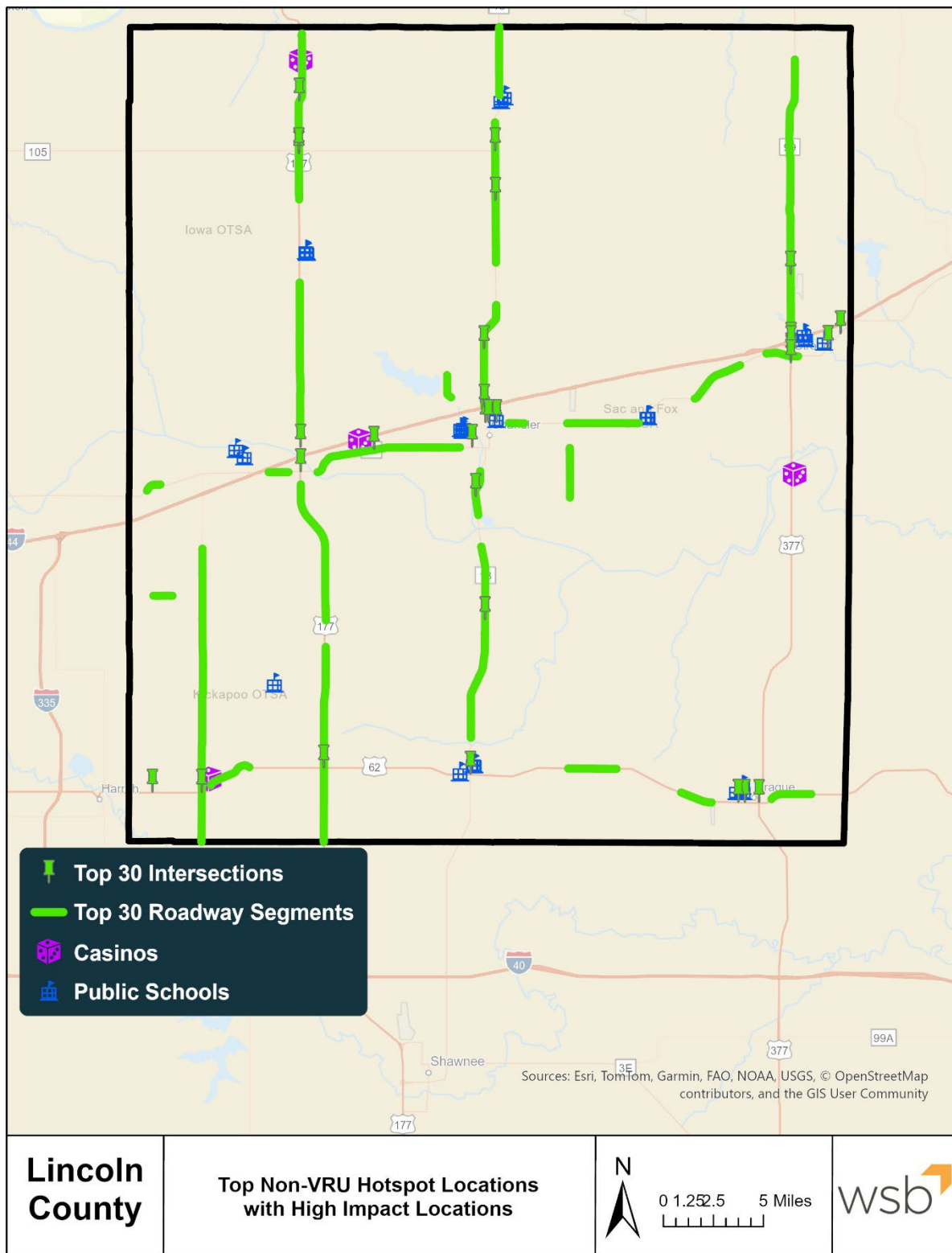


Figure 11: Non-VUR 30 Hotspot Locations – With High Impact Location

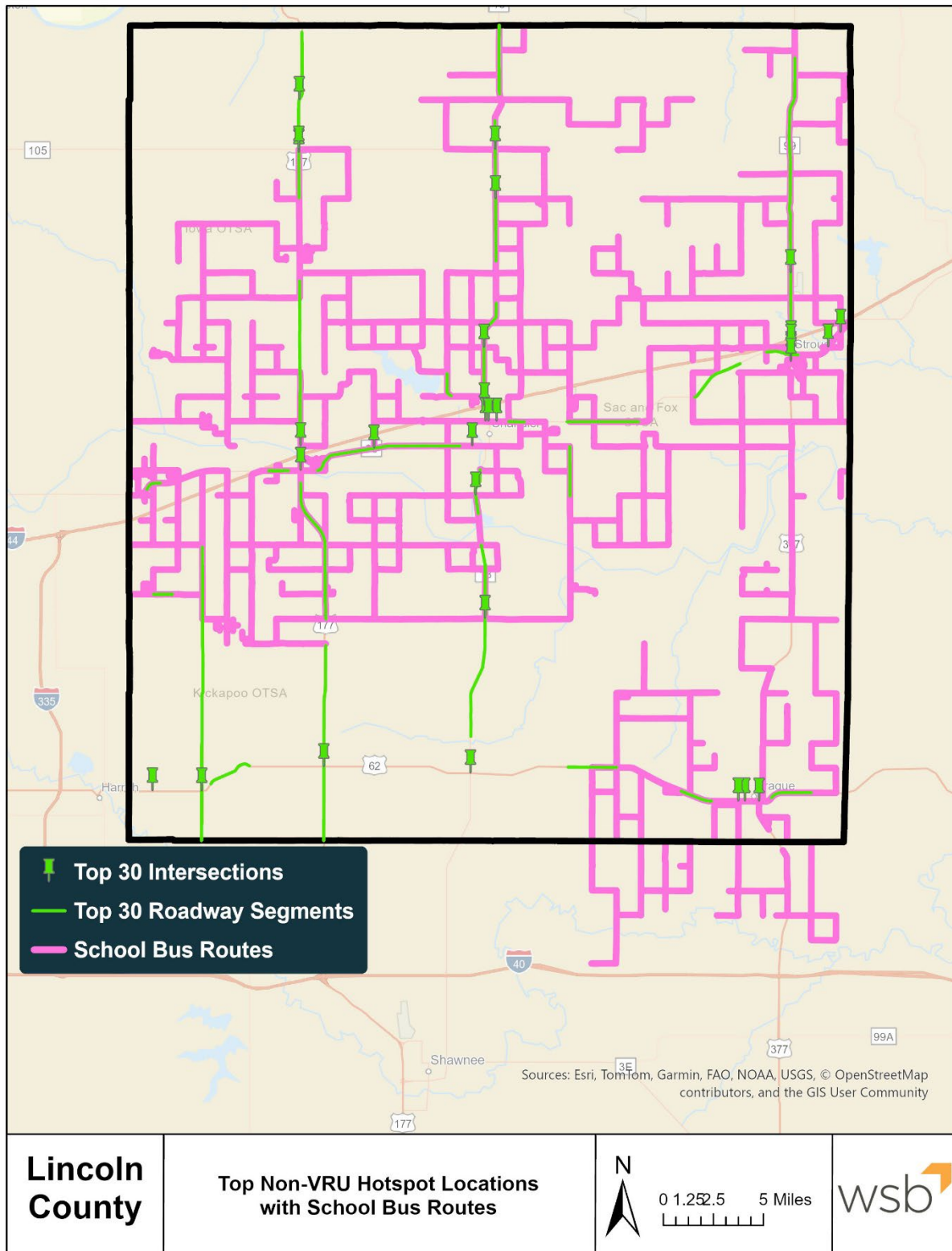


Figure 12: Non-VUR 30 Hotspot Locations – With School Bus Routes

➤ **Selection of 20 Roadway Segments and 10 Intersection:**

The final selection of hotspot locations includes **twenty (20)** roadway segments and **ten (10)** intersections, combining both vulnerable road user (VRU) and non-VRU locations.

Steps for identifying the Final 20 locations from the initial 30

1. Merging Roadway Segments:

Segments in close proximity along the same corridor with similar Annual Average Daily Traffic (AADT) were combined and treated as a single segment.

2. Revaluation and Rescoring:

After merging roadway segments, the analysis was rerun, treating the combined segments as one. Relevant attributes were summed, and the locations were restored based on the updated set of segments. This process was applied to both VRU and non-VRU lists.

3. Final Selection:

Overlapping locations between the VRU and non-VRU lists were retained. The remaining locations were selected by comparing safety measures and other relevant factors, resulting in a final list of roadway segments and intersections.

Table 4 and **Table 5** present the selected roadway segments and intersections, respectively, ranked from 1 to 20, with 1 indicating the highest priority. Each location is identified as originating from either the VRU list or the non-VRU list.

Figure 13 to **Figure 18** visualize the selected locations in relation to key factors, providing updated versions of the initial 30-location maps, now reflecting the final selected locations.

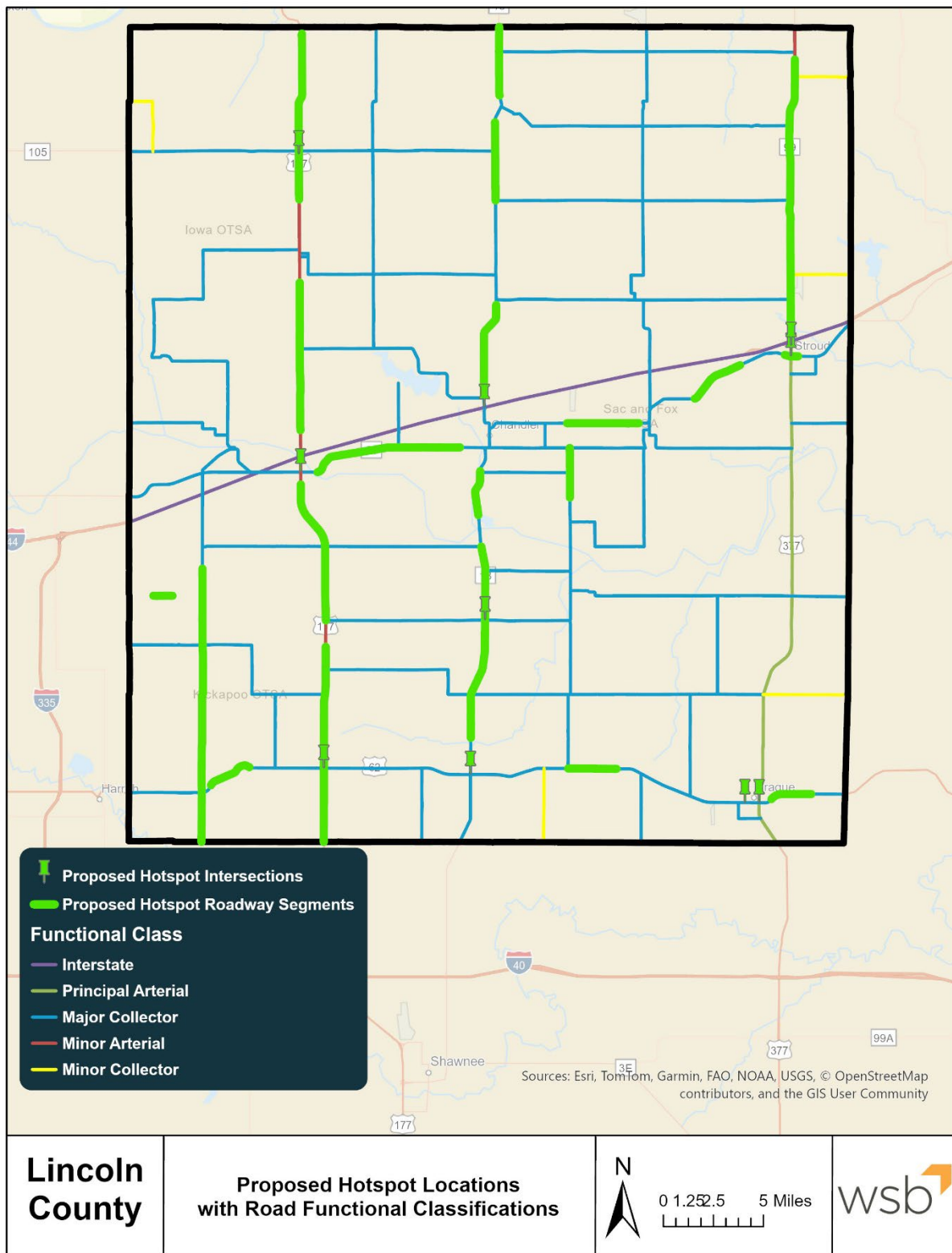


Figure 13: Proposed Hotspot Locations – With Road Classifications

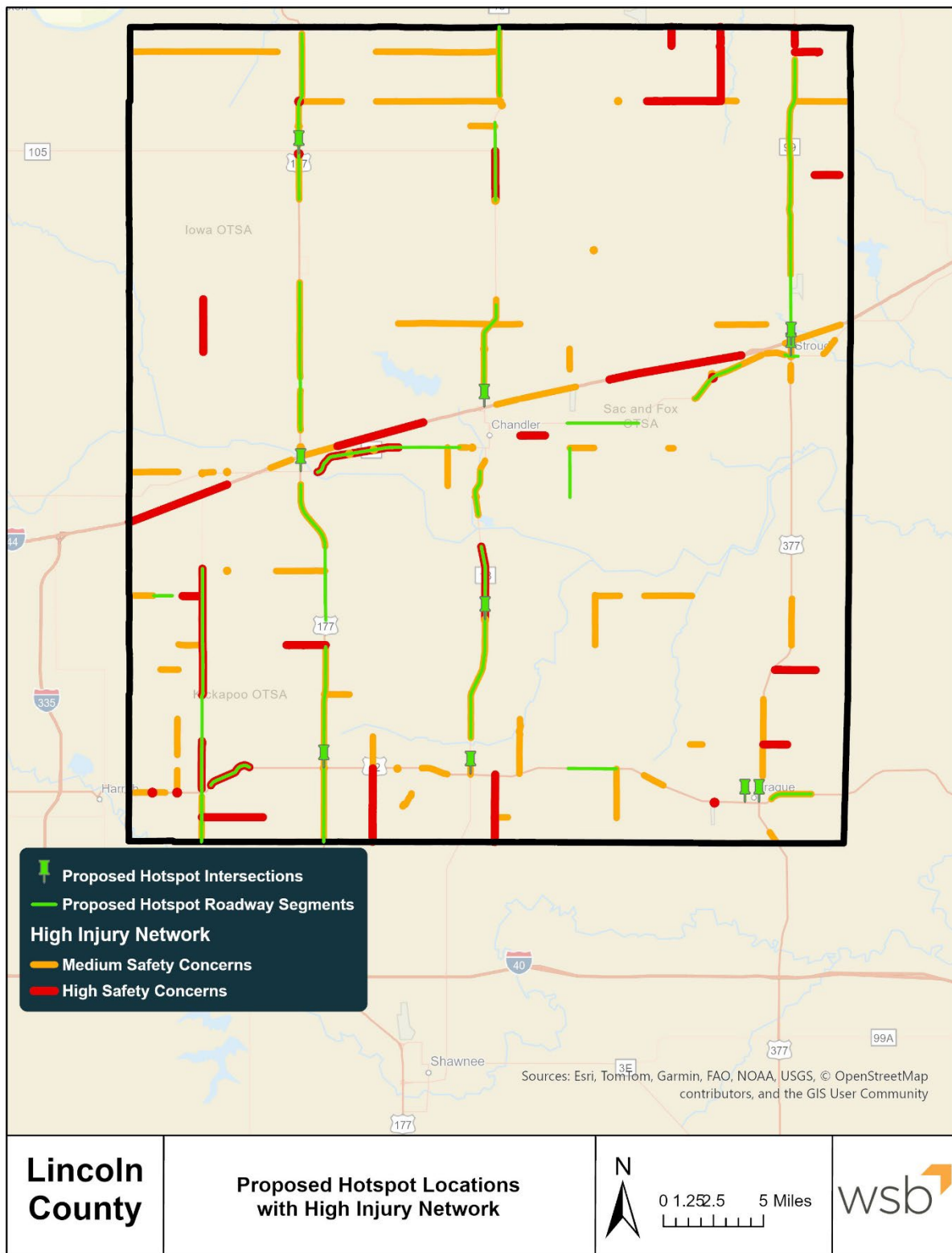


Figure 14: Proposed Hotspot Locations – With High Injury Network

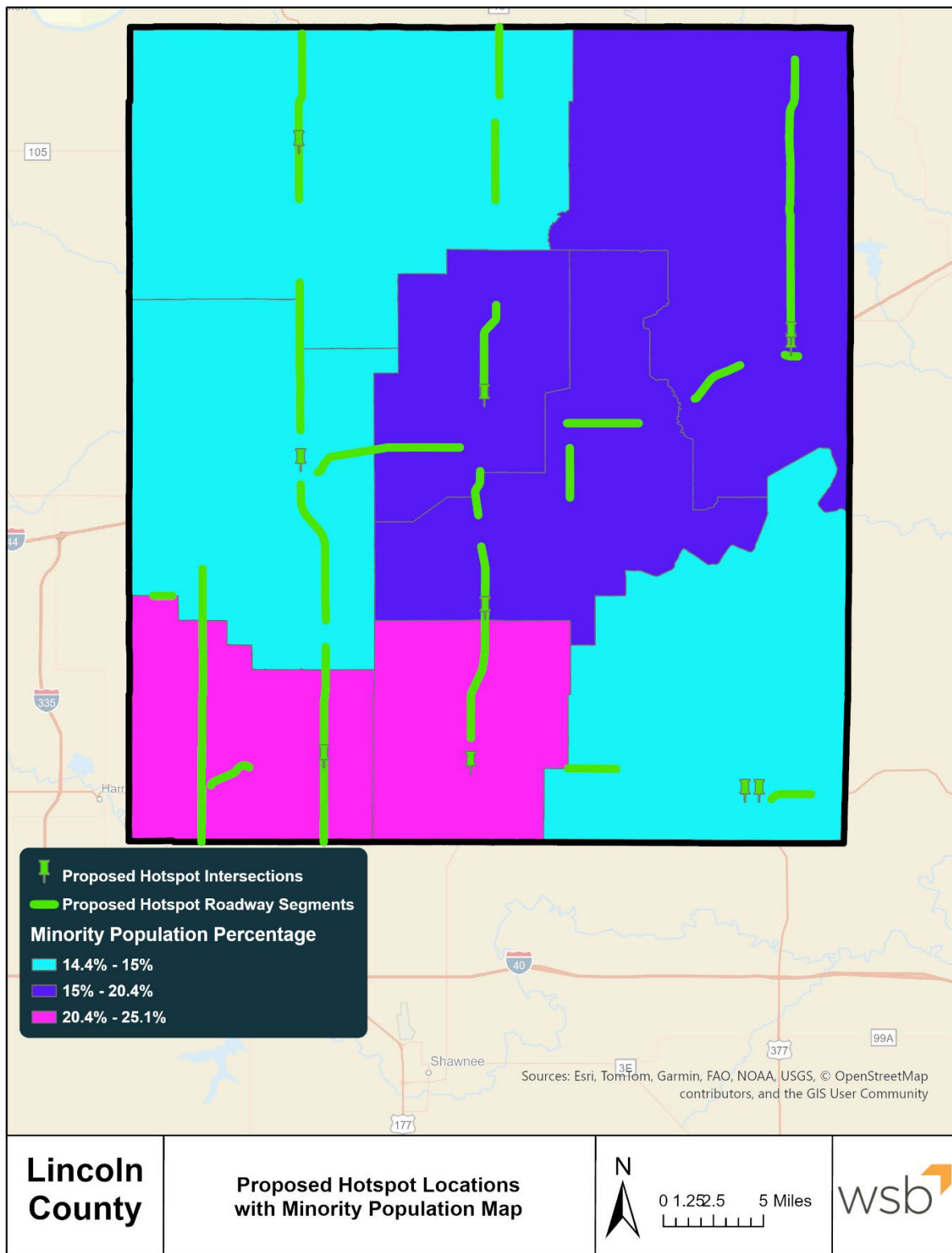


Figure 15: Proposed Hotspot Locations – With Minority Population

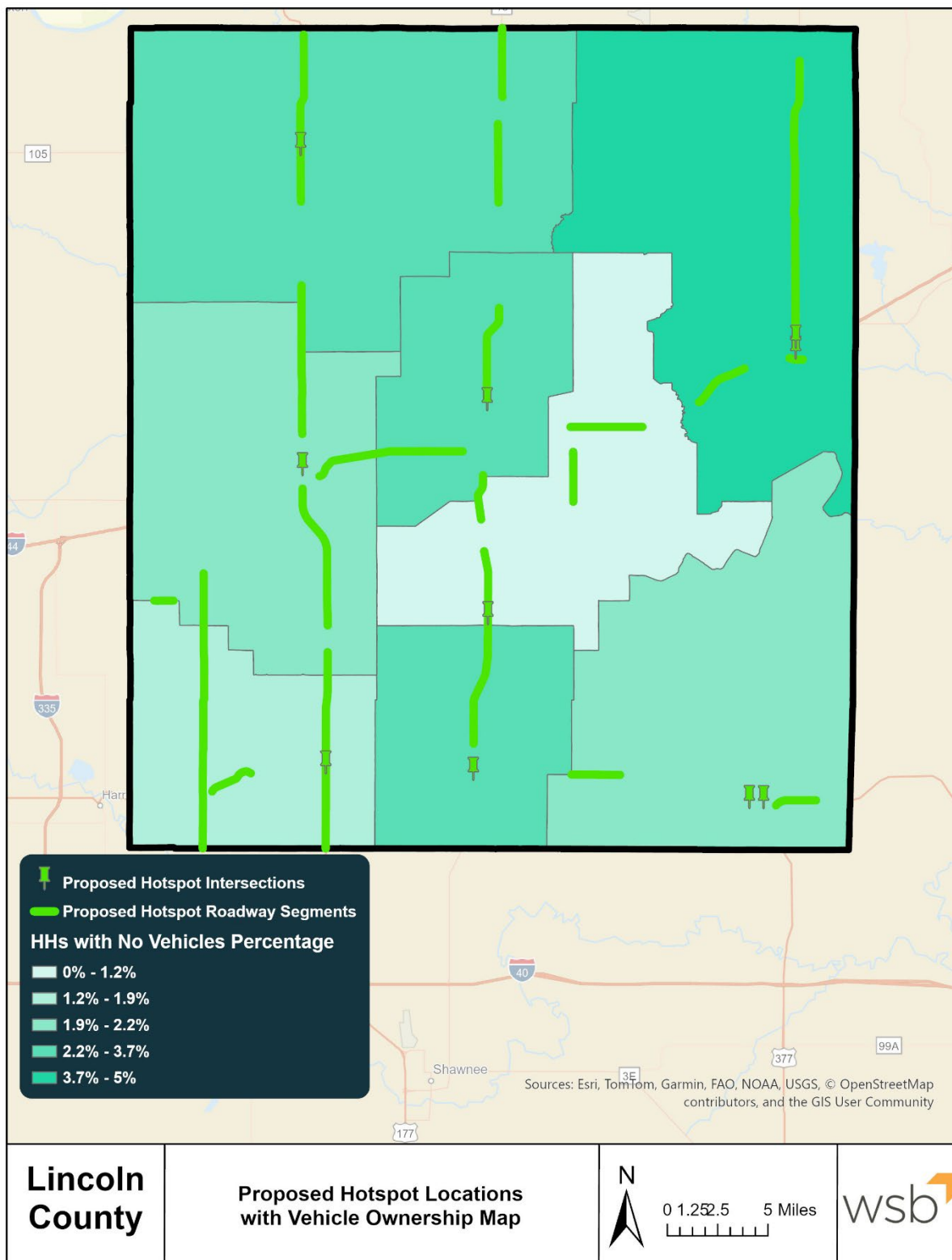


Figure 16: Proposed Hotspot Locations – With Vehicle Ownership

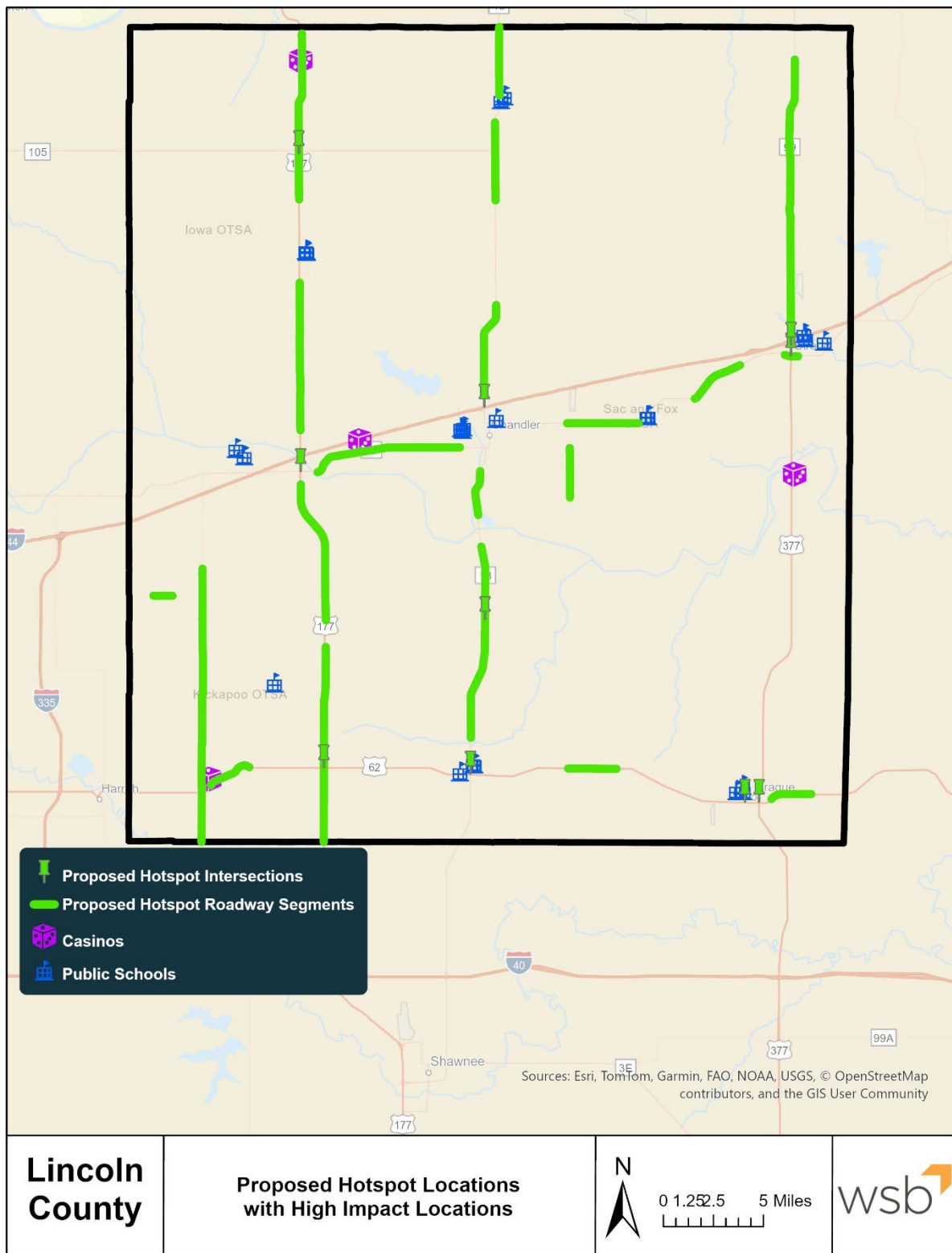


Figure 17: Proposed Hotspot Locations – With High Impact Locations

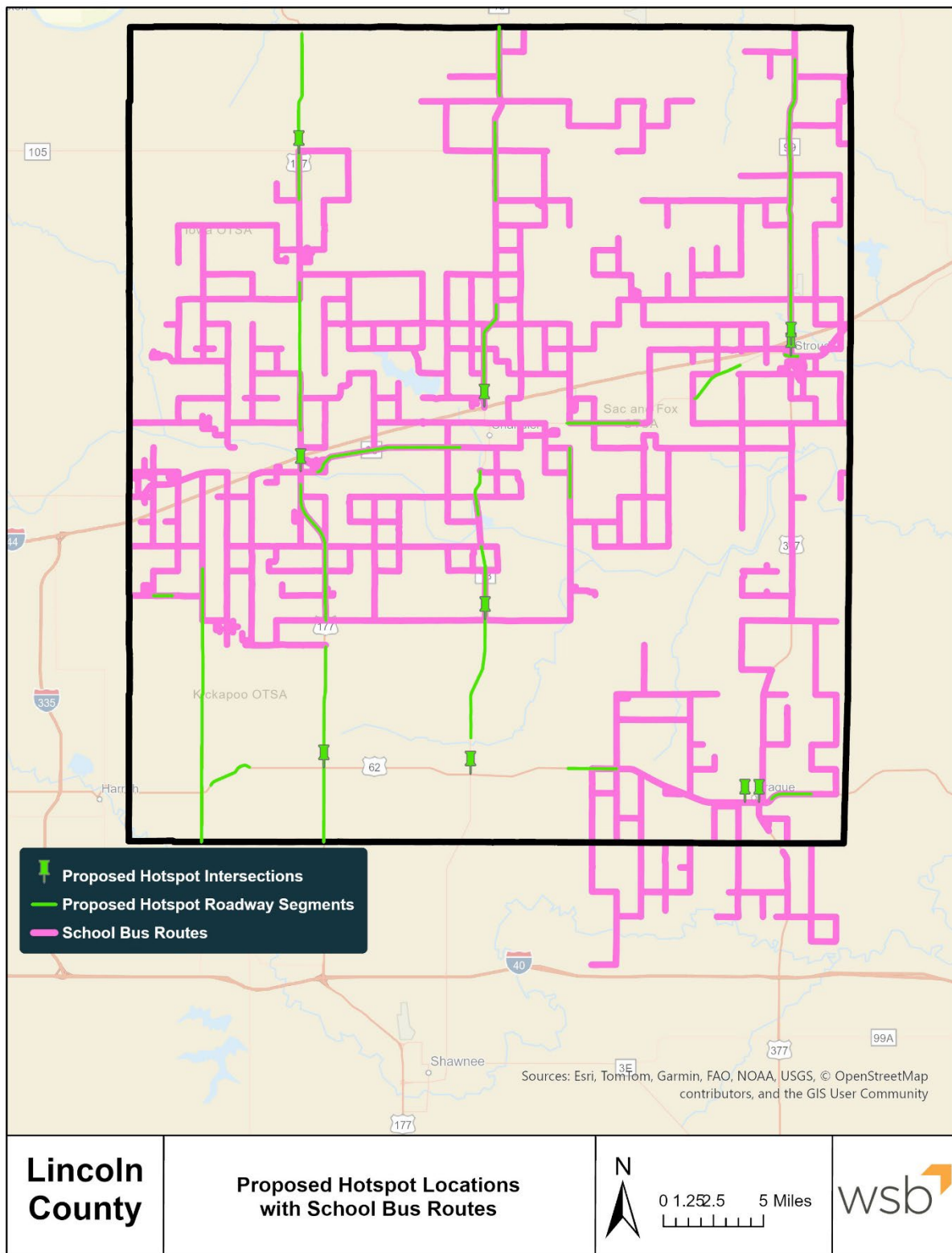


Figure 18: Proposed Hotspot Locations – With School Bus Routes

Table 4 - Hotspot Locations (Combined VRU and non-VRU) for Roadway Segments

Location Rank	Source List (VRU/Non-VRU)	Location	Total Number of Crashes (#)	Fatal Crashes (#)	Incapacitating Crashes (#)	Non-Incapacitating Crashes (#)	Crash Rate (Crashes per 100 million vehicle-miles) - Normalized	High Crash Reoccurrence (Years) - Normalized	Pedestrian Crash Rate (Crashes per 100 million vehicle-miles) - Normalized	Bike Crash Rate (Crashes per 100 million vehicle-miles) - Normalized	On HIN
1	Non-VRU	E Highway 66 from E 0920 to E Memorial Rd, Warwick to Chandler	41	5	4	7	1.150	4.6	1.000	1.000	Yes
2	Both	Highway 102 from E 960 Rd to Belmont Rd	44	2	4	8	1.045	6.4	1.785	1.000	Yes
3	Both	S Highway 177 from E 810 Rd to E 810 Rd	43	1	3	10	1.052	4.6	1.003	1.000	Yes
4	Non-VRU	Historic Route 66 from E 0890 Rd to S 3540 Rd	6	0	1	1	1.018	1	1.000	1.000	Yes
5	Non-VRU	S Highway 18 from E 950 Rd to E 1025 Rd	30	1	1	6	1.033	2.8	1.000	1.000	Yes
6	Both	Highway 99 from E 750 Rd to E 860 Rd	29	0	1	4	1.003	1	1.147	1.000	Yes
7	Non-VRU	Highway 177 from Hamner Park Rd to E 900 Rd, Emsey	14	1	2	2	1.038	1	1.000	1.000	Yes
8	Non-VRU	S Highway 18 from E 740 Rd to E 770 Rd	10	0	2	1	1.042	1	1.000	1.000	Yes
9	Non-VRU	S Highway 18 from E 850 Rd to E 890 Rd	15	0	2	3	1.030	1	1.000	1.000	Yes
10	Non-VRU	S Highway 18 from E 920 Rd to E 940 Rd	5	1	1	0	1.117	1	1.000	1.000	Yes
11	Non-VRU	Highway 177 from E 930 Rd to E 980 Rd	16	0	1	2	1.008	1	1.000	1.000	Yes
12	Non-VRU	S Highway 18 from E 780 Rd to E 810 Rd	10	1	0	4	1.077	1	1.000	1.000	Yes
13	Non-VRU	E Highway 62 from E Main St to S 3570 Rd, Prague	5	1	0	1	1.099	1	1.000	1.000	Yes
14	Non-VRU	S 3470 Rd from E 910 Rd E 930 Rd	6	0	1	0	1.097	1	1.000	1.000	No
15	Non-VRU	S Highway 177 from E 990 Rd to E 1070 Rd	19	2	0	3	1.030	1	1.000	1.000	Yes
16	Non-VRU	E Highway 66 from S 3470 Rd to Santa Fe Rd, Davenport	16	0	0	3	1.006	1	1.000	1.000	No
17	Non-VRU	W Main St from Williams to N 4th Ave, Stroud	7	0	0	0	1.001	1	1.000	1.000	No
18	Non-VRU	E Memorial Rd from S 3300 Rd to W 97 Rd	5	0	0	1	1.505	1	1.000	1.000	No
19	Non-VRU	E Highway 62 from S 3470 Rd to S 3490 Rd	7	0	0	3	1.011	1	1.000	1.000	No
20	Non-VRU	E Highway 62 from Jack Reed Dr to E 1040 Rd, Midway to Fowler	6	1	1	2	1.175	1	1.000	1.000	Yes

Table 5 - Hotspot Locations (Combined VRU and non-VRU) for Intersections

Location Rank	Location	Total Number of Crashes (#)	Fatal Crashes (#)	Incapacitating Crashes (#)	Non-Incapacitating Crashes (#)	Crash Rate (Crashes per 100 million vehicle-miles) - Normalized	High Crash Reoccurrence (Years) - Normalized	On HIN
1	E Main St & N Dawson St, Meeker	6	0	0	0	1.085	3.25	No
2	W Main St & N 8th Ave, Stroud	15	0	3	3	9.171	10.00	Yes
3	E Highway 66 & S Highway 177	19	0	0	0	1.112	10.00	No
4	S Highway 177 & E 791 Rd	11	0	1	6	5.768	10.00	Yes
5	Highway 18 & E 980 Rd	6	0	1	2	4.103	5.50	Yes
6	W Main St & Westlawn Ave, Prague	4	0	0	0	1.033	3.25	No
7	I-44 & Highway 377 Ramps	10	0	0	1	1.456	10.00	No
8	Main St & N Jim Thorpe Blvd, Prague	8	0	0	0	1.070	5.50	No
9	I-44 & Highway 18 Ramps	8	0	0	0	1.048	10.00	No
10	E Highway 62 & Highway 177, Jacktown	9	1	0	0	9.648	10.00	Yes

➤ **Consideration of Public and Stakeholder-Identified Locations**

As part of the hotspot identification process, locations were also gathered through public and stakeholder input via a survey and an interactive comment map. These inputs provided valuable insight into areas of concern identified by the community.

A total of 18 **locations** were identified through public and stakeholder input. Among these locations:

- **Eleven locations had no recorded crash** history and were not considered in the final selection process.
- **Seven locations had crash** data and were incorporated into the ranking and scoring process, receiving additional weight due to public identification.

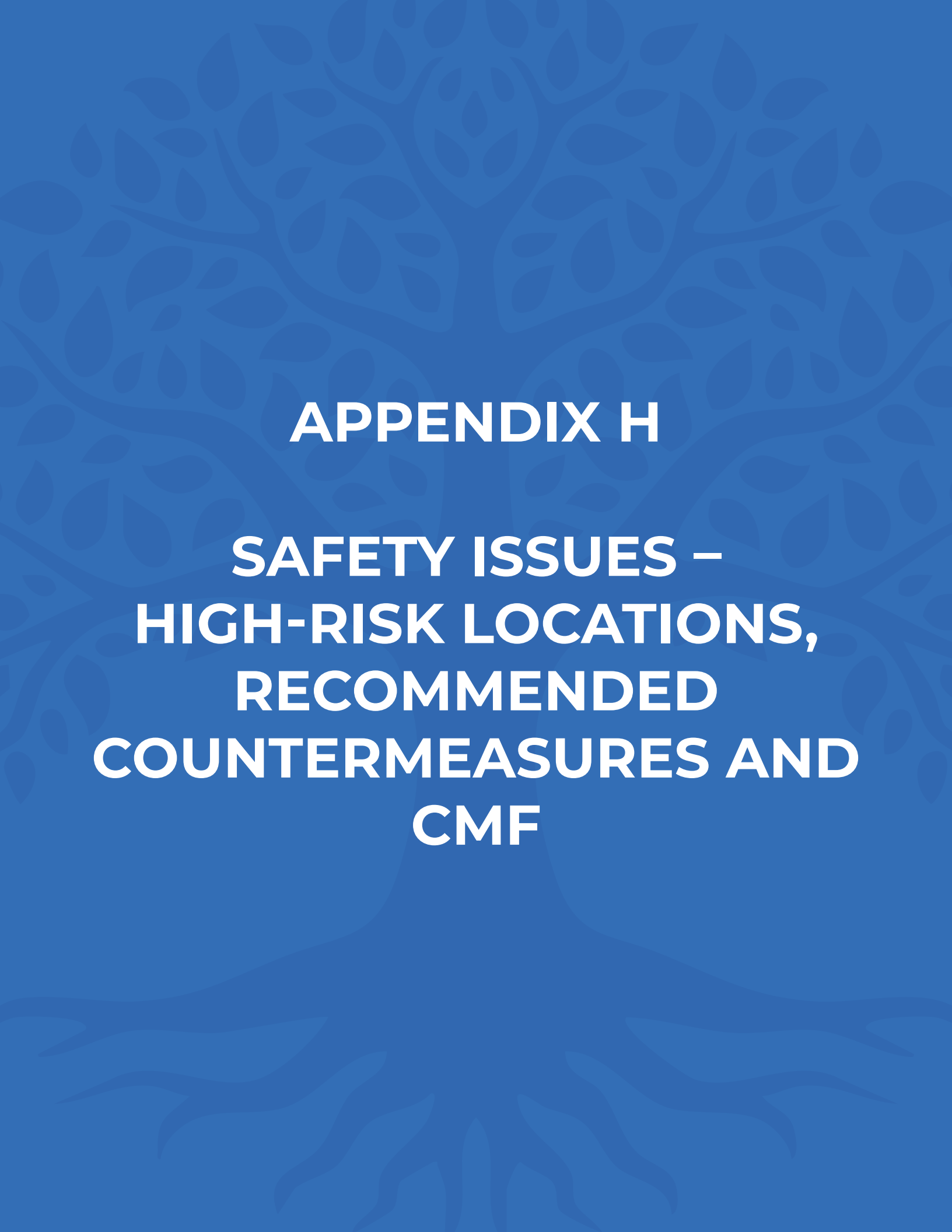
Some of these locations were ultimately selected in the final list, while others were not. **Table 6** and **Table 7** below provide a detailed breakdown of these locations, including their crash history, relevant safety metrics, and whether they were selected for the final list for roadway segments and intersections, respectively. For locations not selected, the table includes the reason for their exclusion.

Table 6 - Public and Stakeholder-Identified Roadway Segments and Final Selection Status

Roadway Segments Location	Total Number of Crashes (#)	Fatal Crashes (#)	Incapacitating Crashes (#)	Non-Incapacitating Crashes (#)	Crash Rate (Crashes per 100 million vehicle-miles) - Normalized	High Crash Reoccurrence (Years) - Normalized	Selected for Final List (Yes/No)	Location Rank If Selected	Reason if Not Selected
E Main St & N Dawson St, Meeker	6	0	0	0	1.085	3.25	Yes	1	-
Historic Route 66 & S 3540 Rd	0	0	0	0	1.000	1	No	-	No Crashes
E Highway 66 & S 3400 Rd	1	0	0	1	1.060	1	No	-	Small Number of Crashes
W 15th St & S Highway 18, Chandler	1	0	0	0	1.001	1	No	-	Small Number of Crashes
E 900 Rd & S 3400 Rd	1	0	0	0	1.084	1	No	-	Small Number of Crashes

Table 7 - Public and Stakeholder-Identified Intersection and Final Selection Status

Intersection Location	Total Number of Crashes (#)	Fatal Crashes (#)	Incapacitating Crashes (#)	Non-Incapacitating Crashes (#)	Crash Rate (Crashes per 100 million vehicle-miles) - Normalized	High Crash Reoccurrence (Years) - Normalized	Pedestrian Crash Rate (Crashes per 100 million vehicle-miles) - Normalized	Bike Crash Rate (Crashes per 100 million vehicle-miles) - Normalized	Selected for Final List (Yes/No)	Location Rank If Selected	Reason if Not Selected
E Highway 66 from E 0920 to E Memorial Rd, Warwick to Chandler	41	5	4	7	1.150	4.6	1.000	1.000	Yes	1	-
Historic Route 66 from E 0890 Rd to S 3540 Rd	6	0	1	1	1.018	1	1.000	1.000	Yes	4	-
S 3400 Rd, Meeker	1	0	0	0	1.001	1.0	1.000	1.000	No	-	Small Number of Crashes
W 10th St, Stroud	0	0	0	0	1.000	1.0	1.000	1.000	No	-	No Crashes
W 9th St, Stroud	0	0	0	0	1.000	1.0	1.000	1.000	No	-	No Crashes
E 10th St, Stroud	0	0	0	0	1.000	1.0	1.000	1.000	No	-	No Crashes
7th St from Highway 66 to N 1st Ave	0	0	0	0	1.000	1.0	1.000	1.000	No	-	No Crashes
N Allied Rd from Highway 66 to I-44	0	0	0	0	1.000	1.0	1.000	1.000	Yes	-	No Crashes
E 870 Rd, Chandler	0	0	0	0	1.000	1.0	1.000	1.000	Yes	-	No Crashes
Fir St from 8th St to Route 66, Wellston	0	0	0	0	1.000	1.0	1.000	1.000	Yes	-	No Crashes
E 930 Rd between N 3350 Rd & S 3340 Rd	0	0	0	0	1.000	1.0	1.000	1.000	Yes	-	No Crashes
S 3400 Rd approach to Highway 66	0	0	0	0	1.000	1.0	1.000	1.000	Yes	-	No Crashes
Roadway around the Chandler Regional Airport	0	0	0	0	1.000	1.0	1.000	1.000	Yes	-	No Crashes



APPENDIX H

SAFETY ISSUES – HIGH-RISK LOCATIONS, RECOMMENDED COUNTERMEASURES AND CMF

H.1

Safety Issues-Countermeasures and CMF

Safer Roads

Safety Category	Safety Concern/Issue	Strategies & Countermeasures	CMF (Crash Modification Factor)	Implementation Term
Intersections	No or limited overhead signs, left turn signs confusing/missing, no right lane must turn right signs, need flashing beacons, intersection ahead signs, crossroad signs, pedestrian crossing, no interchange ramp chevron signs, no interchange ramp advisory signs	Install, improve traffic control devices/warning and regulatory signing	0.56 (Install signal head)	Short-Term / Medium-Term
			0.78 (Installing stop signs at an unsignalized intersection)	
		Dedicated turn lanes at intersections	0.73 (Install left turn lane)	Medium-Term
			0.834 (Install right turn lane)	
	Visibility obstructed from driver line of sight at intersections	Remove all line-of-sight obstructions	0.62 (Remove fixed object)	Short-Term
	Need to evaluate signal timing	Improve signal timing	0.678 (Install adaptive traffic signal control)	Short-Term / Medium-Term
	No paved shoulders	Improve paved shoulder width	$CMF = e^{-0.070(SW_{new} - SW_{existing})}$ Where: SW_{new} = new (or proposed) average paved shoulder width in feet $SW_{existing}$ = existing average paved shoulder width in feet	Medium-Term / Long-Term
	Roadway illumination including new or refurbished pavement markings and roadway delineators	Installation of proper road markings/striping	0.865 (Implement systemic signing and making improvements)	Short-Term
	Study speed zones for speed limit adjustments, no or limited speed limit signs	Conduct speed zone studies. Install or re-set speed limit signs		
	No intersection luminaires	Improve lighting around intersections	0.792 (Install intersection lighting)	Medium-Term
		Install red-light cameras	0.7	Medium-Term

Safer Roads (cont.)				
Safety Category	Safety Concern/Issue	Strategies & Countermeasures	CMF (Crash Modification Factor)	Implementation Term
Roadway Departure	Existing paved shoulders need rumble strips	Safety edges – or minimal edges no drop offs	0.59 - 0.868 (Install safety edge treatment)	Medium-Term
		Install cable barriers and median barriers	0.16 (Install cable median barriers)	Long-Term
		Install rumble strips in rural areas	0.76 - 1.18 (Install rumble strips)	Short-Term
	Pavement markings need refurbishing	Install proper road markings/striping	0.78 - 0.85 (Install edge line pavement marking on rural roads)	Short-Term
			0.153 - 0.509 (Modify/Install wrong way sign)	
	No or narrow paved shoulders	Improve paved shoulder width	0.57 (Add new paved shoulder) modify shoulder on rural road	Medium-Term / Long-Term
	No delineators, no Type 3 delineators	Install delineator posts	0.85 - 1.04 (Install post mounted delineator)	Short-Term / Medium-Term
			0.55 (Install edge lines, centerlines, post mounted delineator)	
	Dirt roads, or poor road conditions	Resurface roads and improve bridges	0.74 - 1.03 (Change Street surface condition from poor to good)	Long-Term

Safer Roads (cont.)				
Safety Category	Safety Concern/Issue	Strategies & Countermeasures	CMF (Crash Modification Factor)	Implementation Term
Poor signage	No or needed road signs (curve, no passing, crossroad, speed advisory, speed limit, icy bridge, stop ahead, mixture of ununiform regulator & warning, chevron, school bus warning, warning/advisory speed plaques)	Inventory all signs (curve, icy bridge, stop ahead, signal ahead, no passing, etc.) and install	0.85 - 0.93 (Install sign to conform to MUTCD)	Short-Term / Medium-Term
Poor line of sight	Visibility issues with seeing chevrons, delineators	Re-align roadway, clear all visual obstructions	0.62 (Remove fixed object)	Short-Term / Medium-Term
			0.93 (Improve visibility of signal head)	
			0.6 (Install high visibility crosswalk)	

Safer People

Safer People				
Safety Category	Safety Concern/Issue	Strategies & Countermeasures	CMF (Crash Modification Factor)	Implementation Term
Pedestrian/Bike Safety	Community engagement & education, student drop-off programs	Conduct community education & establish school drop-off procedures	-	Short-Term
	Unsafe walking and cycling habits	Launch road user education programs for walking and cycling safety	-	Short-Term
	Unsafe crossing behaviors and low driver awareness	Launch public education campaigns	-	Short-Term
	Child pedestrian safety near schools	Implement Safe Routes to School programs	0.87	Medium-Term
High-Risk Driving Behaviors	Aggressive / inattentive driving	Run public education campaigns for safe driving	-	Short-Term
	High-risk maneuvers (failed to yield, following too closely, unsafe turns)	Enhance driver education programs in schools	-	Medium-Term
	Lack of awareness about emergency safety behavior	Launch public awareness campaigns during emergencies	-	Short-Term

Distracted Driving, Speeding	Texting while driving	Organize public pop-up events and campaigns on distracted driving dangers	-	Short-Term
Drug-Impaired Driving	Updated law enforcement training	Train law enforcement on impaired driving detection	-	Short-Term / Medium-Term
	Impaired driving (alcohol, drugs)	High-Visibility Enforcement: Sobriety checkpoints & saturation patrols	-	Short-Term
Occupant Safety	Seatbelt and child seat non-compliance	Promote High Visibility Enforcement (HVE) campaigns for occupant protection	-	Short-Term

Safer Speeds

Safer Speeds				
Safety Category	Safety Concern/Issue	Strategies & Countermeasures	CMF (Crash Modification Factor)	Implementation Term
High Risk Driving Behaviors	Lack of coordinated enforcement on violations	Collaboration with multiple agencies to enhance enforcement efforts	-	Medium-Term
	Speeding, failed to yield, alcohol/drug, crash clusters	Increased and coordinated Law Enforcement HVE in HIN and hot spots	-	Short-Term
Speeding	Speed violations in targeted areas	Install speed safety cameras	0.865 (Install fixed speed camera)	Medium-Term
	Recurring speeding in neighborhood or corridor	Deploy speed trailers	-	Short-Term
	Excessive speed and aggressive driving	Implement speed limit enforcement & traffic calming measures	-	Medium-Term / Long-Term
Speed Limit Signage	Missing or limited speed limit signs	Conduct speed limit sign inventory and install missing signs	0.92 (Install variable speed limit sign)	Short-Term
Speed Advisory Signage	Missing advisory signs at curves	Install advisory speed signs at curves	0.92 (Install variable speed limit sign)	Short-Term
Speed Monitoring	Lack of real-time speed feedback	Install speed monitoring devices (intersection safety devices)	0.66 - 0.936 (Install safety device)	Short-Term / Medium-Term

Post Crash Care

Post Crash Care				
Safety Category	Safety Concern/Issue	Strategies & Countermeasures	CMF (Crash Modification Factor)	Implementation Term
Crash Scene Safety and Response	Delayed EMS and emergency response times	Enhance EMS and emergency response times	-	Short-Term
	Need for better interagency communication & coordination	Enhance emergency response through collaboration with multiple agencies and disciplines	-	Medium-Term
	Resource limitations during large-scale incidents	Develop Memorandums of Understanding (MOUs) with neighboring jurisdictions & transit agencies	-	Medium-Term / Long-Term
	Lack of structured emergency operation procedures	Development of emergency response operation plans with local authorities & first responders	-	Medium-Term

H.2

Safety Issues-Proposed Hotspot Roadway Segments and Intersections

H.2.1 Safety Issues at Proposed Hotspot Roadway Segments

Table 1 - Proposed 20 Hotspot Locations for Roadway Segments

Location Rank	Source List (VRU*/Non-VRU)	Location	On HIN**
1	Non-VRU	E Highway 66 from E 0920 to E Memorial Rd, Warwick to Chandler	Yes
2	Both	Highway 102 from E 960 Rd to Belmont Rd	Yes
3	Both	S Highway 177 from E 810 Rd to E 810 Rd	Yes
4	Non-VRU	Historic Route 66 from E 0890 Rd to S 3540 Rd	Yes
5	Non-VRU	S Highway 18 from E 950 Rd to E 1025 Rd	Yes
6	Both	Highway 99 from E 750 Rd to E 860 Rd	Yes
7	Non-VRU	Highway 177 from Hamner Park Rd to E 900 Rd, Emsey	Yes
8	Non-VRU	S Highway 18 from E 740 Rd to E 770 Rd	Yes
9	Non-VRU	S Highway 18 from E 850 Rd to E 890 Rd	Yes
10	Non-VRU	S Highway 18 from E 920 Rd to E 940 Rd	Yes
11	Non-VRU	Highway 177 from E 930 Rd to E 980 Rd	Yes
12	Non-VRU	S Highway 18 from E 780 Rd to E 810 Rd	Yes
13	Non-VRU	E Highway 62 from E Main St to S 3570 Rd, Prague	Yes
14	Non-VRU	S 3470 Rd from E 910 Rd E 930 Rd	No
15	Non-VRU	S Highway 177 from E 990 Rd to E 1070 Rd	Yes
16	Non-VRU	E Highway 66 from S 3470 Rd to Santa Fe Rd, Davenport	No
17	Non-VRU	W Main St from Williams to N 4th Ave, Stroud	No
18	Non-VRU	E Memorial Rd from S 3300 Rd to W 97 Rd	No
19	Non-VRU	E Highway 62 from S 3470 Rd to S 3490 Rd	No

20	Non-VRU	E Highway 62 from Jack Reed Dr to E 1040 Rd, Midway to Fowler	Yes
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**VRU : Vulnérable Road User*

***HIN: High Injury Network*

1: E Highway 66 from E 0920 to E Memorial Rd, Warwick to Chandler

- EB 65 MPH sign .5 miles before curve
- Add reduced speed sign in curve area
- Add an advisory speed plaque to the Eastbound Curve Warning Sign approaching the segment and the sign just west of RR overpass
- Add more chevrons/delineators in curve areas
- No shoulders
- WB 65 MPH sign at beginning of segment
- No other MPH signs along segment
- Multiple driveways and side road entrances
- Poor lighting
- Clear foliage at signs
- Consider rumble strip
- Highlight where the School bus stop is located

2: Highway 102 from E 960 Rd to Belmont Rd

- 55 MPH signs posted along of segment
- No shoulder most of segment
- Stripping is worn and non-existent in areas at beginning of segment NB
- Add No Passing signs in areas
- Add delineators at curves with chevrons
- Clear foliage at culvert chevrons/delineators

- Multiple driveways and side road entrances
- Poor lighting
- Clear foliage at signs
- Consider completing rumble strip

3: S Highway 177 from E 810 Rd to E 810 Rd

- NB 55 MPH sign 1.6 miles before beginning of segment
- Increased speed to 65 MPH
- No shoulder most of segment
- Post lower speed with curve signs
- Add chevrons in curve areas
- Clear foliage at culvert chevrons/delineators
- Multiple driveways and side road entrances
- Poor lighting
- Clear foliage at signs
- Consider rumble strip

4: Historic Route 66 from E 0890 Rd to S 3540 Rd

- EB 65 MPH sign .9 miles before beginning of segment
- 50 MPH speed limit sign with curve sign at beginning of segment
- 55 MPH along straightaway at end of segment
- WB 65 MPH posted with 55 MPH on EB
- No shoulder most of segment
- Add chevrons, update delineators in curve areas
- Add reduced speed sign in curve area

- Clear foliage at culvert chevrons/delineators
- Multiple driveways and side road entrances
- Poor lighting
- Clear foliage at signs

5: S Highway 18 from E 950 Rd to E 1025 Rd

- NB 55 MPH sign 1.2 miles before beginning of segment
- Add reduced speed sign with curve signs
- NB/SB 65 MPH posted mid segment
- Add chevrons, update delineators in curve areas
- Add reduced speed sign in curve area
- Clear foliage at culvert chevrons/delineators
- Multiple driveways and side road entrances
- Poor lighting
- Clear foliage at signs

6: Highway 99 from E 750 Rd to E 860 Rd

- NB 65 MPH sign at beginning of segment
- No shoulder most of segment
- Add reduced speed sign with curve signs
- Add chevrons, update delineators in curve areas
- Clear foliage at culvert chevrons/delineators
- Multiple driveways and side road entrances
- Poor lighting
- Consider rumble strip

- School bus stops on segment

7: Highway 177 from Hamner Park Rd to E 900 Rd, Emsey

- 65 MPH sign posted on segment
- Consider more speed limit signs
- School bus stops on segment
- Multiple driveways and side road entrances
- Poor lighting

8: S Highway 18 from E 740 Rd to E 770 Rd

- 65 MPH sign posted beginning of segment
- No shoulder most of segment
- Add chevrons, update delineators in curve areas
- Add reduced speed sign in curve area
- Clear foliage at culvert chevrons/delineators
- Multiple driveways and side road entrances
- Consider rumble strip
- Poor lighting

9: S Highway 18 from E 850 Rd to E 890 Rd

- 65 MPH sign posted beginning of segment
- No shoulder most of segment
- Add chevrons, update delineators in curve areas
- Add reduced speed sign in curve area
- Clear foliage at culverts/bridge chevrons/delineators

- Multiple driveways and side road entrances
- Consider rumble strip. refurb
- Poor lighting

10: S Highway 18 from E 920 Rd to E 940 Rd

- 65 MPH sign posted beginning of segment
- Add chevrons, update delineators in curve areas
- Continue/refurb rumble strip
- Clear foliage at culverts/bridge chevrons/delineators
- Multiple driveways and side road entrances
- Poor lighting
- School bus stops on segment

11: Highway 177 from E 930 Rd to E 980 Rd

- No speed limit signs on segment, assume 65
- Add chevrons, update delineators in curve areas
- Add reduced speed sign in curve area
- Multiple driveways and side road entrances
- Poor lighting
- School bus stops on segment
- Refurb rumble strip in some areas

12: S Highway 18 from E 780 Rd to E 810 Rd

- 65 MPH sign posted on segment

- No shoulder most of segment
- Add chevrons, update delineators in curve areas
- Add reduced speed sign in curve area
- Clear foliage at culverts/bridge chevrons/delineators
- Multiple driveways and side road entrances
- Consider rumble strip
- Poor lighting
- School bus stops on segment

13: E Highway 62 from E Main St to S 3570 Rd, Prague

- 55 MPH sign posted at beginning of segment
- Speed increase to 65 MPH
- Add chevrons/delineators in curve areas
- Add reduced speed sign in curve area
- Multiple driveways and side road entrances
- Consider center rumble strip
- Poor lighting

14: S 3470 Rd from E 910 Rd E 930 Rd

- 45 MPH sign posted on segment
- No shoulder along segment
- Refurbish striping
- SB 45 MPH speed limit sign needs larger numbers
- Turn sign needed at NB end of segment
- Update chevrons/delineators/signage at NB end of segment

- Multiple driveways and side road entrances
- Consider rumble strip
- Poor lighting

15: S Highway 177 from E 990 Rd to E 1070 Rd

- 65 MPH sign posted on segment
- Add consistent rumble strip
- Add intersection signs for HWY 62 intersection
- Clear foliage at culverts/bridge chevrons/delineators
- Add curve signs
- Update bridge signs (narrows)
- Multiple driveways and side road entrances
- Poor lighting

16: E Highway 66 from S 3470 Rd to Santa Fe Rd, Davenport

- 65 MPH sign posted on segment
- No shoulder along segment
- Clear foliage at culverts/bridge chevrons/delineators
- Add consistent rumble strip
- Multiple driveways and side road entrances
- Poor lighting

17: W Main St from Williams to N 4th Ave, Stroud

- 45 MPH sign posted at beginning of segment
- 35-30 MPH in town center

- Ped signals, but none or faded Xwalk/stop bars at SH99 intersection
- Angle parking may cause backing out accidents
- Update signing/stripping/ped crossing at 4th street intersection
- Multiple driveways along segment

18: E Memorial Rd from S 3300 Rd to W 97 Rd

- Narrow dirt road
- No signage, MPH
- Poor line of sight in areas due to foliage
- Multiple driveways and side road entrances
- Poor lighting

19: E Highway 62 from S 3470 Rd to S 3490 Rd

- Beginning EB intersection sign with 45 MPH speed limit
- No other speed limit signs posted on segment
- No shoulder along segment
- Update chevrons/delineators at guardrail
- Multiple driveways and side road entrances
- Consider rumble strip
- Poor lighting

20: E Highway 62 from Jack Reed Dr to E 1040 Rd, Midway to Fowler

- 65 MPH sign posted on segment
- No shoulder along segment
- Add chevrons, update delineators in curve areas
- Add reduced speed sign in curve area

- S curve sign with 50 MPH speed limit mid of segment
- Multiple driveways and side road entrances
- Poor lighting
- Add/refurb rumble strip

H.2.2 Safety Issues at Proposed Hotspot Intersections

Table 2 - Proposed 10 Hotspot Locations for Intersections

Location Rank	Location	On HIN*
1	E Main St & N Dawson St, Meeker	No
2	W Main St & N 8th Ave, Stroud	Yes
3	E Highway 66 & S Highway 177	No
4	S Highway 177 & E 791 Rd	Yes
5	Highway 18 & E 980 Rd	Yes
6	W Main St & Westlawn Ave, Prague	No
7	I-44 & Highway 377 Ramps	No
8	Main St & N Jim Thorpe Blvd, Prague	No
9	I-44 & Highway 18 Ramps	No
10	E Highway 62 & Highway 177, Jacktown	Yes

*HIN: High Injury Network

1: E Main St & N Dawson St, Meeker

- Northbound and Southbound existing Speed Limit signs could be moved closer to intersection, install one size larger signs, (24" x 36")
- Northbound and Southbound, Install a Stop Ahead sign (W3-1), (36" X 36"). Consider flashing LED type sign similar to the existing LED Stop Sign
- Eastbound replace existing Stop Ahead sign with a flashing LED type sign similar to the existing LED Stop Sign
- Eastbound at this speed limit move the Stop Ahead sign closer to the intersection

- Eastbound Right Lane Must Turn Right sign is installed too far from the intersection, installed within the painted right shoulderrefurbish the pavement markings and install the Right Lane Must Turn Right sign at the beginning of the right turn lane
- Eastbound approaching the intersection install dotted extension lines for right turn lane channelizing line
- Westbound replace existing Stop Ahead sign with a flashing LED type sign similar to the existing LED Stop Sign
- Westbound at this speed limit move the Stop Ahead sign closer to the intersection
- The only street lighting is an existing luminaire in the northeast quadrant mounted on a utility pole. Consider additional lighting

2: W Main St & N 8th Ave, Stroud

- Northbound install a Signal Ahead sign (W3-3)
- Northbound install new Speed Limit sign closer to the intersection, increase size to (24" X 36")
- Southbound install new Speed Limit sign closer to the intersection, increase size to (24" X 36")
- Southbound install a Signal Ahead sign (W3-3)
- Only 2 luminaires in the intersection on east side traffic signal poles
- Refurbish intersection pavement markings, (crosswalks and stop bars)

3: E Highway 66 & S Highway 177

- No speed limit signs, suggest installation of 45 MPH zone approaching signal/stop sign in all directions
- Improve northbound RT turn lane
- Move all Stop Ahead signs closer to intersection
- Speed limit southbound north of intersection is 65 MPH
- Install crossroad signs on all approaches
- Refurbish intersection pavement markings

4: S Highway 177 & E 791 Rd

- Northbound install a Side Road sign (W2-2) with a 45 MPH Advisory Speed Plaque (W13-1P)
- Install Stop Sign (R1-1) for side road
- Install Stop Ahead sign (W3-1) on side road
- Vegetation partially blocking sight distance to the North and South
- Southbound install a Side Road Sign (W2-2) with a 45 MPH Advisory Speed Plaque (W13-1P)

5: Highway 18 & E 980 Rd

- Northbound and Southbound install intersection ahead (W2-1) sign with Advisory Speed Plaque (W13-1P)
- Eastbound and Westbound install intersection ahead (W2-1) sign with Advisory Speed Plaque (W13-1P).
- Northbound and Southbound consider lowering the speed limit
- Move Eastbound and Westbound Stop Ahead signs closer to intersection
- Consider installing delineators approaching and in the intersection in all directions

6: W Main St & Westlawn Ave, Prague

- Southbound install a Stop Ahead sign (W3-1)
- Westbound install Side Road sign (W2-2)
- Eastbound install Side Road sign (W2-2)
- Consider lowering the speed limit Eastbound and Westbound
- Consider installing LED Flashing or Rectangular Rapid Flash Beacon Eastbound and Westbound for the school crossing

7: I-44 & Highway 377 Ramps

- Replace missing ramp advisory speed sign
- Add additional guide signing for the ramp split NB to WB
- Add Chevron signs on all ramps
- Add ramp advisory signs for the NB to WB ramps prior to loop curve
- Add yellow left side delineators on the NB to WB Loop Ramp
- Add Advisory Speed sign panels below the Exit Gore Signs

8: Main St & N Jim Thorpe Blvd, Prague

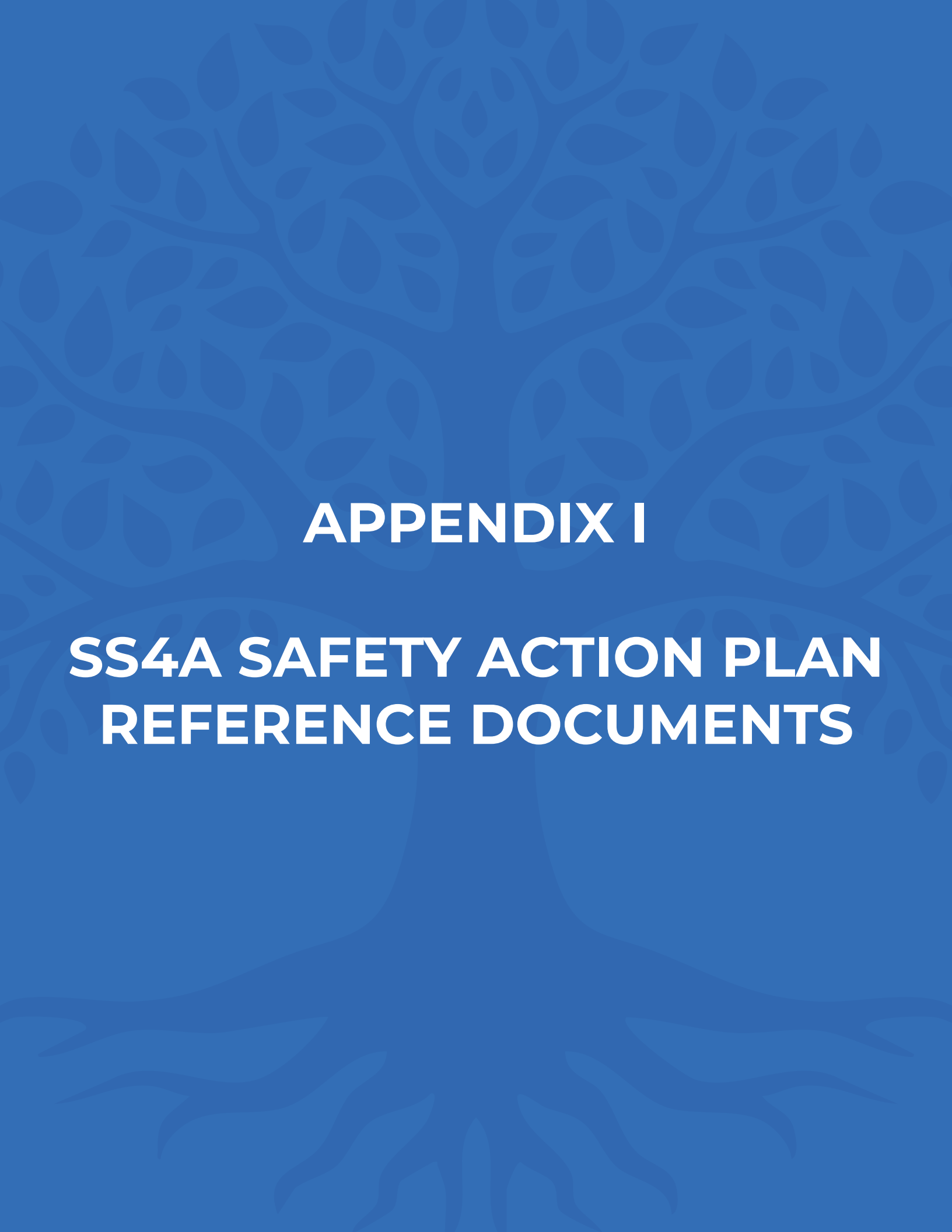
- Some accidents could be caused by vehicles backing from on-street parking stalls
- Refurbish existing pavement marking arrows
- Refurbish intersection pavement markings (Crosswalks and Stop Bars)
- Install overhead Lane Use Signs (R3-5) and (R3-6) on traffic signal mast arms for all four legs
- Install ground mounted Lane Use signs (R3-8) approaching the intersection for all four leg
- Check traffic signal for current signal phasing plans.

9: I-44 & Highway 18 Ramps

- Add additional guide signing for the ramp split NB to WB
- Add Chevron signs on all ramps
- Add ramp advisory signs for the NB to WB ramps prior to loop curve
- Add yellow left side delineators on the NB to WB Loop Ramp

10: E Highway 62 & Highway 177, Jacktown

- Northbound no speed limit signs approaching the intersection
- Southbound no speed limit signs approaching the intersection
- Eastbound no speed limit signs approaching the intersection
- Westbound no speed limit signs approaching the intersection
- Visibility could be improved with larger Stop Signs and larger stop ahead signs.
- Visibility of stop signal could be improved by installing new poles for all four approached, add LED type signal heads
- Intersection only has 2 luminaires for the intersection
- Consider installing delineators approaching and in the intersection in all direction



APPENDIX I

SS4A SAFETY ACTION PLAN REFERENCE DOCUMENTS

Lincoln County - SS4A Certification Reference Table

Leadership Commitment and Goal Setting		
Chapter, Section	Text	Page #
Resolution	“(Lincoln County’s) commitment to the reduction of fatal and serious injury crashes and its accompanying targeted percentage reduction in fatal and serious injury by the year 2045.”	V
Executive Summary	“The Plan was adopted and supported by Lincoln County.... On September XX, 2025.”	VII

Planning Structure		
Chapter, Section	Text	Page #
2.4.1	“Lincoln County operates under a county-level governance framework that enables its elected officials and departments to manage, plan, and oversee transportation infrastructure within its jurisdiction. The Lincoln County Board of County Commissioners (BOCC) holds executive and legislative authority over county policies, including those related to roads, bridges, and transportation safety.”	15
2.4.2	“For the development of an SS4A Safety Action Plan and as part of the planning structure, Lincoln County created a Project Oversight Team.”	16

Safety Analysis		
Chapter, Section	Text	Page #
3.2.1	“According to the FHWA injury classification scale and definitions for Oklahoma, collisions are ranked on a severity scale of 1 to 5, categorized as follows....”	18
3.2.3	“Understanding the factors that contribute to crashes is crucial for identifying key safety concerns and implementing effective countermeasures. A number of reasons can lead to crashes, but some stand out as more significant than others. The analysis focuses on these major contributing factors to highlight critical behavioral and environmental issues affecting roadway safety.”	21
5.1	“To ensure a thorough evaluation of fairness, various datasets provided by USDOT were reviewed...”	37

Lincoln County - SS4A Certification Reference Table

Engagement and Collaboration		
Chapter, Section	Text	Page #
4.1	"An engagement plan was developed early in the process to identify ways to hear from the community and stakeholders."	31
4.2	"To solicit community and stakeholder participation, both in-person and virtual engagement options were provided in February and April 2025. Other strategies included an interactive project website, content on Lincoln County's website, pop-up events, Facebook posts, meeting flyers, stakeholder emails, business card distribution, newspaper advertisements, and public meetings. Input on safety concerns and current conditions was collected through a survey, comment map, helpline, and comment cards."	32

Policy and Process Changes		
Chapter, Section	Text	Page #
6.1	"Oklahoma plans that address transportation safety were reviewed as part of this Safety Action Plan. Each plan had a focus on reducing crashes by various methods to include education, infrastructure, countermeasures, enforcement, performance measures, collaboration, and providing safe alternatives for travelers."	45
6.2	"The development, maintenance, and updating of transportation safety plans, documents, Memorandums of Understanding (MOU)s, policies, and procedures can help with the overall safety of the Lincoln County roadway network. The creation and maintenance of various plans and integrated training sessions facilitate collaboration and resource sharing among Federal, State, County, and Municipal stakeholders."	46
6.3	"The three State Level transportation safety plans revealed various safety-related prominent themes. It is recommended that each local jurisdiction within Lincoln County review and adopt the Lincoln County SS4A Safety Action Plan and take part in its successful implementation."	46

Lincoln County - SS4A Certification Reference Table

Strategy and Project Selection		
Chapter, Section	Text	Page #
7	“Ensuring roadway safety within Lincoln County requires a data-driven and equitable approach to identifying and addressing hotspot locations. This SS4A Action Plan includes a structured and transparent prioritization process to guide the selection of projects that improve safety outcomes for all users, particularly vulnerable and underserved communities.”	48
7	“Two distinct analyses were conducted: one encompassing all users and another specifically focused on vulnerable road users (pedestrians and bicyclists). Initial hotspot lists were generated for both groups and refined based on factors such as segment proximity, overlapping risk areas, and crash severity thresholds.”	48
7.1	“To address this, Lincoln County recommends enhancing crash data quality by adopting the National Highway Traffic Safety Administration’s Model Minimum Uniform Crash Criteria (MMUCC). This voluntary guideline establishes a minimum, standardized set of crash data variables that would enable better problem identification and more effective countermeasure selection.”	48

Progress and Transparency		
Chapter, Section	Text	Page #
8.1	“To track the progress of the Safety Action Plan an oversight committee should be formed. This committee should meet quarterly... with the goal of ensuring progress in the implementation of all aspects of the plan...”	59
8.6	“Transparency and regular reporting ensure accountability and community engagement. Consider these measures...”	62

Action Plan Date		
Document	Date Finalized	Page #
Lincoln County SS4A Comprehensive Safety Action Plan	TBD	All