

*City of Mesquite*

# Comprehensive Safety Action Plan

**FEBRUARY 2026**

## Acknowledgments

The Comprehensive Safety Action Plan (CSAP) for the City of Mesquite was developed with the collaboration of city departments, agencies, organizations, and community stakeholders committed to improving roadway safety. This plan outlines a set of projects and strategies aimed at reducing roadway fatalities and serious injuries within the city. The information provided is intended for planning purposes and does not constitute a commitment from any potential partners.

This material was funded in part through a grant from the Federal Highway Administration (FHWA) of the U.S. Department of Transportation. The views and opinions expressed herein are those of the authors and do not necessarily reflect the policies or positions of the U.S. Department of Transportation or the Federal Highway Administration.

**Prepared For:**

MESQUITE
TEXAS
Real. Texas. Service.

**Prepared By:**

Kimley»Horn
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## Disclaimer

23 United States Code Section 407 | Discovery and admission as evidence of certain reports and surveys

Not withstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

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# CHAPTER 1

## BACKGROUND AND PURPOSE

# CHAPTER 1

## Background and Purpose

The City of Mesquite developed a Comprehensive Safety Action Plan (CSAP) to reduce traffic-related fatalities and serious injuries, as well as enhance efficiency of the transportation network. This plan serves as a strategic guide for city officials, the Mesquite City Council, and local partners, enabling them to make data-driven decisions to improve road safety and execute impactful safety projects. By using detailed data analysis, the plan identifies high-risk locations and formulates targeted strategies to reduce crashes. This plan is in alignment with broader safety initiatives such as The Road to Zero Initiative.

### VISION ZERO

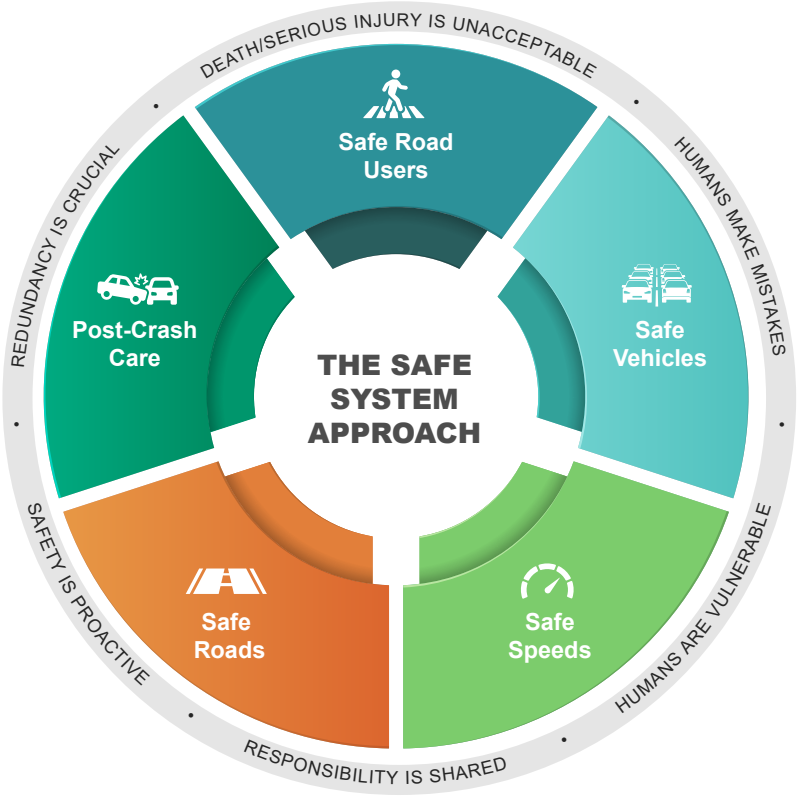
**Vision Zero** is a guiding philosophy that states even one death on our transportation system is unacceptable. To achieve zero fatalities, strategies were developed based on this belief, leading to the comprehensive **Safe System Approach**.

The Safe System Approach is founded on the principles that humans make mistakes and the human body has limited ability to withstand crash forces. In a Safe System, those mistakes should not result in fatalities. To minimize crash risk and reduce injury severity, this approach designs and manages road infrastructure to anticipate human error.

The Safe System Approach creates environments that encourage safe speeds, control crash angles, and reduce the likelihood that user errors result in death or serious injury. There are six core principles to a Safe System approach, which are shown in *Figure 1-1*. Road design and traffic management proactively reduce risk and build in safety redundancies, playing key roles in achieving these goals.

By adhering to these principles, Vision Zero and the Safe System Approach aim to create a transportation network that protects all road users and reduces the likelihood of lives being lost in preventable crashes.

*Figure 1-1. Six Principles of Safe System Approach*



## WHAT IS A SAFETY ACTION PLAN

A Safety Action Plan (SAP) is a strategic initiative designed to enhance road safety and minimize traffic-related fatalities and serious injuries. The significance of SAPs was elevated with the passing of the Infrastructure Investments and Jobs Act (IIJA) in November 2021, formally called the Public Law 117-58 or the Bipartisan Infrastructure Law (BIL). This legislation authorized substantial funding for federal aid highways, safety programs, and transit projects, with a clear focus on improving the nation's roadway safety.

The IIJA introduced the Safe Streets and Roads for All (SS4A) discretionary program, which allocated $5 billion over a five-year period (2022-2026) to support the development and implementation of comprehensive safety plans and construction projects aimed at preventing roadway deaths and serious injuries. The SS4A program offers financial resources and expert guidance to assist communities in crafting and executing their Safety Action Plans.

A Safety Action Plan is a detailed framework that leverages data analysis to identify high-risk areas and develop targeted measures to address these risks. The process involves a systematic evaluation of crash data, safety trends, and other relevant indicators to pinpoint locations and factors contributing to traffic incidents. The plan then outlines specific strategies and interventions to mitigate these risks effectively.

This approach of a Safety Action Plan is holistic, incorporating a combination of infrastructure improvements, policy updates, and focused efforts to engage and support underserved communities. It aims to create a safe and inclusive environment for all road users, including pedestrians, bicyclists, and motorists. By addressing both site-specific hazards and broader systemic issues, the plan advances proactive measures to enhance overall road safety.

## PEER CITY COMPARISONS

Mesquite's crash data was analyzed from TxDOT's Crash Records Information System (CRIS) for 2020 to 2024 and combined with 2020 population data from the U.S. Census Bureau. A comparison of Mesquite's crash rates with six peer cities shows that Mesquite had relatively fewer fatal (K), serious (A), and minor (B) injury crashes compared to other cities *(Figure 1-2; Figure 1-3)*. However, there is still room for improvement, highlighting the need for a citywide safety plan.

*Figure 1-2. KAB Crashes Among Peer Cities per 100,000 Population*

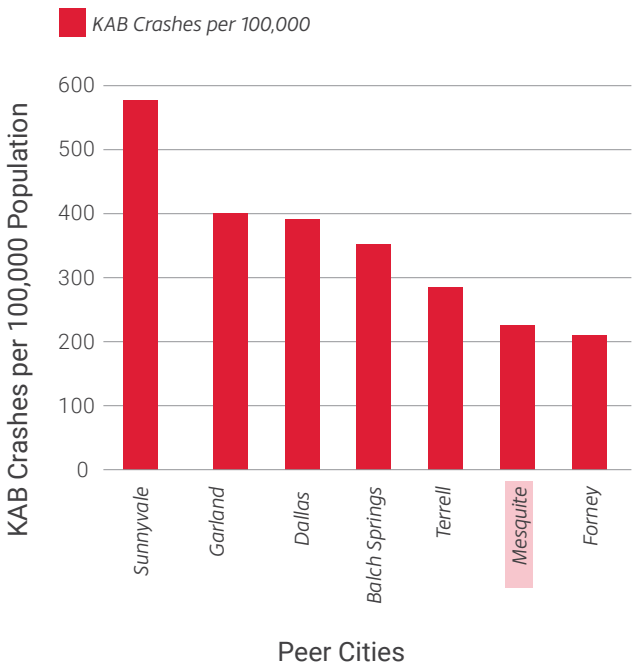
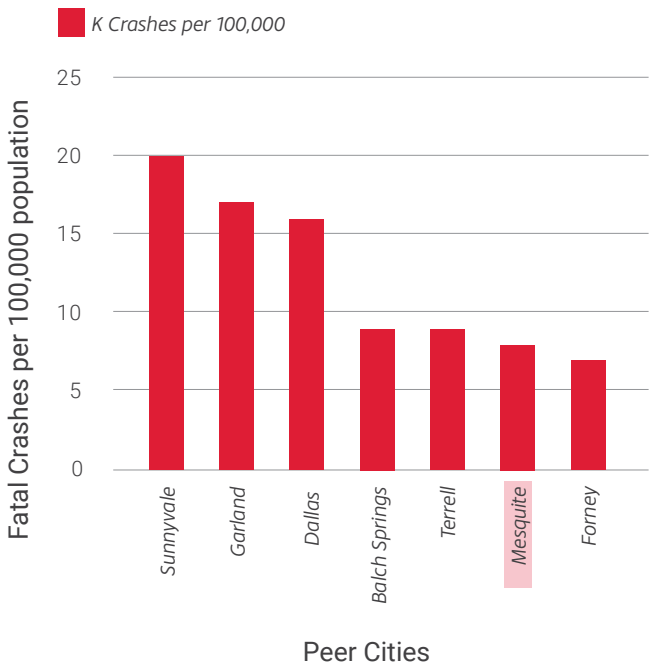



*Figure 1-3. Fatal Crashes Among Peer Cities per 100,000 Population*



## MISSION STATEMENT AND GOALS

The City of Mesquite targets incremental reduction in fatalities and serious injuries every year and zero by 2050 by doing the following:

1. Investing in technology solutions and key partnerships with other entities to maintain aging and damaged infrastructure throughout the city.
2. Providing opportunities for education and public engagement to positively influence driver behavior and improve safety.
3. Prioritizing pedestrian and cyclist safety by designing and implementing connected and reliable pedestrian and bicycle facilities to accommodate all road users.

# CHAPTER 2

## PLANNING STRUCTURE

# CHAPTER 2

## Planning Structure

During the early stages of Mesquite's CSAP, a Safety Task Force (STF) was identified, including representatives from key city departments such as transportation, public works, and emergency services, along with community stakeholders and local law enforcement, as shown in *Table 2-1.*

***Table 2-1. Mesquite CSAP Safety Task Force (STF) Members***

| Name | Agency | Role |
|---|---|---|
| Eric Gallt | City of Mesquite | Director of Public Works |
| Bryan Cabrera | City of Mesquite | Traffic Engineer |
| Byron Stephens | City of Mesquite | Senior Traffic Engineer |
| Garrett Langford | City of Mesquite | Manager of Planning and Zoning |
| Luis Oseguera | City of Mesquite | Public Works Management Analyst |
| James Gadsden | Mesquite ISD | Executive Director of Risk Management and Operations |
| Brian Cummings | Mesquite Police Department | Police Sergeant |
| Phillip Cunningham | Mesquite Fire Department | Battalion Chief - EMS |

The STF contributed to the development of the mission statement and goals, key corridor evaluation, countermeasure identification, policy action plan creation, and generally assisted in shaping the overall CSAP. Four meetings were held with the STF during the development of the CSAP, which are listed below:

- STF Meeting No. 1 (July 1, 2025): High-Injury Network Results Discussion
- STF Meeting No. 2 (September 4, 2025): Countermeasures Discussion
- STF Meeting No. 3 (October 30, 2025): Policy Review and Intersection Street Safety Audit
- STF Meeting No. 4 (February 2, 2026): Draft Plan Review

The task force will continue to play a key role in the implementation and ongoing monitoring of the CSAP, ensuring its long-term success.

# CHAPTER 3

## CRASH ANALYSIS

# CHAPTER 3

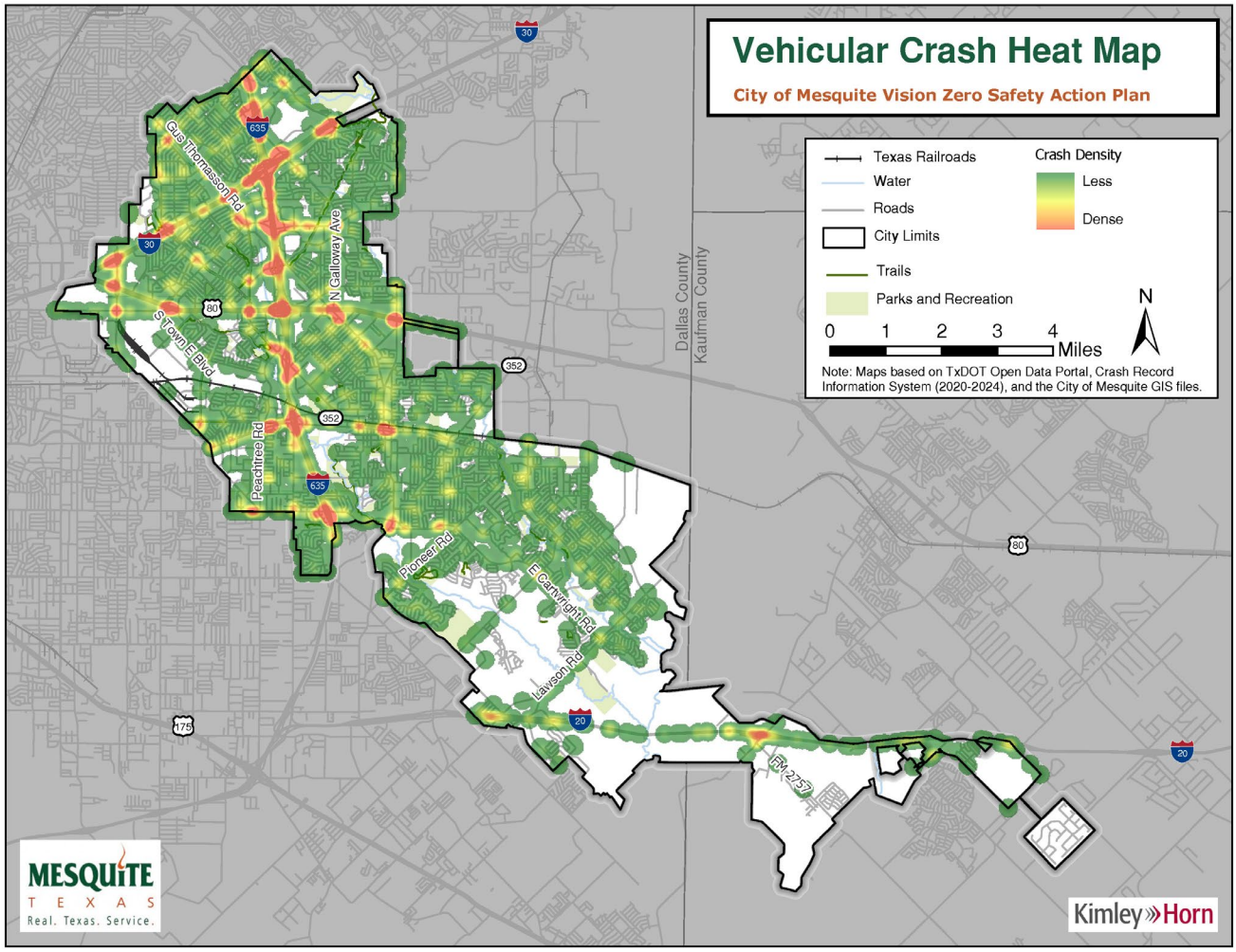
## Crash Analysis

The crash analysis for the Mesquite CSAP provides a detailed assessment of the city's roadway safety conditions, using crash data from TxDOT's CRIS for the years 2020 to 2024. This analysis includes crash heat maps, crash trends, high crash intersections, and the development of the High-Injury Network (HIN). These elements provide a comprehensive overview of the city's safety challenges and serve as the basis for the targeted strategies outlined in the plan. Detailed information on each of these components is provided in the following subsections.

### CRASH LOCATIONS AND TRENDS

A crash heat map was created to highlight the density of crashes within the City of Mesquite from 2020 to 2024, as shown in *Figure 3-1*.The crash heat map shows the density of crashes throughout the city, without considering traffic volumes, number of travel lanes, or speed limits—factors that also influence crash frequency. Crash density was concentrated along major thoroughfares throughout Mesquite, such as Interstate (I) 635, United States Highway (US) 80, I-30, and parts of I-20.

*Figure 3-1. Mesquite Crash Density Heat Map*



Between 2020 and 2024, the City of Mesquite recorded a total of 12,651 crashes. As illustrated in *Figure 3-2*, there was an increase in crashes during 2021. However, the number of fatal crashes and suspected serious injury (K and A) crashes fluctuated among the five-year period, with fatal injury crashes peaking at 16 in 2020 and serious injury crashes reaching their highest at 68 in 2023 (see *Figure 3-3*). Over the five-year period, Mesquite experienced 64 fatal crashes and 279 suspected serious injury crashes in total. Targeted traffic safety improvements are needed to address the incidence of severe crashes.

*Figure 3-2. Total Crashes by Crash Severity for Each Year, 2020-2024*

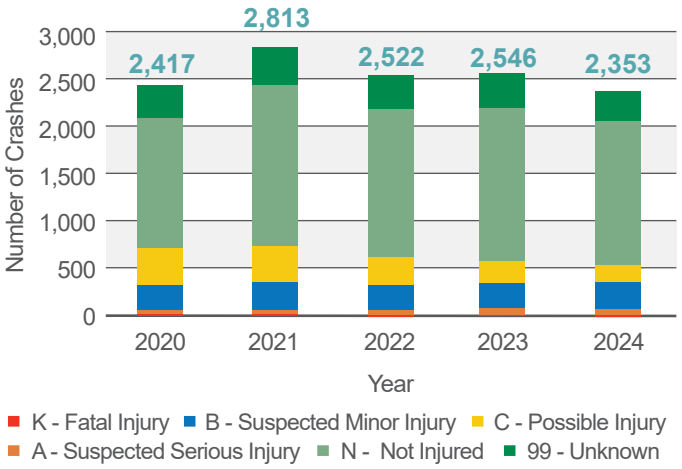
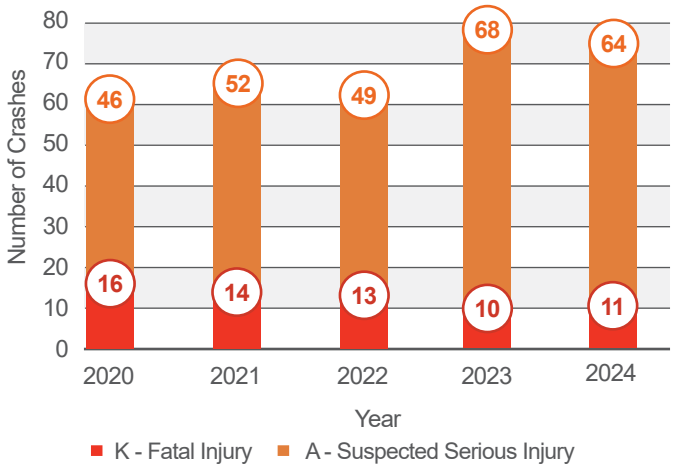



*Figure 3-3. Fatal and Suspected Serious Injury Crash Trends, 2020-2024*




## SYSTEMIC ANALYSIS

TxDOT's Strategic Highway Safety Plan (SHSP) identifies emphasis areas focused on specific crash types. These emphasis areas were developed based on the crash types that could provide the greatest potential reduction in crashes. There are a total of eight emphasis areas, shown in *Table 3-1*, seven of which are reviewed. The eighth emphasis area is post-crash care, which cannot be assessed using CRIS data. Instead, red light/stop sign running was assessed as the eighth emphasis area. One emphasis area, distracted driving crashes, is over-represented in Mesquite's fatal and serious injury crashes compared to statewide averages.

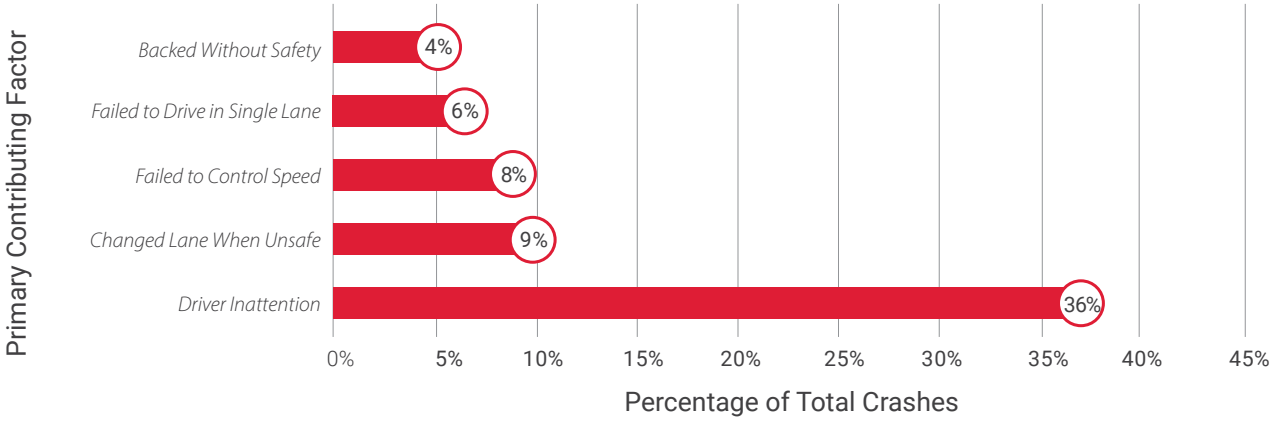
*Table 3-1. Fatal and Serious Injury Crash Comparison for Emphasis Areas between Statewide and Mesquite*

| NO. | EMPHASIS AREA | STATEWIDE | MESQUITE | DIFFERENCE |
|---|---|---|---|---|
| 1 | Roadway/Lane Departure | 35% | 35% | 0% |
| 2 | Speed-Related | 33% | 32% | -1% |
| 3 | Intersection-Related | 32% | 29% | -3% |
| 4 | Impaired Driving | 18% | 12% | -6% |
| 5 | Unrestrained Persons | 17% | 16% | -1% |
| 6 | Distracted Driving | 15% | 27% | +12% |
| 7 | Vulnerable Road Users | 13% | 12% | -1% |
| 8 | Red Light/Stop Sign Running | 12% | 6% | -6% |

## PRIMARY CONTRIBUTING FACTORS

The top five primary contributing factors for crashes in Mesquite are shown in *Figure 3-4*. Driver Inattention represents the greatest portion of crashes at 36%.

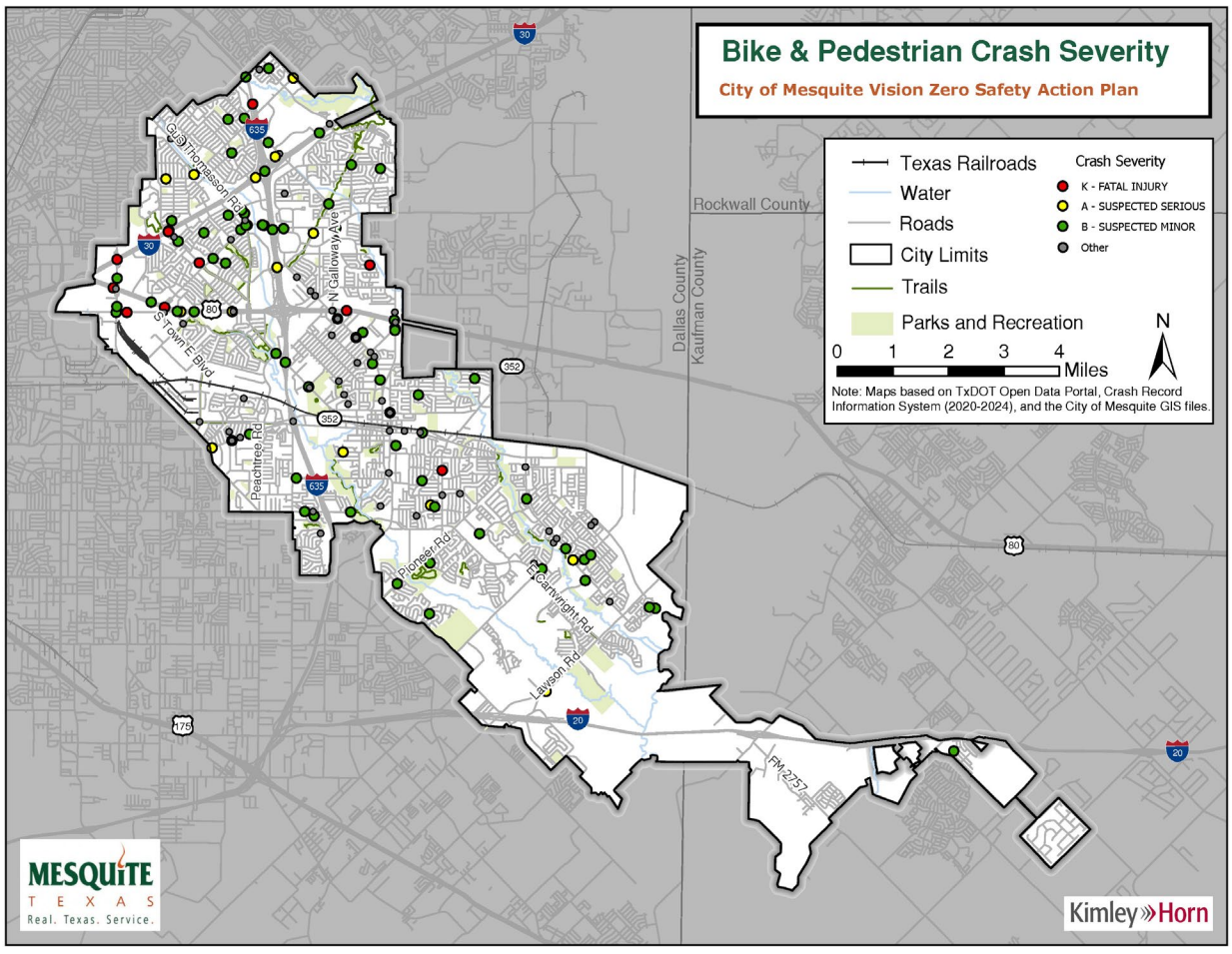
*Figure 3-4. Top 5 Primary Contributing Factors*




## PEDESTRIAN AND BICYCLIST CRASHES

Pedestrians and bicyclists are considered vulnerable road users (VRU), with a higher likelihood of sustaining fatal or serious injuries in crashes. As shown in *Figure 3-3*, between 2020 and 2024 there were 209 pedestrian crashes and 58 bicyclist crashes. Pedestrian and bicyclist crashes make up 11.7% of the fatal plus serious injury crashes. *Figure 3-5* illustrates the locations of pedestrian and bicyclist crashes by severity.

*Figure 3-5. Mesquite Pedestrian and Cyclist Crash Locations*



Pedestrian and bicyclist crashes in Mesquite have higher rates of serious injury and fatality compared to crashes involving only vehicles. *Table 3-2* shows the differences in crash severity between crashes involving motor vehicles and those involving pedestrians or bicyclists from 2020 to 2024.

*Table 3-2. Vehicles vs Pedestrians and Bicyclists by Crash Severity*

| CRASH SEVERITY | VEHICLES | PEDESTRIANS AND BICYCLISTS | DIFFERENCE |
|---|---|---|---|
| K - Fatal Injury | 0.4% | 4.5% | 4.1% |
| A - Suspected Serious Injury | 2.0% | 10.5% | 8.5% |
| B - Suspected Serious Injury | 10.1% | 37.8% | 27.7% |
| C - Possible Injury | 11.3% | 28.1% | 16.8% |
| N - Not Injured | 61.7% | 18.7% | -43.0% |
| 99 - Unknown | 14.5% | 0.4% | -14.1% |

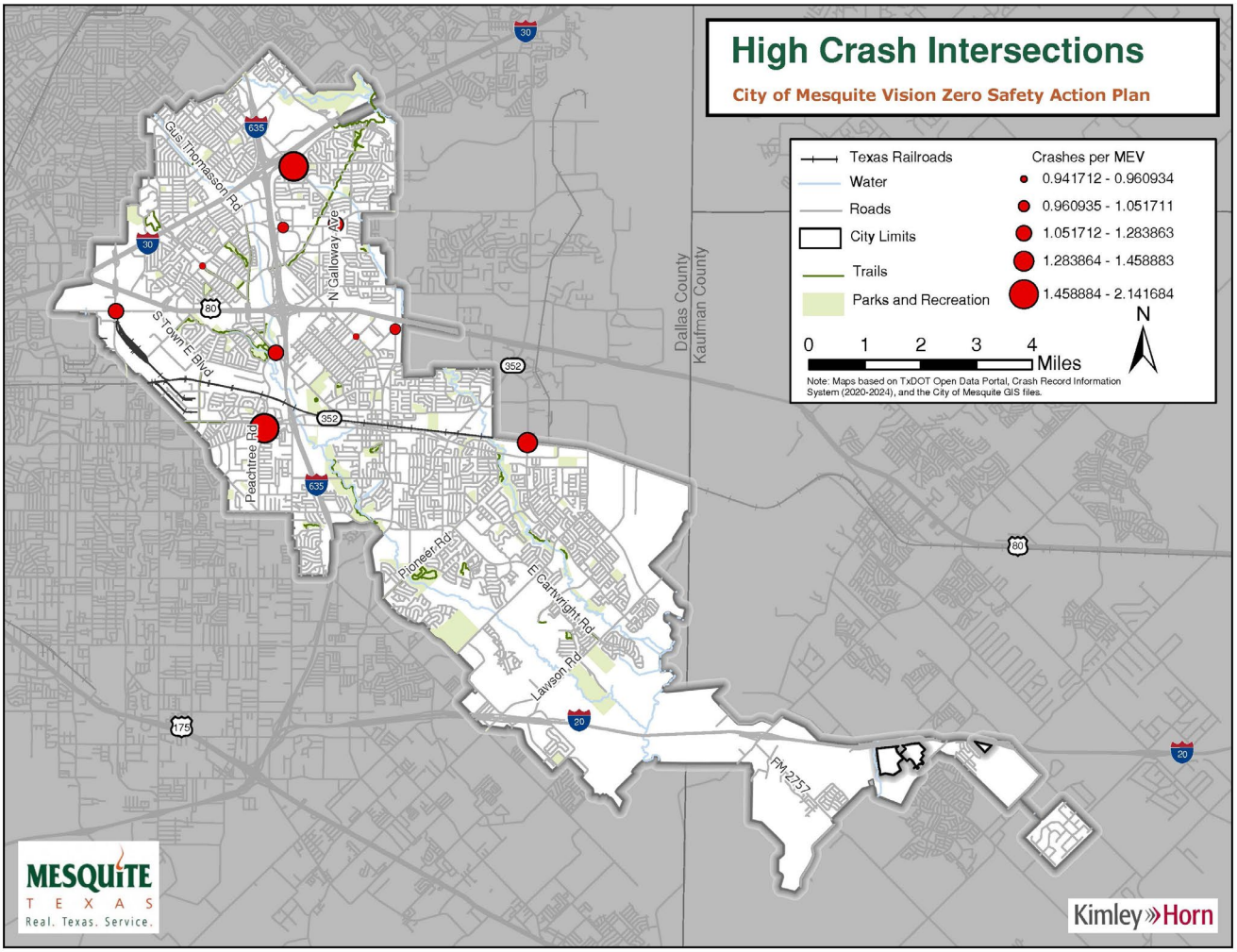
## HIGH CRASH INTERSECTIONS

Approximately 26% of all crashes in Mesquite occurred at intersections or were intersection-related. Intersections typically have more crashes because they contain numerous conflict points where vehicles, pedestrians, and bicyclists cross paths, increasing the likelihood of collisions from turning, crossing, and merging movements. *Table 3-3* and *Figure 3-6* highlight the top 10 intersections with the greatest intersection crash rate in the City of Mesquite, excluding TxDOT-owned highways and interstate highways. The intersection crash rate is a function of total crashes per 1 million entering vehicles (MEV).

*Table 3-3. Top 10 High-Crash Intersections*

| INTERSECTION | NUMBER OF CRASHES | INTERSECTION CRASH RATE |
|---|---|---|
| Galloway Avenue & Childress Avenue/ Barnes Bridge Road | 23 | 2.14 |
| Scyene Road & Peachtree Road | 55 | 2.13 |
| Scyene Road & Clay Mathis Road | 13 | 1.46 |
| Peachtree Road & Gross Road | 26 | 1.28 |
| Town East Boulevard & Galloway Avenue | 40 | 1.22 |
| Samuell Avenue & Big Town Boulevard | 29 | 1.16 |
| Town East Boulevard & Town East Mall/ Emporium Circle | 29 | 1.05 |
| Belt Line Road & Range Drive | 19 | 1.03 |
| Galloway Avenue & Hillcrest Street | 16 | 0.96 |
| Town East Boulevard & Motley Drive | 24 | 0.94 |

*Figure 3-6. Mesquite Pedestrian and Cyclist Crash Locations*




Of these 10 intersections, four were selected to be evaluated further using street safety analytics. The results of this analysis can be found in **Chapter 5.**

## HIGH-INJURY NETWORK

A High-Injury Network (HIN) is a network of roads that has higher-than-average rates of crashes resulting in injuries or fatalities. This network is determined by crash data, considering factors such as crash frequency and severity. Identifying and prioritizing facilities within the HIN is the initial step in the data analysis process to determine safety countermeasures across the network.

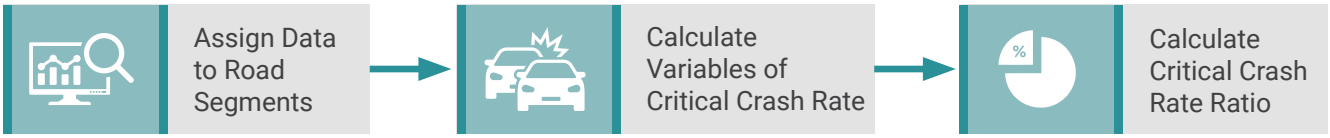
### *Critical Crash Rate Method*

The Federal Highway Administration (FHWA) outlines methods to calculate crash rates to prioritize locations where safety improvements are most needed. Outlined in the Highway Safety Manual (HSM), Section 4.4.4.5 on Page 4-41, the critical crash rate method identifies crash hotspots by comparing the observed crash rate at a roadway segment to the critical crash rate based on similar functional classification and traffic volumes. If the observed crash rate exceeds the critical crash rate, the roadway segment is considered for the HIN.

An ArcGIS Pro model was created to calculate the critical crash rate and supporting calculations for each city roadway segment, using five years of crash data (2020-2024). The model assigns crashes to an adjacent segment and performs the calculations in the order outlined by the FHWA. The following section outlines the process for calculating the critical crash rate, using fatal and serious injury (KA) crashes. The full methodology for this model's creation can be found in **Appendix A**.

## Critical Crash Rate Calculation

The critical crash rate was calculated for each road segment in the City of Mesquite using the following three steps:




### Assign Data to Road Segments

Three data inputs are needed to calculate the critical crash rate: functional classification, daily traffic volumes, and crash counts. Higher traffic volumes, more travel lanes, and higher speed limits can inflate crash rates along road segments. The critical crash rate compares road segments with the same functional classification and normalizes daily traffic volumes to calculate crashes at a more even level to like-designed roadways.

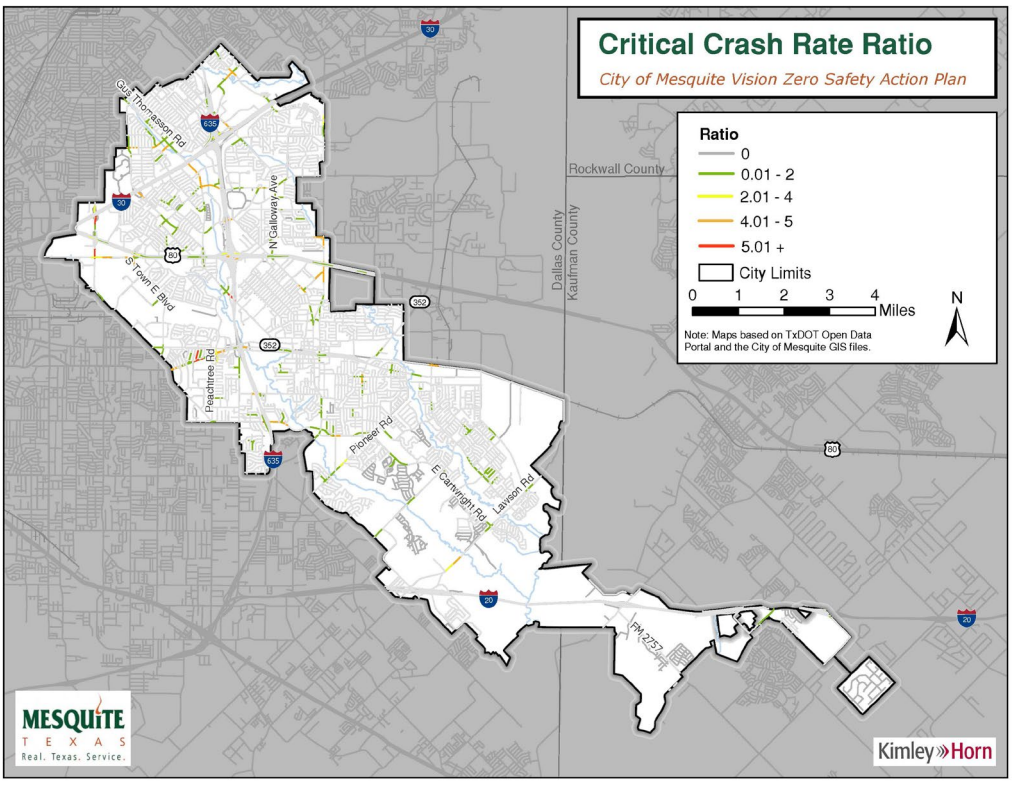
### Calculate Variables of Critical Crash Rate

The critical crash rate variables were calculated following the equations detailed in the FHWA's Highway Safety Manual. The observed crash rates for the HIN were determined by calculating the number of existing KA crashes on each road segment per 100 million vehicle-miles traveled. The critical average crash rates per 100 million vehicle-miles traveled for the network were also calculated by normalizing daily volumes for each functional class. Comparisons were made within each roadway classification in the City of Mesquite; for example, local roads were only compared to other local roads.

### Calculate Critical Crash Rate Ratio

To compare the observed and critical crash rates, a ratio is calculated to understand the magnitude of the difference. If the ratio is greater than 1.0, meaning the observed crash rate is higher than the critical crash rate, then the road segment's crash history was higher than that of other road segments of the same functional classification. Any segments with a ratio greater than 1.0 were flagged as potential HIN segments. The critical crash rate ratios for all roadway segments in the City of Mesquite are shown below in *Figure 3-7*.

*Figure 3-7. Critical Crash Rate Ratio Results*



## *HIN Development and Results*

The process of selecting segments for the HIN is a data-driven effort combined with qualitative refinement to the model results. The goal of the HIN is to maximize the total KA crashes on the least number of city roads.

To refine and clean the model results, segments with a "one-crash" result that yielded a ratio greater than 1.0 were removed, prioritizing locations with a higher density of crashes. The remaining segments that observed more than one KA crash within the five-year period and had a critical crash rate ratio greater than 1.0 were placed on the respective HIN. Several road segments with no KA crashes were located between "high crash" segments. These segments did not qualify for a HIN on their own; however, because the influence area of crashes typically extends to adjacent segments, the gaps between high-crash areas were filled. Finally, if a segment on the HIN only showed intersection-related crashes, it may have been removed if the intersecting roadway was more representative of the intersection-related crashes.

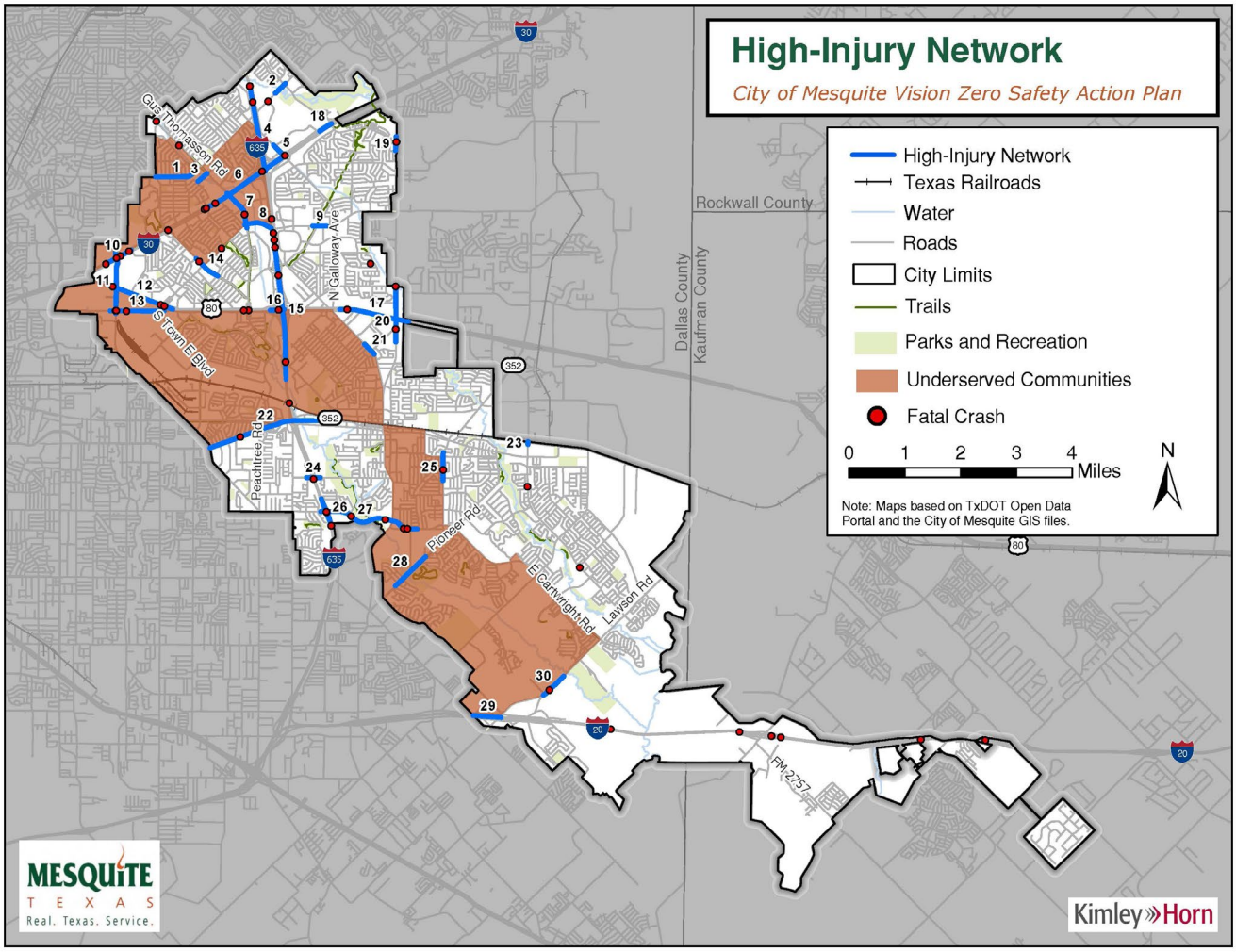
After this additional data refinement, the analysis resulted in the HIN for the City of Mesquite (see *Figure 3-8*). **The HIN consists of 13.0% of the total city road network, capturing 59% of KA crashes and 61% of K crashes.** General information, including corridor limits, crash counts, and jurisdiction for each HIN segment is provided in *Table 3-4*.

*Table 3-4. Mesquite HIN*

| NO. | HIN SEGMENT | LIMITS | | LENGTH (MILES) | CRASHES | | | TXDOT OR CITY | UNDERSERVED TRACT? | PLANNED ROADWAY PROJECT? |
|---|---|---|---|---|---|---|---|---|---|---|
| | | FROM | TO | | COUNT OF KAB CRASHES | COUNT OF TOTAL CRASHES | KA CRASH DENSITY (CRASHES/ MILE) | | | |
| 1 | Oates Drive | Motley Drive | Gus Thomasson Road | 0.23 | 5 | 34 | 21.88222 | City | Yes | No |
| 2 | Oates Drive | LBJ Garden Villas | Northwest Drive | 0.08 | 2 | 30 | 26.24666 | City | No | No |
| 3 | Moon Drive | Sidney Drive | Gus Thomasson Drive | 0.07 | 2 | 14 | 30.52658 | City | Yes | No |
| 4 | IH-635 | 740' N of Oates Drive | IH-30 | 0.46 | 19 | 822 | 41.55722 | TxDOT | Partial | Yes, planning 10+ years |
| 5 | Galloway Avenue | Republic Pkwy | IH-30 | 0.08 | 3 | 92 | 39.37000 | City | No | No |
| 6 | IH-30 | Edgebrook Drive | Galloway Avenue | 0.53 | 19 | 711 | 35.62048 | TxDOT | Partial | Yes, planning 10+ years |
| 7 | Gus Thomasson Road | IH-30 | Town East Boulevard | 0.23 | 5 | 125 | 21.87222 | City | Yes | No |
| 8 | Town East Boulevard | Gus Thomasson Road | IH-635 | 0.15 | 4 | 95 | 26.24667 | City | Partial | No |
| 9 | Town East Boulevard | Town Centre Drive | Independence Drive | 0.08 | 2 | 38 | 26.24667 | City | No | No |
| 10 | IH-30 | 320' W of La Prada Drive | Action Drive | 0.15 | 7 | 138 | 45.93167 | TxDOT | Partial | Yes, planning 10+ years |
| 10 | IH-30 | 320' W of La Prada Drive | Action Drive | 0.15 | 7 | 138 | 45.93167 | TxDOT | Partial | Yes, planning 10+ years |
| 11 | Big Town Boulevard | IH-30 | Samuell Boulevard | 0.37 | 9 | 148 | 24.53161 | City | Partial | No |
| 12 | US 80 | Big Town Shopping Ctr | Town East Boulevard | 0.76 | 11 | 191 | 14.43567 | TxDOT | Partial | Yes, construction begins within 4 years |

| NO. | HIN SEGMENT | LIMITS | | LENGTH (MILES) | CRASHES | | | TXDOT OR CITY | UNDERSERVED TRACT? | PLANNED ROADWAY PROJECT? |
|---|---|---|---|---|---|---|---|---|---|---|
| | | FROM | TO | | COUNT OF KAB CRASHES | COUNT OF TOTAL CRASHES | KA CRASH DENSITY (CRASHES/ MILE) | | | |
| 13 | Samuell Boulevard | Big Town Boulevard | Town East Boulevard | 0.29 | 7 | 108 | 23.89536 | City | Yes | No |
| 14 | Motley Drive | Palm Drive | Bellhaven Drive | 0.15 | 3 | 39 | 19.68500 | City | Partial | No |
| 15 | IH-635 | 330' S of Town East Boulevard | 500' N of Gross Road | 0.76 | 32 | 718 | 41.99467 | TxDOT | Partial | Yes, planning 10+ years |
| 16 | US 80 | Jane Street | IH-635 | 0.15 | 4 | 176 | 26.24667 | TxDOT | Partial | Yes, construction begins within 4 years |
| 17 | US 80 | Galloway Avenue | Belt Line Road | 0.76 | 6 | 142 | 7.87400 | TxDOT | No | Yes, construction begins within 4 years |
| 18 | IH-30 | Columbia Pkwy | Northwest Drive | 0.08 | 4 | 109 | 52.49334 | TxDOT | No | Yes, planning 10+ years |
| 19 | Belt Line Road | 200' N of Northwest Drive | 200' S of Northwest Drive | 0.08 | 4 | 8 | 52.49333 | City | No | No |
| 20 | Belt Line Road | Tripp Road | Range Drive | 0.31 | 6 | 150 | 19.36365 | City | No | No |
| 21 | Galloway Avenue | Alta Vista Street | Willowbrook Drive | 0.08 | 2 | 20 | 26.24667 | City | Partial | No |
| 22 | Scyene Road | Sam Houston Road | Gross Road | 0.69 | 17 | 475 | 24.78852 | TxDOT | Partial | Yes, construction underway or begins soon |
| 23 | Clay Road | Scyene Road | 100' S of Scyene Road | 0.01 | 2 | 13 | 147.32438 | City | No | No |
| 24 | New Market Road | Cedarcrest Drive | Matthew Drive | 0.08 | 2 | 9 | 26.24667 | City | No | No |
| 25 | Pioneer Road | Newsome Road | Leyenda Drive | 0.15 | 3 | 10 | 19.68500 | City | Partial | No |
| 26 | IH-635 | Springcrest Drive | 400' S of Cartwright Road | 0.15 | 7 | 204 | 45.93167 | TxDOT | No | Yes, feasibility study |
| 27 | Cartwright Road | Poplar Drive | Wilkinson Road | 0.56 | 11 | 221 | 19.52327 | City | Partial | No |
| 28 | Pioneer Road | Elm Falls Pl | Silversprings Drive | 0.23 | 5 | 25 | 21.87222 | City | Yes | Yes, construction begins within 4 years |
| 29 | IH-20 | Lasater Road | Lawson Road | 0.15 | 4 | 52 | 26.24667 | TxDOT | Partial | Yes, planning 10+ years |
| 30 | Lawson Road | Milam Road | 400' N of Milam Road | 0.15 | 4 | 10 | 26.24667 | City | Partial | Yes, construction underway or begins soon |

*Figure 3-8. Mesquite High-Injury Network*



# CHAPTER 4

## PUBLIC ENGAGEMENT

# CHAPTER 4

## Public Engagement

Public engagement played an important role in the development of the Mesquite CSAP, providing an opportunity to gather input from the community on transportation safety concerns. The engagement process included various outreach efforts, such as online surveys, pop-up events, and interactive mapping tools, to collect feedback from residents, local organizations, and agencies. The feedback helped identify safety priorities and inform strategies aimed at addressing the needs of the city.

### ONLINE ENGAGEMENT

A project website was created for the Mesquite CSAP to provide general information related to the plan, including upcoming events, timeline, and corridor recommendations. The site also featured online engagement tools, such as an interactive mapping tool, to collect community input on a variety of topics. These tools allowed participants to identify specific safety concerns such as red-light running, pedestrian safety concerns, speeding concerns, and more. This approach helped reach a broader audience and gather feedback on safety issues across the city.

#### *INTERACTIVE MAP*

The interactive map is an online public engagement tool designed to gather community input. Residents can easily participate by "dropping a pin" on the map to highlight specific locations where they have noticed safety issues, such as speeding, poor signage, pedestrian safety, intersection safety-related issues, and more. Each pin allows users to categorize their concerns, add detailed comments, and suggest potential improvements. The City of Mesquite CSAP website featured an interactive map that allowed the public to provide comments on transportation safety concerns within city limits. A total of 83 comments were provided on the online interactive map. Users categorized their comments under the following categories:


Speeding Issue


Bicycle Safety


Pedestrian Safety


Lighting Issue


Signage Issue

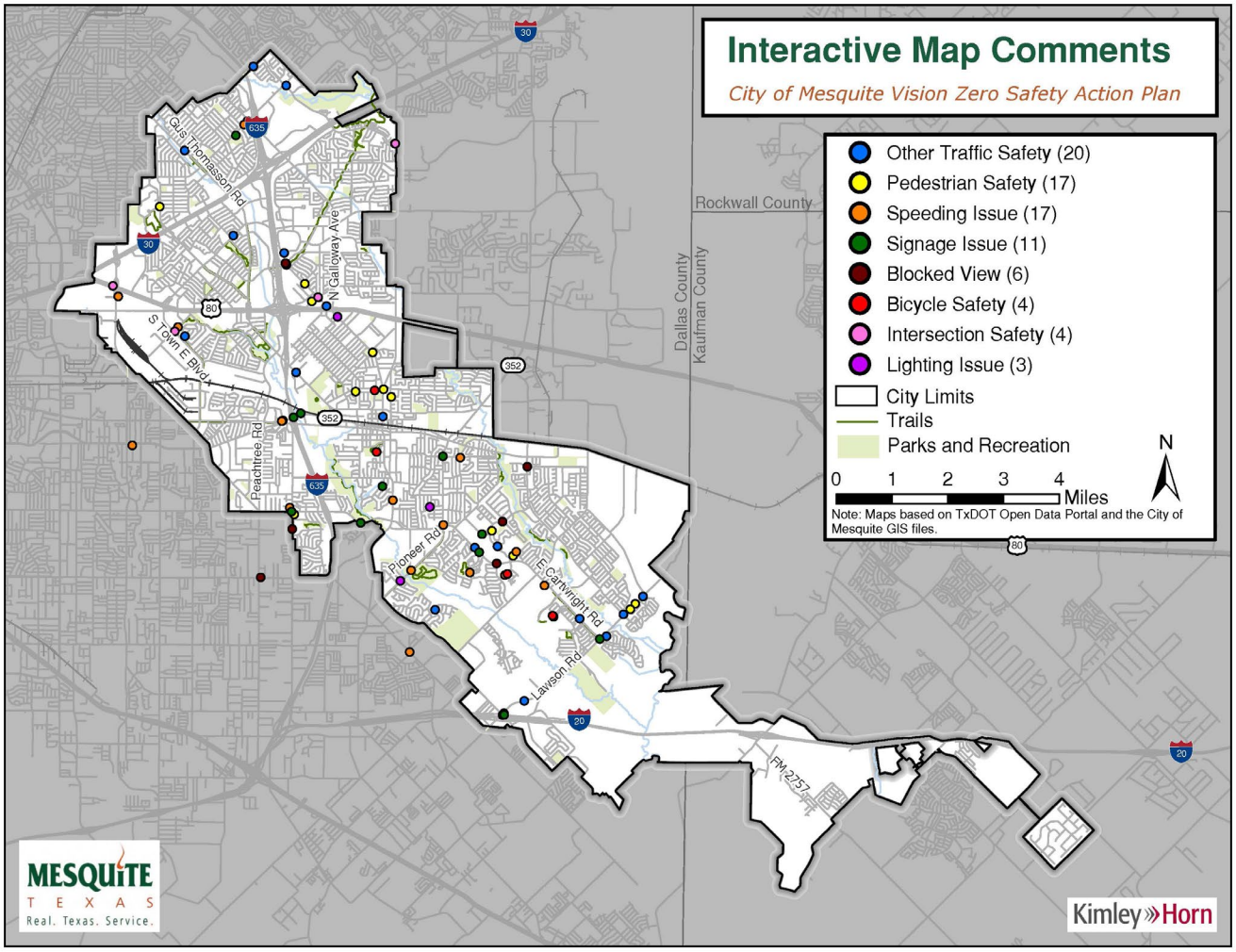

Other Traffic Safety


Blocked View


Intersection Safety

The most reported issues on the interactive map besides other traffic related safety issues were pedestrian safety and speeding, accounting for 17 of the comments each (34 total). *Figure 4-1* shows the location of the comments on the interactive map; the legend includes showing the comment count for each category.

*Figure 4-1. Interactive Map Comments*



## PUBLIC EVENTS

In-person public engagement was an important component in gathering community input on roadway safety. Two public events were organized to connect directly with residents and provide opportunities for them to share feedback on safety concerns and potential improvements. These events were designed to engage the public via interactive activities and open dialogue about Mesquite's transportation needs.

### *FARMERS MARKET – EVENT ONE*

The first public event was a pop-up style event that took place at the Downtown Mesquite Farmer's Market, on May 31, 2025. During the event, members of the public were invited to add to a map of the city with color-coded stickers corresponding to different safety concerns. Attendees placed stickers on the map to indicate where they had safety concerns. Most concerns were related to speeding, lack of sidewalks, and traffic congestion.

***Figure 3-2. Market Day Public Engagement Event***

### *FARMER'S MARKET – EVENT TWO*

The second public event was also a pop-up style event that took place at the Downtown Mesquite Farmer's Market, on August 16, 2025. During this event, the public was presented with a map of the city with five highlighted corridors from the HIN that had been chosen for targeted safety countermeasures. Based on these priority corridors and proposed countermeasures, the visitors provided feedback on how they feel these countermeasures would best serve the corridors on the HIN. Many comments were related to the desire for improved pedestrian and bicycle infrastructure, raised medians, and speed calming safety measures such as speed bumps, flashing curve signage, and midblock pedestrian crossings.

*Figure 3-3. Market Day Public Engagement Event*


A recap of the two public engagement events can be found in the **Appendix A**.

# CHAPTER 5

## PROJECT AND COUNTERMEASURES SELECTION

# CHAPTER 5

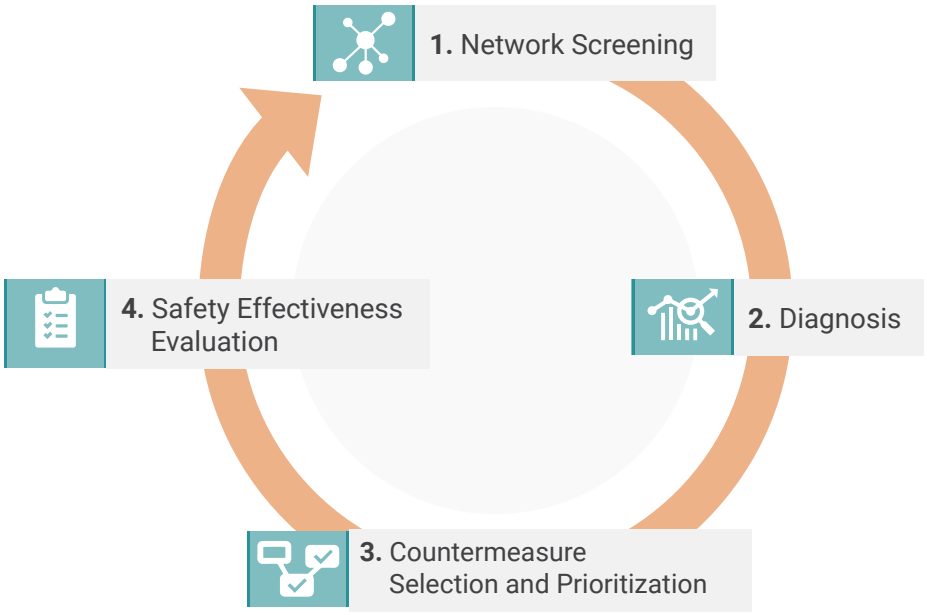
## Project and Countermeasures Selection

This chapter presents the methodology used to identify and prioritize projects for Mesquite's Comprehensive Safety Action Plan (CSAP). The approach combines a targeted safety analysis of specific corridors within the High-Injury Network (HIN) and of specific high-crash intersections, along with a systemic citywide analysis based on crash data. The objective is to provide the city with a framework for selecting and prioritizing safety improvements both on known high-risk corridors and at other locations throughout the city. The targeted safety analysis focused on five primary corridors identified for safety enhancements. A detailed evaluation was conducted for each, leading to the selection of appropriate countermeasures. The systemic safety analysis involved recommending potential countermeasures aimed at mitigating crashes categorized within four of the eight emphasis areas. Additionally, four intersections were identified to be evaluated further from the top 10 high-crash intersection list mentioned in **Chapter 3**. A focused safety study was performed for these four intersections using advanced analytics and LiDAR and countermeasures were proposed based on these results.

### TARGETED CORRIDOR SAFETY ANALYSIS METHODOLOGY

This targeted corridor safety analysis follows a modified version of the roadway safety management process described in the American Association of State Highway and Transportation Officials (AASHTO) Highway Safety Manual and consists of four steps. The first three steps are covered in this chapter: (1) network screening, (2) diagnosis, (3) countermeasure selection and prioritization. The final step–(4) safety effectiveness evaluation–is covered in **Chapter 8** where further measures will be outlined to verify the long-term effectiveness of the selected safety strategies. The methodology is shown in *Figure 5-1* below.

*Figure 5-1. Safety Analysis Methodology*




The STF conducted a targeted safety analysis process, following the first three steps listed previously, to address roadway safety in Mesquite. The team began with **network screening** to identify high-priority corridors within the HIN. Following this, the **diagnosis** phase involved a detailed examination of these locations to understand the factors contributing to crashes. Finally, the team selected targeted **countermeasures** designed to address the specific safety issues identified during the diagnosis. The following subsections provide a detailed look at each of these steps.

## *STEP 1 – NETWORK SCREENING*

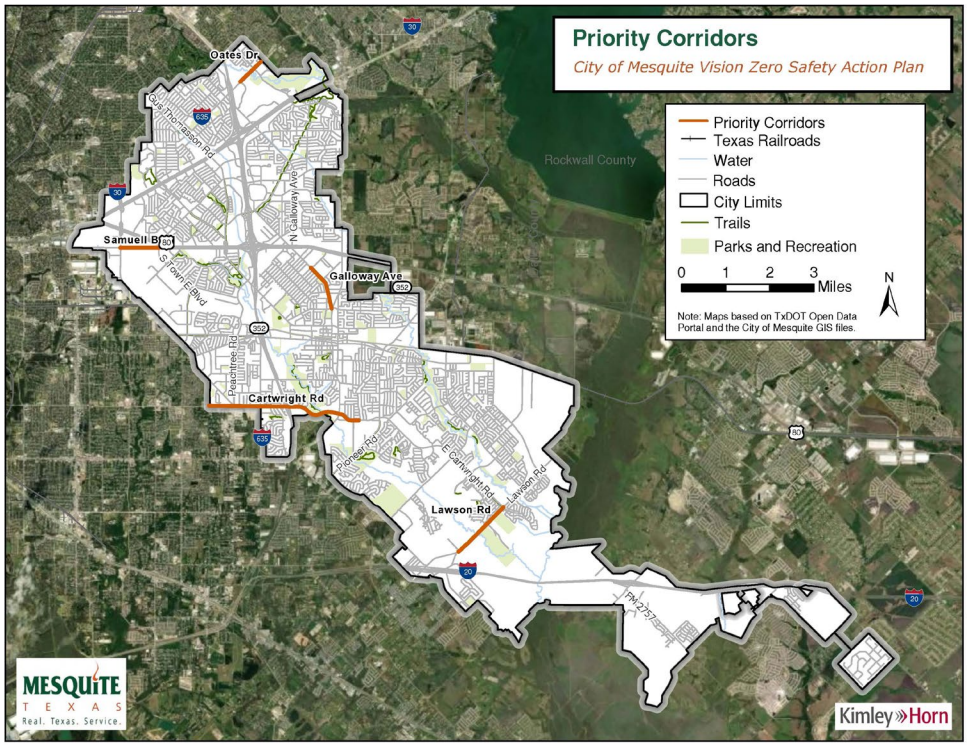
The first step in the targeted safety analysis was **network screening**, which involved reviewing the HIN to identify corridors for focused safety improvements. The STF and the project team screened corridors based on factors such as crash density, crash severity, the presence of vulnerable road users, and whether the road was a TxDOT or city facility. The process also considered whether the corridor was located within an area with a high vulnerability index or in an underserved census tract to help address the needs of underserved communities. This screening resulted in a shortlist of priority corridors, which would then undergo further analysis to determine site-specific countermeasures.

In coordination with the STF and the City of Mesquite, the project team selected five corridors for further analysis and the development of targeted countermeasures. General information, including corridor limits, crash data, and other relevant details for these five corridors, is provided in *Table 5-1* below, with their locations shown in *Figure 5-2*.

*Table 5-1. Top 5 HIN Priority Corridors*

| CORRIDOR | Cartwright Rd. | Oates Dr. | Lawson Rd. | Samuell Blvd. | Galloway Ave. |
|---|---|---|---|---|---|
| LIMITS | Cheyene Rd. to Wilkinson Rd. | Wooded Lake Dr. to Frontier Blvd. | Milan Rd. to Cartwright Rd. | Big Town Blvd. to Town East Blvd. | Hillcrest St. to Grubb Dr. |
| High-Injury Network | Yes | Yes | Yes | Yes | Yes |
| Underserved Community | Partially | Yes | Partially | Partially | No |
| Length (mi) | 2.9 | 0.55 | 1.2 | 0.73 | 0.92 |
| Total Crashes | 304 | 40 | 34 | 77 | 72 |
| Total Crashes Per Mile | 104.8 | 72.7 | 28.3 | 105.5 | 78.3 |
| KAB Crashes | 59 | 9 | 9 | 16 | 18 |
| KAB Crashes Per Mile | 20.3 | 16.4 | 7.5 | 21.9 | 19.6 |
| Bike/Pedestrian Crashes | 2 | 1 | 0 | 3 | 6 |
| Bike/Pedestrian Crashes Per Mile | 0.7 | 1.8 | 0 | 4.1 | 6.5 |

*Figure 5-2. Top 5 HIN Priority Corridors*



## *STEP 2 – DIAGNOSIS*

To better understand the safety challenges for the priority corridors, the project team conducted a thorough review that combined crash data analysis with field assessments. The project team analyzed crash data to determine the types of crashes occurring on each corridor, such as red light running, roadway/lane departure crashes, and incidents involving bicyclists and pedestrians. Detailed crash maps for the priority corridors are included in **Appendix C**. In addition to the data review, the project team conducted field visits to assess on-the-ground conditions and identify safety deficiencies.

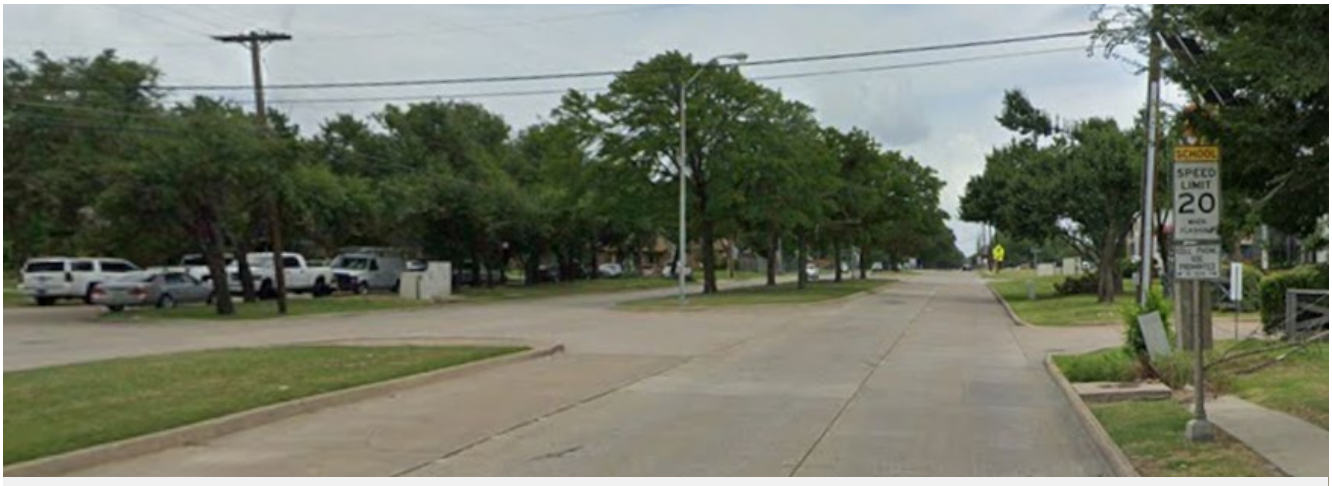
### *Cartwright Road/Bruton Road*

*Existing Signal at Bruton Park Entrance*

The first corridor analyzed was Cartwright Road/Bruton Road, the extents of which are approximately 2.9 miles from Cheyenne Road to Wilkinson Road. Over the five-year analysis period, a total of 304 crashes were reported along this segment, including four fatal injury crashes and five suspected serious injury crashes with one of these crashes involving a bicyclist or pedestrian (vulnerable roadway user, VRU). There was a total of two VRU crashes recorded along the corridor. The majority of crashes occurred between I-635 and Wilkinson Road, a segment that includes heavy horizontal and vertical curves. The corridor features a two-lane undivided section from Cheyenne Road to Hickory Tree Road, a four-lane divided section from Hickory Tree Road to I-635, and a six-lane divided section east of I-635. The existing pavement markings are faded and make it difficult for vehicles to differentiate lanes. Additionally, there are no continuous sidewalks along Cartwright and Bruton Road and major intersections along the corridor lack ADA-compliant curb ramps and APS push buttons.

### *Oates Drive*

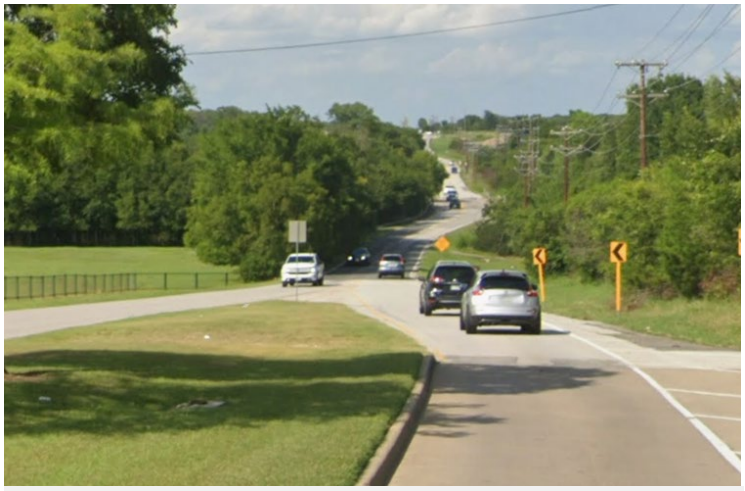
Oates Drive is another HIN corridor, a 0.55-mile segment extending from Wooded Lake Drive to Frontier Boulevard, which acts as a key connecting point between the City of Mesquite and City of Garland. Over the five-year analysis period, a total of 40 crashes were reported, including one fatal injury crash and one involving a pedestrian. Oates Drive serves a mix of single-family and multifamily residential and commercial uses, as well as school zones and an existing park southeast of Frontier Boulevard. The roadway has faded pavement markings and a lack of continuous sidewalks. The signalized intersections also lack ADA-compliant curb ramps and APS push buttons.




*Beginning of Existing School Zone near Frontier Boulevard*

### *Lawson Road*

Lawson Road is a two-lane undivided street that spans 1.2-miles extending from Milam Road to Cartwright Road. Over the five-year analysis period, 34 crashes were reported along the corridor, including one fatal injury crash. The corridor currently has no curb and gutter or sidewalk on either side of the street. West of Milam Road, Lawson Road is four lanes divided; additional capacity, curb and gutter improvements, continuous sidewalk, and a center median east of Milam Road is crucial to improve safety along this corridor. The existing roadway conditions also lack adequate roadway lighting. The intersection of Lawson Road at Cartwright Road is currently in progress for signal improvements through the Highway Safety Improvement program (HSIP).



*Lawson Road Transition from Four-lane Divided to Two-lane Undivided*

### *Samuell Boulevard*

Samuell Boulevard from Big Town Boulevard to Town East Boulevard is a six-lane divided roadway that spans 0.73-miles. Over the five-year analysis period, a total of 77 crashes were reported, including three fatal injury crashes with one being a pedestrian-related crash. The corridor is surrounded by multifamily residential on the north side and heavy industrial use on the south side. There is currently a lack of sidewalk along the corridor, with many sections having worn foot paths from pedestrian usage. The existing pavement markings along the corridor are difficult to distinguish, creating potential hazards. The signalized intersections also lack ADA-compliant curb ramps and APS push buttons. One of the top 10 high-crash intersections is also along this corridor at Samuell Boulevard and Big Town Boulevard.

*Pedestrian Walking along Worn Path on Samuell Boulevard (adjacent to the multifamily units)*

### *Galloway Avenue*

Galloway Avenue from Hillcrest Street to Grubb Drive is a six-lane divided roadway that spans 0.92 miles. Over the five-year analysis period, a total of 72 crashes were reported, including four suspected serious injury crashes and six VRU crashes. The corridor is surrounded by residential, commercial areas, school zones, and medical facilities. With the existing wide cross-section, this section of Galloway Avenue experiences speeding issues along with a high number of pedestrians could potentially benefit from traffic calming improvements such as on-street bike lanes. The intersection of Galloway Avenue at Range Drive is currently in progress for signal improvements through the Highway Safety Improvement program (HSIP). One of the top 10 high-crash intersections is also along this corridor at Galloway Avenue and Hillcrest Street.


*Existing School Zone along Galloway Avenue near Tisinger Elementary School*

## *STEP 3 – COUNTERMEASURE SELECTION AND PRIORITIZATION*

Countermeasures were selected for each of the five priority corridors to address the safety issues identified in the diagnosis step. To aid in the selection and prioritization of countermeasures, a systemic countermeasures toolbox was also developed. This toolbox includes widely recognized solutions for reducing crashes, such as improved signage, enhanced crosswalks, and traffic calming measures. Countermeasures within the toolbox were ranked based on their Crash Modification Factors (CMFs), which indicate their relative effect on reducing crash frequency. A low CMF indicates that a countermeasure has a high impact on reducing crashes, while a high CMF indicates that a countermeasure has a low impact on reducing crashes. Other countermeasures were also considered based on their suitability for the specific conditions of each corridor.

## SYSTEMIC COUNTERMEASURE TOOLBOX

A countermeasure toolbox is a comprehensive collection of strategies and interventions designed to address specific traffic safety issues and challenges. It provides transportation professionals with a range of options and resources to effectively mitigate risks, improve safety, and enhance the overall performance of roadways and transportation systems.

The following details systemic countermeasures that can be implemented in all areas of the city to improve safety, not limited to study corridors. Priority should be given to roads along the HIN and in areas of underserved populations to reduce the severity of crashes. Countermeasures were based on the **FHWA Proven Safety Countermeasures** list but also included other common safety measures such as curb extensions, high-contrast pavement markings, and dynamic speed feedback signs. The City of Mesquite's systemic countermeasures are listed along with their CMF and categorized by safety emphasis area in ***Table 5-2***.

*Table 5-2. Systemic Countermeasure Toolbox*

| COUNTERMEASURE | CMF | ROADWAY & LANE DEPARTURE | SPEED-RELATED | INTERSECTION-RELATED | VULNERABLE ROAD USERS |
|---|---|---|---|---|---|
| Raised Median | 0.290 | X | X | - | X |
| Rectangular Rapid Flashing Beacon | 0.310 | - | - | X | X |
| Bike Lanes | 0.435 | - | X | - | X |
| Signal Timing Adjustments | 0.490-0.920 | - | X | X | X |
| Roadway Reconfiguration | 0.530 | X | X | - | X |
| Change Right-Turn Geometry | 0.558 | - | X | X | X |
| Conversion to All-Way Stop Control | 0.570 | - | X | X | X |
| Roundabouts | 0.590 | - | X | X | - |
| Sidewalks | 0.598 | - | - | - | X |
| Crosswalk Visibility Enhancements | 0.600 | - | - | - | X |
| Install Traffic Signal | 0.610 | - | X | X | X |
| Install Pedestrian Crossing with Curb Extension | 0.630 | - | - | - | X |
| Lighting Improvements | 0.679 | X | - | X | X |
| Pedestrian Refuge Island | 0.685 | - | - | - | X |
| Improve Signing and Visibility at Signals | 0.732 | - | - | X | X |
| Pedestrian Hybrid Beacon | 0.833 | - | - | - | X |
| High Contrast Lane Markings | 0.840 | X | - | - | - |
| Retroreflective Backplates | 0.850 | - | - | X | - |
| Flashing Yellow Arrow | 0.857 | - | - | X | - |
| Lane Designation Markings & Signs | 0.887 | X | - | X | - |
| Wide Edge Lines | 0.920 | X | - | - | - |
| Corridor Access Management | 0.930 | - | - | X | - |
| Speed Feedback Signs | 0.950 | - | X | - | - |
| Shared-Use Pathway | N/A* | - | - | - | X |

**Insufficient studies have been conducted to assign a CMF for this countermeasure*

### RAISED MEDIAN

A raised median is a physical barrier or divider that separates opposing lanes of traffic on a roadway. It is most used in urban and suburban areas to enhance safety and traffic flow by preventing vehicles from crossing over into opposing lanes or making certain left-turn movements. Installing a raised median has a CMF of 0.29 for all crash types and severities (CMF ID: 2219). *Figure 5-3* provides an example of a raised median.

*Applicable Safety Emphasis Areas:*

- Roadway and Lane Departure
- Speed-Related
- Vulnerable Road Users

### RECTANGULAR RAPID FLASHING BEACON (RRFB)

A Rectangular Rapid Flashing Beacon (RRFB) is a pedestrian-activated safety device installed at crosswalks to enhance visibility and alert drivers to the presence of pedestrians. When activated, the RRFB emits a rapid, alternating pattern of flashing lights to prompt drivers to yield to pedestrians crossing the street. According to FHWA, RRFBs can result in motorist yielding rates as high as 98% at marked crosswalks with varied speed limits, crossing distances, and number of travel lanes. A CMF of 0.31 applies for pedestrian crashes of all severities (CMF ID: 11158). *Figure 5-4* provides an example of an RRFB for a pedestrian crossing.

*Applicable Safety Emphasis Areas:*

- Intersection-Related
- Vulnerable Road Users

### BIKE LANES

A bike lane is a designated area of a roadway reserved for bicycles, typically marked with pavement markings and signage. Bike lanes provide cyclists with a dedicated space to ride, improving safety by reducing conflicts with motor vehicles and encouraging more people to choose bicycling as a mode of transportation. The CMF for bike lanes is 0.435 for vehicle and bicycle crashes and all crash severities (CMF ID: 10737). *Figure 5-5* provides an example of a bike lane.

*Applicable Safety Emphasis Areas:*

- Speed-Related
- Vulnerable Road Users

*Figure 5-3. Raised Median Example*

*Source: FHWA, City of Charlotte, NC*

*Figure 5-4. RRFB Example*

*Source: pedbikeimages.org - Toole Design Group*

*Figure 5-5. Bike Lane Example*

*Source: pedbikeimages.org - Dan Burden*

### SIGNAL TIMING ADJUSTMENTS

Various adjustments can be made to signal timing to enhance vehicular and pedestrian safety. For instance, increasing the length of signal phases provides pedestrians with more crossing time, leading to safer crossings. This modification has a CMF of 0.49 for pedestrian crashes of all severities (CMF ID: 5252). Additionally, changing left-turn signal control from protected/permitted to protected-only during busy times of the day reduces left-turn crashes at intersections and improves overall safety. This change has a CMF of 0.58 for all crash types and severities (CMF ID: 2108). Another adjustment that can be made is to modify clearance intervals to help prevent rear-end collisions by giving drivers adequate time to react to changing signals. This modification has a CMF of 0.92 for all crash types and severities (CMF ID: 380). *Figure 5-6* shows an example of signal timing adjustments.

*Applicable Safety Emphasis Areas:*

- Speed-Related
- Intersection-Related
- Vulnerable Road Users

### ROADWAY RECONFIGURATION

A roadway reconfiguration usually involves converting an existing four-lane roadway into a three-lane roadway. Implementing a roadway reconfiguration can improve safety, calm traffic, provide better mobility and access for all users, and enhance the quality of life in a community. Roadway reconfigurations provide an opportunity to improve mobility by making space for the addition of bike lanes. Completing a roadway reconfiguration from four to three lanes has a CMF of 0.53 for all crash types and severities (CMF ID: 2841). *Figure 5-7* provides an example of what a roadway reconfiguration can look like.

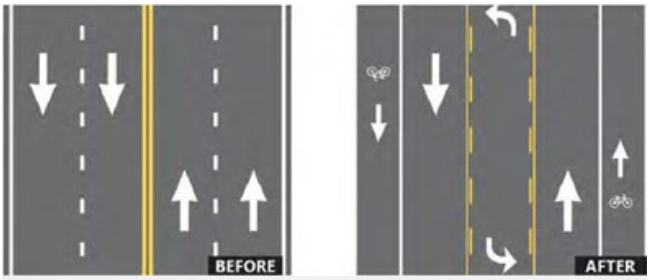
*Applicable Safety Emphasis Areas:*

- Roadway and Lane Departures
- Speed-Related
- Vulnerable Road Users

*Figure 5-6. Signal Timing Progression Example*


Source: Kimley-Horn

*Figure 5-7. Roadway Reconfiguration*




Source: FHWA

### CHANGE RIGHT-TURN LANE GEOMETRY TO INCREASE LINE OF SIGHT (INTERSECTION LEVEL)

Reducing the turning radii to create a sharper angle of entry onto the cross street on dedicated right-turn lanes will enhance safety at intersections. By reducing the turn radii, the turning path for vehicles is narrowed, resulting in slower turning speeds, increased sight distance, and enhanced visibility of vulnerable road users at these intersections. Additionally, this geometry creates a shorter crossing distance for pedestrians and bicyclists. Changing existing geometry to the suggested has a CMF of 0.558 (CMF ID: 8496). *Figure 5-8* shows an example of what the updated right-turn lane could look like after the improvements.

*Applicable Safety Emphasis Areas:*

- Speed-Related
- Vulnerable Road Users
- Intersection-Related

### CONVERSION FROM TWO-WAY TO ALL-WAY STOP CONTROL

Transitioning from a two-way stop-controlled intersection to an all-way stop-controlled intersection offers significant safety benefits. At an all-way stop, all approaching vehicles must come to a complete stop, reducing the likelihood of collisions caused by drivers failing to yield. It also improves the visibility of oncoming traffic, allowing drivers to make safer decisions when proceeding through the intersection. Additionally, the all-way stop configuration helps manage traffic flow more effectively by reducing the chances of high-speed crashes. This modification has a CMF of 0.57 for all crash types and severities (CMF ID: 10519). *Figure 5-9* shows an example of an all-way stop-controlled intersection.

*Applicable Safety Emphasis Areas:*

- Speed-Related
- Vulnerable Road Users
- Intersection-Related

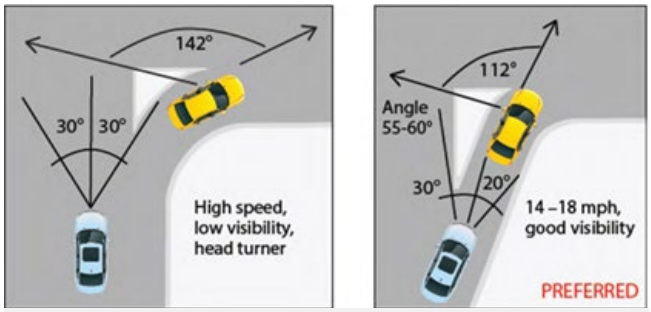
### ROUNDABOUTS

A roundabout is a type of circular intersection where traffic flows continuously around a central island. Vehicles entering a roundabout must yield to traffic already circulating within it, promoting a smooth and efficient flow of traffic with reduced conflict points compared to traditional intersections. Roundabouts are designed to improve safety, reduce congestion, and enhance traffic flow. The CMF for installing a roundabout is 0.59 for all crash types and severities (CMF ID: 10434). *Figure 5-10* provides an example of a roundabout.

*Applicable Safety Emphasis Areas:*

- Speed-Related
- Intersection-Related

**Figure 5-8. Example of Improved Geometry for Right-Turn Lanes**




Source: FHWA

**Figure 5-9. All-Way Stop-Controlled Intersection Example**

Source: pedbikeimages.org - Greg Griffin

**Figure 5-10. Roundabout Example**

Source: FHWA

### SIDEWALKS

A sidewalk is a designated pathway alongside a road or street intended for pedestrian use. It provides a safe and separate space for pedestrians to walk, away from vehicular traffic. Sidewalks enhance pedestrian safety by reducing the risk of collisions with vehicles, promoting walking as a mode of transportation, and providing accessible routes for people of all ages and abilities. Installing a sidewalk has a CMF of 0.598 for pedestrian crashes of all types and severities (CMF ID: 11246). *Figure 5-11* provides an example of a buffered sidewalk.

*Applicable Safety Emphasis Areas:*

- Vulnerable Road Users

### CROSSWALK VISIBILITY ENHANCEMENTS

Due to conditions such as poor lighting, obstructions, roadway curvature, and driver inattention, many pedestrians at crosswalks are not seen by drivers. Crosswalk enhancements, including high-visibility markings, improved lighting, and enhanced signing, significantly improve the visibility of crosswalks and their users to drivers. These enhancements, which are a national standard adopted by FHWA, can be implemented as standalone or combination features. This countermeasure alone has a CMF of 0.60 for pedestrian crashes of all severities (CMF ID: 4123). *Figure 5-12* shows an example of a high-visibility crosswalk.

*Applicable Safety Emphasis Areas:*

- Vulnerable Road Users

### INSTALLATION OF A TRAFFIC SIGNAL

Installing a traffic signal at an intersection significantly enhances safety by regulating the flow of vehicles and pedestrians. Traffic signals help prevent collisions by clearly indicating when it is safe for each direction to proceed, reducing the likelihood of accidents caused by confusion or failure to yield. They also improve pedestrian safety by providing designated crossing times, ensuring that pedestrians can cross the intersection without conflicting with vehicular traffic. Additionally, traffic signals manage traffic flow and reduce the likelihood of high-speed collisions. This countermeasure has a CMF of 0.61 for all crash types and severities (CMF ID: 7848). *Figure 5-13* shows an example of a signalized intersection.

*Applicable Safety Emphasis Areas:*

- Speed-Related
- Intersection-Related
- Vulnerable Road Users

*Figure 5-11. Buffered Sidewalk Example*

*Source: pedbikeimages.org - Dan Burden*

*Figure 5-12. High-Visibility Crosswalk Example*

*Source: pedbikeimages.org – Dan Burden*

*Figure 5-13. Signalized Intersection Example*


*Source: mntransportationresearch.org*

### CURB EXTENSIONS

Curb extensions at pedestrian crossings offer safety benefits by increasing pedestrian visibility and reducing the crossing distance. By extending the curb into the roadway, pedestrians are more visible to drivers, which helps prevent accidents caused by driver inattention. Additionally, curb extensions reduce the time pedestrians spend in the roadway, minimizing their exposure to vehicular traffic. The narrower roadway also serves as a traffic calming measure by reducing vehicular speeds. Installing a crosswalk with curb extensions has a CMF of 0.63 for all crash types and severities (CMF ID: 1786). *Figure 5-14* shows an example of a curb extension at a crosswalk.

*Applicable Safety Emphasis Areas:*

- Speed-Related
- Vulnerable Road Users

### LIGHTING IMPROVEMENTS

Insufficient lighting can cause significant visibility problems, as drivers may have difficulty seeing pedestrians, obstructions, and other vehicles. Installing or improving existing lighting infrastructure offers considerable safety benefits, as well-lit areas are less prone to crashes. Enhanced lighting also helps pedestrians feel safer and more confident when crossing streets. Improving street lighting illuminance and uniformity has a CMF of 0.679 for all crash types and severities (CMF ID: 11026). *Figure 5-15* shows an example of a well-lit roadway.

*Applicable Safety Emphasis Areas:*

- Roadway and Lane Departure
- Intersection-Related
- Vulnerable Road Users

### PEDESTRIAN REFUGE ISLAND

A pedestrian refuge island is a raised median area with a refuge point that assists pedestrians in crossing a road. Having a refuge island allows pedestrians to make a two-stage crossing by letting them cross one direction of traffic at a time. It is commonly used in urban and suburban areas where pedestrian and vehicular traffic is high and can be a part of other crossing enhancements, like pedestrian hybrid beacons (PHBs) or RRFBs. Installing a pedestrian refuge island has a CMF of 0.685 for all crash types and severities (CMF ID: 8799). *Figure 5-16* shows an example of a pedestrian refuge island.

*Applicable Safety Emphasis Areas:*

- Vulnerable Road Users

**Figure 5-14. Curb Extension Example**

Source: pedbikeimages.org – Andy Hamilton

**Figure 5-15. Example of a Well-Lit Roadway**

Source: FHWA

**Figure 5-16. Pedestrian Refuge Island Example**

Source: www.pedbikeimages.org - Dan Burden

### *IMPROVE SIGNING AND VISIBILITY AT SIGNAL*

The minimum improvements to the equipment and facilities at signalized intersections should include high contrast crosswalks, pedestrian signal heads and push buttons, and ADA-compliant curb ramps. When constructed, pedestrians and other vulnerable road users are provided with adequate facilities to make safe crossings, and motorists are alerted to dedicated crossing areas. Installing a high-visibility crosswalk and pedestrian signals has a CMF of 0.732 for vehicle and pedestrian crashes for all severities (CMF ID: 8967). *Figure 5-17* provides an example of high-contrast crosswalks with pedestrian signal heads and push buttons.

*Applicable Safety Emphasis Areas:*

- Intersection-Related
- Vulnerable Road Users

### *PEDESTRIAN HYBRID BEACON*

The pedestrian hybrid beacon (PHB) is a traffic control device designed to help pedestrians safely cross higher-speed roadways at midblock crossings and uncontrolled intersections. PHBs are typically effective at locations where three or more lanes will be crossed, or traffic volumes are above 9,000 annual average daily traffic. If a community is not familiar with PHBs, agencies and other governmental departments should provide appropriate education campaigns. PHBs have a CMF of 0.567 for pedestrian crashes of all severities (CMF ID: 10585). *Figure 5-18* provides an example of a pedestrian hybrid beacon for a pedestrian crossing.

*Applicable Safety Emphasis Areas:*

- Vulnerable Road Users

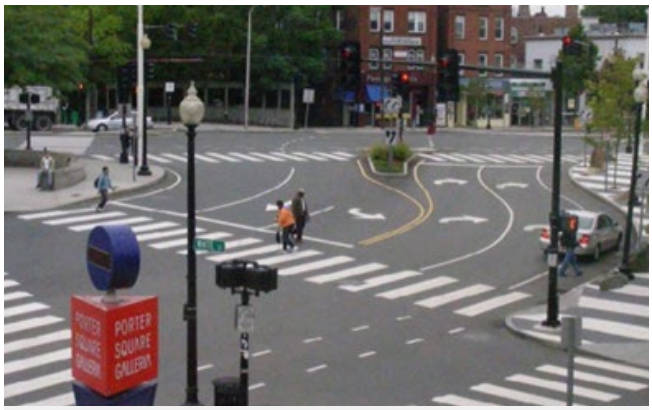
### *HIGH-CONTRAST LANE MARKINGS*

High-contrast lane markings refer to road markings that are designed to be easily distinguishable from the surrounding pavement, typically using contrasting colors or materials. These markings are intended to enhance visibility and clarity for drivers, especially in challenging conditions such as low light, inclement weather, or areas with poor visibility. This has a CMF of 0.84 for sideswipe and runs off the road crash types of all severities (CMF ID: 11280). *Figure 5-19* provides an example of high-contrast lane markings.

*Applicable Safety Emphasis Areas:*

- Roadway and Lane Departure
- Intersection-Related

**Figure 5-17. Crosswalk and Pedestrian Crossing Example**

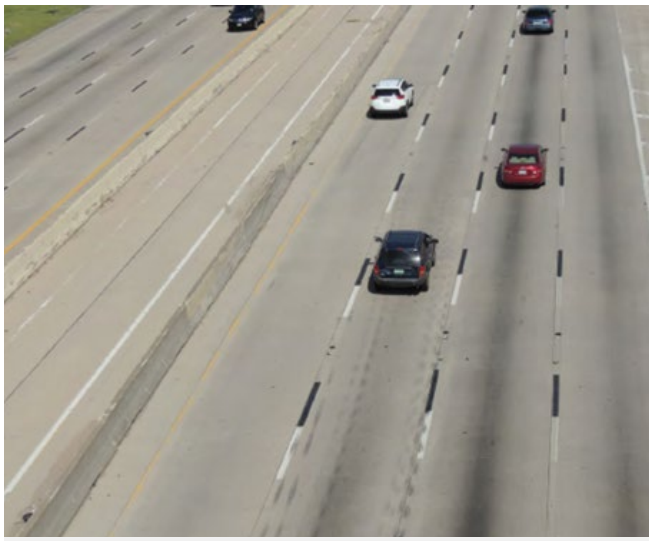



Source: pedbikeimages.org - Gary Thomas

**Figure 5-18. PHB Example**


Source: pedbikeimages.org - Mike Cynecki

**Figure 5-19. High-Contrast Lane Markings Example**



Source: FHWA

### *RETROREFLECTIVE BACKPLATES*

A retroreflective backplate is a backplate that frames a signal head with a 1-to-3-inch yellow retroreflective border. They improve the visibility of the illuminated face of the signal by introducing a controlled contrast background. They are also more visible and conspicuous in both daytime and nighttime conditions. Installing retroreflective backplates has a CMF of 0.85 for all crash types and severities (CMF ID: 1410). *Figure 5-20* provides an example of a retroreflective backplate installed on a signal head.

*Applicable Safety Emphasis Areas:*

- Intersection-Related

### *FLASHING YELLOW ARROW*

A Flashing Yellow Arrow (FYA) indicates that drivers are permitted to turn left but should yield to pedestrians and oncoming traffic during a permissive circular green. This countermeasure is a national standard adopted by the FHWA to increase intersection safety. The addition of a FYA is meant to decrease the number of left-turn crashes, especially those between vehicles turning left and those going straight. Installing a FYA has a CMF of 0.857 for left-turn crashes of all severities (CMF ID: 7730). *Figure 5-21* shows an example of a FYA installed at an intersection.

*Applicable Safety Emphasis Areas:*

- Intersection Safety

### *LANE DESIGNATION MARKINGS AND SIGNS*

Pavement markings are painted or applied symbols, lines, and patterns on road surfaces to convey traffic regulations, guidance, and warnings to drivers. They enhance safety by providing clear visual cues for lane delineation, intersection control, and other traffic management purposes. Pavement markings reduce confusion, improve traffic flow, and minimize the risk of crashes by assisting drivers in navigating roadways effectively and safely. Upgrading pavement markings has a CMF of 0.887 for all crash types and severities (CMF ID: 8101). *Figure 5-22* provides an example of pavement markings for lane designation.

*Applicable Safety Emphasis Areas:*

- Roadway and Lane Departure
- Vulnerable Road Users

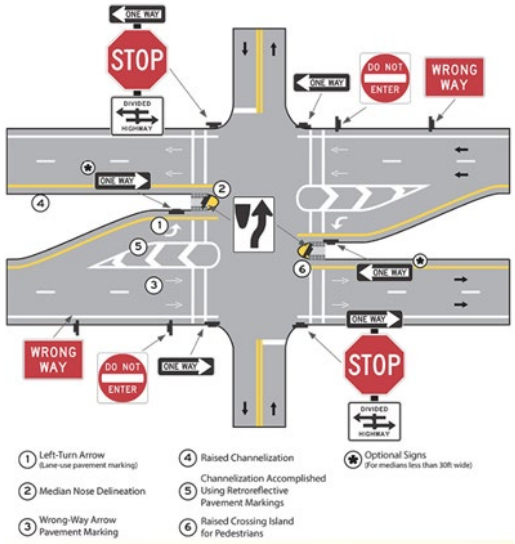
*Figure 5-20. Retroreflective Backplate Example*

Source: FHWA

*Figure 5-21. Flashing Yellow Arrow Example*


Source: mntransportationresearch.org

*Figure 5-22. Lane Designation Markings Example*




Source: FHWA

### WIDE EDGE LINES

Edge lines are the pavement markings at the edge of travel lanes and are designed to help drivers clearly identify the road alignment ahead. Edge lines are considered "wider" when the marking width is increased from the minimum normal line width of 4 inches to the maximum normal width of 6 inches. Wider edge lines enhance the visibility of travel lane boundaries compared to traditional edge lines. This has a CMF of 0.92 for all crash types and K, A, B, or C crash severities (CMF ID: 4775). *Figure 5-23* provides an example of a wide edge line.

*Applicable Safety Emphasis Areas:*

- Roadway and Lane Departure

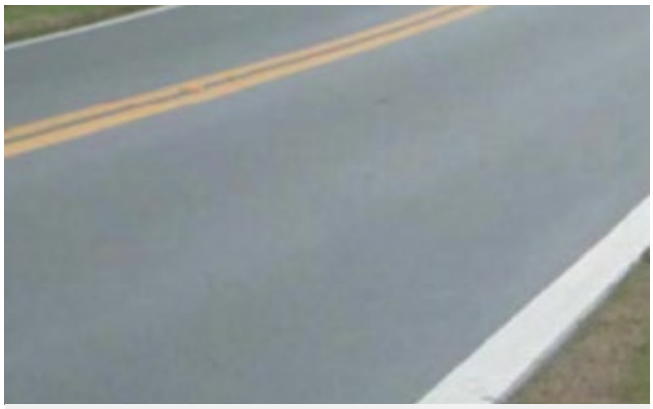
### CORRIDOR ACCESS MANAGEMENT

Access management pertains to the planning, implementation, and regulation of entry and exit locations along a road, encompassing intersections with other roads and driveways serving nearby properties. Thoughtful access management along a corridor can improve safety for all transportation modes, promote walking and cycling, and alleviate traffic congestion and delays. Closure or relocation of driveways from the functional area of intersection has a CMF of 0.93 for all crash types and severities (CMF ID: 442). *Figure 5-24* provides an example of corridor access management elements.

*Applicable Safety Emphasis Areas:*

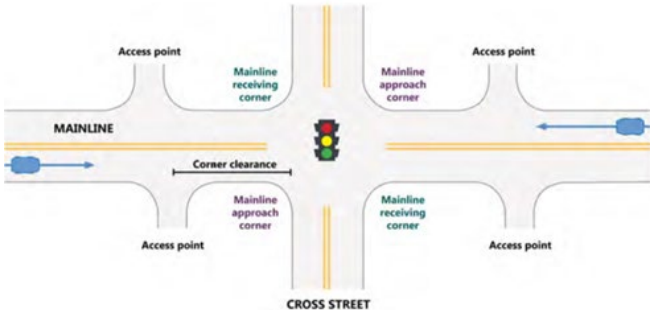
- Intersection-Related

**Figure 5-23. Wide Edge Line Example**



Source: FHWA, Texas Transportation Institute

**Figure 5-24. Corridor Access Management Example**




Source: FHWA

### *SPEED FEEDBACK SIGNS*

Speed feedback signs are traffic control devices designed to alert drivers of their current vehicle speed and encourage compliance with posted speed limits. These signs typically consist of a display panel, often featuring LED or digital readouts, which visually indicates the speed of approaching vehicles as they pass. The primary purpose of speed feedback signs is to increase drivers' awareness of their speed and encourage voluntary speed reductions, ultimately promoting safer driving behaviors and reducing the risk of crashes. These signs are commonly deployed in school zones, residential areas, work zones, and other locations where speeding may pose a safety hazard. Installing speed feedback signs has a CMF of 0.95 for all crash types and severities (CMF ID: 6885). The study for this CMF was conducted in a rural area, however, speed feedback signs in urban or suburban environments have a similar impact. ***Figure 5-25*** provides an example of a speed feedback sign.

*Applicable Safety Emphasis Areas:*

- Speed-Related

***Figure 5-25. Speed Feedback Sign Example***


*Source: FHWA*

### *SHARE-USE PATHWAY*

A shared-use pathway is a dedicated space designed for pedestrians, bicyclists, and other non-motorized users, separate from vehicular traffic. These pathways reduce the risk of collisions by providing a physical barrier between users and vehicles, enhancing safety for pedestrians and cyclists. By promoting active transportation and reducing conflicts with motor vehicles, shared-use pathways create a safer and more accessible environment. ***Figure 5-26*** shows an example of a shared-use pathway.

*Applicable Safety Emphasis Areas:*

- Vulnerable Road Users

***Figure 5-26. Shared-Use Pathway Example***

*Source: Source: pedbikeimages.org – Matthew Rufo*

## TARGETED CORRIDOR SAFETY COUNTERMEASURES

The top five HIN priority corridors are shown in ***Figure 5-27*** through ***Figure 5-30***. Each figure shows the limits of the HIN, an overview of corridor-wide safety considerations, and detailed countermeasures specific to each intersection or observed issue within the corridor.

*Figure 5-27. Top Five HIN - Corridor 1: Bruton Road/Cartwright Road*

# Corridor 1: Bruton Road/Cartwright Road

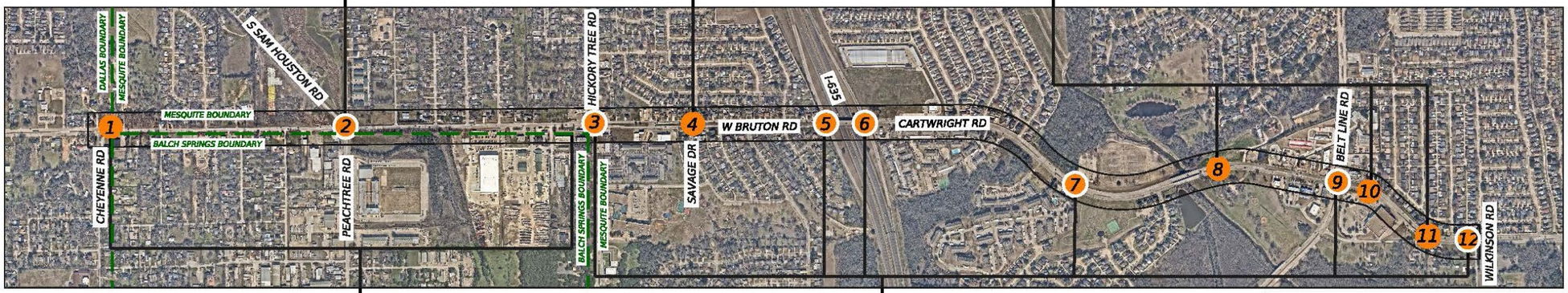
N

N.T.S.

## Cheyenne Road to Wilkinson Road

This section of Cartwright Road and Bruton Road is bordered by commercial and residential areas. The corridor features a two-lane undivided section from Cheyenne Road to Hickory Tree Road, a four-lane divided section from Hickory Tree Road to I-635, and a six-lane divided section east of I-635. The entire corridor spans approximately 2.9 miles, with a speed limit of 35 mph west of I-635 and 40 mph east of I-635. With this corridor acting as a key connecting point between the City of Mesquite, City of Dallas, and City of Balch Springs, the need for additional capacity, curb and gutter improvements, and a center median is crucial for the roadway segment between Cheyenne Rd and Hickory Tree Rd. Safety improvements along this area would be a net benefit to the surrounding communities and all that commute through this area.

East of I-635, the corridor has significant sidewalk gaps making pedestrian accessibility a challenge. Filling in the missing segments will help this corridor become more pedestrian friendly. The current faded raised pavement markings along the corridor make it difficult to distinguish between lanes, creating potential hazards. Refreshing the markings or implementing solid lane striping in these areas will help guide drivers into a single lane and reduce conflicts, therefore improving safety along the corridor's winding path.




Drainage Improvements

Roundabout

Pedestrian Hybrid Beacon (PHB)

High Contrast Lane Markings

LED Chevron Signage

Install Median

Roadway and Curb/Gutter Improvements

ADA Ramps

Crosswalk Visibility Enhancement

APS Push Buttons

Sidewalks

Pavement Marking Improvements

Corridor-Wide

X Unsignalized Location

X Signalized Location

Proposed Improvements

1 3 It is recommended to install a median, provide curb and gutter improvements, and add an additional lane of capacity between Cheyenne Rd (1) and Hickory Tree Rd (3). This would improve the existing cross-section of two-lane undivided to four-lane divided, to provide consistency along the corridor.

2 This five-legged intersection is a consistent problem area due to its atypical configuration and outdated signal infrastructure. It is recommended to upgrade this intersection to a roundabout and improve the existing drainage system.

3 5 6 8 7 12 These are signalized intersections that could benefit from minor updates including updating pedestrian ramps to be ADA-compliant, installing APS push buttons, as well as enhancing pedestrian crossing markings.

4 Two pedestrian/cyclist crashes have occurred at this existing crossing location in the last five years. Therefore, enhanced signage along with the evaluation for a pedestrian hybrid beacon (PHB) is recommended at this location to improve pedestrian safety.

8 10 11 This area has seen many roadway lane departure crashes over the last five years, due to the existing horizontal curves along this segment. At these locations it is recommended to convert the existing chevron signage to include flashing LEDs to alert drivers of the significant road curvature. In addition, high contrast lane markings are recommended at these locations due to the significant curvature of the road.

## Key Map

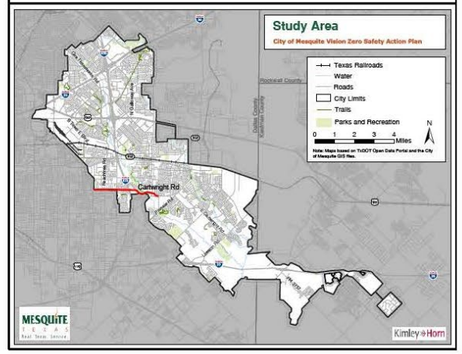



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*Figure 5-28. Top 5 HIN - Corridor 2: Oates Drive*

# Corridor 2: Oates Drive

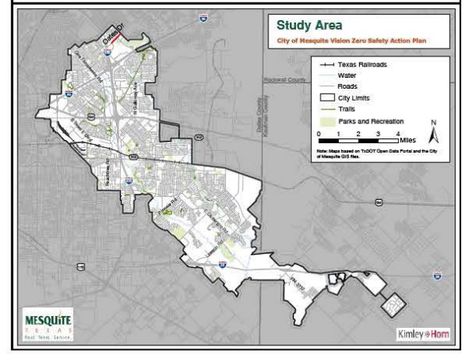
## Wooded Lake Drive to Frontier Boulevard

This section of Oates Dr is surrounded by multifamily and single family residential, commercial area, school zones, and a public park southeast of Frontier Blvd. Oates Dr is currently a six-lane divided roadway between Wooded Lake Dr to Northwest Dr and four-lane divided east of Northwest Dr. This section of Oates Dr spans 0.55 miles long with a speed limit of 40 mph and acts as a key connecting point between the City of Mesquite and the City of Garland. Therefore, any safety improvements would be a net benefit to both communities.

The corridor has significant sidewalk gaps with many areas missing segments making pedestrian accessibility to nearby schools and parks a challenge. Filling in the gaps with sidewalks will help this corridor become more walkable and enhance pedestrian connectivity. The existing pavement markings along the corridor are difficult to distinguish, creating potential hazards. Refreshing the markings with new buttons will enhance lane visibility and improve driver guidance.

N.T.S.

Key Map




Flashing Yellow Arrow (FYA) Improvements

Pedestrian Hybrid Beacon (PHB)


ADA Ramps

Crosswalk Visibility Enhancement

APS Push Buttons

X Unsignalized Location

X Signalized Location

**Proposed Improvements**

1 2 These are signalized intersections that could benefit from minor updates including updating pedestrian ramps to be ADA-compliant, installing APS push buttons, as well as enhancing pedestrian crossing markings.

1 There was a fatality at this intersection due to a left turn at the signal, implementing flashing yellow arrows (FYA) to all approaches would enhance vehicle safety.

3 A pedestrian/cyclist crash occurred at this existing crossing location in 2024 and caused incapacitating injuries. With direct access to the adjacent park, enhanced signage along with the evaluation for a pedestrian hybrid beacon (PHB) is recommended at this location to improve pedestrian safety.

Sidewalks

Pavement Marking Improvements

Corridor-Wide

MESQUITE TEXAS

*Figure 5-29. Top 5 HIN - Corridor 3: Lawson Road*

# Corridor 3: Lawson Road

## Milam Road to Cartwright Road

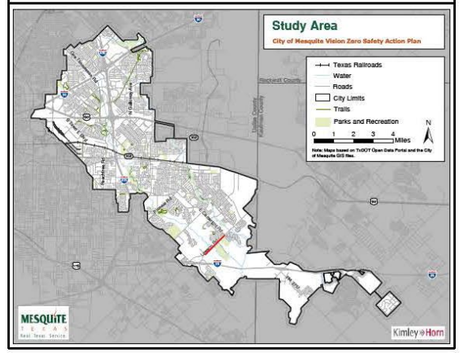
This section of Lawson Rd is surrounded by residential land use. The corridor stretches from Milam Rd to Cartwright Rd and is currently two-lane undivided and spans 1.2 miles long with a speed limit of 35 mph.

The corridor currently has no curb and gutter or sidewalk on either side of the street. The need for additional capacity, curb and gutter improvements, continuous sidewalk, and a center median is crucial to improve safety along this corridor. This expansion would improve the existing cross-section of two-lane undivided to four-lane divided, to provide consistency along the corridor. Installing curb and gutter will also create a buffer along the travel way, providing a safer distance between pedestrians and vehicles, while also enhancing roadway drainage.

N

N.T.S.

### Key Map





Guardrail and Bridge Improvements

X Unsignalized Location

X Signalized Location

**Proposed Improvements**

1 2 Between these locations guardrail and bridge improvements are recommended for vehicle safety as the road crosses over an existing ditch.

* The following intersection is being improved through the Highway Safety Improvement Program (HSIP) with a full signal rebuild that includes signal mast arms, flashing yellow arrows (FYA), pedestrian ramps and pedestrian signals, and refreshed pavement markings.

Sidewalks | Roadway Expansion | Curb and Gutter | Raised Median | Lighting

**Corridor-Wide**

*Figure 5-30. Top 5 HIN – Corridor 4: Samuell Boulevard*

# Corridor 4: Samuell Boulevard

## Big Town Boulevard to Town East Boulevard

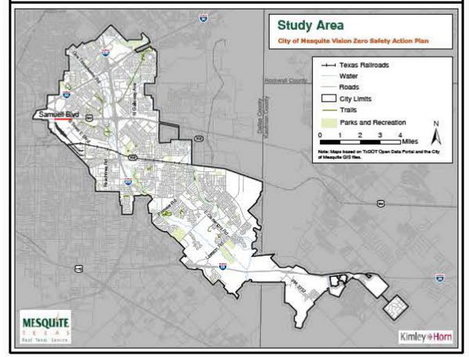
This section of Samuell Boulevard is surrounded by multi-family residential north of the corridor and industrial-use south of the corridor, which leads to a high percentage of heavy truck traffic. The corridor is currently six-lane divided and spans 0.73 miles long with a speed limit of 40 mph.

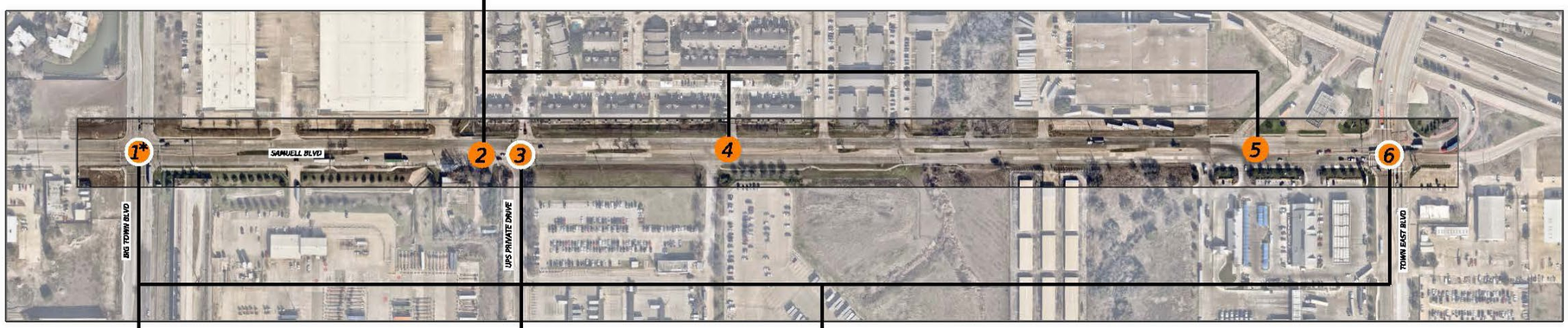
There is currently a lack of sidewalk connectivity along the corridor, with many sections having worn foot paths from pedestrian usage. Filling in the gaps with sidewalks will help this corridor become more pedestrian friendly. The existing pavement markings along the corridor are difficult to distinguish, creating potential hazards. Refreshing the markings with new buttons will enhance lane visibility and improve driver guidance.

N

N.T.S.

Key Map




Access Management Improvements

Lane Reduction Improvements

Pedestrian Signal

ADA Ramps

APS Push Buttons

Crosswalk Visibility Enhancement

X Unsignalized Location

X Signalized Location

**Proposed Improvements**

1 3 6 These are signalized intersections that could benefit from minor updates including updating pedestrian ramps to be ADA-compliant, installing APS push buttons, as well as enhancing pedestrian crossing markings.

1 The southbound approach has a lane drop shortly south of the intersection, the lane reduction markings can be improved to make the transition more smooth for drivers.

3 This intersection currently has no pedestrian signal. With a pedestrian fatality occurring near this crossing, it is recommended to enhance the existing signal with this improvement.

2 4 5 Recommending the extension of raised medians in these locations would improve access management, allowing reduced conflicting movements for vehicles turning into developments with multiple access points. This would enhance overall traffic flow and safety on the roadway.

* This intersection is on the City's top 10 high-crash intersection list and sees a high number of red-light running vehicles and pedestrian demand. It is recommended to implement protected left-turns during critical hours and install advanced detection to improve clearance intervals. See Chapter 5 for more information

Sidewalks

Pavement Marking Improvements

Corridor-Wide

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*Figure 5-31. Top 5 HIN – Corridor 5: Galloway Avenue*

# Corridor 5: N Galloway Avenue

## Hillcrest Street to Grubb Drive

This section of N Galloway Ave is surrounded by residential and commercial areas, school zones, and medical facilities nearby. The corridor stretches from Hillcrest St to Grubb Dr and is currently six-lane divided; it spans 0.92 miles long with a speed limit of 35 mph.

With the existing wide cross-section, this section of Galloway Ave experiences speeding issues and could potentially benefit from traffic calming improvements such as a road diet. Converting the current six-lane divided roadway into a four-lane divided roadway could help implement traffic calming and even allow for a potential on-street bike lane. An on-street bike facility would benefit the community and nearby schools. With three cyclist related crashes, this shows the demand of using this facility as a bike route to improve the cyclist conditions.

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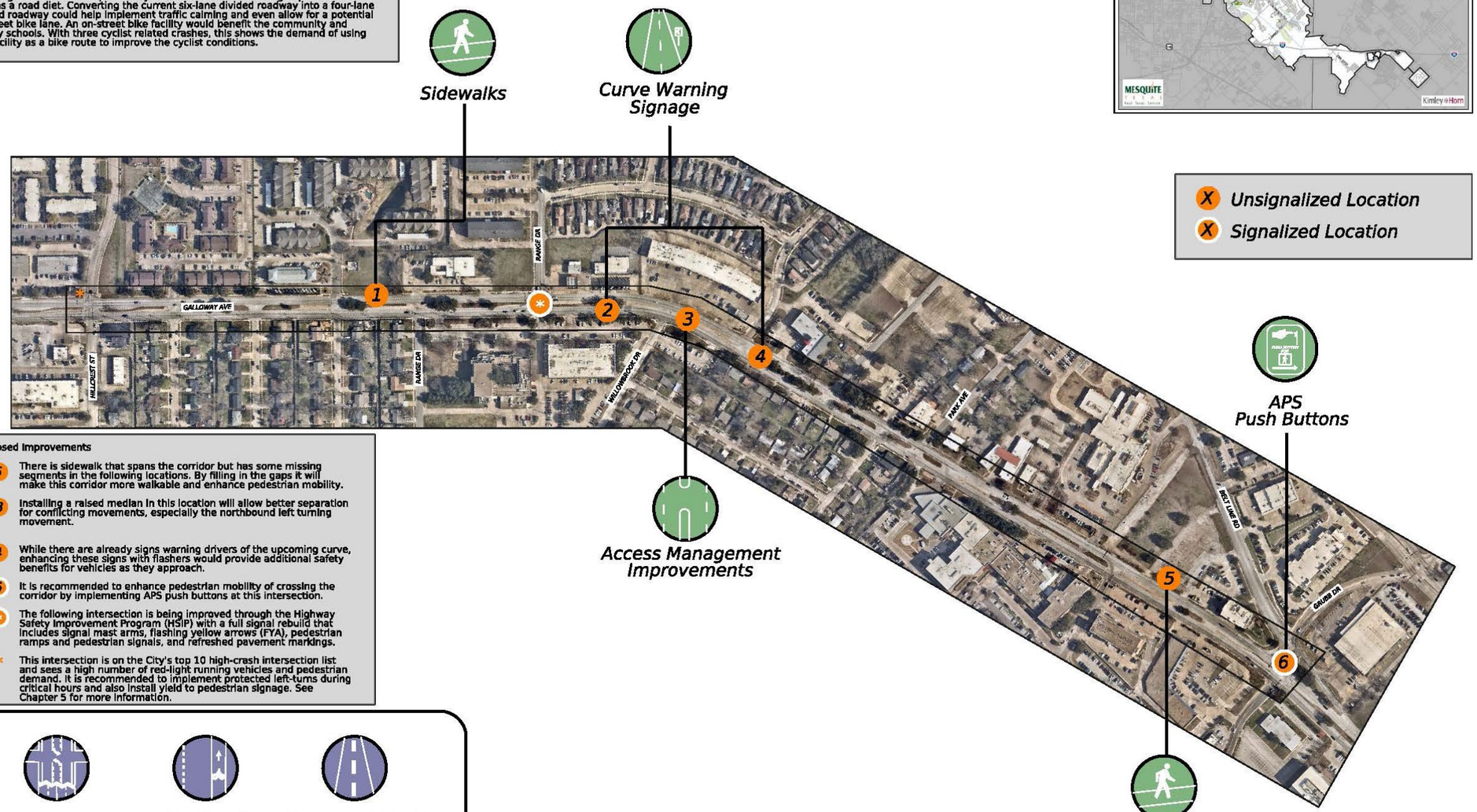



**Proposed Improvements**

- 1 5 There is sidewalk that spans the corridor but has some missing segments in the following locations. By filling in the gaps it will make this corridor more walkable and enhance pedestrian mobility.
- 3 Installing a raised median in this location will allow better separation for conflicting movements, especially the northbound left turning movement.
- 2 4 While there are already signs warning drivers of the upcoming curve, enhancing these signs with flashers would provide additional safety benefits for vehicles as they approach.
- 6 It is recommended to enhance pedestrian mobility of crossing the corridor by implementing APS push buttons at this intersection.
- * The following intersection is being improved through the Highway Safety Improvement Program (HSIP) with a full signal rebuild that includes signal mast arms, flashing yellow arrows (FYA), pedestrian ramps and pedestrian signals, and refreshed pavement markings.
- * This intersection is on the City's top 10 high-crash intersection list and sees a high number of red-light running vehicles and pedestrian demand. It is recommended to implement protected left-turns during critical hours and also install yield to pedestrian signage. See Chapter 5 for more information.

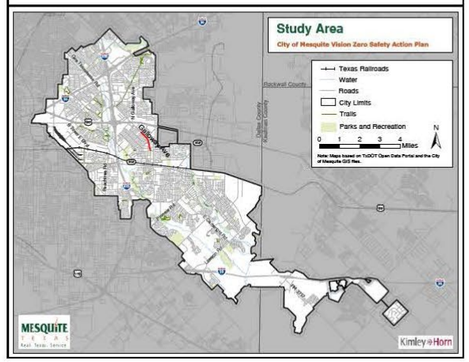
**Corridor-Wide**

Road Diet

On Street Bike Lanes

Pavement Marking Improvements

**Key Map**




X Unsignalized Location

X Signalized Location

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## INTERSECTION SAFETY ANALYSIS AND COUNTERMEASURES

Following the identification of the top 10 high-crash intersections throughout the city (as shown in **Chapter 3**), a focused safety study was conducted at four intersections to further analyze specific risks and potential improvements. These four intersections are shown below in *Table 5-3*.

*Table 5-3. Four Targeted High-Crash Intersections*

| INTERSECTION | NUMBER OF CRASHES | INTERSECTION CRASH RATE |
|---|---|---|
| Galloway Avenue at Barnes Bridge Road (Childress Avenue) | 23 | 2.14 |
| Scyene Road at Peachtree Road | 55 | 2.13 |
| Samuell Avenue at Big Town Boulevard | 29 | 1.16 |
| Galloway Avenue at Hillcrest Street | 16 | 0.96 |

Street Simplified conducted a 24-hour safety study at each intersection to assess crash trends, vehicle and pedestrian movements, and potential safety improvements. The study leveraged advanced analytics and LiDAR, including near-miss analysis, red-light running incidents, speed evaluations, and VRU conflicts. The findings highlight key safety concerns and suggest infrastructure improvements to enhance pedestrian and vehicular safety at each intersection, which are revealed in the following sections.

## *N GALLOWAY AVENUE AT BARNES BRIDGE ROAD (CHILDRESS AVENUE)*

At the intersection of Galloway Avenue at Barnes Bridge Road, **a total of 35 crashes were recorded and mapped at the intersection over the last 10 years (2015-2024)**. Predominant crash types included angle crashes where vehicles were traveling perpendicular to one another. The conducted study revealed several critical safety concerns, including a high frequency of red light running, sight distance challenges, opposing near-misses, and infrastructure deficiencies for vulnerable road users. Below is a breakdown of this data.

**INTERSECTION HIGHLIGHTS** from the 24-hour safety study period

- **83** speeding events
- **19** instances of red light running
- **213** instances of opposing left-through near-misses

*Figure 5-32. Galloway Avenue at Barnes Bridge Road Intersection*

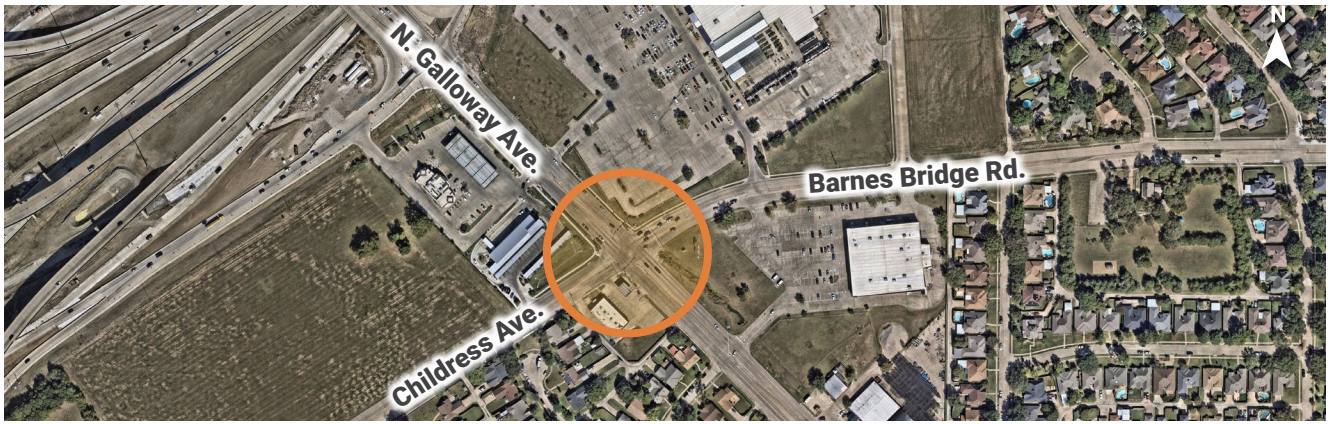



*Figure 5-33. Red Light Dilemma Zone*

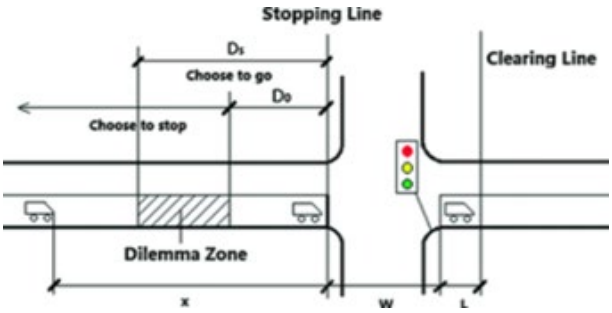
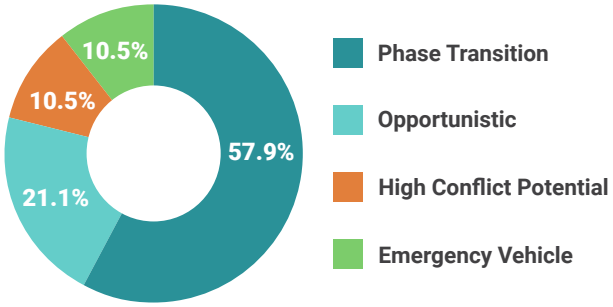



*Figure 5-34. Total Red Light Running Events by Type*




### *Red-Light Running and Speeding*

83 events of speeding and 19 instances of red-light running were recorded, with most violations occurring on the southeast leg of the intersection.

A significant number of violations occurred during phase transitions or directly after a phase transition, as shown in *Figure 5-34*, which breaks down the percentage of red light running event types from a random sample size.

Red light running during a **"phase transition"** refers to a driver entering an intersection after their traffic signal has turned red but while the signal for conflicting traffic is not yet green.

**Opportunistic** red light running is the act of entering an intersection after the signal has turned red because the driver believes they can safely and quickly clear the intersection before other traffic begins to move.

### *Recommendation:*

- Consider installing advance dilemma zone protection
- Evaluate yellow change and all-red clearance intervals

## Sight Distance Challenges

With the existing horizontal curve on the southwest-bound approach of Barnes Bridge Road, the historical crash data shows a significant number of rear-end crashes on this approach.

### *Recommendation:*

- Consider installing advanced signal warning signage on this approach as vehicles are traveling around the curve.
- Consider installing a near-side signal head to warn oncoming drivers that vehicles may be stopped or queued at the intersection.

## Vulnerable Road User Conflicts

Frequent pedestrian and cyclist near-misses were observed on all approaches of the intersection.

Crosswalk compliance was low, with many pedestrians crossing outside designated areas or on prohibited crossings, as shown in *Figure 5-35.*

### *Recommendation:*

- Consider removing pedestrian crossing restrictions on the southeast and northeast legs of the intersection. This would include the installation of pedestrian crosswalks and signal crossings on all intersection approaches.
- Consider adding or improving sidewalks and pedestrian ramps on the east corner of the intersection.
- Consider adding stop bars in advance of the pedestrian crosswalks on each approach.

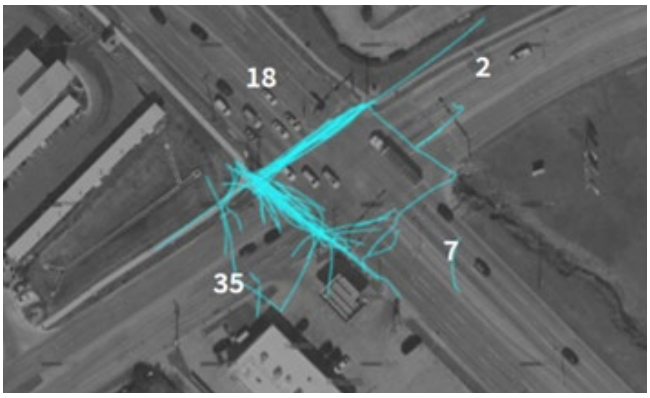
## Opposing Left-Through Near-Misses

The study recorded 213 instances of opposing left-through near misses, with 85% of these occurring along Galloway Avenue on the northwest-bound through movement and southeast-bound left movement.

### *Recommendation:*

- Consider replacing the left-turn permissive phases with protected left-turn phases or implementing protected left-turn phases at certain times of the day.

*Figure 5-35. Pedestrian/Cyclist Crossing Off Crosswalk*



## *SCYENE ROAD AT PEACHTREE ROAD*

At the intersection of Scyene Road at Peachtree Road, **a total of 102 crashes were recorded, with 99 crashes mapped at the intersection over the last 10 years (2015-2024)**. Predominant crash types included angle crashes where one vehicle was making a left turn while an opposing vehicle was traveling through the intersection. The conducted study revealed several critical safety concerns, including a high frequency of left turning near-misses, red light running, and high vehicle speeds. Below is a breakdown of this data.

**INTERSECTION HIGHLIGHTS** from the 24-hour safety study period

- **35** speeding events
- **49** instances of red light running
- **227** instances of opposing left-through near-misses

### *Left Turning Conflicts*

227 instances of opposing left-through near misses were recorded, with 47% of these occurring along Scyene Road on the westbound through movement and eastbound left movement.

***Recommendation:***

- Consider replacing the left-turn permissive phases with protected left-turn phases or implementing protected left-turn phases at certain times of the day.

### *Red-Light Running and Speeding*

35 events of speeding and 49 instances of red-light running were recorded, with most violations occurring on the west leg of the intersection along Scyene Road.

A significant number of violations occurred during phase transitions or directly after a phase transition, as shown in *Figure 5-37*.

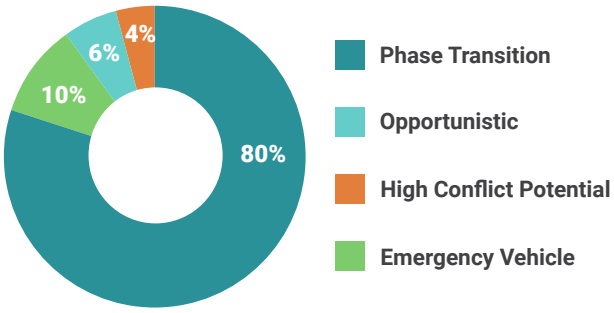
There were also a higher percentage of emergency vehicle red-light running events (10%); this is likely due to the proximity of the intersection to Mesquite Fire Station No. 4.

***Recommendation:***

- Consider installing advance dilemma zone protection and evaluating yellow change and all-red clearance intervals.

*Figure 5-36. Scyene Road at Peachtree Road Intersection*


*Figure 5-37. Total Red Light Running Events by Type*




Red light running during a **"phase transition"** refers to a driver entering an intersection after their traffic signal has turned red, but while the signal for conflicting traffic is not yet green.

**Opportunistic** red light running is the act of entering an intersection after the signal has turned red because the driver believes they can safely and quickly clear the intersection before other traffic begins to move.

## *SAMUELL AVENUE AT BIG TOWN BOULEVARD*

At the intersection of Samuell Avenue at Big Town Boulevard, **a total of 42 crashes were recorded with 36 crashes mapped at the intersection over the last 10 years (2015-2024).** Predominant crash types included angle crashes where both vehicles were going straight. The conducted study revealed several critical safety concerns, including sight distance challenges, red light running with high speeds, inadequate intersection lighting, and opposing left-through near misses. Below is a breakdown of this data.

**INTERSECTION HIGHLIGHTS** from the 24-hour safety study period

- **64** speeding events
- **112** instances of red light running
- **153** instances of opposing left-through near-misses

*Figure 5-38. Samuell Boulevard at Big Town Boulevard Intersection*


*Figure 5-39. Sight Distance Challenge*

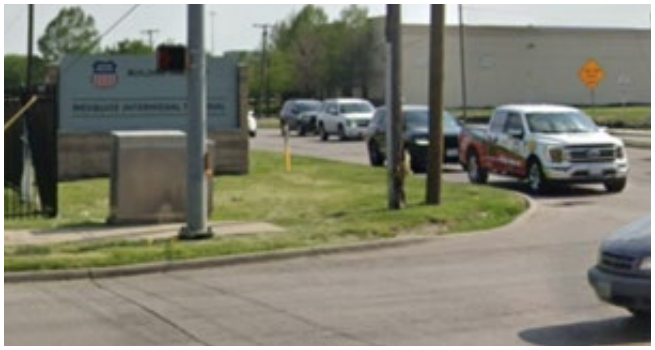
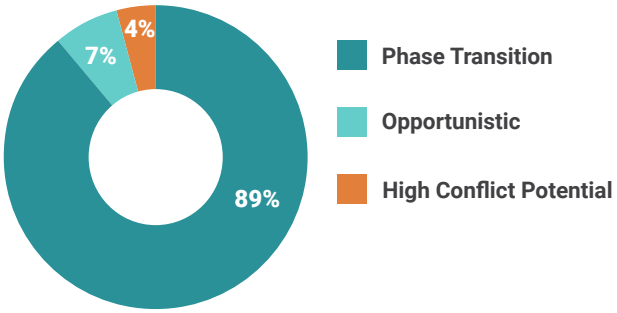


*Figure 5-40. Total Red Light Running Events by Type*




### *Sight Distance Challenges*

The existing Mesquite Intermodal Terminal signage on the south leg of the intersection poses safety concerns and limits the sight distance on the westbound approach to nearly 130 feet.

***Recommendation:***

- Consider installing advanced signal warning signage on this corner as vehicles approach the intersection.

Red light running during a **"phase transition"** refers to a driver entering an intersection after their traffic signal has turned red, but while the signal for conflicting traffic is not yet green.

**Opportunistic** red light running is the act of entering an intersection after the signal has turned red because the driver believes they can safely and quickly clear the intersection before other traffic begins to move.

## Red-Light Running and Speeding

64 events of speeding and 112 instances of red-light running were recorded, with most violations occurring on the south leg of the intersection along Big Town Boulevard.

A significant number of violations occurred during phase transitions or directly after a phase transition, as shown in *Figure 5-40*.

***Recommendation:***

- Consider installing advance dilemma zone protection and evaluating yellow change and all-red clearance intervals.

## Intersection Lighting

This intersection was rated 1.5 out of 5 stars. The northeast, southwest, and southeast corners lack adequate lighting, as shown in *Figure 5-41*.

***Recommendation:***

- Install intersection lighting to illuminate all four corners.

## Left Turning Conflicts

153 instances of opposing left-through near misses were recorded, with 48% of these occurring along Big Town Boulevard on the northbound through movement and southbound left movement.

***Recommendation:***

- Consider replacing the left-turn permissive phases with protected left-turn phases or implementing protected left-turn phases at certain times of the day.

*Figure 5-41. Intersection Lighting*

## GALLOWAY AVENUE AT HILLCREST STREET

At the intersection of Galloway Avenue at Hillcrest Street, a total of **30 crashes were mapped at the intersection over the last 10 years (2015-2024)**. Predominant crash types included angle crashes where one vehicle was making a left turn while an opposing vehicle was traveling through the intersection. This intersection also experienced multiple crashes that involved vulnerable road users. The conducted study revealed several critical safety concerns, including insufficient infrastructure for vulnerable road users, red light running with high speeds, and inadequate intersection lighting. Below is a breakdown of this data.

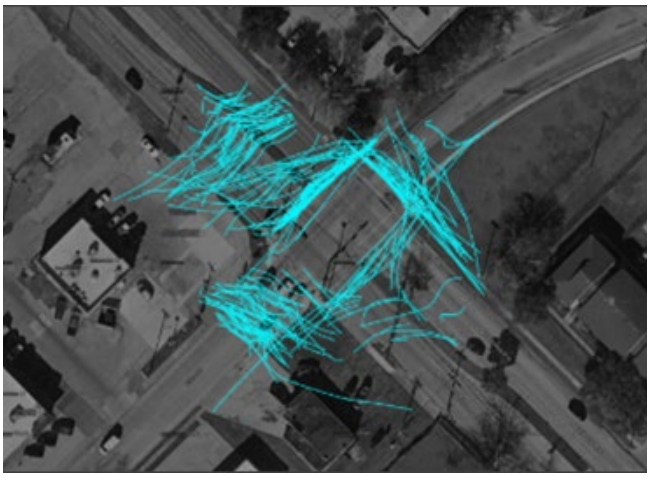
**INTERSECTION HIGHLIGHTS** from the 24-hour safety study period

**255** speeding events

**55** instances of red light running

*Figure 5-42. Galloway Ave. at Hillcrest St. Intersection*


*Figure 5-43. Pedestrian/Cyclist Crossing Off Crosswalk*



### Vulnerable Road User Conflicts

Frequent pedestrian and cyclist near-misses were observed on all approaches of the intersection.

Crosswalk compliance was low, with many pedestrians crossing outside designated areas or on prohibited crossings, as shown in *Figure 5-43.*

***Recommendation:***

- Consider implementing high-visibility crosswalk striping across all four approaches of the intersection, as shown in *Figure 5-44*.
- Consider implementing yield to pedestrian signage at the intersection, as shown in *Figure 5-45*.

*Figure 5-44. High-Visibility Crosswalk Striping*

*Figure 5-45. Yield to Pedestrian Signage*

## Red-Light Running and Speeding

255 events of speeding and 55 instances of red-light running were recorded, with most violations occurring on the northwest leg of the intersection along Galloway Avenue.

A significant number of violations occurred during phase transitions or directly after a phase transition, as shown in *Figure 5-46.*

### *Recommendation:*

- Consider installing speed feedback signs along N Galloway Avenue. Because this is adjacent to a school with many pedestrians using the intersection, it is critical to slow down vehicle speeds.
- Consider installing advance dilemma zone protection and evaluating yellow change and all-red clearance intervals.

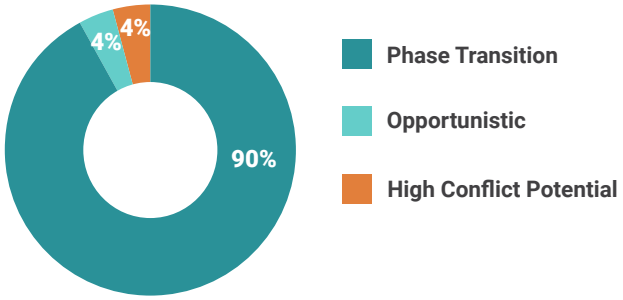
## Intersection Lighting

This intersection was rated 2 out of 5 stars. The corner lacks adequate lighting, especially for a location that experiences high pedestrian demand, as shown in *Figure 5-47*.

### *Recommendation:*

- Install intersection lighting to illuminate the north corner.

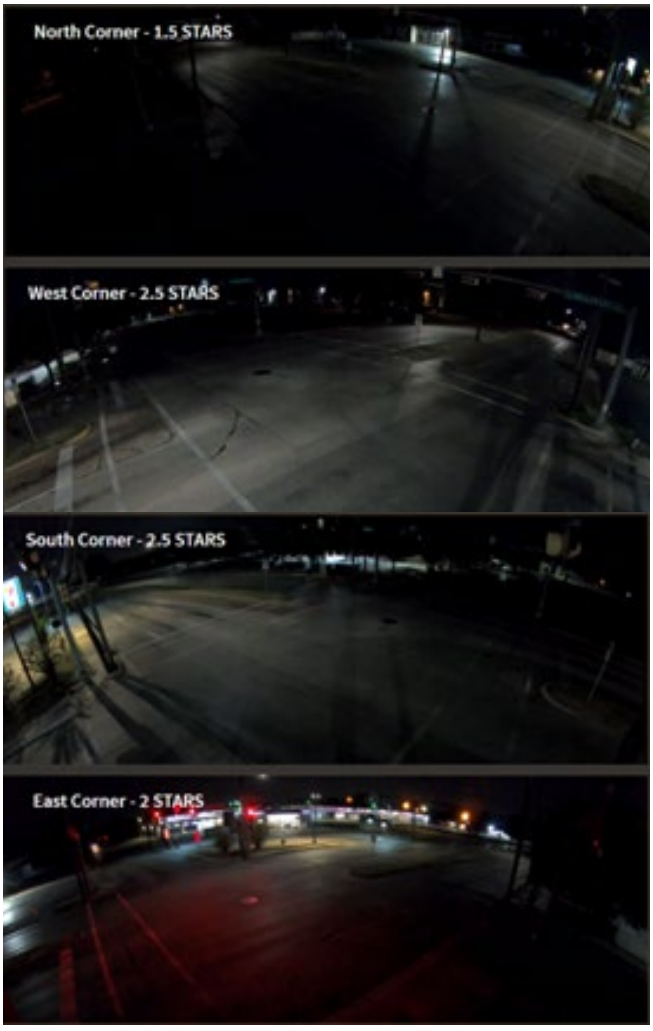
*Figure 5-46. Total Red Light Running Events by Type*




Red light running during a **"phase transition"** refers to a driver entering an intersection after their traffic signal has turned red, but while the signal for conflicting traffic is not yet green.

**Opportunistic** red light running is the act of entering an intersection after the signal has turned red because the driver believes they can safely and quickly clear the intersection before other traffic begins to move.

*Figure 5-47. Intersection Lighting*



# CHAPTER 6

## UNDERSERVED COMMUNITIES ANALYSIS

# CHAPTER 6

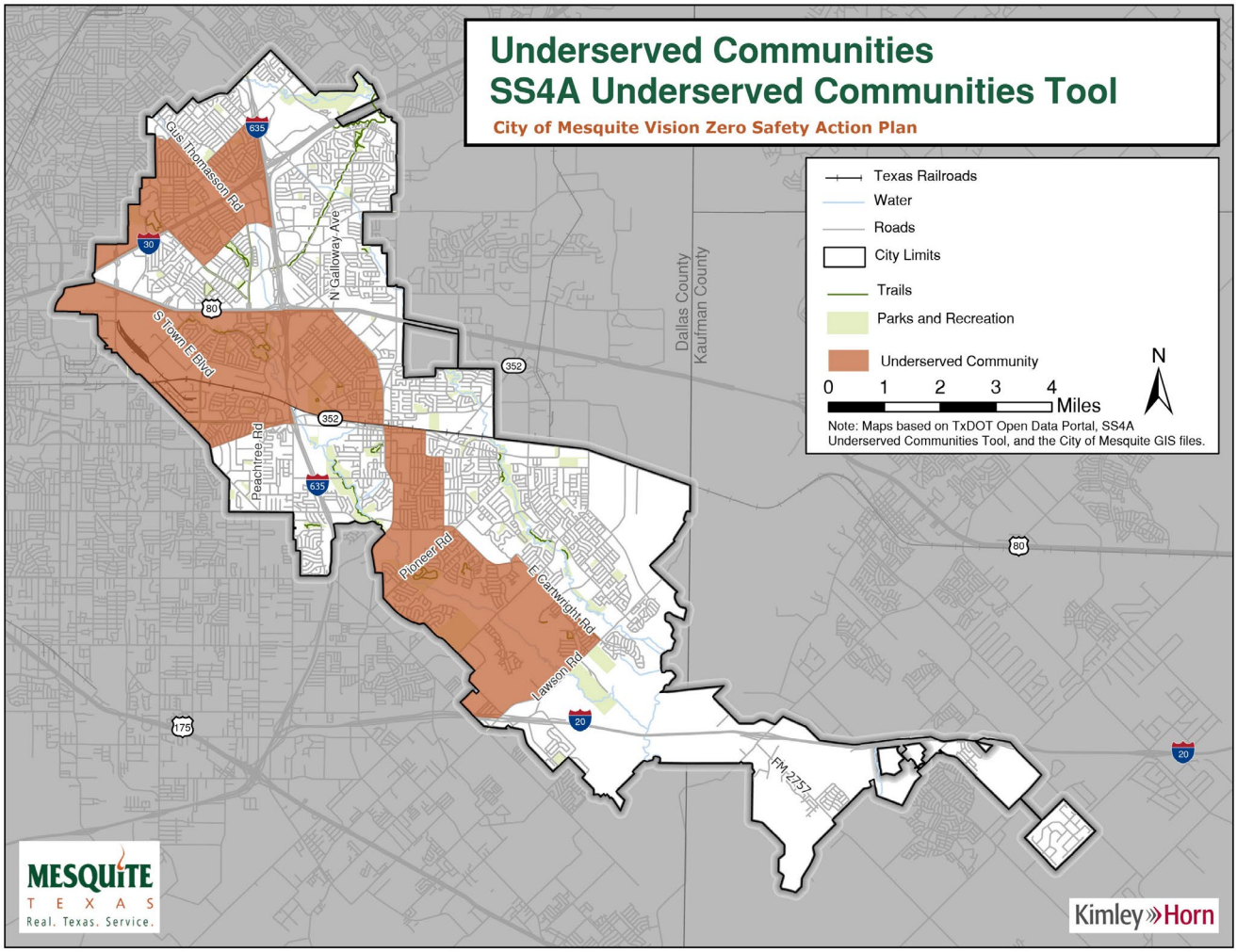
## Underserved Communities Analysis

For the Mesquite CSAP, underserved communities were an important factor in determining how the city should prioritize future investment. This involves tailoring resources and interventions to meet the specific needs of Mesquite, ensuring that vulnerable communities have the necessary support to achieve similar safety outcomes. By prioritizing underserved communities, the plan recognizes and addresses the varying levels of risk and access to safety measures among diverse populations, leading to more effective and inclusive safety improvements.

### HOW TO DETERMINE UNDERSERVED COMMUNITIES

U.S. Department of Transportation (USDOT) determines underserved census tracts for Safe Streets and Roads for All (SS4A) grants by determining whether 20 percent or more of the population of that census is or has been continually living in poverty. These tracts often show higher unemployment levels, lower median incomes, and inadequate safety infrastructure. Furthermore, underserved census tracts may experience more traffic incidents and lack sufficient infrastructure for pedestrian and bicyclist safety. Identifying these tracts is essential for allocating SS4A grants to regions that require the most safety enhancements and prioritizing resource allocation. *Figure 6-1* below shows the underserved census tracts within the city limits of Mesquite.

*Figure 6-1. City of Mesquite Underserved Communities Census Tracts*



## UNDERSERVED CRASH HISTORY VERSUS CITYWIDE

Fatal and Serious Injury (KA) crashes representing the eight emphasis areas identified in TxDOT's Strategic Highway Safety Plan (SHSP) were evaluated in underserved community tracts to see how they compare to crashes that occurred citywide. This comparison is shown below in *Table 6-1*. In six of the eight emphasis areas, Fatal and Serious Injury crashes were overrepresented in Underserved Communities compared to Citywide, with the highest difference shown for Distracted Driving at 13%.

***Table 6-1. Fatal and Serious Injury Crash Comparison for Emphasis Areas between Underserved Communities and Citywide***

| NO. | EMPHASIS AREA | % KA CITYWIDE CRASHES | % UNDERSERVED COMMUNITY KA CRASHES | DIFFERENCE |
|---|---|---|---|---|
| 1 | Roadway/Lane Departure | 33% | 36% | 3% |
| 2 | Speed-Related | 9% | 8% | -1% |
| 3 | Intersection-Related | 12% | 11% | -1% |
| 4 | Impaired Driving | 34% | 41% | 7% |
| 5 | Unrestrained Persons | 30% | 36% | 6% |
| 6 | Distracted Driving | 44% | 57% | 13% |
| 7 | Vulnerable Road Users | 26% | 30% | 4% |
| 8 | Red Light/Stop Sign Running | 6% | 8% | 2% |

## UNDERSERVED COMMUNITY VULNERABILITY INDEX

Underserved communities within Mesquite were identified with data collected from USDOT. An integral part of the crash history analysis was considering existing underserved areas of the City. This analysis included population characteristics for five categories:

- Accessibility
- Mobility
- Community
- Safety
- Environment

These five categories are explained further below.

1. **Accessibility** considers sidewalk connectivity and the pedestrian level of service. It also considers other pedestrian infrastructure and identifies where and how enhancements to the existing infrastructure allow for more access to the greater transportation network.
2. **Mobility** uses data from NCTCOG to understand the level of service to the population of those in Mesquite, with a specific focus on those who are able to reach public transit options within a reasonable walking distance.
3. **Community** evaluates social and economic conditions, health indicators, and environmental vulnerabilities. This data highlights disparities in income, education, housing stability, and healthcare access, which can compound challenges for under-resourced populations.
4. **Safety** analyzes traffic-related risks by examining the rate of fatal crashes, the number of fatalities, and total vehicular crashes, with a specific focus on severe pedestrian and bicycle incidents identified within the High-Injury Network using TXDOT and GIS data.
5. **Environment**, or climate impact, evaluates natural resource conditions, ecological health, and environmental vulnerabilities using the Texas A&M Climate Vulnerability Index (CVI). This data highlights disparities in air and water quality, pollution exposure, green space access, and resilience to climate impacts, which can compound challenges for under-resourced communities.

The five categories were scored, summed, and the resulting percentiles to create a final Vulnerability Index score per census tract.

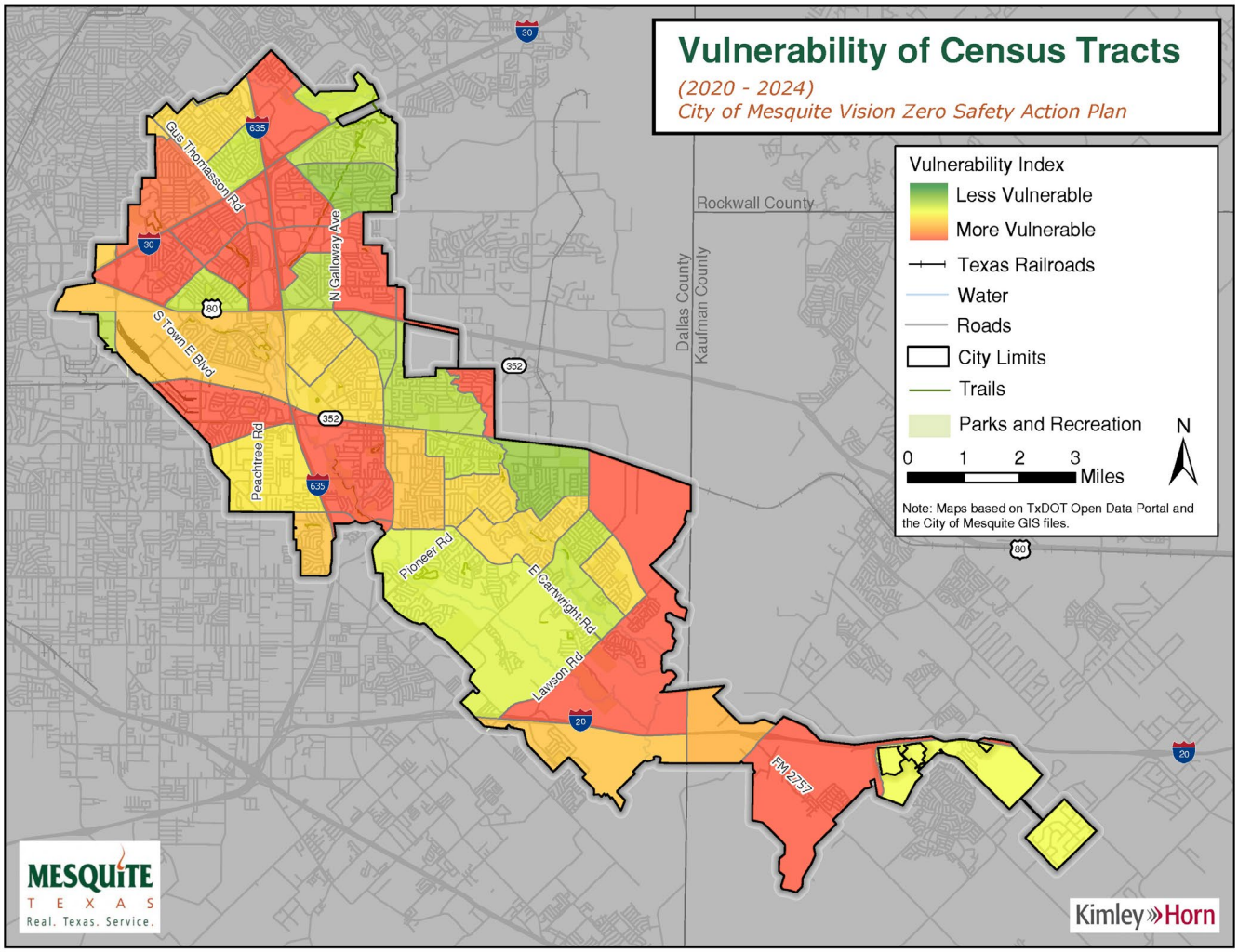
## VULNERABILITY INDEX RESULTS

The data analyzed in this study offers a comprehensive understanding of the specific needs of each identified underserved tract within Mesquite. This information enables the city, policymakers, and other relevant stakeholders to make well-informed recommendations and decisions based on detailed calculations and assessments. By pinpointing areas of vulnerability, the study guides targeted interventions and resource allocation to improve conditions in these underserved tracts.

### *VULNERABILITY OF CENSUS TRACTS MAP*

The overall map assessment of Mesquite is a compilation of all scores assigned to the five indicators: accessibility, mobility, community, safety, environment. This composite score is visually represented on a gradient scale ranging from red to green, where red signifies higher vulnerability and green indicates lower vulnerability. Compiling all the scores in one map allows us to visualize which tracts are the most vulnerable and would require the most targeted intervention and resource allocation (*Figure 6-2)*. The census tracts that have the highest vulnerability in Mesquite have the most critical scores for the accessibility, safety, and environment indicator scores. Of the five corridors selected from the HIN, three are within or adjacent to census tracts which scored the highest vulnerability (shown in red in the map below). This included Cartwright Road/Bruton Road, Oakes Street, and Lawson Road. The remaining two corridors, Samuell Boulevard and Galloway Avenue, are adjacent to census tracts with a score of medium vulnerability. This correlation confirms that the most vulnerable census tracts are at high risk for crashes and are likely underserved by common social demographics (i.e., high poverty rates, high minority populations, high numbers of households without cars, etc.) This map can help the city visualize how underserved communities in Mesquite face higher safety risks.

*Figure 6-2. City of Mesquite Vulnerability of Census Tracts*



# CHAPTER 7

## POLICY AND PROCESS

# CHAPTER 7

## Policy and Process

This chapter outlines the recommended policies and programs designed to address systemic issues identified in Mesquite's transportation network. The policies and programs are organized by the key safety emphasis areas discussed earlier. Each emphasis area features specific safety initiatives and recommendations aimed at improving traffic safety and advancing the city toward its Vision Zero goal.

Current City of Mesquite policies and plans were reviewed to identify opportunities to enhance safety, connectivity, and consistency with Safe System principles. The review included local documents such as the City of Mesquite Code of Ordinances—specifically **Chapter 9**–Motor Vehicles and Traffic; **Chapter 15**–Streets and Sidewalks; **Appendix B**–Subdivisions, Article V, General Requirements and Design Standards; and **Appendix C**–Zoning Ordinance–as well as relevant sections of the Engineering Design Manual. Relevant sections of the 2019 Comprehensive Plan and the 2008 Master Trails Plan were also evaluated to understand how planned growth may impact transportation infrastructure.

This review and analysis focused on key policy areas, including street design standards, sidewalk and pedestrian network requirements, block lengths and pedestrian connectivity, lighting standards, traffic impact analysis (TIA) procedures, and speed management strategies. These focus areas were selected based on their relevance to Mesquite's safety goals, the STF, and potential to support safer multimodal access throughout the city.

*Table 7-1. Mesquite Policy and Procedures Recommendations*

| POLICY AREA | CURRENT LIMITATIONS | RECOMMENDED ACTIONS |
|---|---|---|
| **Street Design** | In the Engineering Design Manual (Section 2.2), the criteria for a Collector Roadway (C2) has an 11-foot minimum lane width but typical sections show 18-foot lanes. Criteria for a Local Roadway (L1/L2) has a 15-foot minimum lane width; these lane widths could lead to speed concerns without proper striping/delineation. | Amend Section 2.2 of the Engineering Design Manual to:<br>• Update Figure 2-1 to match the 11-foot minimum lane width for C2 Roadways and/or provide guidance for anticipated on-street parking designation.<br>• Provide guidance or reference for traffic calming measures if speeding is a concern on roadways with wider lane widths. |
| **Sidewalks** | The Engineering Design Manual proposes that pedestrian facilities that are not shown on the Trails Master Plan have a minimum width of 5-feet when not adjacent to curb and minimum width of 6-feet when adjacent to curb. No design buffer is recommended for sidewalks not shown on the Trails Master Plan.<br><br>The Engineering Design Manual has a link to the Comprehensive Plan (Section 2.9.1.) that does not go to the correct webpage. | • Revise Section 2.9 to require dedicated buffer space between sidewalks and curbs based on the type of roadway facility.<br>• Revise the hyperlink in Section 2.9.1. to correctly reference the Comprehensive Plan. |
| **Trails** | The Municipal Code has not been updated to accommodate preservation of greenways, trails, or easements as recommended in the Master Trails Plan.<br><br>On the City's Trail Webpage (Parks and Recreational Trails), the current map shows high level location of existing trails throughout the City but does not reference the Master Trails Plan or include future trails in this interactive map. | • Revise Appendix C (Part 4) of the Municipal Code to include a Mesquite Greenway and Trail Overlay District addressing protection and preservation of greenways, trails, and easements for future trail corridors.<br>• Develop a public-facing GIS map of the existing and future trails shown on the Master Trails Plan on the city's website (on the Trails page or the Online Interactive Maps page of the website).<br>• Add reference to the Master Trails Plan on the Trails page of the City website. |

| POLICY AREA | CURRENT LIMITATIONS | RECOMMENDED ACTIONS |
|---|---|---|
| **Lighting Standards** | No lighting zones or context-based criteria (e.g., residential vs. commercial vs. rural). Lack of illumination level standards (in footcandles or lux). No requirements for color temperature (CCT), which impacts visibility and dark-sky compliance.<br><br>Lighting design guidance in the Engineering Design Manual is not referenced or codified in enforceable standards within Streets and Sidewalk Ordinance (Section 15).<br><br>Master Trails Plan gives guidance on minimum footcandle levels and infrastructure for trail access points, trail heads, and heavy retail areas, but no other requirements are given for proposed lighting along a trail. | • Establish illumination and color temperature standards (for roadways and trails).<br>• Add reference to the Engineering Design Manual in Chapter 15 of the Municipal Code. |
| **Traffic Signal Standards** | No language related to City's policy or preference on installation of retroreflective backplates at new traffic signals. | • Add requirement to install retroreflective backplates at all new signals. |
| **Block Lengths and Pedestrian Cut-Throughs** | Maximum block lengths are not included for all zoning districts, despite being encouraged by the Comprehensive Plan. | • Update the maximum block length in other zoning districts, especially in districts where there is significant pedestrian activity like residential subdivisions, commercial districts, and mixed-use centers. |
| **Traffic Impact Analysis (TIA)** | Section 2-501 of the Municipal Code states the construction of 50 or more multifamily dwelling units shall require a TIA. This threshold is lower than the criteria stated in the Engineering Design Manual and is the only land use with a separate specification. | • Revise TIA thresholds to include 50 or more multifamily dwelling units.<br>• Reference the Engineering Design Manual in the Municipal Code when a TIA is mentioned as a requirement. |
| **Speed Management** | Speed management principles or traffic management recommendations are not mentioned in the Comprehensive Plan, Engineering Design Manual, or Municipal Code. | • Recommend implementation of a traffic calming toolbox for speed management which would include proven countermeasures with design considerations and benefits to streamline installation/application of traffic calming measures. Safety measures could include raised pedestrian crossings, delineators, roundabouts, road diets, reduced lane widths, and more. |

# CHAPTER 8

## NEXT STEPS

# CHAPTER 8

## Next Steps

The next steps for the City of Mesquite are to develop an implementation plan and establish a system for ongoing monitoring. The implementation plan will help establish a process through which the City can prioritize which projects should be implemented first and allocate resources effectively. In conjunction, the City should establish a monitoring system to track the progress of safety improvements over time. This system will allow the City to evaluate the impact of these projects on crash reduction and other safety metrics, helping to meet the CSAP goals.

### IMPLEMENTATION PLAN

The implementation plan defines the methods through which the improvements identified in this Safety Action Plan should be funded and implemented. Action items include the following:

- Complete the low-cost improvements such as signage cluster, pavement markings, RRFBs, etc., through the city's annual maintenance and traffic budget.
- Grants such as Safe Streets for All (SS4A) Implementation, Highway Safety Improvement Program (HSIP), Transportation Alternatives (TA), and Safe Routes to School (SRTS), should be explored for alternate sources of funding to help implement projects.
- Large-scale projects should be programmed in Capital Improvement Program for eventual completion based on when funding becomes available.

### STEP 4 – SAFETY EFFECTIVENESS (MONITORING)

Safety effectiveness focuses on evaluating the actual impact of implemented safety improvements. After projects are completed, this step involves analyzing crash data and other safety metrics to determine whether the interventions have successfully reduced crashes and improved overall roadway safety. This post-implementation evaluation helps measure the effectiveness of the safety measures and provides valuable feedback for future projects. By assessing the results, agencies can identify what works well and where adjustments may be needed, ensuring a continuous improvement process for enhancing roadway safety over time.

- **Action Item 4.1:** Yearly, record actions accomplished and track the crash counts for each emphasis area. Present these findings to the City Council.
- **Action Item 4.2:** Develop an online safety monitoring dashboard on the City's GIS website that is regularly updated with CRIS data to track citywide crash trends and project progress.
- **Action Item 4.3:** Implement functionality within the dashboard to isolate specific roadways where safety projects have been implemented, allowing for targeted tracking of crash reduction using CRIS data.

# CHAPTER 9

## APPENDIX

# CHAPTER 9

## Appendix

**A.** HIN methodology
**B.** Summary of public engagement events
**C.** Corridor crash maps
**D.** Underserved community analysis
**E.** Street Simplified Data

# APPENDIX A

**APPENDIX A**

# City of Mesquite HIN - GIS Model Methodology

**Critical Crash Rate Calculation**

The critical crash rate was calculated for each road segment in the City of Mesquite.

**Assigning Data to Road Segments**

Three data inputs are needed to calculate the critical crash rate: functional classification, daily traffic volumes, and crash counts. Higher traffic volumes, more travel lanes, and even higher speed limits can inflate crash rates along road segments. The critical crash rate compares road segments with the same functional classification and normalizes daily traffic volumes to calculate crashes at a more even level to like designed roadways.

**Calculate Variables of Critical Crash Rate**

The critical crash rate variables were calculated following the equations detailed in the FHWA's Highway Safety Manual. The observed crash rates for the HIN were determined by calculating the number of existing KA crashes on each road segment per 100 million vehicle-miles traveled. The expected average crash rates per 100 million vehicle-miles traveled for the network were also calculated by normalizing daily volumes for each functional class. Comparisons were made within each roadway classification in the City of Mesquite; for example, arterials roads were only compared to other arterials roads.

The following procedure was followed to create the HIN for the City of Mesquite. Data was sourced from the TxDOT Open Data Portal, NCTCOG Open Data Portal, TxDOT's Crash Records Information System, and the City of Mesquite GIS department.

## ***Section 1: GIS User Information***

**Data Needed**

1) Crash Data
   a) Download from CRIS database with Crash Severity field
      i) Filter by KA crashes
   b) n, # of crash year data
      i) 5 years, 2020-2024
2) Study Area Streets Shapefile
   a) Daily Volume
   b) Functional Class
   c) Segment Lengths

**Filter Crashes to Study Area**

1) XY to Point
   a) Bring in all CRIS crash data as points based on Lat/Long
2) Clip
   a) Clip to study area
3) Definition Query
   a) Definition query KA crashes only from clipped layer and make own layer

**Running the Model**

1) Open “Model” tab in ArcGIS Pro
2) Validate model and then hit “Run”
3) The output layer is called “BalchSprings_City_HIN”
   a) Located in the Catalog > Folders > HIN > scratch.gdb > BalchSprings_City_HIN
   b) All calculations used to select the HIN segments are saved in the layer

## ***Section 2: GIS Model Information and Steps***

**Assigning Crashes to Street Segments**

1) Select
   a) Select City Streets
2) Select
   a) Select by functional class of street layer for each iteration
3) Spatial Join
   a) Streets with KA Crashes within a distance
      i) Principal Arterial = 65 ft
      ii) Minor Arterial = 50 ft
      iii) Major Collector = 50 ft
      iv) Minor Collector = 40 ft
      v) Local = 25 ft
      vi) Frontage Road = 30 ft
      vii) Interstate = 70 ft
   b) Join_Count field is created
4) Join Field
   a) Join “Join_Count” field back to the selected streets output based on OBJECTID in both layers
5) Add Field
   a) Add Crash_Count field (as Double) to get Join_Count data into correct format
6) Calculate Field
   a) Calculate Join_Count = Crash_Count

**Calculating Variables for Critical Crash Rate**

1) Add Field
   a) Add HMVMT (100 million vehicle miles traveled)
2) Calculate Field
   a) Calculate $HMVMT = \left(\frac{Vol}{100{,}000{,}000}\right) * n * 365 * mi$
   b) Calculate HMVMT=(Total_Volume/100,000,000)*n*365*(Shape_Length/5280)
   c) Vol = “Total_Volume” field, or AADT or Daily Volume

d) n = # of crash year data, 5
e) Shape_Length = segment length in ft, converting to miles

3) Add Field
   a) Add $R_i$ (observed crash rate) field
4) Calculate Field
   a) Calculate $R_i = \frac{N_{observed,i(TOTAL)}}{HMVMT}$
   b) $N_{observed}$= “Crash_Count” field
   c) HMVMT previously calculated field
5) Add Fields
   a) Fields of the $R_a$ equation to better QC math individually
      i) Add Vol_Ri field
      ii) Add Sum_Vol_Ri field
      iii) Add Sum_Vol field
6) Calculate Fields
   a) Calculate $R_a = \frac{\sum(Vol*R_i)}{\sum Vol}$
   b) Vol=”Total_Volume” field or AADT or Daily Volume
   c) $R_i$=observed crash rate
   d) Calculate “Vol * $R_i$” in Vol_Ri field
   e) Calculate Sum of all “Vol * $R_i$” in selection in Sum_Vol_Ri field
   f) Python Code for Sum of Vol * Ri:

```
“ def calculate_total():
    total = 0
    cursor = arcpy.da.SearchCursor("ModelBuilder\Streets – Mesquite - Select Principal
Arterial:StreetsBalchSprings_Select_PrincipalArterial", ["Vol_Ri"])
    for row in cursor:
        total += row[0]
    del cursor
    return total # Cast result to a Double ”
```

   g) Calculate Sum of all “Vol” in Total_Volume field
   h) Python Code for Sum of Vol:

```
“ def calculate_total():
    total = 0
    cursor = arcpy.da.SearchCursor("ModelBuilder\Streets – Mesquite - Select Principal
Arterial:StreetsBalchSprings_Select_PrincipalArterial", ["Total_Volume"])
    for row in cursor:
        total += row[0]
    del cursor
    return total # Cast result to a Double ”
```

7) Add Field
   a) Add $R_a$ (weighted average crash rate for ref population)
8) Calculate Field
   a) $R_a$=(Sum_Vol_Ri)/(Sum_Vol)
9) Add Field

a) Add $R_{c,I}$ (critical crash rate)

10) Calculate Field

a) Calculate $R_{c,i} = R_a + \left[P * \sqrt{\frac{R_a}{HMVMT}}\right] + \left[\frac{1}{(2*HMVMT)}\right]$

b) $R_{c,I}=R_a+(1.645*\text{sqrt}(R_a/HMVMT))+(1/(2*HMVMT))$

c) P=1.645, which corresponds to 95$^{th}$ % confidence level

**Calculate Ratio**

- Add Field
  - Add “Ratio” field
- Calculate Field
  - Ratio of observed crash rate to critical crash rate
  - Ratio $=R_i/R_{c,i}$
  - If Ratio>1.0 then flag it for potential HIN

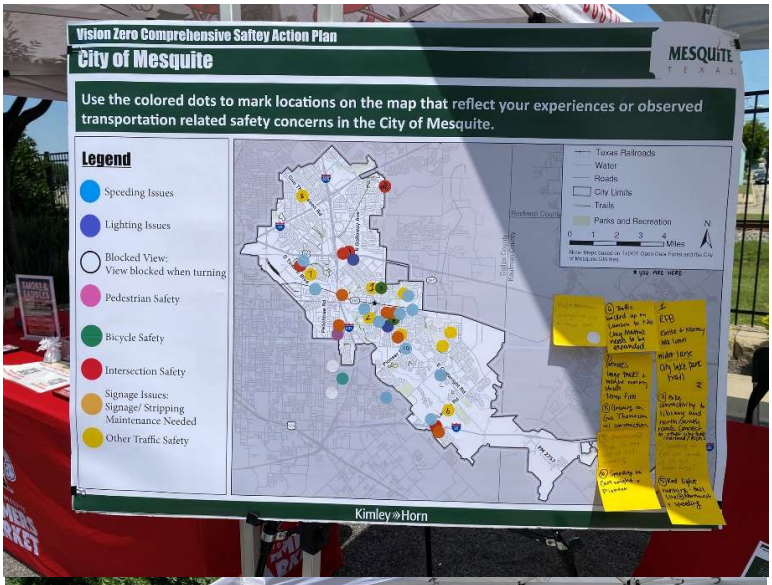
# APPENDIX B

# APPENDIX B

MESQUITE TEXAS
Real. Texas. Service.

## Mesquite Vision Zero CSAP | Farmers Market Recap Document

The Mesquite Vision Zero Comprehensive Safety Action Plan (CSAP) occurred at Front Street Station, 100 S Front Street, on **May 31, 2025, from 9 a.m. to 1 p.m.** A total of 45 colored dots were recorded on the map. The pop-up event format consisted of Kimley-Horn hosting a tent booth at the Downtown Farmers Market. The team passed out informational postcards, one in English and the other in Spanish, with general information about Mesquite's Vision Zero CSAP and a QR code directing visitors to the project website. The team also collected stickered responses (and sticky notes when needed) about where the participants observed or experienced traffic concerns.

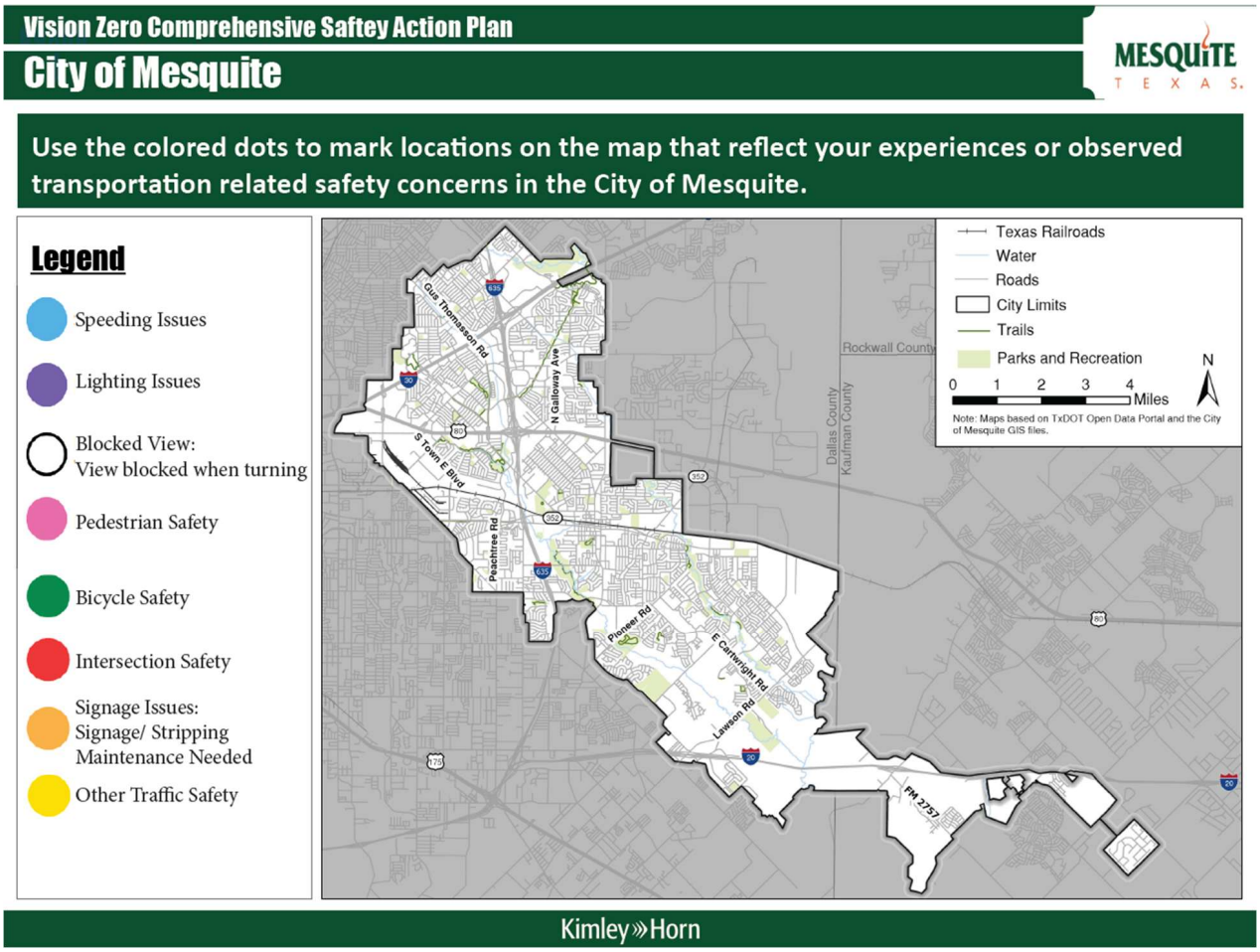





## Event Materials

The card below shows the postcard-sized handouts with project information. One side is written in English, the other is in Spanish.

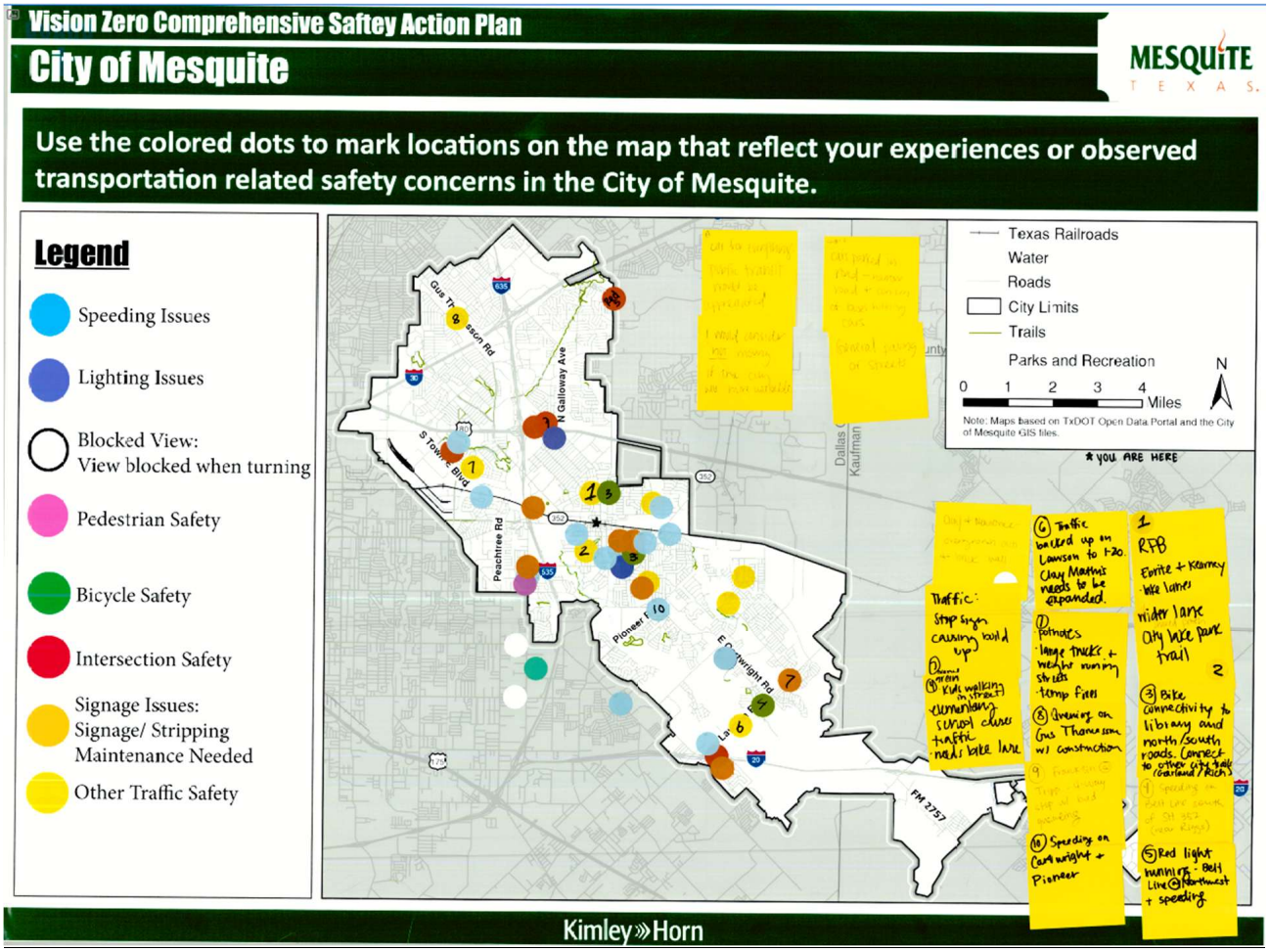
MESQUITE
TEXAS
Real. Texas. Service.




The mapping activity board displayed a map of the City of Mesquite, along with a legend of various transportation safety concerns and stickers with corresponding colors. Attendees were asked to mark areas for speeding issues, lighting issues, blocked views, pedestrian safety, bicycle safety, intersection safety, signage issues: signage/stripping maintenance needed, and other traffic safety concerns. The goal was to gather feedback about high areas of concern for Mesquite residents and begin to understand potential safety countermeasures. The responses of this activity can be found below.

## Event Results

The board below shows the scanned board showing dots and comments of concern for residents in the City of Mesquite.




## Public Comments

- Need car for everything; public transit may be appreciated
- I would consider not moving if the city was more walkable
- Cars parked in road near high school; narrow road and concerned about buses hitting cars
- The streets generally need to be repaved
- Clay & Newsome - some overgrown cacti and a brick wall creates a blocked view when turning
- Traffic backed up on Lawson to I20. Clay Mathis needs to be expanded.
- Suggestion of a rapid flashing beacon on the intersection of Ebright and Kearney.
- Need for bike lanes, wider lanes for shared paths at city Lake Park.
- Kids walking in the streets near elementary school on Lawson. Would like a bike lane

- Lots of speeding
- Large trucks and their weight are ruining the streets
- Potholes are temporary fixes and materials do not fix the issue
- Franklin and Tripp intersection is four-way stop and has bad queuing
- Speeding on Cartwright, Pioneer, and Belt Line
- Red light running at Beltline at Northwest and speeding
- Bike connectivity to library in north-south roads lane should connect to other city trails (Garland & Richardson). Would like an RRFB crossing near Ebrite/Kearney.
- Lots of speeding near the schools

**Key Takeaways**

- **Alternative Means of Travel:** Residents would like to see more alternative routes for transportation—more walkable routes, bike lanes, connected park trails.
- **Overreliance on Cars:** Residents feel dependent on cars; some would consider staying if the city were more walkable.
- **Public Transit & Safety Concerns:** There's appreciation for public transit, but safety concerns arise from narrow roads (e.g., near the high school) and cars parked on streets.
- **Street Conditions:** Many streets need repaving; potholes and temporary fixes are common, worsened by heavy truck traffic.
- **Traffic Congestion:** High traffic volumes near elementary schools, on Lawson to I-20, and at the Ebright/Kearney intersection; suggestions include lane expansion and flashing beacons.
- **Obstructed Visibility:** Issues at Clay & Newsome due to overgrown vegetation and a brick wall.
- **Cyclist & Pedestrian Needs:** Bike lanes, wider lanes, shared paths, and improved connectivity (especially to the library and city trails) are needed; kids are walking in streets due to lack of infrastructure.
- **Problem Intersections:** Specific concerns include Franklin & Tripp (four-way stop), Cartwright & Pioneer, and red light running/speeding at Beltline & Northwest.
- **Reduce Speeding.** Lots of cars disregarding red lights and running through the stop signs. Feels particularly unsafe near the elementary and high school.

## Mesquite Vision Zero CSAP | Pop Up #2 Recap Document

The Second Pop-Up Event for the Mesquite Vision Zero Comprehensive Safety Action Plan (CSAP) occurred at Front Street Station, 100 S Front Street, on Saturday, **August 16, 2025, from 9 a.m. to 1 p.m.** A total of 38 pom-poms and comments were recorded. The pop-up event format consisted of Kimley-Horn hosting a tent booth at the Downtown Farmers Market. The team passed out informational postcards, one in English and the other in Spanish, with general information about Mesquite's Vision Zero CSAP and a QR code directing visitors to the project website. The team presented visitors with the identified High Injury Network (HIN) — streets and intersections with high numbers of crashes resulting in fatalities and serious injuries. Based on the priority corridors and proposed countermeasures, the team sought feedback from the public on how they feel these countermeasures would best serve the HIN. The activity can be seen in Image 1 below.


***Image 1**: Event Set up*

## Event Materials

Image 2 shows the postcard-sized handouts with project information. One side is written in English, the other is in Spanish.


***Image 2**: Project Handouts*

Image 3, crash statistics during the study period of 2020-2024 were displayed at the table.

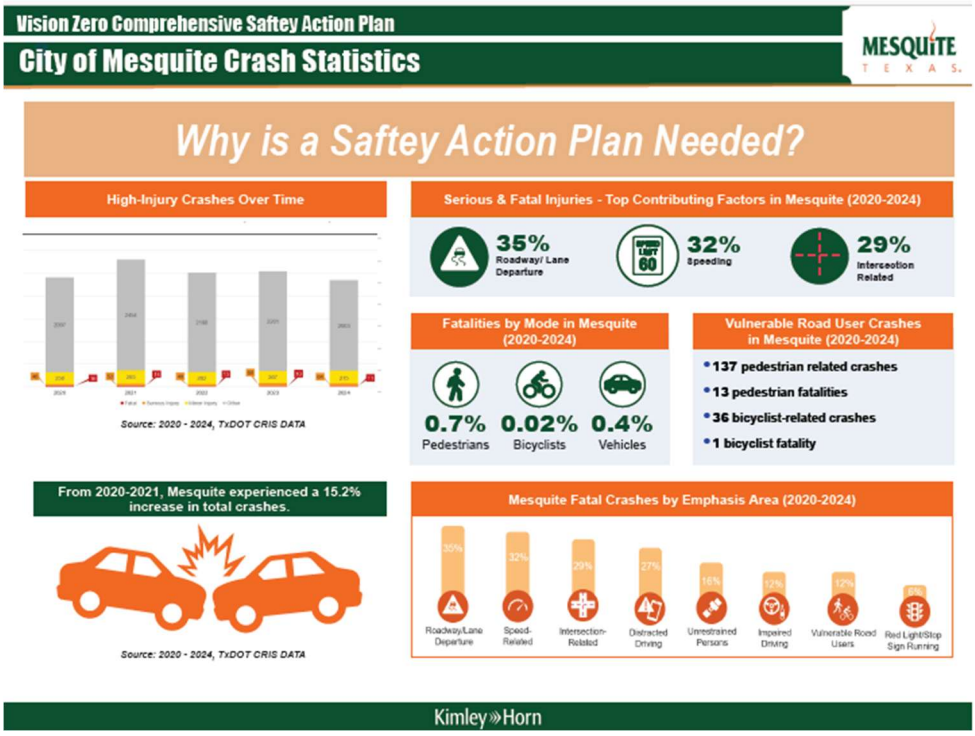



***Image 3**: Crash Statistics, 2020-2024*

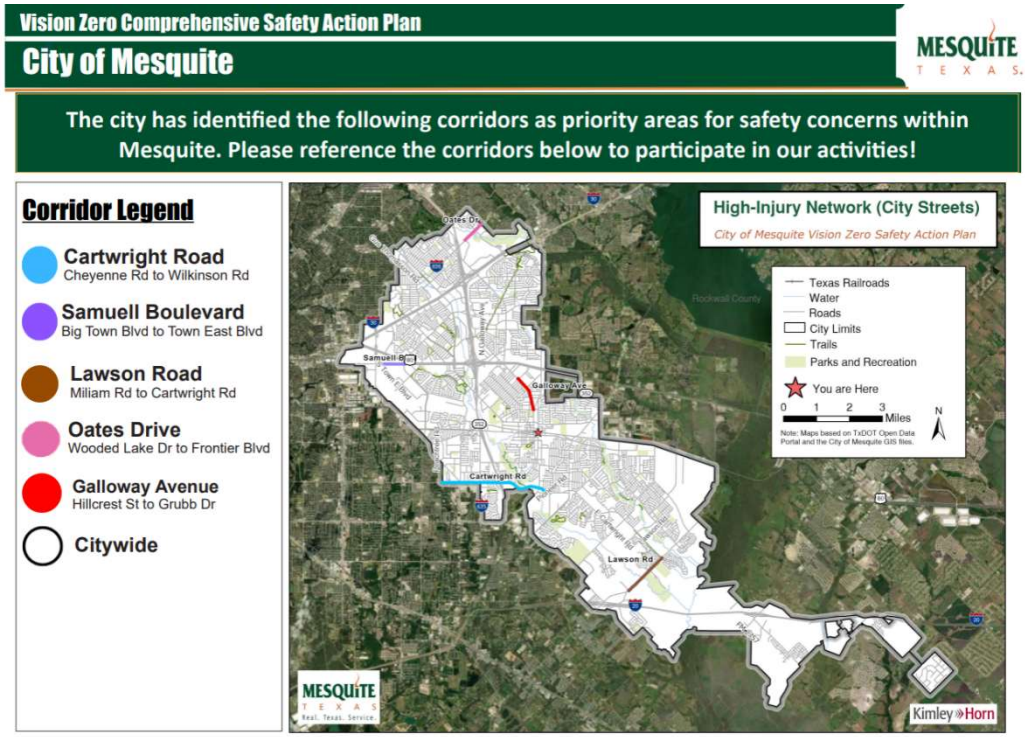



***Image 4**: HIN Corridors*


***Image 5**: Proposed Safety Countermeasures*

Image 4 above displayed a map of the City of Mesquite, along with a legend of the identified corridors in the HIN. These corridors include **Cartwright Rd.**, **Samuell Blvd.**, **Lawson Rd.**, **Oates Dr.**, **Galloway Ave.**, and city-wide comments. Six safety countermeasures were presented (shown in Image 5), including: Protected left-turn signal, Sidewalks, Raised Medians, Flashing Curve Signs, Protected Midblock Crossings, and Other—used for suggestions of other safety countermeasures. The goal of this activity was to understand the safety countermeasures they best see fit in these identified areas. While feedback was being specifically sought out for the HIN, many residents also provided input on other areas of concern. Some of these were proposals of

the countermeasure but implemented in another area. These comments were recorded by placing a detailed note into the corresponding countermeasure's jar. The responses to this activity can be found below.

## Event Results


**Key Takeaways**

- **Sidewalk and Pedestrian Infrastructure**
  - Non-ADA compliant sidewalks in many areas.
  - Quality improvements needed for cracked and disconnected sidewalks.
  - New sidewalks and protected crossings requested.
- **Traffic Calming and Safety Measures**
  - Speed bumps requested in various areas to reduce speeding.
  - Flashing curve signs and advance warnings for turns suggested.
  - Protected midblock crossings needed, especially in high-speed areas.

- **Road Quality and Maintenance**
    - Pothole issues in several locations.
    - Road resurfacing and re-pavement are needed in multiple areas.
    - Median implementation on narrow roads for safety.
- **Accessibility and Visual Aids**
    - Installation of backplate reflectors on stoplights for visually impaired individuals.
    - Improvements in street lighting and repairs of non-functional lighting posts.
    - Advanced warning signs for winding roads
- **Traffic Flow and Parking**
    - Concerns over narrow roads due to parking; suggestions to eliminate parking to improve lane width.
    - Need for curb and gutter additions in certain areas.

**Inventory of jar comments:**

**Protected Left-Turn Signal**

- No votes, no additional comments

**Sidewalks**

- Galloway ( 1 vote): Non-ADA compliant sidewalk
- Citywide (1 vote): Quality improvements for cracks and connectivity
- Franklin Ave.: Needs sidewalks & protected crossings
- Near Town Center Tripp

**Raised Medians**

- Lawson Rd. (3)

**Flashing Curve Signs**

- Cartwright Rd. (2)

**Protected Midblock Crossings**

- Franklin Ave.
- Elm Falls → Valley Creek Park: not safe with speeding cars; light posts don't work

**Other Comments**

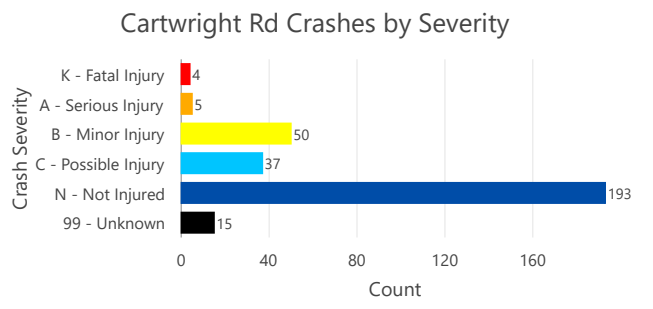
- Citywide (3): Backplate reflectors on stoplights would help for those who are visually impaired; repavement of street
- Galloway (2): Narrow road, resurfacing of street needed
- Cartwright (2): Potholes; Blind spot when turning; reduce speeding; advance warning of turn; guardrails to avoid nearby ditches
- Oates Dr. (2): Fan of Oates Dr., not a fan of zig-zag design on roads because speeding still occurs
- Lawson Rd. (2): road widening; improve road by adding curb/ gutter
- Franklin Ave. (from the Mall to US 80): Potholes
- Mesquite Valley Rd.: Stop sign makes it feel safer, but speeding is still an issue; blind spot due to the winding road
- Cantina/ San Simon: Speed bumps
- Council District 1: Potholes
- Berry Middle School: cut through
- Near St. Stephen United Methodist Church: the entryway of the church has a dip due to fire truck marks created when it was first paved
- Heritage Trail: Safer crossings; sighting issues; improve sidewalk quality
- Berry Rd. (1700 Block) → FP Lucas; near Edward's Church: Large trucks on road; needs better signage enforcement to keep truck off roads
- Scyene Rd.: Used as a highway connector and is not ideal near schools and residential
- La Prada Dr.: No curbs, remove the parking because it reduces lanes
- Motley Dr.: straighten sidewalks & fix missing sidewalks (lack of connectivity); medians
- Woodson Way: Potholes
- Solterra Neighborhood: Speed bumps or something to calm traffic, especially near Gentry Elementary School; existing bike lanes appreciated

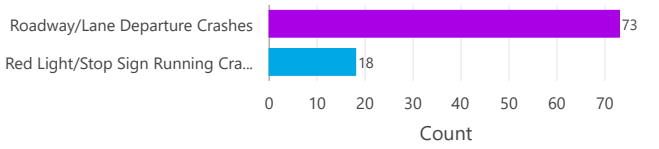
# APPENDIX C

# APPENDIX C

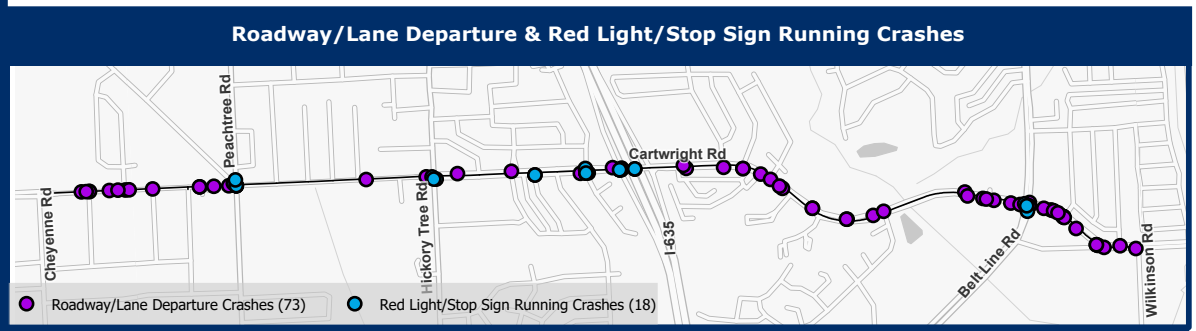
## Cartwright Road: Cheyenne Road to Wilkinson Road
## Crash Map - Mesquite, TX

Total Crashes: 304 Crash Years: 2020-2024








## Intersection Crashes

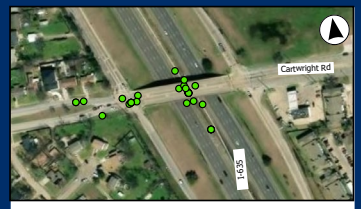
### Bruton Rd at Peachtree Rd


| | |
|---|---|
| **Total Crashes** | 30 |
| **KAB Crashes** | 3 (10%) |
| **Pedestrian/Cyclist Crashes** | 0 (0%) |
| **Opposite Left Turn Crashes** | 3 (10%) |
| **Angle Crashes** | 5 (17%) |

### Bruton Rd at Hickory Tree Rd


| | |
|---|---|
| **Total Crashes** | 16 |
| **KAB Crashes** | 2 (13%) |
| **Pedestrian/Cyclist Crashes** | 0 (0%) |
| **Opposite Left Turn Crashes** | 2 (13%) |
| **Angle Crashes** | 3 (19%) |

### Cartwright Rd at I-635




| | |
|---|---|
| **Total Crashes** | 36 |
| **KAB Crashes** | 8 (22%) |
| **Pedestrian/Cyclist Crashes** | 0 (0%) |
| **Opposite Left Turn Crashes** | 1 (3%) |
| **Angle Crashes** | 6 (17%) |

### Cartwright Rd at Belt Line Rd


| | |
|---|---|
| **Total Crashes** | 28 |
| **KAB Crashes** | 8 (29%) |
| **Pedestrian/Cyclist Crashes** | 0 (0%) |
| **Opposite Left Turn Crashes** | 7 (25%) |
| **Angle Crashes** | 7 (25%) |

### Cartwright Rd at Wilkinson Rd

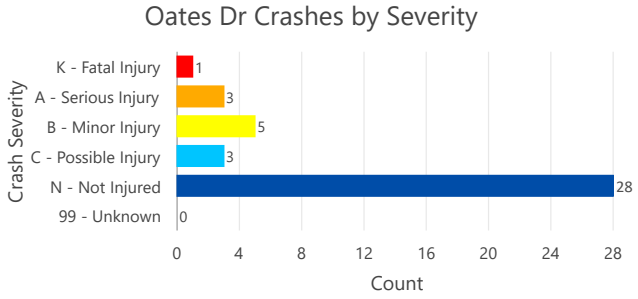

| | |
|---|---|
| **Total Crashes** | 1 |
| **KAB Crashes** | 0 (0%) |
| **Pedestrian/Cyclist Crashes** | 0 (0%) |
| **Opposite Left Turn Crashes** | 1 (100%) |
| **Angle Crashes** | 0 (0%) |

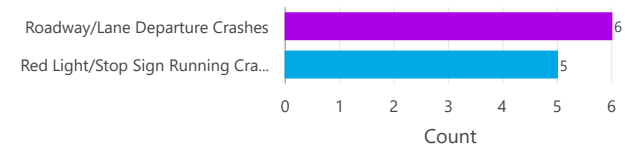
## Oates Drive: Wooded Lake Drive to Frontier Boulevard

## Crash Map - Mesquite, TX

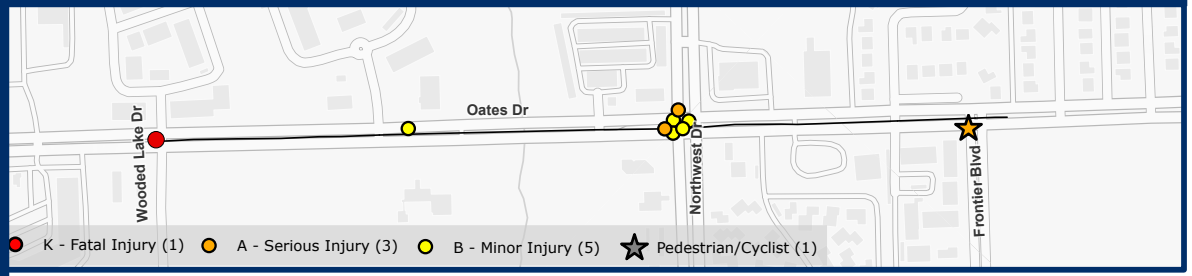
Total Crashes: 40

Crash Years: 2020-2024

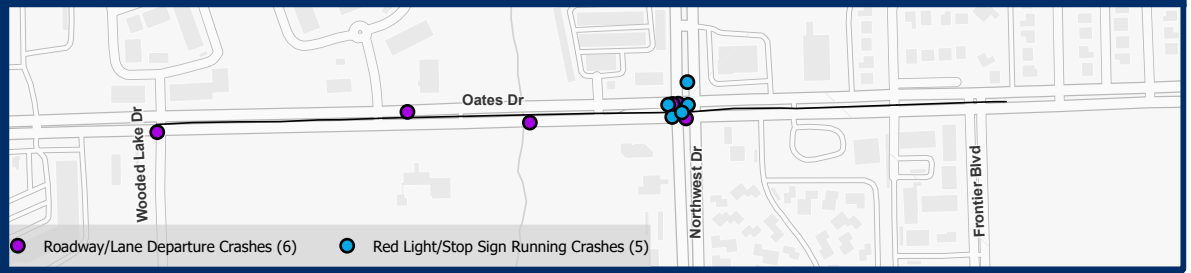



### Fatal, Serious, and Minor Injury Crashes




### Roadway/Lane Departure & Red Light/Stop Sign Running Crashes




### Intersection Crashes

#### Oates Dr at Wooded Lake Dr


| | |
|---|---|
| **Total Crashes** | 9 |
| **KAB Crashes** | 1 (11%) |
| **Pedestrian/Cyclist Crashes** | 0 (0%) |
| **Opposite Left Turn Crashes** | 1 (11%) |
| **Angle Crashes** | 2 (22%) |

#### Oates Dr at Northwest Dr


| | |
|---|---|
| **Total Crashes** | 21 |
| **KAB Crashes** | 5 (24%) |
| **Pedestrian/Cyclist Crashes** | 0 (0%) |
| **Opposite Left Turn Crashes** | 5 (24%) |
| **Angle Crashes** | 7 (33%) |

#### Oates Dr at Frontier Blvd

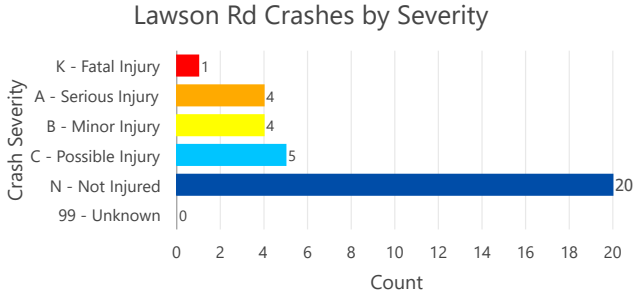

| | |
|---|---|
| **Total Crashes** | 1 |
| **KAB Crashes** | 1 (100%) |
| **Pedestrian/Cyclist Crashes** | 1 (100%) |
| **Opposite Left Turn Crashes** | 0 (0%) |
| **Angle Crashes** | 0 (0%) |

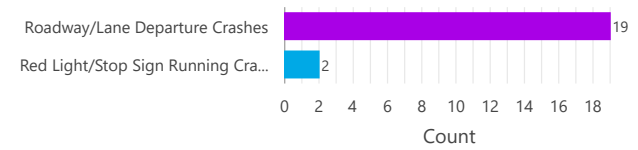
**Lawson Road: Milam Road to Cartwright Road**

## Crash Map - Mesquite, TX

Total Crashes: 34

Crash Years: 2020-2024





### Fatal, Serious, and Minor Injury Crashes


### Roadway/Lane Departure & Red Light/Stop Sign Running Crashes


### Intersection Crashes

**Lawson Rd at Cartwright Rd**

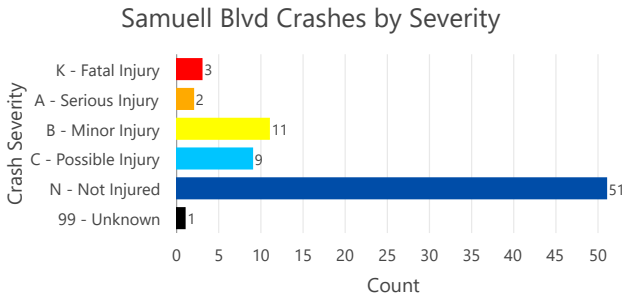

| | |
|---|---|
| **Total Crashes** | 9 |
| **KAB Crashes** | 1 (11%) |
| **Pedestrian/Cyclist Crashes** | 0 (0%) |
| **Opposite Left Turn Crashes** | 1 (11%) |
| **Angle Crashes** | 5 (56%) |

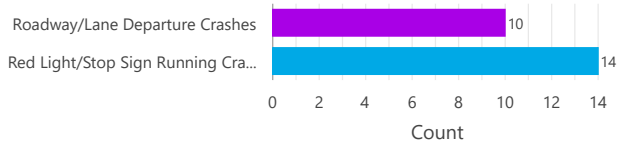
## Samuell Boulevard: Big Town Boulevard to Town East Boulevard

### Crash Map - Mesquite, TX

Total Crashes: 77

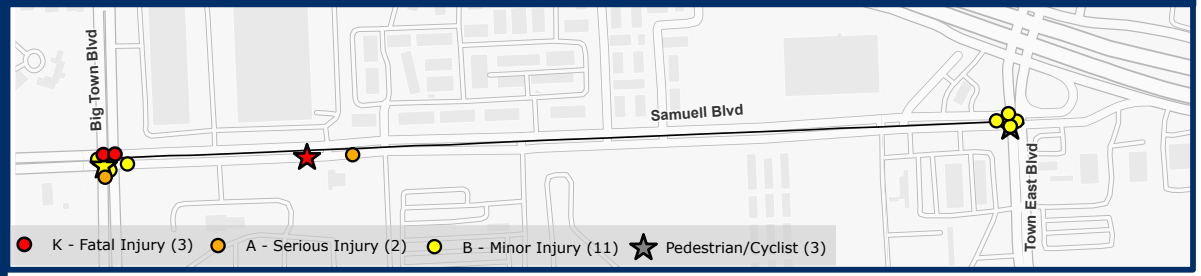
Crash Years: 2020-2024



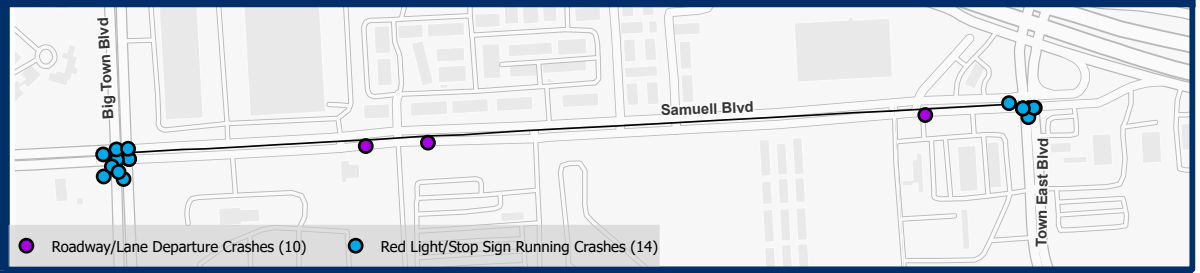





### Fatal, Serious, and Minor Injury Crashes




### Roadway/Lane Departure & Red Light/Stop Sign Running Crashes




### Intersection Crashes

#### Samuell Blvd at Big Town Blvd


| | |
|---|---|
| **Total Crashes** | 29 |
| **KAB Crashes** | 8 (28%) |
| **Pedestrian/Cyclist Crashes** | 1 (3%) |
| **Opposite Left Turn Crashes** | 3 (10%) |
| **Angle Crashes** | 12 (41%) |

#### Samuell Blvd at Town East Blvd

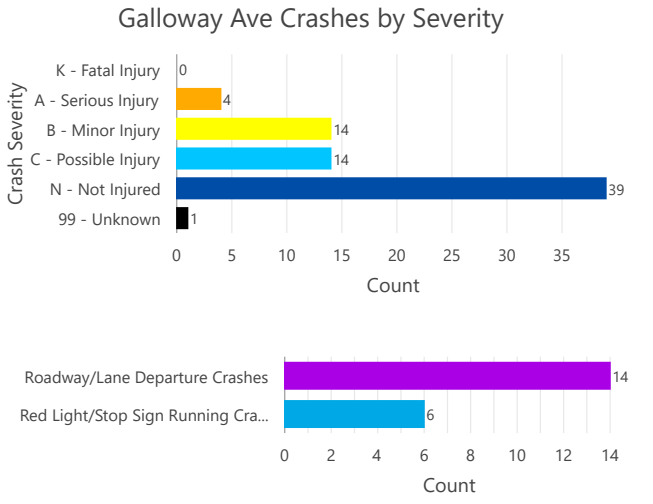

| | |
|---|---|
| **Total Crashes** | 24 |
| **KAB Crashes** | 5 (21%) |
| **Pedestrian/Cyclist Crashes** | 1 (4%) |
| **Opposite Left Turn Crashes** | 3 (13%) |
| **Angle Crashes** | 4 (17%) |

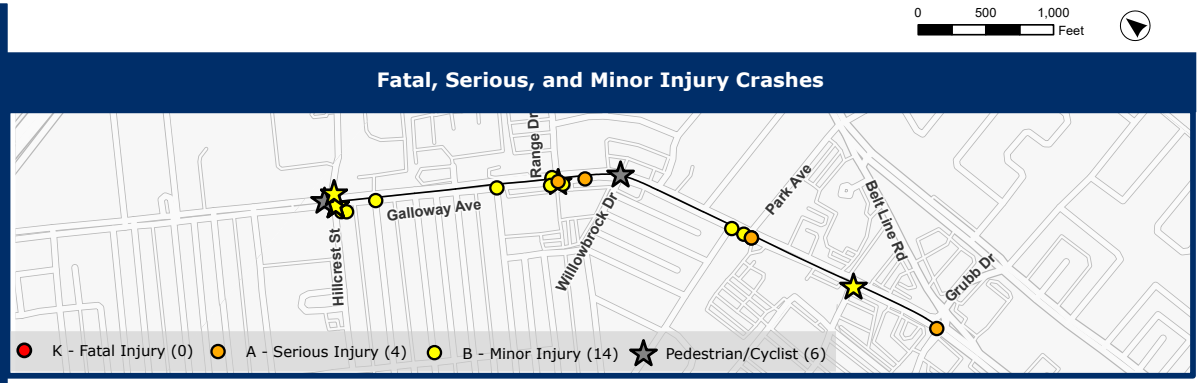
**Galloway Avenue: Hillcrest Street to Grubb Drive**

## Crash Map - Mesquite, TX

Total Crashes: 72

Crash Years: 2020-2024





## Intersection Crashes

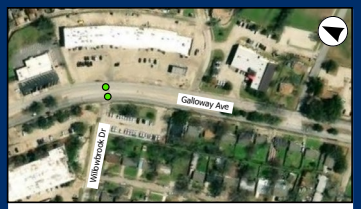
### Galloway Ave at Hillcrest St


| | |
|---|---|
| **Total Crashes** | 16 |
| **KAB Crashes** | 5 (31%) |
| **Pedestrian/Cyclist Crashes** | 3 (19%) |
| **Opposite Left Turn Crashes** | 5 (31%) |
| **Angle Crashes** | 6 (38%) |

### Galloway Ave at Range Dr


| | |
|---|---|
| **Total Crashes** | 14 |
| **KAB Crashes** | 3 (21%) |
| **Pedestrian/Cyclist Crashes** | 1 (7%) |
| **Opposite Left Turn Crashes** | 4 (29%) |
| **Angle Crashes** | 6 (43%) |

### Galloway Ave at Willowbrook Dr




| | |
|---|---|
| **Total Crashes** | 2 |
| **KAB Crashes** | 0 (0%) |
| **Pedestrian/Cyclist Crashes** | 1 (50%) |
| **Opposite Left Turn Crashes** | 0 (0%) |
| **Angle Crashes** | 1 (50%) |

### Galloway Ave at Park Ave


| | |
|---|---|
| **Total Crashes** | 2 |
| **KAB Crashes** | 1 (50%) |
| **Pedestrian/Cyclist Crashes** | 0 (0%) |
| **Opposite Left Turn Crashes** | 0 (0%) |
| **Angle Crashes** | 2 (100%) |

### Galloway Ave at Grubb Dr


| | |
|---|---|
| **Total Crashes** | 5 |
| **KAB Crashes** | 1 (20%) |
| **Pedestrian/Cyclist Crashes** | 0 (0%) |
| **Opposite Left Turn Crashes** | 0 (0%) |
| **Angle Crashes** | 2 (40%) |

# APPENDIX D

# APPENDIX D

## UNDERSERVED COMMUNITY ANALYSIS

**PROJECT:** MESQUITE COMPREHENSIVE SAFETY ACTION PLAN
**LOCATION:** MESQUITE, TEXAS

**PREPARED BY** RME - KHA

| | | ID: 181.30 | | ID: 173.13 | | ID: 177.04 | | ID: 175 | | ID: 178.05 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Citywide Metric Average | Census Tract A Metric | Census Tract A Score | Census Tract B Metric | Census Tract B Score | Census Tract C Metric | Census Tract C Score | Census Tract D Metric | Census Tract D Score | Census Tract E Metric | Census Tract E Score |
| **Community (18%)** | **0.558** | | **0.00** | | **4.50** | | **13.50** | | **9.00** | | **18.00** |
| Health | 0.615 | 0.573 | 0 | 0.439 | 0 | 0.810 | 4.5 | 0.605 | 0 | 0.685 | 4.5 |
| Social & Economic | 0.563 | 0.538 | 0 | 0.449 | 0 | 0.677 | 4.5 | 0.612 | 4.5 | 0.571 | 4.5 |
| Infrastructure | 0.586 | 0.541 | 0 | 0.494 | 0 | 0.674 | 4.5 | 0.561 | 0 | 0.618 | 4.5 |
| Environment | 0.470 | 0.462 | 0 | 0.486 | 4.5 | 0.468 | 0 | 0.515 | 4.5 | 0.560 | 4.5 |
| **Mobility (18%)** | **0.00002** | | **18** | | **0** | | **0** | | **0** | | **0** |
| Bus Stops - # of bus stops/1,000 people | 0.00002 | 0.053 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Safety (34%)** | **45.824** | | **34** | | **34** | | **0** | | **34** | | **0** |
| Injury Rate - KA crashes per 100,000 population | 45.824 | 156.926 | 34 | 65.862 | 34 | 26.914 | 0 | 133.760 | 34 | 38.712 | 0 |
| **Accessibility (24%)** | **0.396** | | **24** | | **24** | | **24** | | **24** | | **24** |
| Accessibility - Miles of sidewalk (population/miles of sidewalk) | 0.396 | 1.070 | 24 | 0.756 | 24 | 1.599 | 24 | 0.985 | 24 | 1.174 | 24 |
| **Climate Impacts (6%)** | **0.435** | | **4.00** | | **4.00** | | **4.00** | | **2.00** | | **4.00** |
| Health | 0.470 | 0.465 | 0 | 0.468 | 0 | 0.465 | 0 | 0.468 | 0 | 0.464 | 0 |
| Social & Economic | 0.449 | 0.460 | 2 | 0.457 | 2 | 0.465 | 2 | 0.439 | 0 | 0.468 | 2 |
| Extreme Events | 0.387 | 0.408 | 2 | 0.417 | 2 | 0.403 | 2 | 0.408 | 2 | 0.394 | 2 |
| **Total Score** | - | 80.00 | | 66.50 | | 41.50 | | 69.00 | | 46.00 | |

# APPENDIX E

# APPENDIX E

| Mesquite Street Simplified Results | |
|---|---|
| Location | Web-viewable Reports |
| Galloway Avenue and Barnes Bridge Road (Childress Avenue) | https://www.beautiful.ai/player/-ObXjMOgw33S5-pv72oK |
| Scyene Road and Peachtree Road | https://www.beautiful.ai/player/-ObXjUi2tzUAwwMk4g4i |
| Samuell Avenue and Big Town Boulevard | https://www.beautiful.ai/player/-ObXjQOTeWqVYRqIatyb |
| Galloway Avenue and Hilcrest Street | https://www.beautiful.ai/player/-ObXjYAoftk2i7Z1JCyc |