

FROM ANALYSIS TO ACTION

IMPLEMENTING SAFETY IMPROVEMENTS IN THE
TXDOT AUSTIN DISTRICT

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TRANSPORTATION EXPERIENCE™
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AGENDA

1 / A BRIEF BACKGROUND

2 / CRASH DATA ANALYSIS

3 / WORK ORDER DEVELOPMENT

4 / WHY THIS MATTERS



1

A BRIEF BACKGROUND

Project Process

Data Collection

- TxDOT Austin District provided a list of locations with higher-than-normal fatal and serious injury crash rates compared to the District
- Split locations amongst DKS and SV Traffic

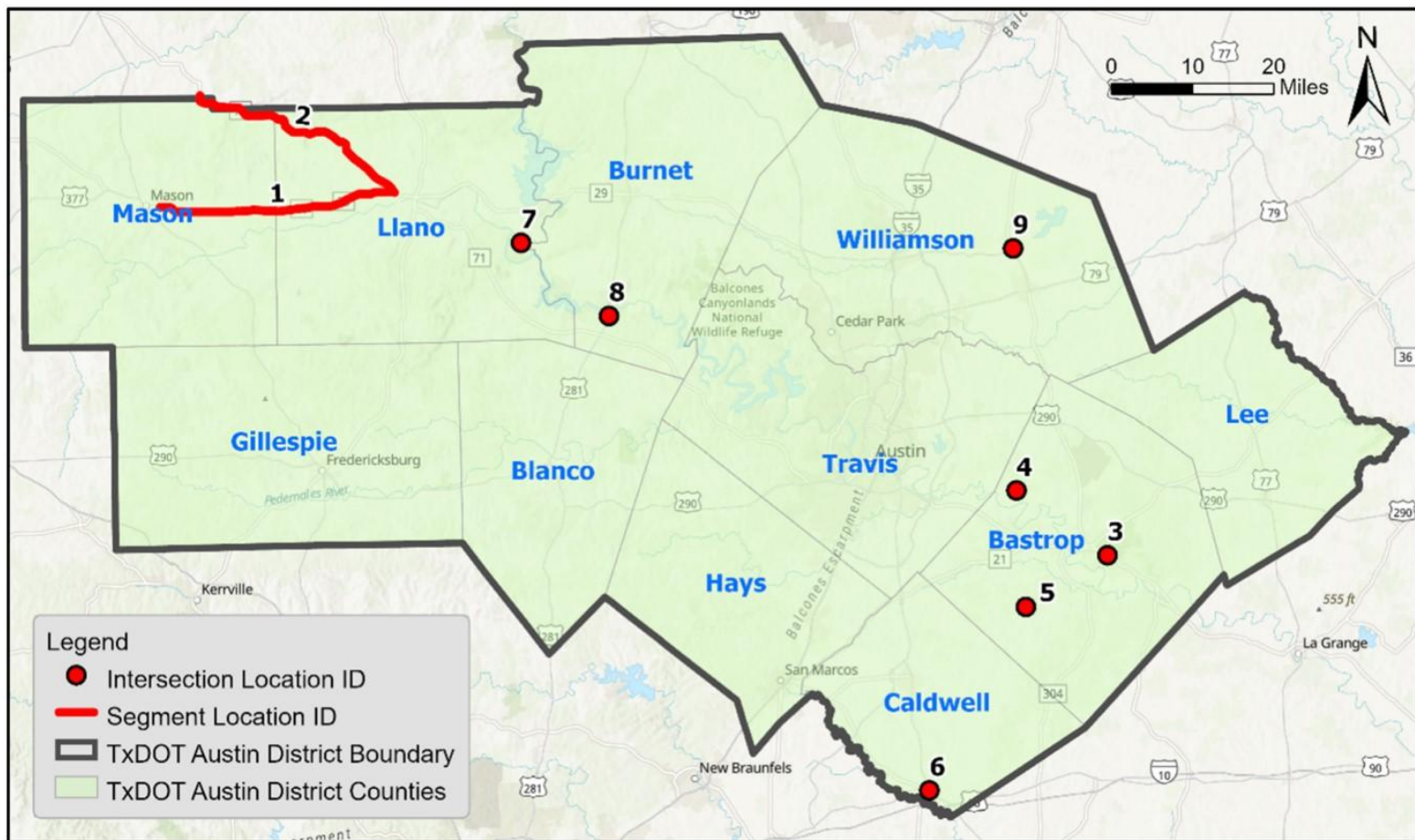
Crash Analysis

- Collect and refine crash data
- Develop Tableau dashboard
- Conduct site visit

Technical Memo and Work Orders

- Develop technical memo
- Develop work orders





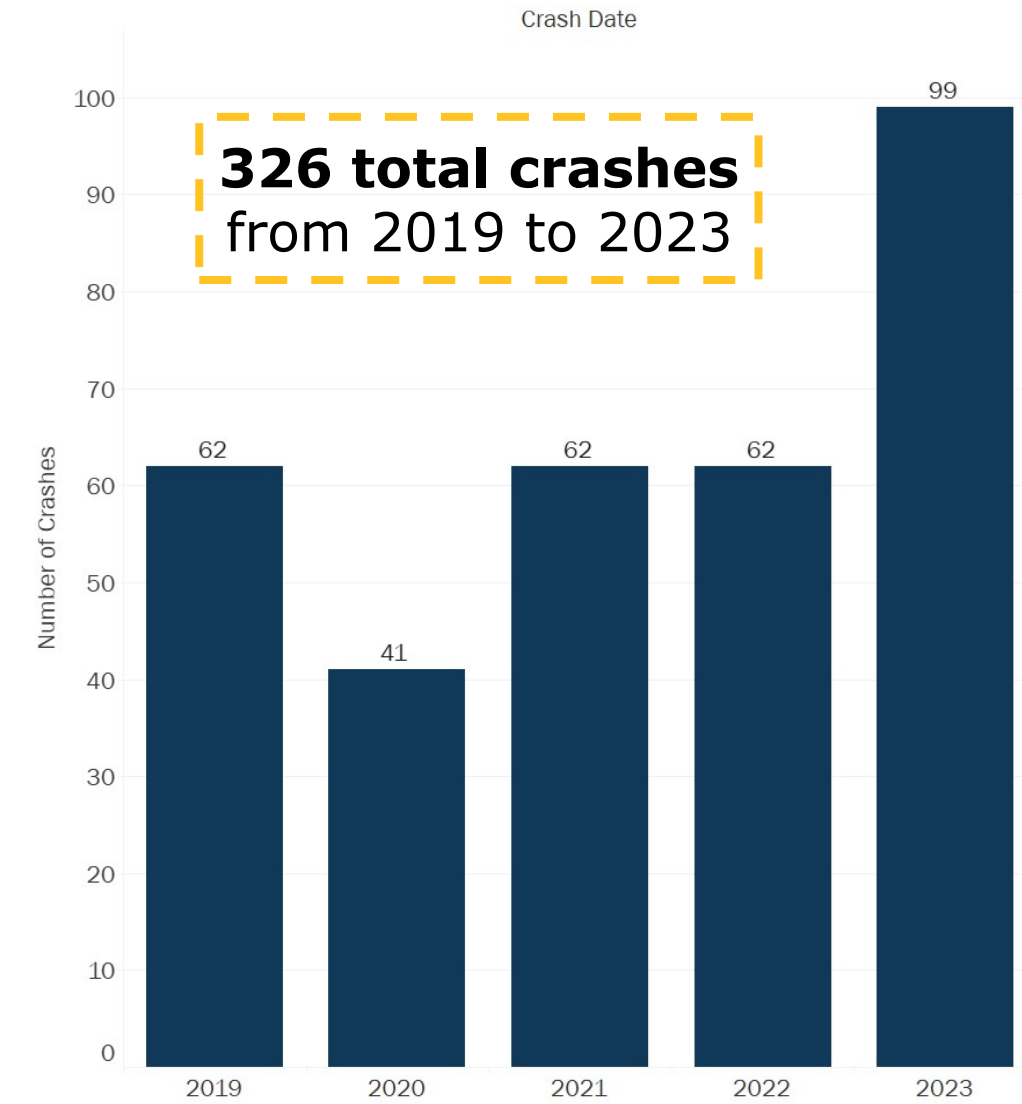
Crash data from 2019 - 2023
Team analysed 11 specific locations

- 2 segments (SH 29, SH 71)
- 9 intersections (see map)



CRASH DATA ANALYSIS

Total Crashes by Year

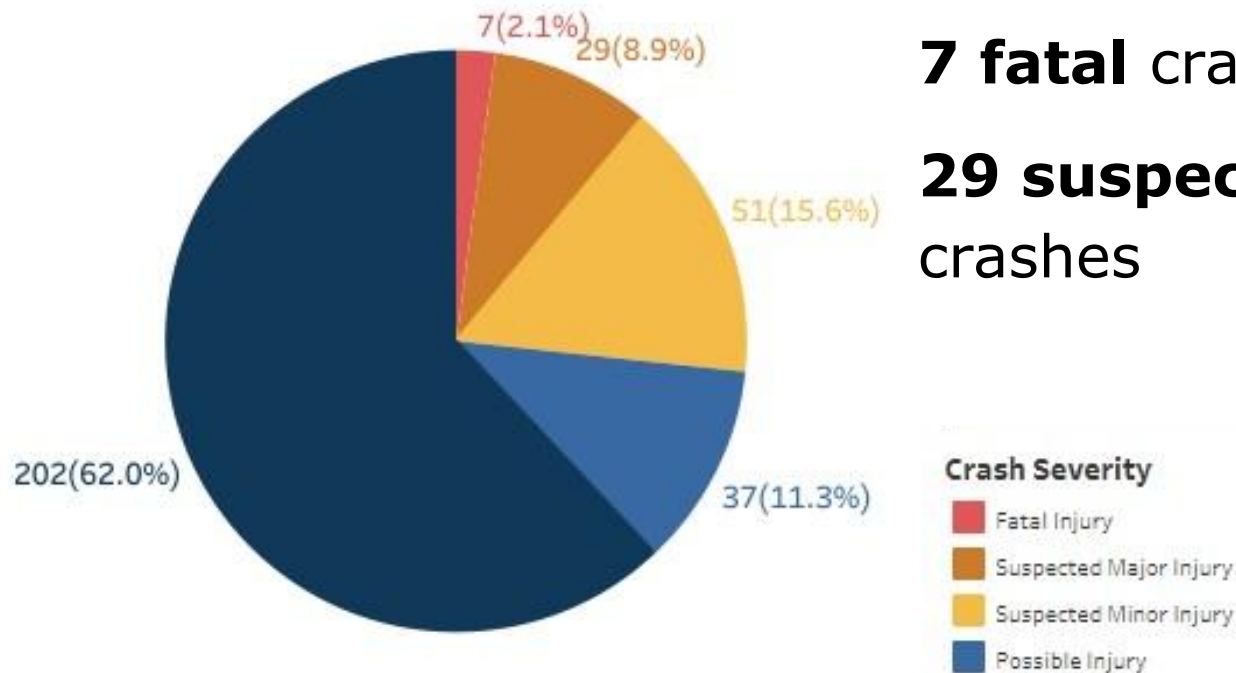


SOURCE: Ghandour, H. (2024, April 4). *TxDOT AUS TSMO Safety Analysis*. AUSTSMOSafetyAnalysis.

https://public.tableau.com/app/profile/houssam.ghandour8731/viz/AUSTSMOSafetyAnalysis_17122626620660/AUSSafetyAnalysis?publish=yes

A closer look at the fatal and suspected major injury crashes...

Severity



From 2019 to 2023...

7 fatal crashes

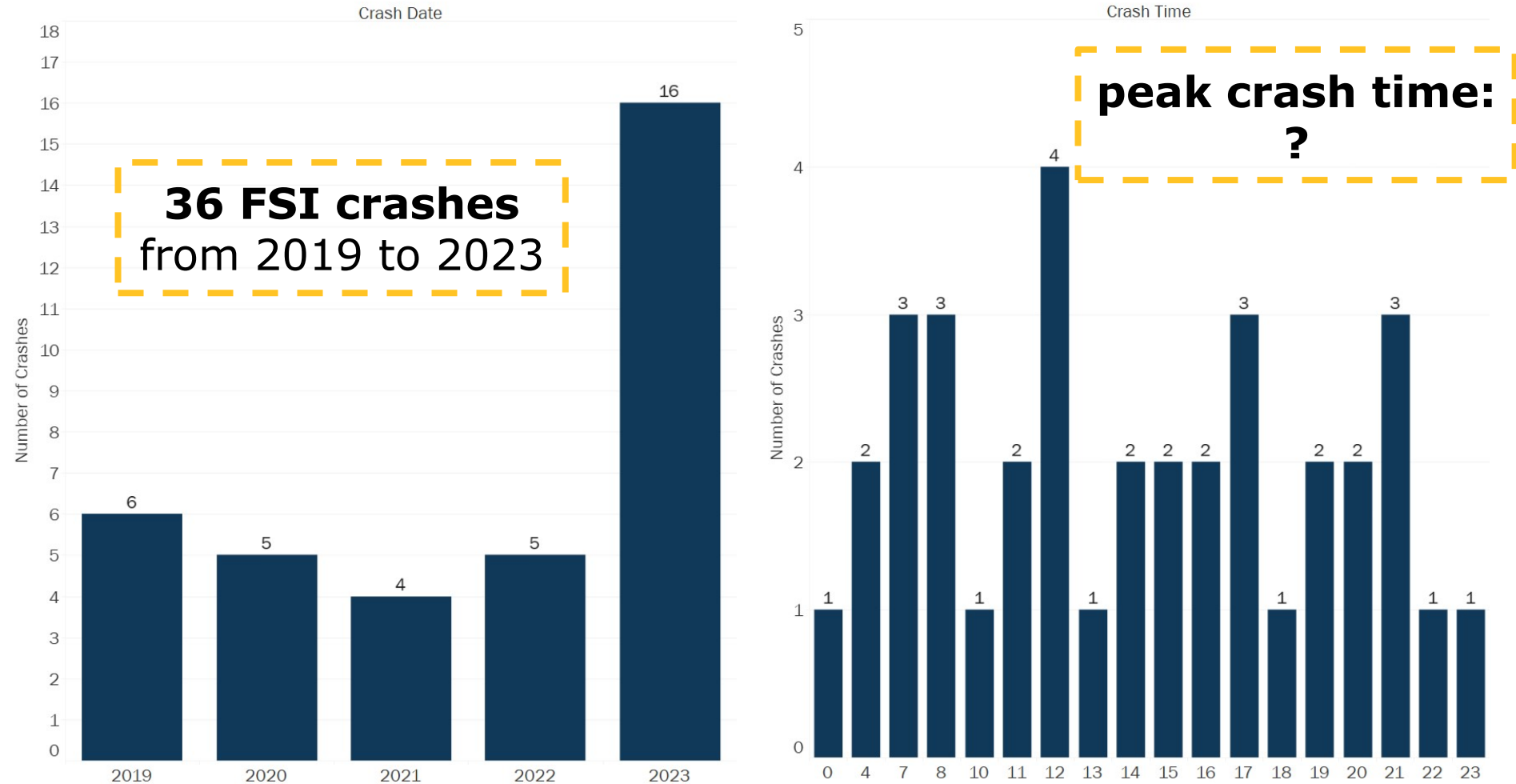
29 suspected major injury crashes

11% of crashes were fatal or serious injury crashes

SOURCE: Ghandour, H. (2024, April 4). *TxDOT AUS TSMO Safety Analysis*. AUSTSMOSafetyAnalysis.

https://public.tableau.com/app/profile/houssam.ghandour8731/viz/AUSTSMOSafetyAnalysis_17122626620660/AUSSafetyAnalysis?publish=yes

Fatal and Suspected Major Injury (FSI) Crashes by Year and Hour



SOURCE: Ghandour, H. (2024, April 4). *TxDOT AUS TSMO Safety Analysis*. AUSTSMOSafetyAnalysis.

https://public.tableau.com/app/profile/houssam.ghandour8731/viz/AUSTSMOSafetyAnalysis_17122626620660/AUSSafetyAnalysis?publish=yes

FSI Crashes by Type

36 FSI crashes
from 2019 to 2023

57% of fatal crashes were head-on collisions

- 14% of all FSI crashes were head-on

Crash Collision

Crash Type	Collision Type	Fatal Injury	Suspected Major Injury
Angle Crash	Angle - both going straight	1	3
	Angle - one straight-one left turn		3
	Angle - one straight-one right turn		1
Opposite Direction	Opposite direction - one straight-one left turn		4
Roadway and Lane Departure	One motor vehicle - going straight	2	10
	OPPOSITE DIRECTION - BOTH GOING STRAIGHT	4	1
Same Direction	Same direction - both going straight-rear end		3
	Same direction - one straight-one stopped		1
Single Vehicle Crash	One motor vehicle - going straight		3

47% of FSI crashes were roadway and lane departure

SOURCE: Ghandour, H. (2024, April 4). *TxDOT AUS TSMO Safety Analysis*. AUSTSMOSafetyAnalysis.

https://public.tableau.com/app/profile/houssam.ghandour8731/viz/AUSTSMOSafetyAnalysis_17122626620660/AUSSafetyAnalysis?publish=yes

Lighting

**86 TOTAL DARK
CONDITIONS
CRASHES**

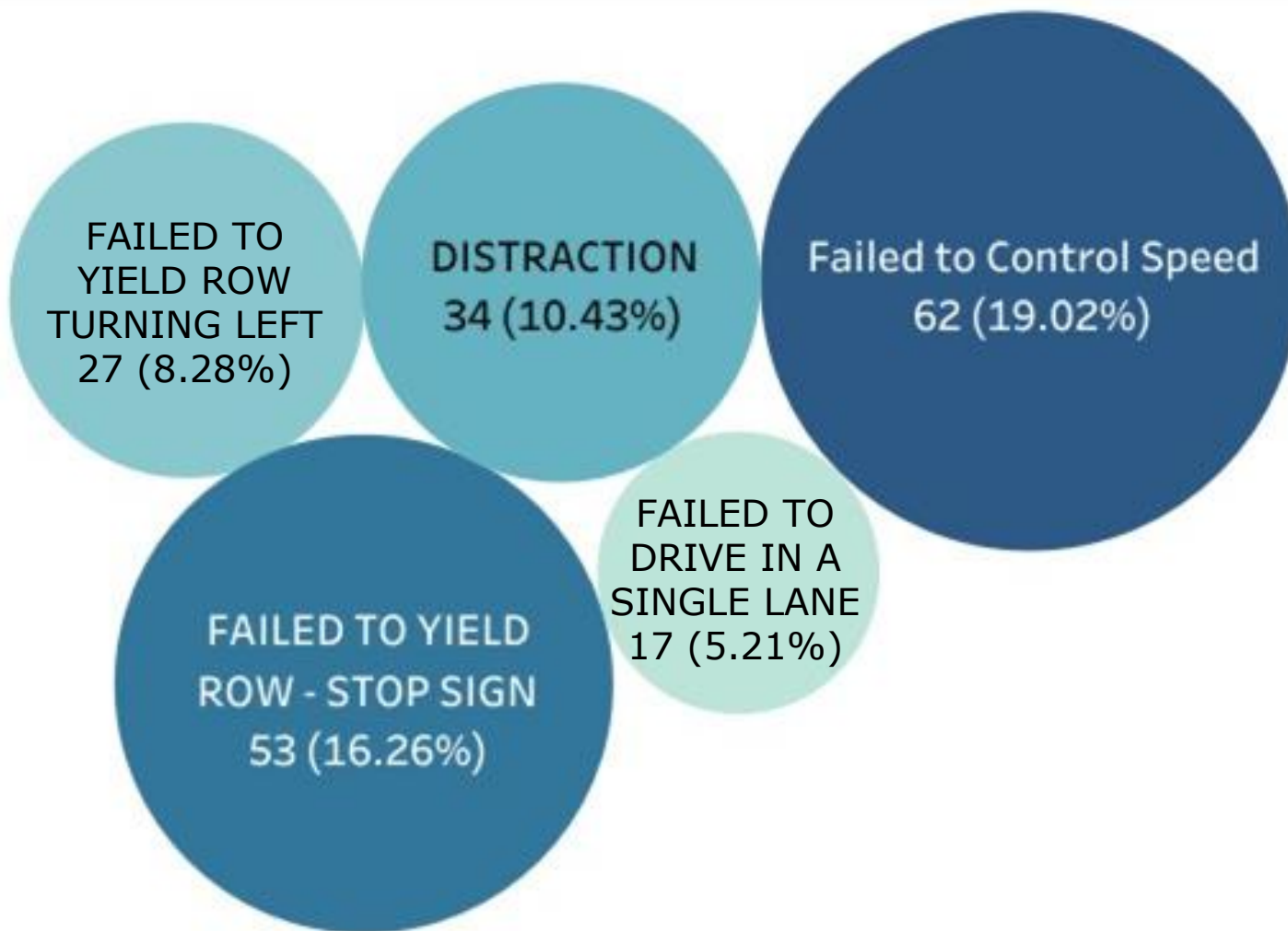
**31% OF FSI
CRASHES
OCCURRED
IN THE DARK**

Light Condition	Fatal Injury	Suspected Major Injury	Suspected Minor Injury	Possible Injury	Not Injured
Dark, Lighted		1	1	2	7
Dark, Not Lighted	3	7	9	5	49
Dark, Unknown Lighting			2		
Dawn		1		1	2
Daylight	4	20	39	28	139
Dusk				1	4
Other					1

SOURCE: Ghandour, H. (2024, April 4). *TxDOT AUS TSMO Safety Analysis*. AUSTSMOSafetyAnalysis.

https://public.tableau.com/app/profile/houssam.ghandour8731/viz/AUSTSMOSafetyAnalysis_17122626620660/AUSSafetyAnalysis?publish=yes

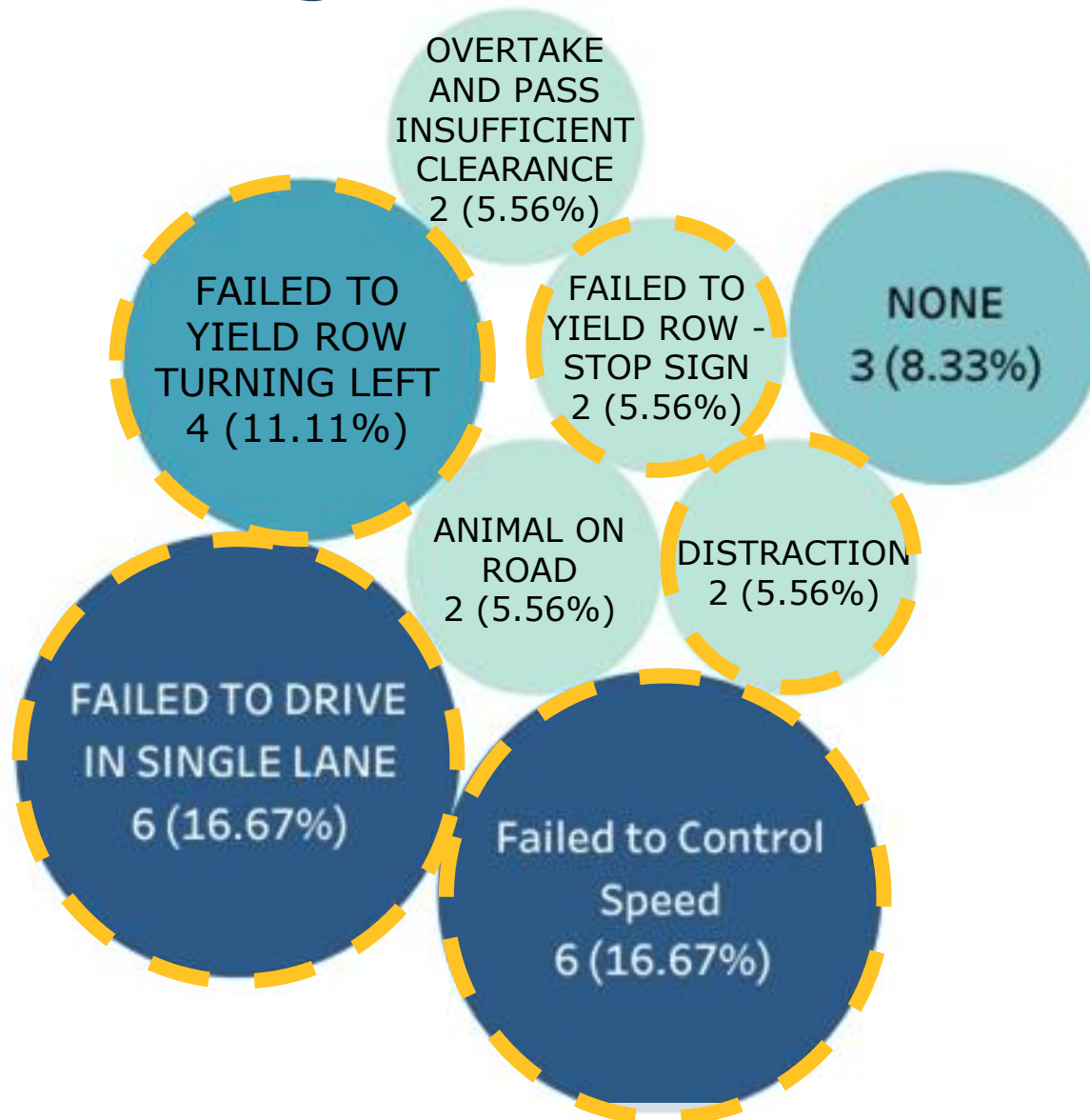
Contributing Factors: All Severities



SOURCE: Ghandour, H. (2024, April 4). *TxDOT AUS TSMO Safety Analysis*. AUSTSMOSafetyAnalysis.

https://public.tableau.com/app/profile/houssam.ghandour8731/viz/AUSTSMOSafetyAnalysis_17122626620660/AUSSafetyAnalysis?publish=yes

Contributing Factors: FSI Crashes



SOURCE: Ghandour, H. (2024, April 4). *TxDOT AUS TSMO Safety Analysis*. AUSTSMOSafetyAnalysis.

https://public.tableau.com/app/profile/houssam.ghandour8731/viz/AUSTSMOSafetyAnalysis_17122626620660/AUSSafetyAnalysis?publish=yes

Technical Memo



Traffic Safety Analysis

Technical Memorandum

DKS Associates, in association with SV Traffic
under contract to Texas Department of Transportation (TxDOT) Austin District

Contract Number: 58-3IDP5004, Work Authorization 1

April 10, 2024

DKS

S+V
traffic

Site Location ID

- Site Description
- Safety Analysis
 - Summary of Key Crash Statistics
 - Specific Safety Concerns and Field Observations
- Recommended Countermeasures

TABLE 3: SUMMARY OF KEY ROADWAY CHARACTERISTICS ALONG SH 71

Roadway	Functional Classification	No. of Lanes in Each Direction	Medians ? (Y/N)	Avg. Lane Width	Avg. Shoulder Width	Posted Speed Limit (mph)	Avg. Daily Traffic (year)
SH 71	Minor Arterial	1	No	11 ft	3 – 8 ft	70	2,600 (2022)

Safety Analysis

The safety analysis for the segment of SH 71 includes a summary of crash data and specific safety concerns that were observed from the Tableau crash data, Google Maps and Earth, and the field visit.

Summary of Key Crash Statistics (2019-2023)

There were 5 fatal and 6 suspected major injury crashes in the five-year period along SH 71 study corridor.

- **Crash Type:** 10 out of the 11 crashes (91%) were roadway or lane departure crashes, including 3 fatal head-on crashes.
- **Contributing Factor:** 3 out of the 11 crashes (27%) cite failure to control speed and 2 out of the 11 (18%) crashes cite failure to correctly overtake and pass another vehicle as contributing factors.
- **Lighting:** 4 out of the 11 crashes (36%) occurred in "dark, not lighted" conditions.
- **Object Struck:** 6 out of the 11 crashes (55%) hit a fixed object, including a ditch, fence, and delineator or marker post.
- **Pavement Condition:** 4 out of the 11 crashes (36%) occurred during wet pavement conditions.



WORK ORDER DEVELOPMENT

Developing Work Orders

Work orders developed for **short-term recommendations**

- Signage and pavement marking improvements

Work orders included

- TxDOT Bid Item numbers and quantities
- Plan view of recommended changes
- Pictures of signs and insets of the site
- Work order memo



MEMORANDUM

To: James Low, Llano Maintenance Section Supervisor **Date:** 04/10/2024
From: Cory Jucius, P.E., Austin District Traffic Office
Subject: Installation of Pavement Markings and Signs (Work Order **BTA#**)

Highway: FM 1431
Control-Section: 1378-05
County: Llano

Please complete the following on FM 1431.

1. Striping contract – Install stop bars at Rose Hill Drive, Texas Avenue, and Oklahoma Street as shown in the attached maps. Pavement needs to be refreshed on Oklahoma Street to install stop bar. **Note: Milling and overlay of asphalt pavement would be required prior to work.**
2. Striping contract – Refresh pavement markings and RPMs along FM 1431 from Rose Hill Drive to Oklahoma Street as shown in the attached maps.

If there are any changes made to this request, please note them on the attached pictures and submit a copy to this office for documentation. If you have any questions or require additional assistance, please contact Cory Jucius, P.E. at (737)-377-9873.

cc: Joseph Muck, P.E. – Burnet Area Engineer



Developing Work Order Memos



MEMORANDUM

To: James Low, Llano [Maintenance Section Supervisor] **Date:** 04/10/2024

From: Cory Jucius, P.E., Austin District Traffic Office

Subject: Installation of Pavement Markings and Signs (Work Order BTA#)

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cc: Joseph Muck, P.E. – Burnet [Area Engineer]

Developing Work Order Plans



Developing Work Order Plans



Developing Work Order Plans





WHY THIS MATTERS

From Analysis to Action!

TxDOT Austin has been **assigning work orders to field crews to implement short-term recommendations** developed by DKS and SV Traffic

Mid- and Long-term recommendations also included in the technical memo

Other Safety Work in the District

Wrong-way crash safety analysis

SH 21 crash safety analysis

A Piece of the Road to Zero Puzzle

Eliminate deaths on Texas roads by 2050.



Kaylee Webber, of Georgetown, TX passed from this life unexpectedly on November 26, 2023. She was headed back home after spending the Thanksgiving weekend with her family in San Angelo and was involved in a tragic motor vehicle accident in Llano County. She was 20 years old. Her family and friends are shocked and grieved by the loss of such a sweet, vibrant life. She would have turned 21 in just a few weeks.

#EndTheStreak

SOURCE: Harper Funeral Home. (n.d.). Kaylee Webber Obituary. <https://www.harper-funeralhome.com/obituaries/Kaylee-Webber?obId=30017530>

THANK YOU

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