

Grayson County Metropolitan Planning Organization (MPO)
TECHNICAL ADVISORY COMMITTEE
AGENDA

Wednesday, September 21, 2022 @ 9:00 am
Texas Department of Transportation
3904 US 75, Sherman, Texas

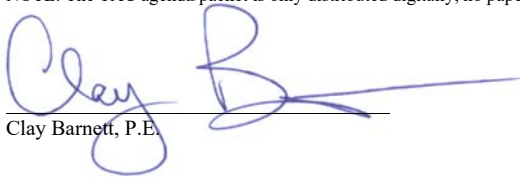
Please visit our MPO website www.gcmppo.org for background materials under the “Committees/Meetings” link or under “News and Announcements” at our home page.

- I. Call to order
- II. Acknowledgment of Quorum by Chairman
- III. Public Comment Period
- IV. [Consider approval of the minutes of the MPO TAC meeting of August 17, 2022](#)
 Action Information
- V. Presentation and discussion on the demographics used in the 2024 Grayson County Travel Demand Model
 Action Information
- VI. Announcements
(*Informal Announcements, Future Agenda Items, and Next Meeting Date*)
 - TAC Next meeting November 9, 2022 (This is a week earlier than our regularly scheduled meeting)
 - MPO Policy Board Next meeting December 7, 2022
 - Freight Advisory Committee Next meeting TBD
- VII. Adjournment

All meetings of the Grayson County Metropolitan Planning Organization (MPO) and Technical Advisory Committee (TAC) are open to the public. The MPO is committed to compliance with the Americans with Disabilities Act (ADA). Reasonable accommodations and equal opportunity for effective communications will be provided upon request. Please contact Clay Barnett at (903) 813-4524 at least 24 hours in advance if accommodation is needed.

The above notice was posted at the Grayson County Courthouse in a place readily accessible to the public and made available to the Grayson County Clerk on or before September 16, 2022.

NOTE: The TAC agenda/packet is only distributed digitally, no paper copies will be sent. If you need a printed copy, please contact MPO staff.



Clay Barnett, P.E.

1 Grayson County Metropolitan Planning Organization (MPO)
2 TECHNICAL ADVISORY COMMITTEE

3 Wednesday, August 17, 2022 9:00 a.m.
4 Texas Department of Transportation
5 3904 US 75, Sherman, Texas
6

7 **Committee Members Present:**

8 Clay Barnett, P.E., Chairman	Grayson County MPO
9 Rob Rae, AICP	City of Sherman
10 Bobby Atteberry	City of Denison
11 Aaron Bloom, P.E.	TxDOT Sherman Area Engineer
12 Bill Benton	Grayson County

13
14 **Committee Members Absent:**

15 Len McManus, P.E.	City of Van Alstyne
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16
17 **Non-Voting Members Present:**

18 Mansour Shiraz	TxDOT TPP Division
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19
20 **Non-Voting Members Absent:**

21 Barbara Maley	Federal Highway Administration (FHWA)
22 Shellie White	Texoma Area Paratransit System (TAPS)
23 Lynn Hayes	Federal Transit Administration (FTA)

24
25 **Guests Present:**

26 Gracie Johnson	Grayson County
27 Eric Greenman	CP&Y
28 Jill Van Hoewyk	Lamb-Star Engineering
29 Tom Fowler	Kimley-Horn and Associates
30 Kate Stankiewicz	Kimley-Horn and Associates
31 Eric Jeon	Kimley-Horn and Associates

32
33 **I. Call to Order**

34
35 Mr. Barnett called the meeting to order at 9:00 a.m.
36

37 **II. Acknowledgement of Quorum by Chairman**

38
39 Mr. Barnett declared a quorum of the Technical Advisory Committee present.
40

41 **III. Public Comment Period**

42
43 No public comment.
44
45
46

1 **IV. Consider approval of the minutes of the MPO TAC meeting of May 18, 2022**

2
3 Motion to approve the minutes was made by Mr. Rae, seconded by Mr. Benton. Motion carried.

4
5 **V. Review of the Targets for Safety Performance Measures (PMI) for Fiscal Year 2023**
6 **As Established by the Texas Department of Transportation and Approve a Resolution**
7 **Adopting the PMI**

8
9 Motion to recommend the approval of the resolution to adopt the PMI Targets to the Policy
10 Board was made by Mr. Atteberry, seconded by Mr. Rae. Motion carried.

11
12 **VI. Workshop on the Grayson County Safety and Operations Strategic Plan**

13
14 Tom Fowler and Eric Jeon with Kimley-Horn and Associates gave a presentation on the update
15 with the Grayson County Safety and Operations Strategic Plan which is attached hereto and
16 incorporated herein.

17
18 **VII. Announcements**

19
20 Mr. Barnett stated that a Corridor Study on US-82 has been approved by the State. Four committees
21 have been formed. He will serve on our regional committee and the overarching committee as
22 well.

23
24 The MPO Policy Board next meeting will be held on September 14, 2022. The TAC next meeting
25 will be held on September 21, 2022.

26
27 **VIII. Adjournment**

28
29 Having no further business, Mr. Barnett adjourned the meeting at 10:38 AM.

30
31
32 _____
33 Clay Barnett, P.E., Chairman, GCMPO Technical Advisory Committee

GRAYSON COUNTY SAFETY AND OPERATIONS STRATEGIC PLAN TAC MEETING MINUTES

MEETING DATE: August 17, 2022

MEETING TIME: 9:00 AM – 10:30 AM

MEETING LOCATION: Hybrid – TxDOT Sherman Area Office and Zoom

ATTENDEES:

Bobby Atteberry, City of Denison
Rob Rae, City of Sherman
Bill Benton, Grayson County
Gracie Johnson, Grayson County
Clay Barnett, Grayson County MPO
Shellie White, TAPS Public Transit
Aaron Bloom, TxDOT Paris District

Mansour Shiraz, TxDOT TPP Division
Eric Greenman, Lamb-Star Engineering
Jill Van Hoewyk, Lamb-Star Engineering
Tom Fowler, Kimley-Horn and Associates
Kate Stankiewicz, Kimley-Horn and Associates
Eric Jeon, Kimley-Horn and Associates

SUBJECT: Grayson County MPO TAC Meeting – Discussion on Grayson County Safety and Operations Strategic Plan

INTRODUCTION

The Grayson County Metropolitan Planning Organization (MPO) Technical Advisory Committee (TAC) Meeting was held on Wednesday, August 17, 2022. The Grayson County Safety and Operations Strategic Plan project team presented initial findings and potential recommendations to the TAC to gather input and comments prior to completing the draft plan. Topics and notes from the discussion are listed below.

SAFETY AND OPERATIONS ANALYSIS AND RECOMMENDATIONS

- The Kimley-Horn project team identified crash hotspots from 2017 to 2021. The TAC asked about the crash hotspot near the intersection of US 69 and Spur 503 around downtown Denison. The TAC members noted the possible need to investigate crash details, as they think many of the crashes in this location are likely pedestrian crashes. The details will help to determine the potential improvements for pedestrian crashes. The project team will further investigate crashes in this area.
- TAC members noted that the construction along US 75 should be taken into account when reviewing crash data as the construction may be a factor in the causes of crashes. The project team is only analyzing and making recommendations for the segments of US 75 from the northern Grayson County border to Spur 503, and from US 82 to SH 91. Sections of US 75 under construction were not considered for improvements as any historical crash data may not be relevant after construction is completed.
- Clay Barnett identified the need to resurface US 75, as the rough existing pavement is likely a major contributor to the crashes along the freeway. He said that drivers attempting to dodge potholes often swerve and leave their lane, resulting in run off the road and sideswipe crashes.
- TAC members noted that there is also construction currently happening on FM 1417 from US 82 to SH 56. Therefore, the project team will reduce the study segment of FM 1417 to be contained within SH 56 and US 75, on the west side of US 75. The existing construction on FM 1417

includes the installation of sidewalks, signals, and crosswalks due to multiple crashes involving pedestrians.

- The project team gave an overview of Highway Safety Improvement Program (HSIP) and Safe Streets for All (SS4A) funding opportunities.
- The Grayson County Safety and Operations Strategic Plan will include projects that can qualify for HSIP funding and recommendations will be centered around the HSIP approved work categories.
- SS4A funding includes grants for Action Plans and Implementation Plans. Action Plans require a higher level of detail for safety recommendations than can be included in the Grayson County Safety and Operations Strategic Plan. FHWA has stated that Action Plans should be funded at a minimum of \$200k for cities and may go as high as \$5M for larger MPOs. If a MPO receives an Action Plan grant, they can also apply for an Implementation Plan grant once the Action Plan is completed. Implementation Plan grants will be funded in the range of \$5M to \$50M.
- Although the Grayson County Safety and Operations Strategic Plan does not qualify as an Action Plan, completion of the Strategic Plan can support an Action Plan grant application because it identifies many of the safety issues in Grayson County and demonstrates the regional commitment to improving safety.
- TAC members were interested in applying for a SS4A grant, however concern was noted about the 20% match required as finding funding to match grants is often challenging for smaller MPOs. Applications for 2022 are due September 15, 2022. FHWA plans to continue this program for at least 5 years. The Grayson County MPO will not submit an application this year but may do so next year if matching funds can be identified.
- TAC members discussed the shelf life of engineering plans and the possibility of developing a detailed Action Plan for multiple corridors and implementing the improvements over five to ten years.
- TxDOT has been updating many of the signals in Sherman including traffic signal timing updates, installation of battery back-up units, and the addition of CCTV cameras at several signals to allow remote monitoring and evaluation of reported issues.
- Although FM 121 does not currently appear in the top 10 priority corridor segments for operational needs, TAC members would like FM 121 in Van Alstyne to be included in the review of operational improvements due to Van Alstyne's projected growth and the potential for severe congestion.

ELECTRIC VEHICLE (EV) CHARGING STATION NEEDS ANALYSIS AND RECOMMENDATIONS

- The Kimley-Horn project team had performed site visits of the four potential EV charging station locations selected in previous meetings and identified specific parking spots at each location where the equipment could be efficiently installed. Kimley-Horn presented these findings and discussed the recommended type of charging station for each location.
- TAC members noted that the City of Denison has invested a lot of funds into renovating Main Street in two phases. The goal of the renovation is to make Main Street more pedestrian friendly, which has resulted in a reduction of parking spaces. The limited parking spaces along Main Street are important to the shops in the area and owners would not want EVs parked there long-term while they charge. Any EV charging stations will have to be off of Main Street.
- The TAC members are interested in EV charging stations for the long-term future and are focused on learning more about EV charging station options at a high level. They want to know costs for electricity to power the charging stations and the price people would be willing to pay to use them.
- Four parking spaces at the Denison Travel Center along US 75, including an ADA compliant parking space, were identified for EV charging station consideration. Direct Current Fast Charging (DCFC) chargers are recommended at this site, although it may require upgrades to the electrical

equipment. DCFC is the faster charger type, which would allow travelers to explore the travel center while their vehicle charges and not have to spend too much extra time waiting.

- TAC members mentioned that a new Victron Energy travel center, under construction at the northeast section of the interchange of US 75 and SH 91, has eight Tesla charging stations already operating even though the rest of the travel center is not complete.
- Approximately 20 potential parking spaces were identified for EV charging station consideration in a parking lot in Denison at the corner of West Chestnut Street and South Rusk Avenue. Level 2 chargers are recommended at this site to encourage travelers to stay longer in downtown Denison and walk to the shops and restaurants along Main Street.
- Approximately 20 or so parking spaces were identified for EV charging station consideration in a parking lot in Denison on West Chestnut Street, between South Mirick Avenue and South Fannin Avenue. Level 2 chargers are also recommended at this site to encourage travelers to stay longer in downtown Denison and walk to the shops and restaurants along Main Street.
- At the downtown Denison sites, EV charging stations are recommended in the middle of parking lots due to past concerns with advertisements on EV equipment. Level 2 chargers are recommended because DCFC electrical equipment may take up the space of other parking spaces and the faster charge provided by DCFC does not encourage visitors to stay long enough to visit local restaurants and shops.
- A site in downtown Sherman, on South Elm Street between West Houston Street and West Lamar Street, was reviewed and approximately six parking spaces for EV charging stations were identified. Level 2 chargers and pavement marking improvements are recommended. TAC members expressed concern that this location may be too far from restaurants and shops. TAC members noted that the City of Sherman is currently coordinating with private businesses and land owners to provide additional public parking. The Sherman Police Department parking lot is also being considered for conversion to public parking and could include EV charging stations.
- Rob Rae from the City of Sherman offered to meet with others in the City of Sherman and provide additional locations in downtown Sherman that may be better locations for EV parking station deployments. Rob will coordinate with Clay Barnett and the Kimley-Horn project team to arrange a meeting to further review the potential sites for EV parking.

NEXT STEPS

- The project team will incorporate the input provided by TAC members during this meeting in the draft document of the Grayson County Safety and Operations Strategic Plan.
- The project team will continue to incorporate comments from TAC members on the corridor priority and potential list of recommendations for the top 10 safety segments.
- The project team will have the draft document of the Grayson County Safety and Operations Strategic Plan ready for review by early September.
- Rob Rae will reach out to City of Sherman staff to get the list of additional public parking locations to consider for potential EV charging stations.

Grayson County
**Safety and
Operations
Strategic Plan**

**Technical Advisory Committee
Meeting**

August 17, 2022

GRAYSON COUNTY MPO
METROPOLITAN PLANNING ORGANIZATION
INTERMODAL URBAN TRANSPORTATION PLANNING



Overview

- Overview of the Grayson County Safety and Operations Strategic Plan
- Safety
 - Safety Segment Selection and Prioritization
 - Safety Recommendations
 - HSIP and Safe Streets and Roads for All Funding
- Operations
 - Operations Segments Selection and Prioritization
 - Operations Recommendations
- Electric Vehicles Charging Station Evaluation
- Next Steps

Overview of the Safety and Operations Strategic Plan

Project Objectives

Safety Analysis and Recommendations

Identify and prioritize regional and local safety improvements

Identify key projects that qualify for HSIP funding

Operations-ITS Analysis and Recommendations

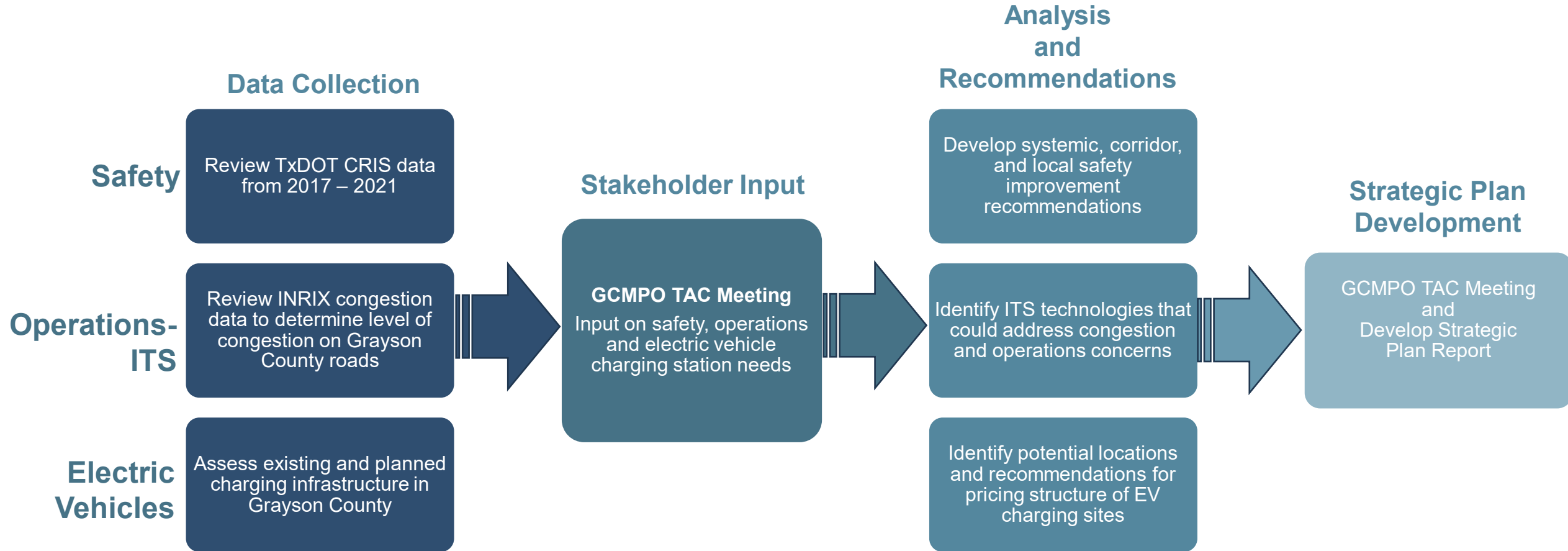
Identify and prioritize ITS recommendations to address operational issues related to congestion, weather, and special events

EV Charging Station Needs Analysis and Recommendations

Assess existing and planned EV charging infrastructure and provide prioritized recommendations for EV charging sites

Identify possible funding sources

Key Project Development Steps



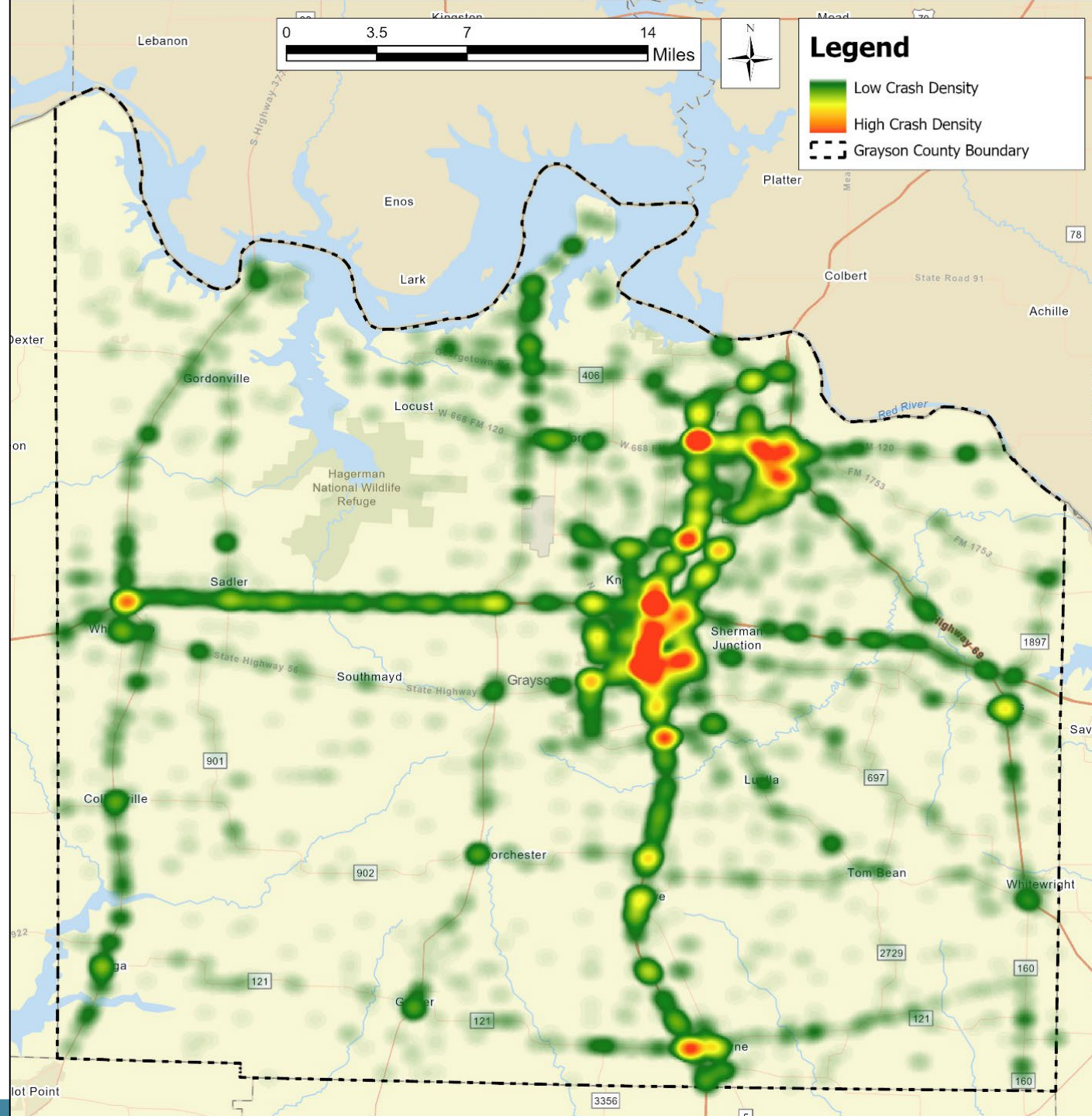
Safety Analysis and Recommendations

CRIS Crash Data

**Segment Selection,
Prioritization, and
Recommendations**

**Systemic
Recommendations**

**HSIP and Safe Streets for
All Grants**



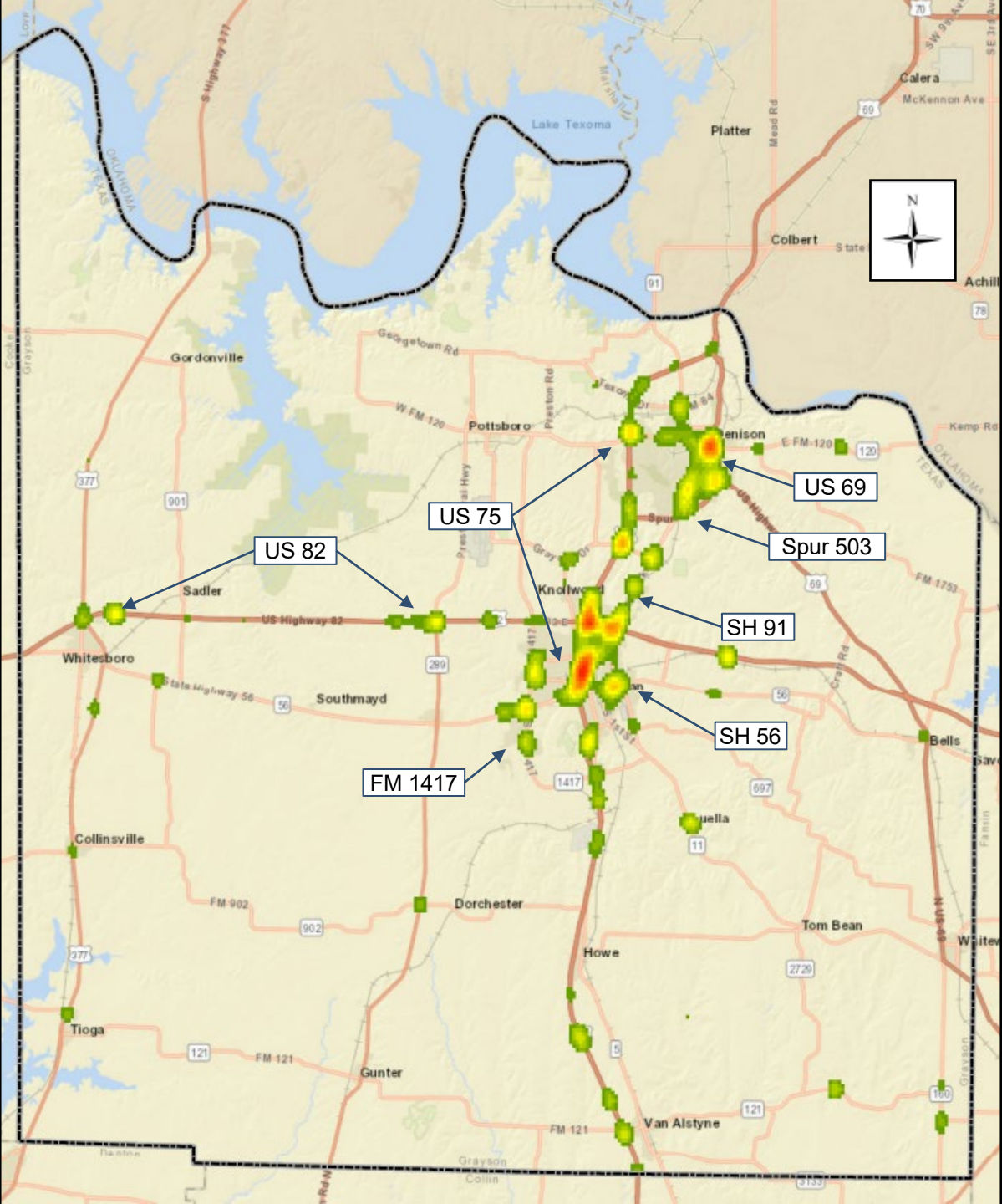
TxDOT Crash Records Information System (CRIS)

Grayson County 2017 – 2021 Crash Data

Hotspots along US 75, US 69, US 82, SH 56, SH 91, FM 1417, FM 120 & Spur 503

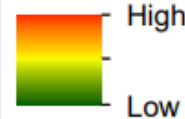
CRIS Data 2017-2021


Fatal and Serious Injury Crashes



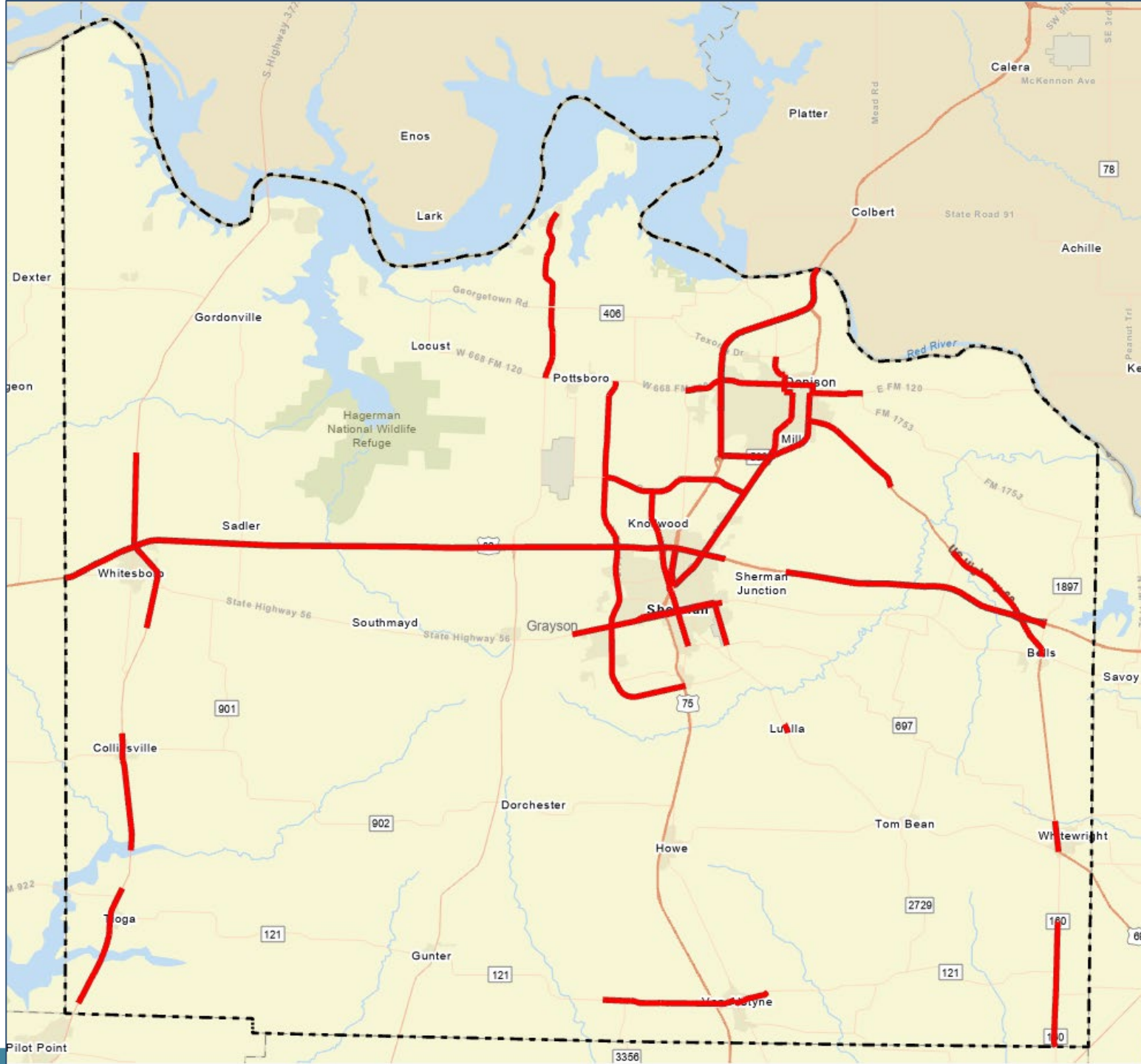
Legend

Crash Density



 Grayson County Boundary

Identified Key Safety Segments



Roadway	From	To
US 82	SH 56/W Main St	Bar Seven Dr
US 82	Reynolds Rd	Baker Ridge Rd
US 82	Junction Rd	FM 1897
US 75	County Boundary	Spur 503
US 75	US 82	SH 91
US 69	S Austin Ave	Mack Nelsen Ln
US 69	Craft Rd	Bells Blvd
US 69	FM 697	SH 11
US 377	Dixie Rd	Gunter Rd
US 377	W Ford St	Patton Rd
US 377	FM 922	Pierce Spring Branch
Travis St	FM 691/Grayson Dr	W Park Ave
SH 91	Texoma Dr	Spur 503
SH 91	Spur 503	US 75
SH 56	Friendship Rd	N Colbert Ave
SH 289	Peddicord Ln	FM 120
SH 11	Lamar St	FM 697
SH 11	Judy Dr	Cedar Rd
Spur 503	US 75	W Main St/E FM 120
FM 691	FM 1417	SH 91
FM 160	Jack England Rd	County Boundary
FM 1417	FM 120	US 82
FM 1417	US 82	W Travis St
FM 121	Durning Rd	Van Alstyne City Bound
FM 120	FM 131	FM 1753

Safety Prioritization Criteria

General Segment Characteristics

- Roadway Classification
- Average Daily Traffic (ADT)

Crash Data (2017 – 2021)

- Number of K, A, and B Crashes* per Mile
- Total Number of Crashes (weighted by severity) per Mile

* (K) Fatal Crashes (A) Serious Injury Crashes (B) Non-Incapacitating Crashes

Safety Prioritization Results - Top 10 Segments

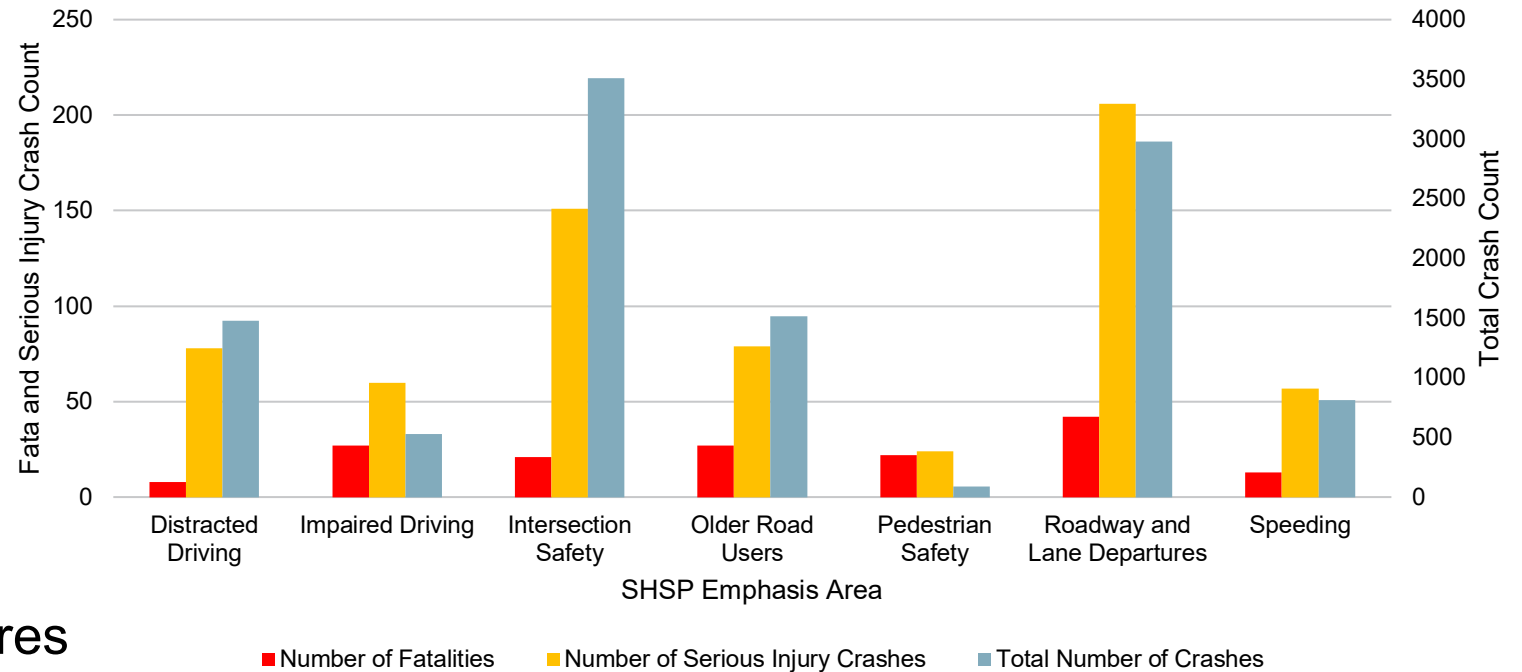
General Segment Characteristics						Guiding Factor of Segment	Other Factors Considered						
Roadway Name	Roadway Classification ¹	From	To	Approx. Segment Length (mi) ²	ADT (vpd) ³	Hotspot Crash Density ⁴	Number of Fatal Crashes	Number of Serious Injury Crashes	Number of Minor Injury Crashes	Number of Possible Injury Crashes	Number of No Injury Crashes	Fatal, Serious Injury, and Minor Injury Crashes per Mile within Segment	All Crashes (Weighted) per Mile within Segment ⁵
US 75	Freeway	US 82	SH 91	1.92	56,017	Medium - High	2	11	45	82	160	30.21	12.55
US 82	Freeway	Reynolds Rd	Baker Ridge Rd	6.29	28,048	Medium - High	8	21	88	106	303	18.60	7.86
US 75	Freeway	County Boundary	Spur 503	10.50	52,475	Medium - High	9	29	111	146	428	14.19	6.18
SH 91	Principal Arterial	Spur 503	US 75	5.50	8,400	Low - Medium	4	18	90	84	171	20.36	7.21
SH 56	Major Arterial	Friendship Rd	N Colbert Ave	5.55	14,099	Medium - High	2	17	83	90	223	18.38	6.64
SH 11	Major Arterial	Judy Dr	Cedar Rd	0.61	3,612	Low	4	1	4	2	6	14.75	9.38
SH 91	Minor Arterial & Major Collector	Texoma Dr	Spur 503	4.49	15,519	Medium	3	12	42	32	159	12.69	5.49
FM 1417	Major Arterial	US 82	W Travis St	6.41	12,470	Low	1	21	45	58	100	10.45	4.90
FM 120	Major Arterial & Minor Arterial	FM 131	FM 1753	7.01	15,229	Medium	1	14	59	61	289	10.56	4.31
Spur 503	Major Arterial	US 75	W Main St/E FM 120	4.70	14,439	Low - Medium	1	16	28	49	116	9.57	5.15

General Segment Characteristics				Prioritization Scoring ⁶				
Roadway Name	Roadway Classification ¹	From	To	Classification Score (10 Points)	ADT Score (20 Points)	Fatal, Serious, and Minor Injury Crashes per Mile Score (40 Points)	All Crashes per Mile Score (20 Points)	Total (90 Points)
US 75	Freeway	US 82	SH 91	10	20	40	20	90
US 82	Freeway	Reynolds Rd	Baker Ridge Rd	10	19	36	14	79
US 75	Freeway	County Boundary	Spur 503	10	20	31	12	73
SH 91	Principal Arterial	Spur 503	US 75	9	8	38	13	68
SH 56	Major Arterial	Friendship Rd	N Colbert Ave	7	12	36	12	67
SH 11	Major Arterial	Judy Dr	Cedar Rd	7	2	31	16	56
SH 91	Minor Arterial & Major Collector	Texoma Dr	Spur 503	4	12	28	11	55
FM 1417	Major Arterial	US 82	W Travis St	7	11	24	10	52
FM 120	Major Arterial & Minor Arterial	FM 131	FM 1753	6	12	24	8	50
Spur 503	Major Arterial	US 75	W Main St/E FM 120	7	12	20	10	49

Texas Strategic Highway Safety Plan (SHSP)

“The mission of the Texas SHSP is to reduce fatalities and serious injuries on state and local roadways. ... The overarching benefit of the SHSP is to bring together a diverse set of disciplines to collaboratively improve safety.”

- Distracted Driving
- Impaired Driving
- Intersection Safety
- Older Road Users
- Pedestrian Safety
- Roadway and Lane Departures
- Speeding



FHWA Proven Countermeasures

ROADWAY DEPARTURE



Wider Edge Lines



Enhanced Delineation for Horizontal Curves



Longitudinal Rumble Strips and Stripes on Two-Lane Roads



SafetyEdgeSM



Roadside Design Improvements at Curves



Median Barriers

INTERSECTIONS



Backplates with Retroreflective Borders



Corridor Access Management



Dedicated Left- and Right-Turn Lanes at Intersections



Reduced Left-Turn Conflict Intersections



Roundabouts



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

FHWA Proven Countermeasures

PEDESTRIANS/BICYCLES



Crosswalk Visibility Enhancements



Bicycle Lanes



Rectangular Rapid Flashing Beacons (RRFB)



Leading Pedestrian Interval



Medians and Pedestrian Refuge Islands in Urban and Suburban Areas



Pedestrian Hybrid Beacons



Road Diets (Roadway Reconfiguration)



Walkways

CROSSCUTTING



Pavement Friction Management



Lighting



Local Road Safety Plans



Road Safety Audit

Benefits of countermeasures will be assessed by calculating the potential reduction in crashes using FHWA's Crash Modification Factor Clearinghouse

HSIP Work Codes

100 Signing and Signals

- Install Warning/Guide Signs
- Install Advanced Warning Signs and Signals (Intersections & Curves)
- Install Delineators and Chevrons
- Improve Traffic Signals and Interconnect Signals

200 Roadside Obstacles and Barriers

- Install Median Barriers
- Safety Treat Fixed Objects
- Pedestrian Crossing Deterrent

300 Resurfacing and Roadway Lighting

- Resurfacing
- Safety Lighting (Midblock & Intersection)

400 Pavement Markings

- Install Pavement Markings
- Install Edge Marking and Centerline Striping
- Install Pedestrian Crosswalk
- Install Sidewalks

500 Roadway Work

- Widen Lane(s) and Paved Shoulders
- Improve Horizontal Alignment
- Realign Intersection
- Milled and Raised Edgeline and Centerline Rumble Strips
- Transverse Rumble Strips
- Restricted Crossing U-Turn

Recommended Segment Improvements

Aligned with HSIP Work Codes

Roadway	From	To	Potential Improvements to Recommend (HSIP & FHWA)			
US 75	US 82	SH 91	Safety treat fixed objects (209) Widen paved shoulders (to > 5ft) (536)	Wider edge lines (FHWA PSC)	Longitudinal rumble strips and stripes on two-lane roads (FHWA PSC)	Resurfacing (N/A)
US 82	Reynolds Rd	Baker Ridge Rd	Install advanced warning signs (128) Safety treat fixed objects (209) Safety lighting (304)	Widen paved shoulders (to 5ft or less) (503) Widen paved shoulders (to > 5ft) (536) Wider edge lines (FHWA PSC)	Longitudinal rumble strips and stripes on two-lane roads (FHWA PSC)	Corridor access management (FHWA PSC) Resurfacing (N/A)
US 75	County Boundary	Spur 503	Safety treat fixed objects (209) Install impact attenuation system (217)	Wider edge lines (FHWA PSC)	Longitudinal rumble strips and stripes on two-lane roads (FHWA PSC)	Resurfacing (N/A)
SH 91	Spur 503	US 75	Improve traffic signals (108) Install pedestrian signal (110)	Install advanced warning signs (intersection) (128) Install pedestrian crosswalk (403)	Install sidewalks (407) Realign intersection (508)	Backplates with retroreflective borders (FHWA PSC) Corridor access management (FHWA PSC)
SH 56	Friendship Rd	N Colbert Ave	Improve traffic signals (108) Interconnect signals (111)	Install advanced warning signs (intersection) (128) Install pavement markings (401)	Wider edge lines (FHWA PSC)	Backplates with retroreflective borders (FHWA PSC)
SH 11	Judy Dr	Cedar Rd	Install warning/guide signs (101) Install advanced warning signs (intersection) (128)	Flashing or LED-embedded stop signs (145) Safety lighting (304)	Safety lighting at intersection (305) Realign intersection (508)	Wider edge lines (FHWA PSC) Corridor access management (FHWA PSC)
SH 91	Texoma Dr	Spur 503	Improve traffic signals (108) Interconnect signals (111) Improve pedestrian signals (131)	Safety lighting (304) Safety lighting at intersection (305) Install pavement markings (401)	Install edge marking (402) Install pedestrian crosswalk (403) Channelization (509)	Milled centerline rumble strips (542) Raised centerline rumble strips (544) Yellow change interval (FHWA PSC)
FM 1417	US 82	US 75	Install school zones (114) Install advanced warning signs (intersection) (128) Safety lighting (304) Safety lighting at intersection (305)	Widen lane(s) (502) Install continuous turn lane (518) Widen paved shoulder (to > 5ft) (536)	Milled edgeline rumble strips (532) Raised edgeline rumble strips (534) Milled centerline rumble strips (542)	Raised centerline rumble strips (544) Wider edge lines (FHWA PSC) Corridor access management (FHWA PSC)
FM 120	FM 131	FM 1753	Improve traffic signals (108) Interconnect signals (111) Install advanced warning signals and signs (intersection) (124) Install advanced warning signs (intersection) (128)	Install chevrons (curve) (137) Flashing or LED-embedded stop signs (145) Safety lighting (304) Safety lighting at intersection (305)	Install pavement markings (401) Install edge marking (402) Install centerline striping (404) Milled edgeline rumble strips (532)	Raised edgeline rumble strips (534) Backplates with retroreflective borders (FHWA PSC) Yellow change interval (FHWA PSC)
Spur 503	US 75	W Main St/E FM 120	Install advanced warning signals and signs (intersection) (124) Install advanced warning signs (intersection) (128) Install median barrier (201)	Safety treat fixed objects (209) Install impact attenuation system (217) Safety lighting (304) Safety lighting at intersection (305)	Install pavement markings (401) Install edge marking (402) Construct paved shoulders (504) Convert to one way frontage roads (525)	Milled edgeline rumble strips (532) Raised edgeline rumble strips (534) Transverse rumble strips (545)

US 75 (From US 82 to SH 91)

Classification: Freeway

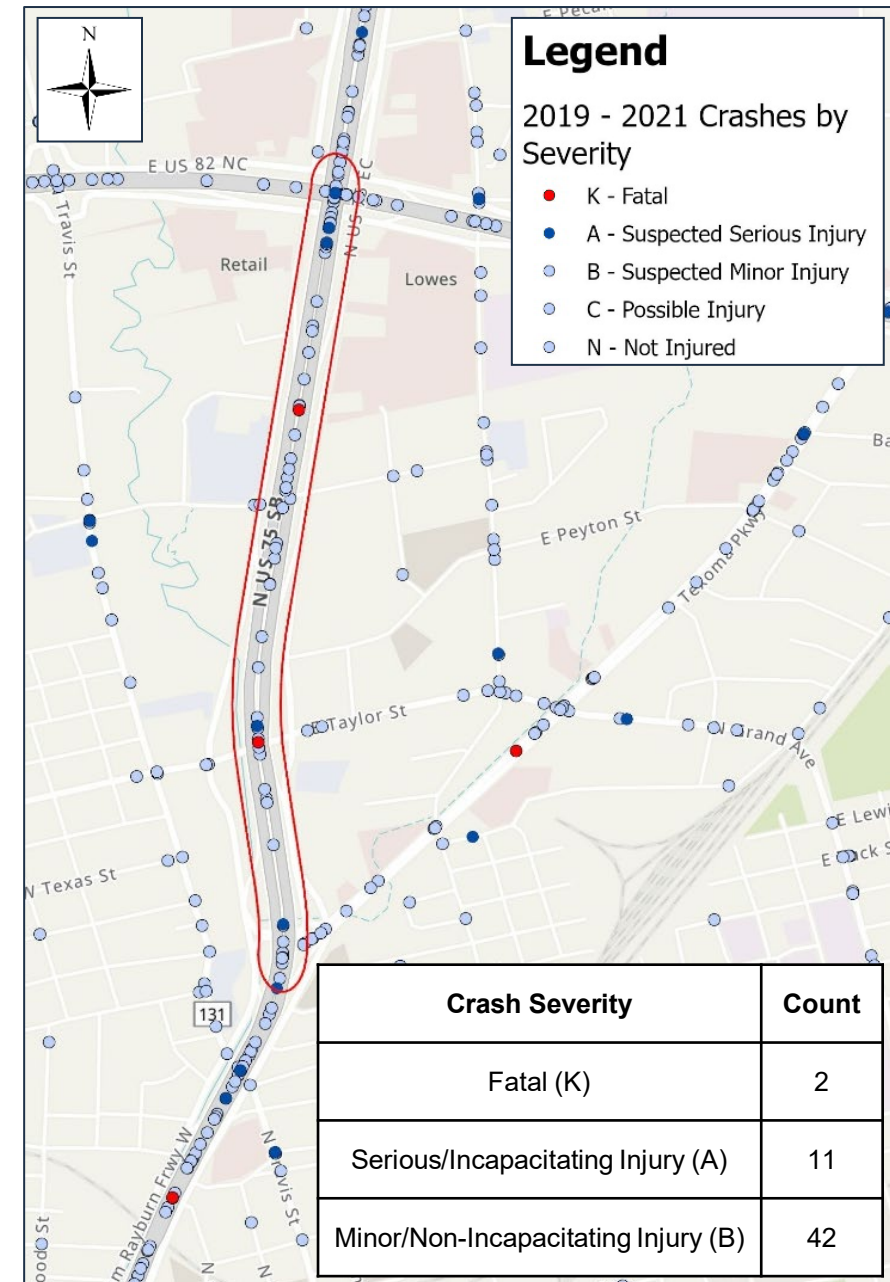
ADT: 56,017 Vehicles Per Day

Crash Data Discussion:

- North of US 82 and South of SH 91 was not included due to recent, current, and planned construction
- Over 65% of crashes were multiple vehicles traveling in the same direction - lane departure
- One vehicle going straight was also common – roadway departure and hitting fixed object

Improvements:

HSIP Code	Improvement	Reduction %	Reason
209	Safety Treat Fixed Objects	50	Reduce Severity of Roadway Departure Crash
536	Widen Paved Shoulders (to >5ft.)	31	Provide Recovery Space for Roadway Departures and Incident Management Activities
FHWA PSC	Wider Edge Lines	N/A	Enhance Visibility of Travel Lanes
FHWA PSC	Longitudinal Rumble Strips and Stripes on Two-Lane Roads	N/A	Physically Alert Driver When Roadway Departure Occurs
N/A	Resurfacing	N/A	Reduce Unevenness of Road Surface to Reduce Risk of Lan/Roadway Departure



Recommended HSIP Work Codes

The following countermeasures were common recommendations found to potentially benefit priority corridor segments.

- **Install Advanced Warning Signs** – Improve advance warning and visibility of intersections and curves
- **Improve Traffic Signals** – Reduce rear-end, angle, and other at intersection and intersection-related crashes
- **Interconnect Signals** – Reduce red light running and rear-end crashes
- **Widen Paved Shoulders** – Reduce roadway departure crashes and reduce risk of secondary crashes
- **Safety Lighting** – Reduce nighttime crashes and improve visibility of hazards in the roadway (animals, pedestrians, disabled vehicles)
- **Edgeline and Centerline Rumble Strips** – Reduce head-on and lane departure crashes

FHWA Proven Countermeasures

The following countermeasures were common recommendations found to potentially benefit priority corridor segments.

- **Wider Edge Lines** – Enhance visibility of travel lanes and reduce roadway departure crashes
- **Longitudinal Rumble Strips and Stripes on Two-Lane Roads** – Reduce head-on and lane departure crashes

HSIP Approved Systemic Safety Countermeasures

		SHSP Emphasis Areas						
		Distracted Driving	Intersection Safety	Pedestrian Safety	Impaired Driving	Older Road Users	Roadway & Lane Departures	Speeding
		Crash Data (2019 – 2021)						
Increase from 2019 to 2021		22.92%	18.42%	17.65%	7.37%	17.12%	11.66%	44.96%
All Crashes		1,478	3,507	91	527	1,516	2,977	812
Fatal, Serious Injury, and Minor Injury Crashes		656	1558	89	272	720	1283	326
		HSIP Approved Systemic Countermeasures						
Roadway Departure	Median barrier			X			X	
	Roadway widening					X	X	
	Continuous safety lighting along a corridor where no lighting is present			X		X	X	
	Enhanced delineation on curves					X	X	
Intersections	Signing and marking improvements at stop-controlled intersections		X	X		X		
	Low-cost urban intersection improvements (includes additional signal heads, protected left-turn signal phases, pavement markings...)		X	X				
	Dedicated right and left turn lanes		X					
	Signal head backplates with reflective borders		X			X		
	Leading Pedestrian Intervals (LPI)		X	X				
	Close Median Openings (Crossovers)		X	X			X	
	Rural intersection improvements – signing and marking improvements at stop-controlled intersections		X			X		
	Rural intersection improvements – safety lighting		X	X				
	Rural intersection improvements – rumble strips on stop-controlled approaches		X					X
	Rural intersection improvements – installation of roadside flashers or embedded LEDs for Stop signs		X				X	

HSIP Approved Systemic Safety Countermeasures

The following countermeasures were found to potentially benefit multiple priority corridor segments and therefore may be considered in systemic safety improvements.

- **Median Barrier** – Reduce head-on and lane departure crashes on high-speed facilities
- **Continuous Safety Lighting** – Reduce nighttime crashes and improve visibility of hazards in the roadway (animals, pedestrians, disabled vehicles)
- **Enhanced Delineation on Curves** – Reduce run-off the road and hit fixed object crashes
- **Signal Head Backplates with Reflective Borders** – Enhance visibility of traffic signals
- **Signage and Marking Improvements at Stop-Controlled Intersections** – Improve advance warning and visibility of intersection
- **Rumble Strips on Stop-Controlled Approaches** – Alert drivers to slow down for stop ahead
- **Installation of Roadside Flashers** – Enhance visibility of warning signs
- **Two-Way Left-Turn Lanes** – Reduce rear-end and left-turn crashes at access points
- **Crosswalk Pavement Markings** – Reduce pedestrian crashes at crossings

HSIP Funding and Call for Projects

The Highway Safety Improvement Program (HSIP) provides federal funding for the construction of the projects that can reduce traffic fatalities and serious injuries on all public roads. Local agencies are responsible for the project design costs.

- FHWA Administered, Managed by TxDOT in Texas
- Reduce or eliminate traffic fatalities and serious injury crashes
- Identify crash 'hotspots' and apply countermeasures
- Require a 10% local match with the federal government paying 90%
- Can be used for both On-System or Off-system projects
- Call for projects expected in Fall 2022



Safe Streets and Roads for All Grant Program

Federal discretionary grant program established by the Bipartisan Infrastructure Law with the goal of preventing roadway deaths and serious injuries for all users.

- \$5 billion in appropriated funds over the next 5 years
- MPOs, counties, cities included as eligible (State DOTs are not eligible)
- Eligible activities
 - Action Plans (\$200k to \$5M)
 - Implementation Plans (\$5M to \$50M)
- Requires match from non-federal sources of 20% (cash or in-kind)
- Applications for this year are due September 15, 2022



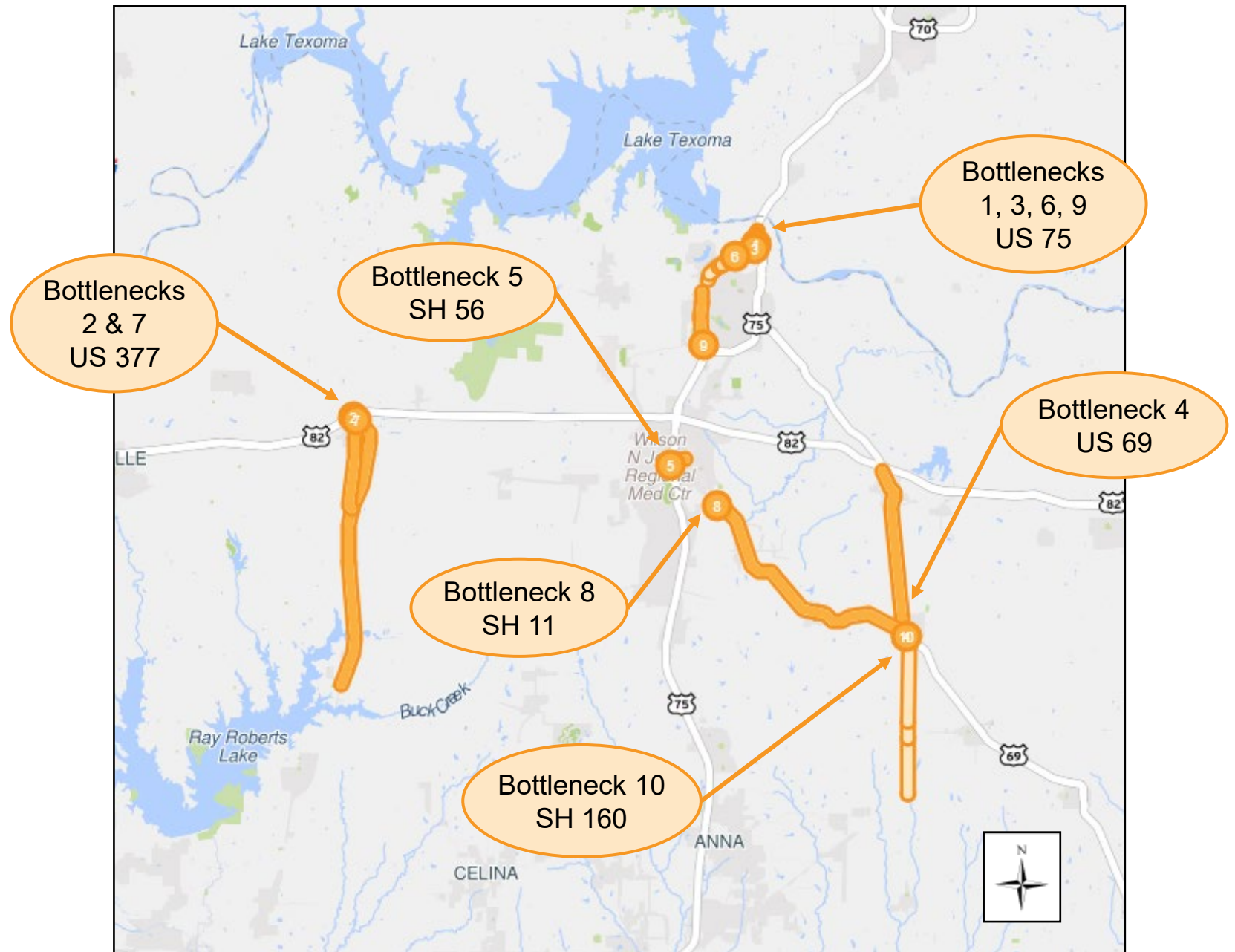
Operations-ITS Analysis and Recommendations

Segment Selection,
Prioritization, and
Recommendations

Operations
Recommendations

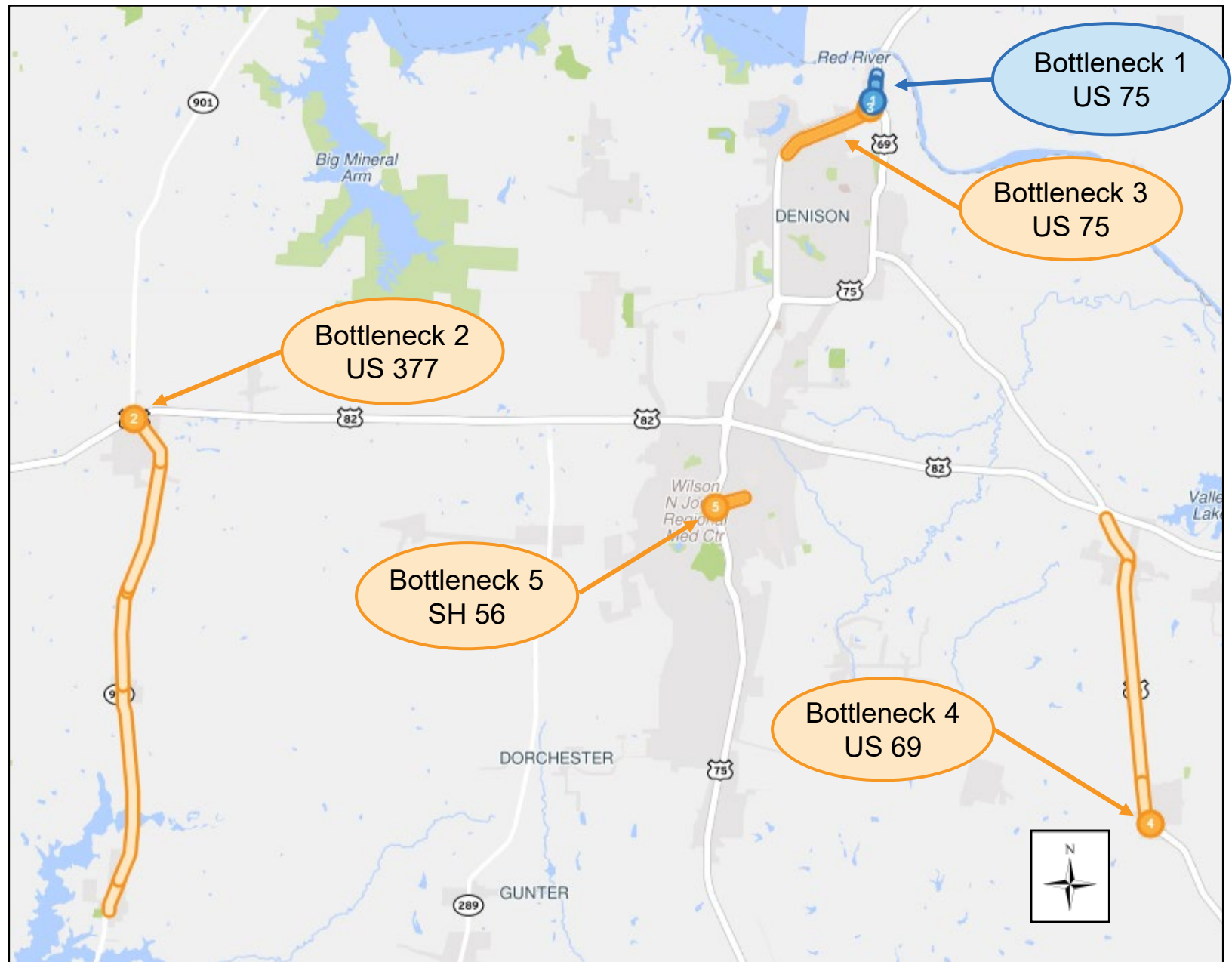
INRIX Top 10 Bottlenecks

2021

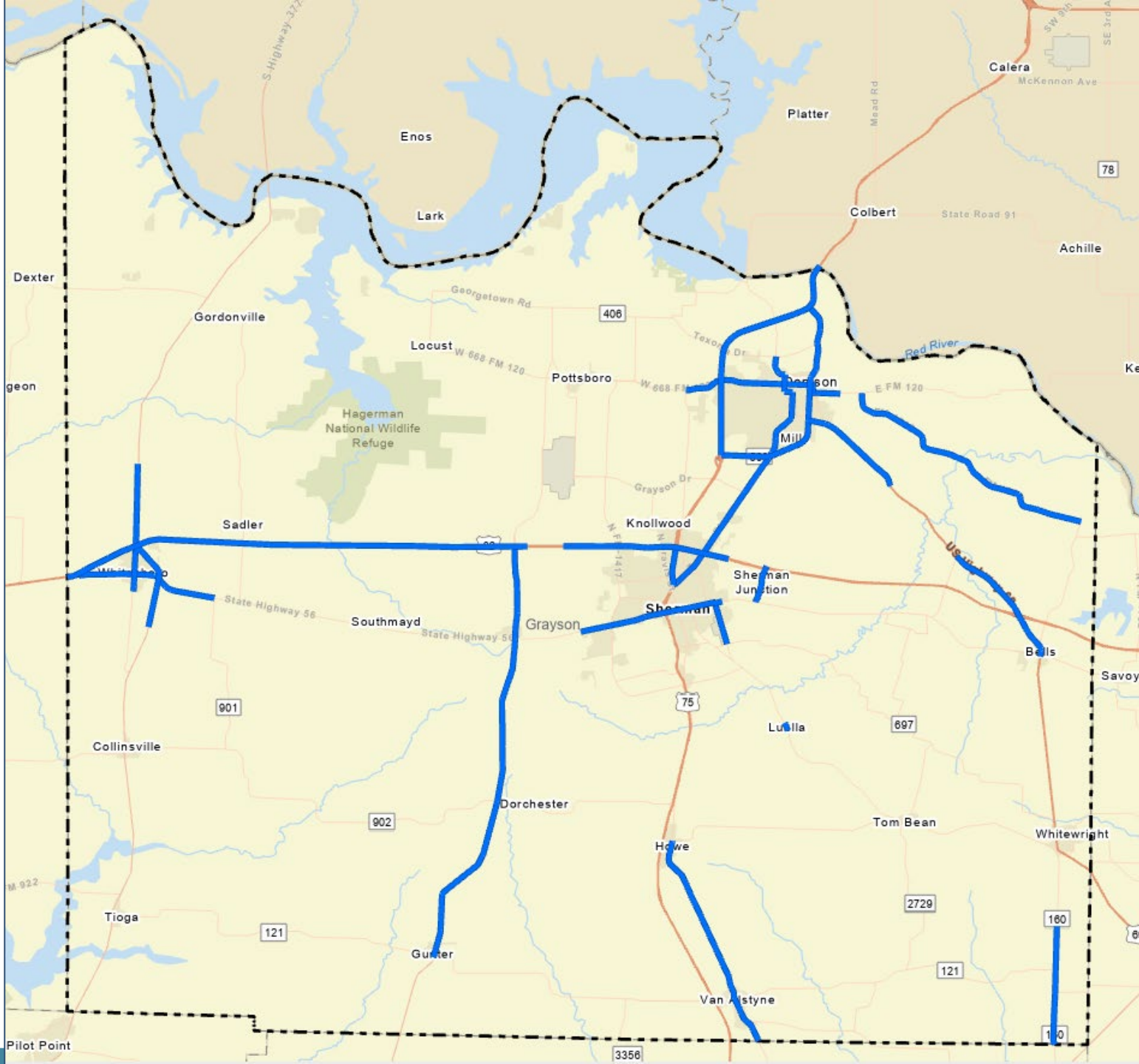


INRIX Top 5 Bottlenecks

2021



Identified Key Operations/ITS Segments



Roadway	From	To
US 82	SH 56/W Main St	Bar Seven Dr
US 82	Reynolds Rd	Baker Ridge Rd
US 75	County Boundary	Spur 503
US 75	US 82	SH 91
US 69	S Austin Ave	Mac Nelsen Ln
US 69	Craft Rd	Bells Blvd
US 377-BR	US 82	Parker Ln
US 377	Dixie Rd	Gunter Rd
Spur 503	US 75	W Main St/E FM 120
Spur 503	W Main St/E FM 120	US 75/US 69
SH 91	Texoma Dr	Spur 503
SH 91	Spur 503	US 75
SH 56	Friendship Rd	N Colbert Ave
SH 56	US 82	FM 901
SH 5	FM 902	County Boundary
SH 289	US 82	FM 121
SH 11	Lamar St	FM 697
SH 11	Judy Dr	Cedar Rd
FM 1753	FM 120	FM 1897
FM 160	Jack England Rd	County Boundary
FM 1417-	US 82	SH 56
FM 120	FM 131	East of S Center Ave

FM 121 in Van Alstyne not included in initial list

Operations/ITS Prioritization Criteria

General Segment Characteristics

- Roadway Classification
- Average Daily Traffic (ADT)

INRIX (2021)

- Bottleneck Ranking Base Impact (Weighted by Bottleneck Location and Days Impacting Identified Segment)

Texas A&M Transportation Institute (TTI) Congestion Data (2021)

- Delay per Mile (person-hours)

Operations/ITS Prioritization Results

Top 10 Segments

Segment Information						Guiding Factor of Segment	Other Factors	Prioritization Scoring ⁶				
Roadway Name	Roadway Classification ¹	From	To	Approx. Segment Length (mi) ²	ADT (vpd) ³	Bottleneck Ranking (2021) Base Impact ⁴	TTI Delay per Mile (person-hours) ⁵	Classification Score (10 Points)	ADT Score (20 Points)	Bottleneck Ranking Score (30 Points)	TTI Delay per Mile Score (30 Points)	Total (90 Points)
FM 120	Major Arterial & Minor Arterial	FM 131	East of S Center Ave	6.61	15,229	7,163.79	22,602	6	12	30	30	78
US 75	Freeway	County Boundary	Spur 503	10.50	52,475	88,497.82	1,008	10	20	30	2	62
SH 56	Major Arterial	Friendship Rd	N Colbert Ave	5.55	14,099	16,108.18	9,366	7	12	30	12	61
US 75	Freeway	US 82	SH 91	1.92	56,017	110.24	26,384	10	20	0	30	60
Spur 503	Major Arterial	US 75	W Main St/E FM 120	4.65	14,439	1,781.63	-	7	12	14	0	33
US 82	Freeway	Reynolds Rd	Baker Ridge Rd	6.29	28,048	77.87	3,516	10	19	0	6	35
US 377-BR	Minor Arterial	US 82	Parker Ln	1.66	4,535	3,087.61	-	5	4	24	0	33
SH 11	Minor Arterial	Lamar St	FM 697	1.61	6,831	1,889.66	-	5	6	14	0	25
SH 56	Major Arterial	US 82	FM 901	4.63	3,067	2,147.42	-	7	2	16	0	25
US 82	Freeway	SH 56/W Main St	Bar Seven Dr	14.53	19,932	118.30	-	10	14	0	0	24

Operations/ITS Recommendations

Segment Recommendations (Traffic Management Related)

- Traffic Signal Operations Upgrades
 - Signal operations including Traffic Management Center (TMC) and Advance Traffic Signal Performance Measures (ATSPM)
 - Communications Upgrades
 - Detection Upgrades
 - Closed-circuit Television Cameras for Signal Operations
- Closed Circuit Television Camera Deployment
- Dynamic Message Sign Deployment

Other Recommendations (Safety, Weather, Work Zones, Data)

- Roundabouts and Other Geometric Changes
- Freeway Safety Service Patrols
- Smart Work Zone ITS Devices
- Queue Detection and Warning
- Data Dashboards
 - Traffic Signal Performance
 - Corridor Performance
 - Crash Data

Electric Vehicle(EV) Charging Stations

SITE SELECTION INPUT

- Denison Travel Center
- Downtown Denison (2 Sites)
- Downtown Sherman

Denison Travel Center

6801 US-75, Denison, TX 75021



Downtown Denison

319 W Chestnut St, Denison, TX 75020



Downtown Denison

531 W Chestnut St, Denison, TX 75020



Downtown Sherman

227 W Lamar St, Sherman, TX 75090



Next Steps

Next Steps

TAC Review and Comment on Safety and Operations Segments and Recommendations
Request Input by Friday August 26th

Kimley-Horn Team to Submit Draft Grayson County Safety and Operations Strategic Plan

TAC Review of Draft of Strategic Plan

Revised Draft and Final Strategic Plan



Grayson County MPO

Safety and Operations Strategic Plan

TAC Meeting
August 17, 2022

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