

City of Dallas Vision Zero and High Injury Networks

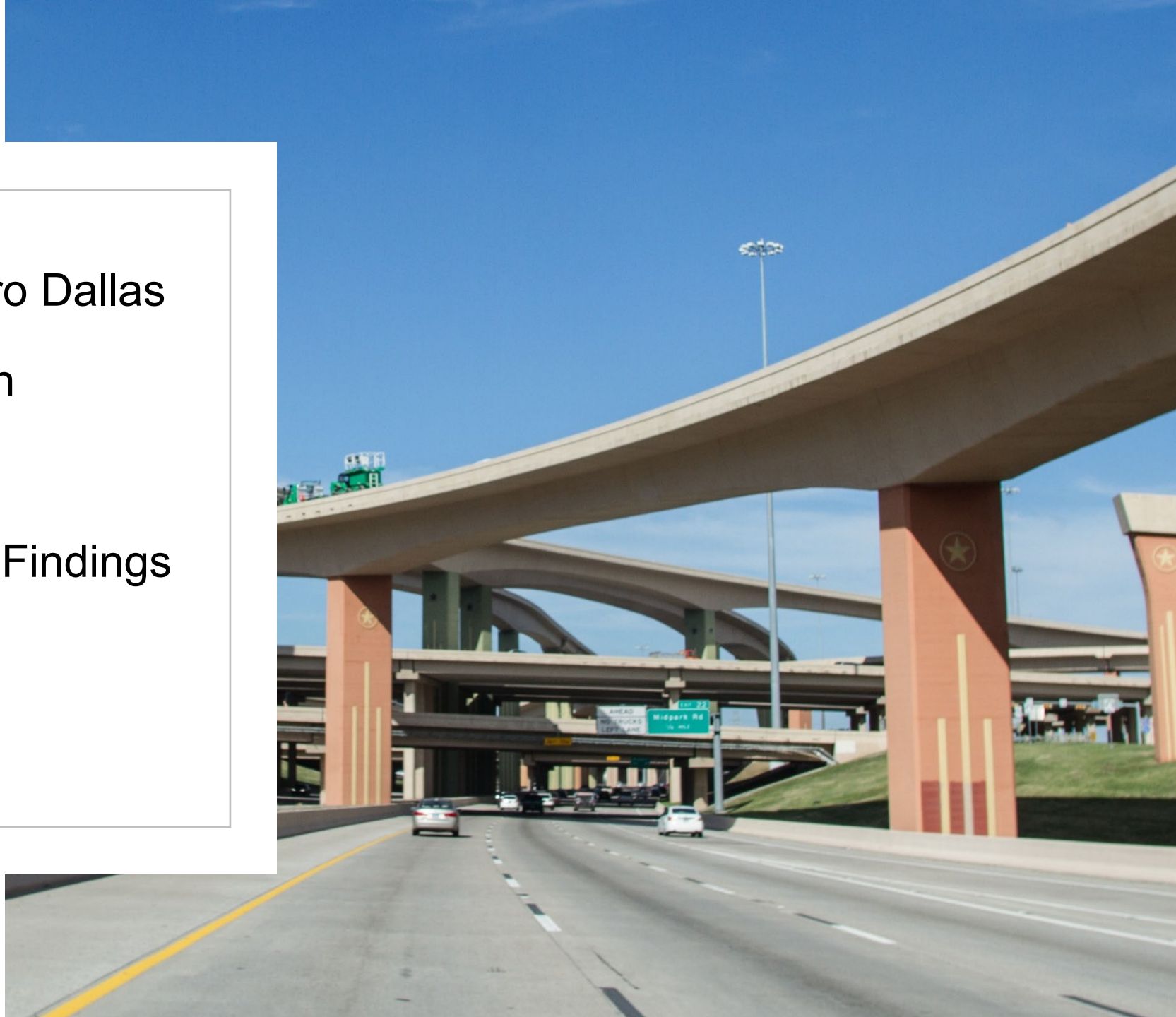
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- 1 Overview of Vision Zero Dallas
- 2 Vision Zero Action Plan
- 3 High Injury Networks
- 4 Sample Corridors and Findings
- 5 Recommendations
- 6 Lessons Learnt

Agenda



What is Vision Zero



Vision Zero:

- An internationally recognized strategy to eliminate traffic fatalities and severe injuries relating to automobile users, pedestrians and bicyclists.
- Based on the belief that no loss of life is acceptable and that all traffic fatalities and severe injuries are preventable.
- Encourages urban design that makes streets as easy as possible to navigate for all roadway users of all physical abilities.
- Promotes safe and equitable mobility for all users, such that movement around the transportation network can be done by road users of all walks of life.

Source- City of Dallas-Vision Zero Action Plan

Vision Zero Goal and Approach

Aspirational Goal:

By 2030: Eliminate all traffic related deaths and reduce severe injury crashes by 50 percent

Vision Zero Approach

Traditional Approach

- Traffic deaths are **INEVITABLE**
- Expect **PERFECT** behavior
- Prevent **COLLISIONS**
- **INDIVIDUAL** responsibility
- Saving lives is **EXPENSIVE**



Vision Zero

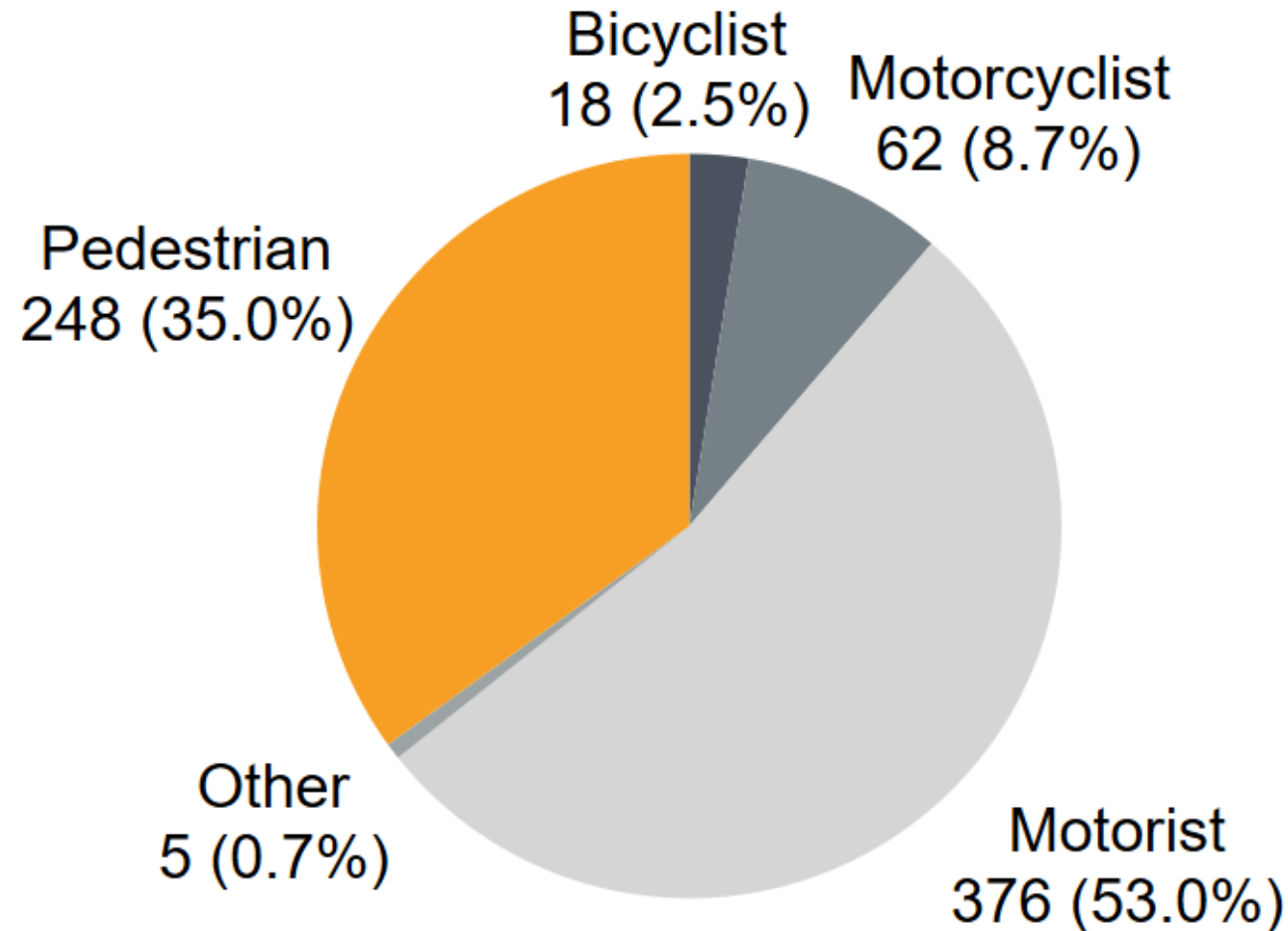
- Traffic deaths are **PREVENTABLE**
- Integrate human **FAILURE**
- Prevent **FATAL** and **SEVERE CRASHES**
- **SYSTEMS** approach
- Saving lives is **NOT EXPENSIVE**



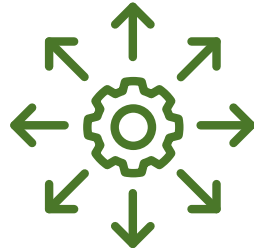
Source- City of Dallas-Vision Zero Action Plan

Fatalities and Severe Crashes in Dallas

2019 - 2023 Fatalities by Mode of Mobility Type



COD Vision Zero Timeline



December 2019

Resolution adopted by City Council supporting the development of an Action Plan

June 2022

Vision Zero Action Plan adopted by City Council; includes action items for multiple departments

October 2022

Allocated \$1.5m in general funds and 2 positions

January 2023

Engineering assistant re-assigned to Vision Zero efforts

October 2023

Allocated \$1.6m in general funds to Vision Zero

High Injury Network

- Disproportionate number of server crashes
- Based on Severity (Fatality and Severe Injury) and type of crashes
- 7% of streets that account for over 57% of severe crashes
- 3 mode specific HIN – Pedestrian, Vehicle, Bicycle
- A High Injury Network can help identify:
 - Areas where further engineering analysis is needed.
 - Where infrastructure improvements can be targeted.
 - Areas where safety education is needed.
 - Potential police enforcement areas



High Injury Network

Fatality and Serious Bodily Injury Crashes Inside vs. Outside the HIN*

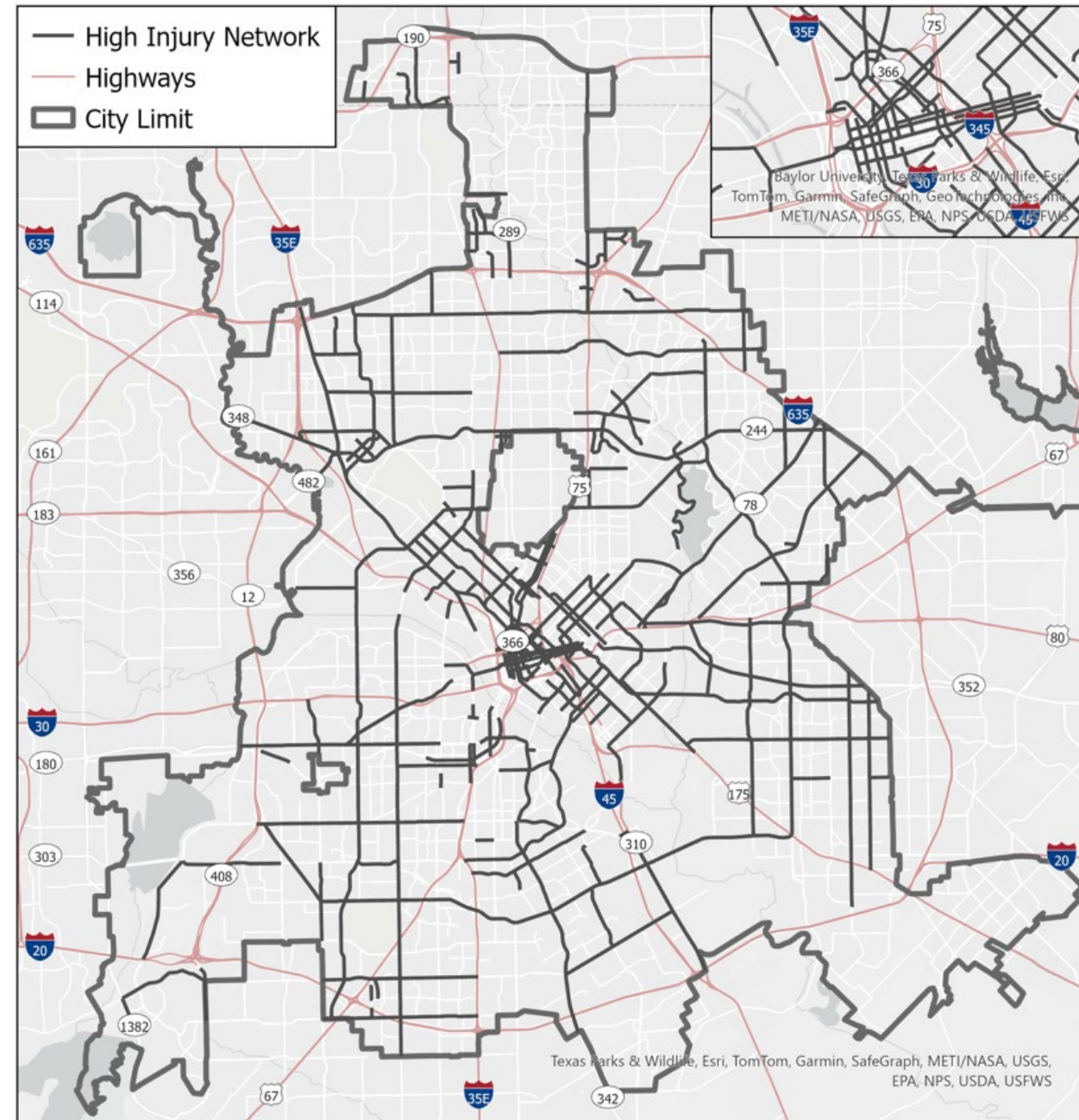
Year	Non-HIN	HIN	Total Number of Crashes	% on HIN per Year
2019	316	508	824	61.65%
2020	360	429	789	54.37%
2021	404	530	934	56.75%
2022	397	509	906	56.18%
2023	392	509	901	56.49%
5-year Total	1,869	2,485	4,354	57.07%

*Non-access controlled roads only

Data provided by DBI from the CRIS database maintained by the Texas Department of Transportation / Data may differ from DPD reporting based on time and location

High Injury Network Inventory

- 447 Street Segments
- 1,008 Signalized Intersections



Efforts Underway

- Staff has worked closely with TXDOT on approx. 220 High Injury Intersections improvements (including installation of new Traffic Signals) through the Highway Safety Improvement Program (HSIP) grants. This effort has achieved a significant reduction in fatalities and serious injuries over the past 12 years. Staff continues to work with our Regional, State and Federal partners to construct Safety projects.
- Implementation of Complete Street Projects- The goal of Dallas Complete Streets is to design streets that provide for multiple transportation modes—pedestrian, bicycle, transit, and automobile.
- Outreach- Vision Zero logo and tagline adopted
- Communication plan under development:
 - Tailored to various audiences
 - Multiple communication types
 - Focused on high-risk behaviors



Integrated Approach

Integrated End- to End Approach: Engineering; Enforcement; Education



Engineering

Department of Transportation and Public works to

- conduct engineering safety evaluation for streets on High injury network (HIN)
- Implement Vision Zero capital safety projects



Enforcement

- Dallas Police Department – DPD traffic and patrol units will elevate enforcement on HIN



Education

- Align all traffic safety education under Vision Zero Umbrella

Improvement Underway- Enforcement

- Dallas Police Department (DPD) has started or completed 10 of 12 Vision Zero Action items.
- Over 1,800 citations have been issued in High Injury Network (HIN) locations since November 2022.
- DPD utilizes the STEP Grant to provide additional enforcement in HIN locations.
- DPD conducts education through social media, variable message signs and speed feedback trailers .
- Police recruits now receive a block of instruction on the overview of Vision Zero.
- Collaboration continues with DDOT on recommendations for road engineering at HIN locations.

High Injury Network

- Key elements of corridor studies:
 - Identification of key challenges/concerns
 - Identification of existing conditions
 - Identification/development of possible options
 - Evaluation of identified possible options
 - Development of a plan
- Development of a plan allows for generation of timeline and associated cost(s) for implementation

There are currently 25 Corridor Studies ongoing, out of which 20 corridors are on High Injury Network corridors prioritized on Fatal and Severe injury crashes per mile and Pedestrian and Bicycle Fatalities

High Injury Network

St Augustine Road

Part of HIN for all modes; Portions close to US 175 and Military Parkway are within equity focus areas. Experiences about 3 times the crash rate of similar facilities statewide in Texas.

Masters Road

Part of HIN for all modes; Portions close to US 175 and Military Parkway are within equity focus areas

Camp Wisdom Road

From Cockrell Hill Road to I-35E scores highly on the HIN and is one of the priority segments ranking 14 out of the 407 corridor segments in HIN. Portion of the corridor has fatal and severe crash density of 18.48/mile.

Corridor Characteristics

St Augustine Road

Masters Drive

Camp Wisdom Rd

Corridor Information



Approximately 5 miles



Community Collector, four-lane undivided roadway



Posted speed limit (35 mph)



22 bus stops
(4 have benches, 1 has shelter)



5,000-9,000 vehicles per day

Corridor Information



Approximately 5 miles



Minor Arterial, six-lane divided roadway



Posted speed limit (40 mph)



32 bus stops
(6 have benches, 3 have shelters)



11,000-17,000 vehicles per day

Corridor Information



Approximately 4 miles



Principal Arterial, six-lane divided roadway



Posted speed limit (40 mph)



41 bus stops
(3 have benches, 6 have shelters)



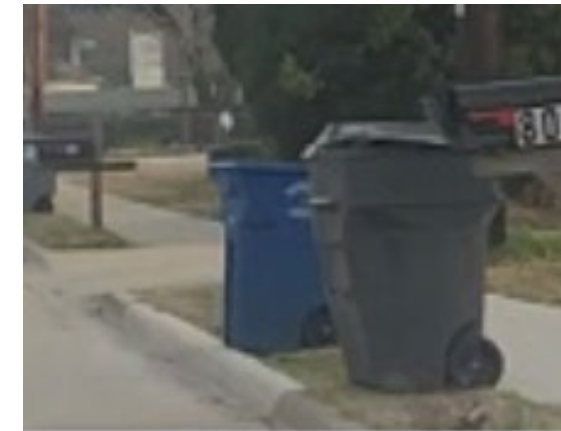
16,000 - 25,000 vehicles per day

Existing Conditions

- Day and nighttime Field visits
- Sidewalk and Pedestrian Ramp evaluation
- Roadway Condition Evaluation
- Codes and Standards Compliance
- Activity Zone Recognition

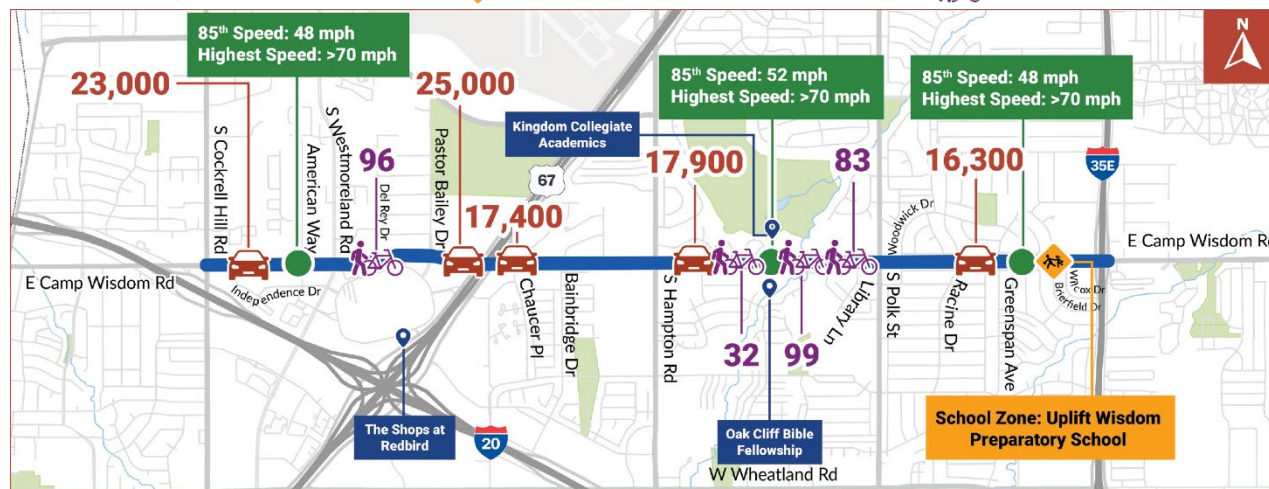


Absence of striped crosswalks at S. Hampton Road

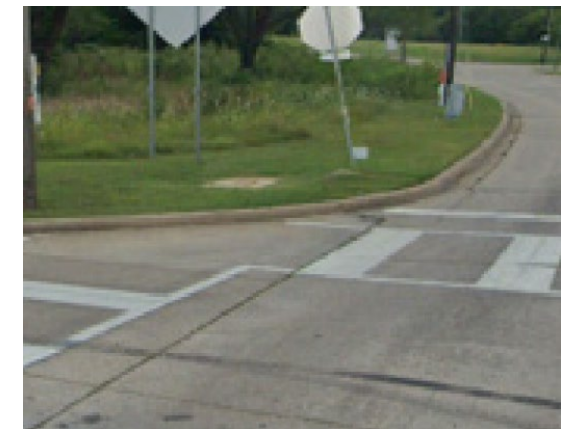


Sidewalks obstructed by utility poles, mailboxes, and trash cans

LEGEND Camp Wisdom Road Spot Speed School Zone 2022 Traffic Volumes (vehicles/day) Pedestrian/Bicyclist Counts (12 hour)



Ramps not ADA compliant

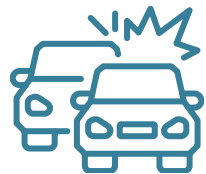
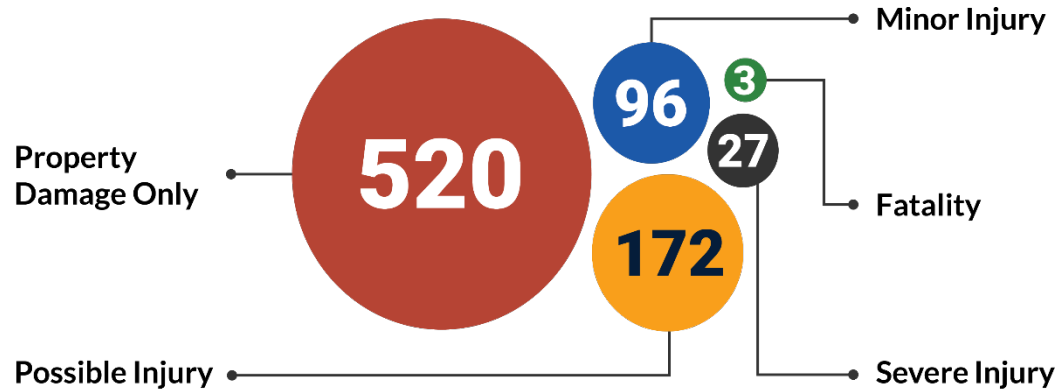


Curb ramps missing

Crash Characteristics

Camp Wisdom

Crash Count by Crash Severity for All Crashes
(2018 – 2022)



All the corridors have the crash rates about 3 times that of similar facilities statewide in Texas

St Augustine Dr - Total 546 Crashes

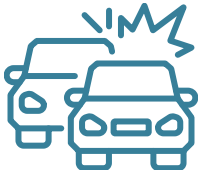


Masters Drive - Total 623 Crashes



Focus Area

Based on the crash further data driven analysis was performed on:



Severe Crashes

- Spatial Analysis of the severe crashes
- Review of detailed crash report
- Review of existing infrastructure



Vulnerable Road Users (Ped/bike)

- Spatial Analysis of the Ped/Bike crashes and activity zones
- Review of detailed crash report
- Review of existing infrastructure
- Time of Day analysis
- Chart the top contributing factors

Crash Factors- Severity

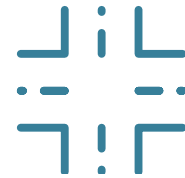
Top 5 fatal and severe injury crash factors:

- Disregard traffic control device
- Failed to control speed/speeding
- Failed to Yield Right of Way
- Driving under influence
- Unsafe speed

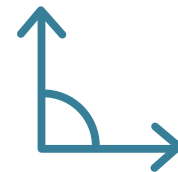
Key Patterns:



About 50% occurred during nighttime hours



38 - 50% occurred at intersections



30- 35% were right angle crashes

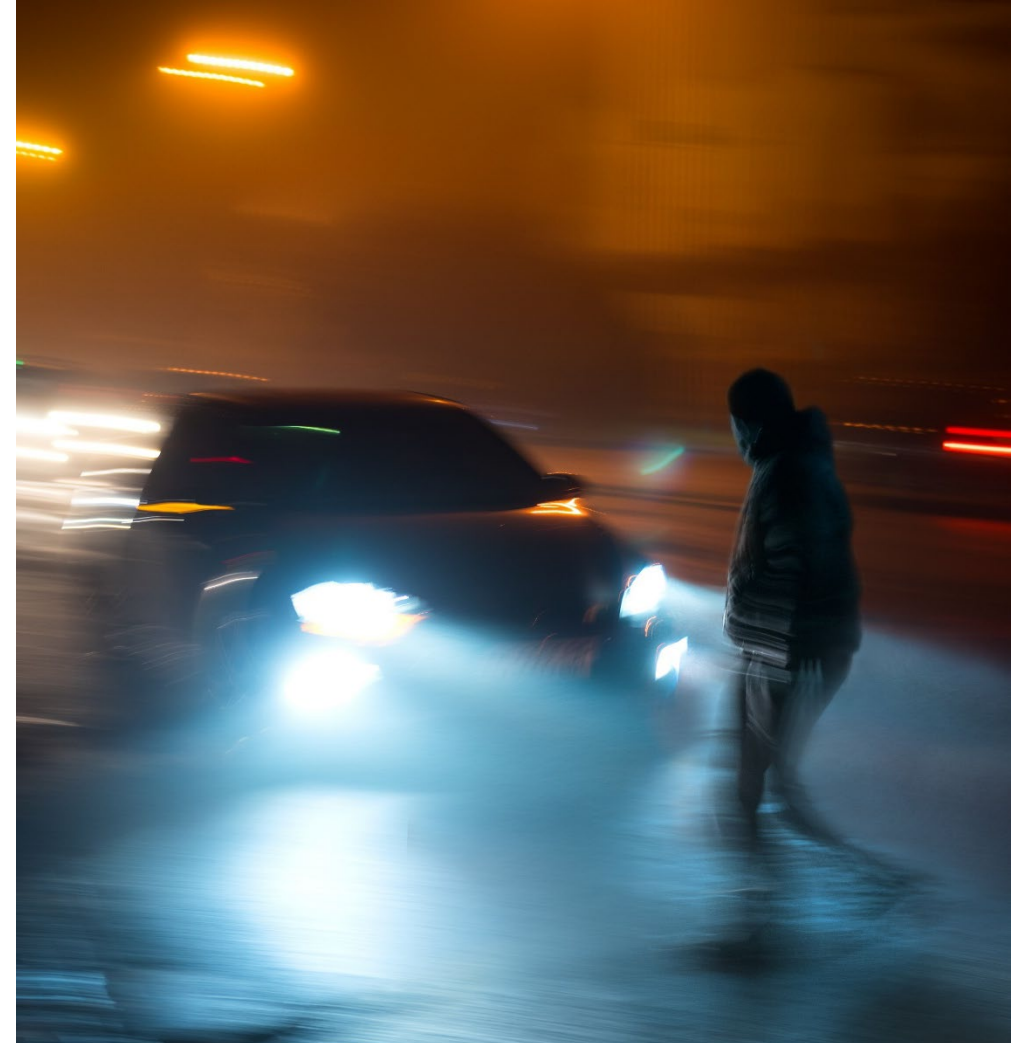
Crash Factors- Pedestrian/Bikes

Top 3 crash factors:

- Pedestrian Failed to Yield Right of Way to vehicle: 40% - 50%
- Vehicle Failed to Yield Right of Way: 3 crashes 25%- 30%
- Failed to drive in single lane/ Disregard Stop Sign or Light: 20%

Key Patterns:

- 30%- 50% of the pedestrian and bicyclist crashes occurred in nighttime hours.



Conclusion/Problem Statements

- Public Meetings and Survey provided input on citizen issues and problem areas
- 85th percentile speeds along the corridor are higher than speed limits
- Managing travel speeds along the corridor will provide more efficient flow of traffic and enhance safety for all road users
- Pedestrian facilities require improvements to ensure accessibility for all users
- Identified major activity zones for pedestrians and bikes
- Based on v/c ratios roadway reconfiguration was considered along the corridors
- Improvements such as pavement markings and signage may offer increased safety, improved visibility, and a more pleasant and navigable environment

Countermeasures

- FHWA Countermeasure Toolbox
- FHWA Traffic Calming ePrimer
- Clearing house CMF
- City of Dallas Engineering Standards
- City of Dallas Neighborhood Traffic Management Program (NTMP)
- City of Dallas bike plan

Integrated End- to End Approach: Engineering; Enforcement; Education; Evaluation

Engineering

Short-Term



Install/refresh signs

Install or update the signs to improve visibility and enhance safety throughout the corridor.



Improve pavement markings and crosswalks with retro-reflectivity

Improve pavement markings and crosswalks with retroreflectivity throughout the corridor



Access management

Eliminating access and conflict points where possible



New traffic signal

Where warranted, traffic signals can reduce crashes by 35%.



Signal backplates with retroreflective border

Install on all traffic signal heads.



Install stop ahead sign

To increase conspicuity of stop sign,. Supplement stop ahead signs with LED enhanced stop signs as they have the most right-angle crashes

Engineering

Long-Term



Application of high friction surface treatment (HFST)

To reduce wet pavement and run-off crashes at intersection approaches.



Install/improve lighting

Install streetlights between Sam Houston Road and Military Parkway. City of Dallas has recently upgraded the lighting to LED fixtures along the corridor.



Lane reduction

Lane reduction to help lower speeds and reduce crashes.



Mailbox consolidation

Consolidate mailboxes which are abutting into sidewalks.



Trail

Construct a trail to provide safe and comfortable space for pedestrians and bicyclists along the corridor.



Bicycle Lanes

Bicycle lanes to help reduce crashes and improve safety for all road users.



Dedicated turn lanes

Installing dedicated right-turn lane has been shown to reduce total crashes by 14-26%. Installing a dedicated left-turn lane has been shown to reduce total crashes by 28-48%.

Enforcement



Permanent speed feedback signs

Installing permanent dynamic speed feedback signs has been shown to reduce total crashes by 7%.



Enhanced traffic enforcement

Increase law enforcement personnel dedicated to traffic enforcement.

Education



Public education and outreach

Share safety tips with the community through flyers, events, or social media to encourage people to drive and walk safely.



Partnership with TxDOT, DART, Dallas ISD and other stakeholders

Coordination with various stakeholders for safety improvements.

Evaluation

- Implementing using temporary pavement marking changes before the permanent lane reconfigurations
- Before After Studies to study the efficacy of the countermeasures



Lessons Learnt



Public meetings- innovative survey strategies to obtain inputs



Coordinate with ISD for educating the public on safety



Project Prioritization was based on Evaluation matrix – Safety & speed management, Mobility and Access, Livability, Cost and Ease of Implementation



Funding Mechanism identified for the improvements proposed

Vision Zero – Path Forward

2024 Bond Fund Allocations – Streets and Transportation

- Current base allocation to the Department of Transportation is \$47M
 - Traffic signals and Technology Upgrades - \$16.6M (\$30M Federal Match)
 - New, warranted traffic signals - \$21.15M
 - Streetlights – \$2.65M
 - Quiet zones - \$0.5M
 - Vision Zero - \$12.4M
 - Streetlights - \$1.9M
- New Transportation funding base and discretionary - \$53.3M
- The 2024 Bond includes \$143.6M for Complete Streets and Partnership Projects. Of that, \$78.2M is for projects on the HIN.

Questions?