January 19, 2023

Mr. Craig Raborn
Director of Transportation
Houston-Galveston Area Council
3555 Timmons Lane
Houston, TX 77027

Re: Harris County's grant application for funding under the Houston-Galveston Area Council's 2023 Project Selection Process – C.E. King Parkway Reconstruction Project

Dear Mr. Raborn:

I am writing to provide support and commitment to Harris County's grant application to the Houston-Galveston Area Council's (H-GAC) 2023 Project Selection Process for the C.E. King Parkway Reconstruction Project located in Precinct 1.

The proposed project focuses on critical improvements to C.E. King Parkway, reconstructing it from two to four lanes from Tidwell Road to Beltway 8. The project includes construction of a bicycle and pedestrian trail, and other access management improvements to improve safety and connectivity.

These comprehensive improvements aim to enhance safety, improve bicycle and pedestrian facilities, improve flood resilience, and reduce travel delays along the C.E. King Parkway corridor. This project promises significant and measurable benefits for all users of this vital corridor and aligns seamlessly with the vibrant growth in the area.

Our grant application seeks $32,000,000 in federal funding, complemented by an additional $8,000,000 in matching funds provided by Harris County Precinct 1, amounting to a total project budget of $40,000,000. The project's overarching goals revolve around the improvement of safety, mobility, resiliency, economic competitiveness, equity in transportation, and the strengthening of community connectivity within Harris County.

We extend our sincere appreciation for considering this grant application and hold hope for a favorable review. Should you require any further clarification or have inquiries regarding this request, please do not hesitate to contact Dr. Milton Rahman at (713) 274-3605 or Milton.rahman@eng.hctx.net.

Respectfully,

Commissioner Rodney Ellis
Harris County Precinct 1

0 1 2 Miles

PROJECT LIMITS:

CE KING CONGESTION

Source of Data: StreetLight Data

Methodology: Congestion Percentage for each segment was calculated using the Network Performance Analysis tool in the StreetLight Data Insight platform by finding the ratio between free flow speed and average speed during peak PM hours (3pm-7pm), Monday - Thursday. Source data year: 2023.

Congestion
- Under 10%
- 10%-20%
- Over 20%

2017 MTFP LEGEND

MAJOR THOROUGHFARE (R.O.W. ONLY)
- SUFFICIENT WIDTH
- TO BE WIDENED
- TO BE ACQUIRED

MAJOR COLLECTOR (R.O.W. ONLY)
- SUFFICIENT WIDTH
- TO BE WIDENED
- TO BE ACQUIRED

MINOR COLLECTOR (R.O.W. ONLY)
- SUFFICIENT WIDTH
- TO BE WIDENED
- TO BE ACQUIRED

FREEWAY / EXPRESSWAY (R.O.W. ONLY)
- SUFFICIENT WIDTH
- TO BE WIDENED
- TO BE ACQUIRED
- PROPOSED/SUGGESTED ALIGNMENT *

TRANSIT CORRIDOR
- TRANSIT CORRIDOR STREET

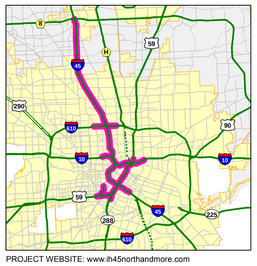
OTHER DESIGNATIONS
- COUNTY BOUNDARY
- RAILROAD
- HOUSTON CITY LIMITS
- LIMITED PURPOSE ANNEXATION **
- HOUSTON ETJ
- RESERVOIR
- WATERWAYS

- (B) SAM HOUSTON PARKWAY (BELTWAY 8)
- (H) HARDY TOLL ROAD
- (W) WESTPARK TOLL ROAD

* THE ALIGNMENT FOR SH 35 AND THE GRAND PARKWAY AS REPRESENTED BY THE SCREEN DESIGNATION ARE CONCEPTUAL IN NATURE AND MAY BE SUBJECT TO MODIFICATION AS DEEMED NECESSARY BY THE FOLLOWING:
SH 35 -- TEXAS DEPARTMENT OF TRANSPORTATION
GRAND PARKWAY -- GRAND PARKWAY ASSOCIATION

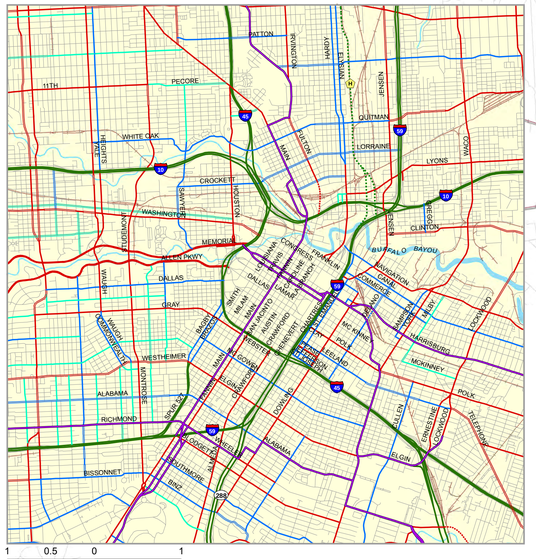
** NOT ALL CITY REGULATIONS APPLY IN AREAS DESIGNATED AS LIMITED PURPOSE ANNEXATION.

NORTH HOUSTON HIGHWAY IMPROVEMENT PROJECT



PROJECT WEBSITE: www.ih45northandmore.com

GENERAL DOWNTOWN AREA



2017 MAJOR THOROUGHFARE AND FREEWAY PLAN

2 1 0 2 4 6
Miles

N
W E
S

ABOUT THE MTFP:

THIS PLAN SHOWS GENERAL LOCATIONS ONLY WHICH ARE SUBJECT TO MODIFICATION TO FIT LOCAL CONDITIONS. THE "TO BE ACQUIRED" SYMBOL REPRESENTS A 500 FOOT WIDE CORRIDOR. THE MTFP IS A SCHEMATIC REPRESENTATION OF ROW. IT IS A TOOL FOR GUIDING ROW DEDICATIONS,

BUILDING SETBACKS, AND OTHER DEVELOPMENT ACTIONS AS OUTLINED IN CHAPTER 42 OF THE CODE OF ORDINANCES. ADDITIONAL ROW MAY BE REQUIRED AT INTERSECTIONS FOR TURNING LANES AND TRANSITIONS.

THE GENERAL DOWNTOWN INSERT MAP IS AN ENLARGEMENT OF THE CENTRAL BUSINESS DISTRICT MAJOR ROADWAY NETWORK.

EFFECTIVE APRIL 17, 1996, THE STREET HIERARCHY CLASSIFICATION SYSTEM SUPPLEMENTED THE MAJOR FREEWAY AND THOROUGHFARE PLAN (MTFP) BY DEFINING THE FUNCTION, PROJECTED NUMBER OF LANES, AND MINIMUM ROW WIDTH REQUIREMENT FOR STREET SEGMENTS.

THE CLASSIFICATION IS AS FOLLOWS:
EXAMPLE -- "P-6-100"
"P", "T", "MJ", "MN" OR "TCS" -- FUNCTIONAL CLASS (PRINCIPAL THOROUGHFARE, THOROUGHFARE, MAJOR COLLECTOR, MINOR COLLECTOR OR TRANSIT CORRIDOR STREET)
"6" -- PROJECTED NUMBER OF LANES
"100" -- MINIMUM ROW WIDTH

ON APRIL 29, 1998, CITY COUNCIL ADOPTED THE COLLECTOR AS AN ADDITIONAL STREET CATEGORY.

STREET ROW WIDTH REQUIREMENTS SHALL COMPLY WITH THE STREET HIERARCHY CLASSIFICATION TABLE. STREETS DESIGNATED ON THE MAJOR THOROUGHFARE AND FREEWAY PLAN THAT ARE NOT IDENTIFIED ON THE STREET HIERARCHY TABLE SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTER 42 OF THE CODE OF ORDINANCES. THE STREET HIERARCHY ROW DEFINES THE GENERAL MINIMUM WIDTH OF STREET SEGMENTS. THE CITY OR COUNTY ENGINEERING DEPARTMENT RESERVES THE RIGHT TO REQUIRE ADDITIONAL ROW AT INTERSECTIONS OR OTHER LOCATIONS AS DEEMED NECESSARY TO ENHANCE MOBILITY.

HOUSTON PLANNING COMMISSION

MARTY STEIN, CHAIR
PATRICK WALSH, P.E., SECRETARY

APPROVED BY HOUSTON PLANNING COMMISSION ON AUGUST 17, 2017

ADOPTED BY HOUSTON CITY COUNCIL ON OCTOBER 18, 2017

COUNCIL MOTION 2017-0643

GRADIENT

Harris County VISION ZERO

ACTION PLAN

Safer Streets. Safer You.

08/09/2022

TBPE Firm #15291

ZERO TRAFFIC FATALITIES AND SEVERE INJURIES IN HARRIS COUNTY BY 2030.

Executive Summary

Introduction

Harris County Commissioner's Court proposed an initiative with **the goal of eliminating all traffic-related fatalities in the region by the year 2030.** Harris County Commissioners Court approved the resolution, originally presented by Commissioner Rodney Ellis in Precinct 1, and officially launched "Vision Zero" in August 2020 as an integrated part of future Harris County transportation plans and projects.

Vision Zero starts with the belief that everyone has the right to move safely in their communities, and that improving safety is a shared responsibility between road users, system designers and policymakers. This means that road users are expected to follow traffic laws, while system designers and policymakers are expected to improve the roadway environment, policies (such as speed management), and other related systems to lessen the severity of crashes.

The County and the City are working hand in hand using their crash data to develop VISION ZERO plans for the City and the unincorporated areas of Harris County that are complimentary and aligned with one another.

Vision Zero Goals and Critical Actions

Harris County implemented a multi-disciplinary organizational structure to engage a diverse group of stakeholders in the process: Steering Committee, Technical Task Force, Communication Task Force, and the City of Houston Data Committee. Communication with the committees was focused on principles that helped guide the Action Plans for each goal:

- GOAL 1: Promote a Culture of Traffic Safety
- GOAL 2: Enhance Harris County Processes and Collaboration
- GOAL 3: Build Safe Streets that Provide Transportation Equity for all Users
- GOAL 4. Improve Data Collection and Evaluation

The Vision Zero Action Plan focuses on the County's efforts to achieve the goal of eliminating traffic-related fatalities and serious injuries on unincorporated County roadways by 2030 focused around the 6 "Es."


Education


Enforcement


Engineering


Evaluation


Encouragement


Equity

Harris County Needs Vision Zero

From 2014-2018, there were an average of 430 crashes where someone was killed and 2,278 crashes where someone was seriously injured in Harris County each year. This means that every day, someone dies in a traffic crash, and at least six people are severely injured in Harris County.

Common Crash Type and Common Risk Factor

Vehicles. Vehicle crashes account for **80%** of all serious or fatal crashes in Harris County, while single vehicle crashes/ run off the road account for **27%** of the serious or fatal vehicle crashes in Harris County followed by angle/ intersection crashes at **21%** and rear end crashes at **12%**. The top three risk factors are unsafe speeds, no seatbelt and impaired driving.

Pedestrians. Pedestrian crashes account for **17%** of the total serious or fatal crashes in Harris County while vehicle going straight/ non-intersection represented **62%** of the total pedestrian crashes, followed by vehicle going straight/ intersection at **16%** and vehicle turning left or right at **12%**. The top risk factor for pedestrian crashes were pedestrian failed to yield right of way to vehicle, poor lighting, and impaired driving.

Bicycle. Bicycle crashes account for **3%** of all serious or fatal crashes in Harris County vehicle going straight/ non-intersection as the top cause for bicycle crashes at **53%**. The second leading cause was vehicle going straight/ intersection at **33%** followed by vehicle turning left or right at **13%**. The top three risk factors for bicyclists were poor lighting, bicycle failed to yield right of way to vehicle and driver failed to yield right of way to bicyclist.

Vulnerable Road Users

People walking and biking are vulnerable roadway users because they are more likely to be killed or seriously injured when involved in a crash. These road users account for less than 3 percent of commute mode share yet are involved in 31 percent of all fatal traffic crashes in Harris County.

Action Plan and Implementation

A successful plan does not require adoption before the process of implementation is underway. Through the leadership of the Harris County team, the direct contact with the City of Houston's Vision Zero team, and support from the Steering Committee, Communication Task Force, and Technical Task Force, the plan is underway. An Implementation Committee will use the Action Plan to turn this initiative into the daily operations of Harris County with immediate, medium-term, and long-term increments and priorities up to 2030 with actions such as:

- Oversight of the Vision Zero Program
- Communication of key messaging about safety in the region
- Implement design guidelines, standards, and specifications
- Build on the existing plans such as the 2040 Harris County Transportation Plan, Harris County Multimodal Thoroughfare Plan, Harris County Equity in Transportation Plan, and Master Trails Plan

Table of Contents

What is Vision Zero?

Vision Zero is a multi-national program started in Sweden around 1995 and approved by their parliament in October 1997. Vision Zero has been adopted in different countries or smaller jurisdictions, although its description varies significantly. The primary intent is to reshape the current casual thinking about roadway crashes and to help improve roadway safety for all users, regardless of their mode of travel. Vision Zero was developed to address traffic deaths using a system approach and to switch the notion from traffic deaths being inevitable to entirely preventable. Mistakes on the road should not be punishable by death.

Vision Zero reshapes the way we think about and achieve safety on our roads, considering **safe streets, safe speeds, safe vehicles,** and **safe people**.

Vision Zero starts with the belief that everyone has the right to move safely in their communities, and that improving safety is a shared responsibility between road users, system designers and policymakers. This means that road users are expected to follow traffic laws, while system designers and policymakers are expected to improve the roadway environment, policies (such as speed management), and other related systems to lessen the severity of crashes.

A core principle of Vision Zero is that 'Life and health can never be exchanged for other benefits within the society' rather than the more conventional comparison between costs and benefits, where a monetary value is placed on life and health, and then that value is used to decide how much money to spend on a road network towards the benefit of decreasing risk. The Vision Zero initiative has been adopted by many cities to reach zero traffic deaths or severe injuries, committing to a fundamental shift in how cities approach traffic safety.

The County and the City are working hand in hand using their crash data to develop VISION ZERO plans for the City and the unincorporated areas of Harris County that are complimentary and aligned with one another.
To read more on the Harris County Vision Zero initiative, refer to *Appendix A. Vision Zero Court Letter* and *Appendix B. Vision Zero Resolution*.

Source: A Primer on Vision Zero: Advancing Safe Mobility for All. Vision Zero Network. https://visionzeronetwork.org/wp-

Harris County's Vision for Safer Streets

Harris County Vision Zero will be an integrated part of future transportation plans and projects to reach the overarching goal of **ZERO traffic fatalities and severe injuries in Harris County by 2030**. For Harris County, Vision Zero will be an evergreen campaign that will be updated and implemented continuously to achieve this goal.

> How many of our own family members, friends, and neighbors should lose their lives to traffic collisions on roadways in Harris County?
>
> **ZERO.**

Vision Zero will also be included in and will serve as the educational component for safety in the following County transportation planning initiatives:

- Harris County Transportation Plan (CTP). The CTP will be a long-range planning document that serves as a guide for future transportation projects, programs, policies, and advocacy for unincorporated Harris County.

- Harris County Multimodal Thoroughfare Plan (MMTP). Maintaining Harris County's juggernaut economic position is the ultimate vision of the MMTP. Overall general mobility and alternative transit modes are critical to keep Harris County strong with access to all regional and international assets. Implementation strategies are a priority to accelerate construction and leverage partnerships across local, state, and federal agencies and will be a centerpiece to the success of the Harris County MMTP.

- Harris County Equity in Transportation Plan. The Equity in Transportation Plan covers Harris County, including the City of Houston, and focuses on the history, status, and future equity of transportation investment by the County. The plan will focus on all modes of transportation infrastructure. The goal of the study is to provide Harris County with information to guide equitable investment in transportation infrastructure and develop a list of projects that will assist the County in meeting short-term equity goals.

Organizational Structure

Harris County utilized a multi-disciplinary organizational structure to engage a diverse group of stakeholders, including community groups, in the development of this action plan.

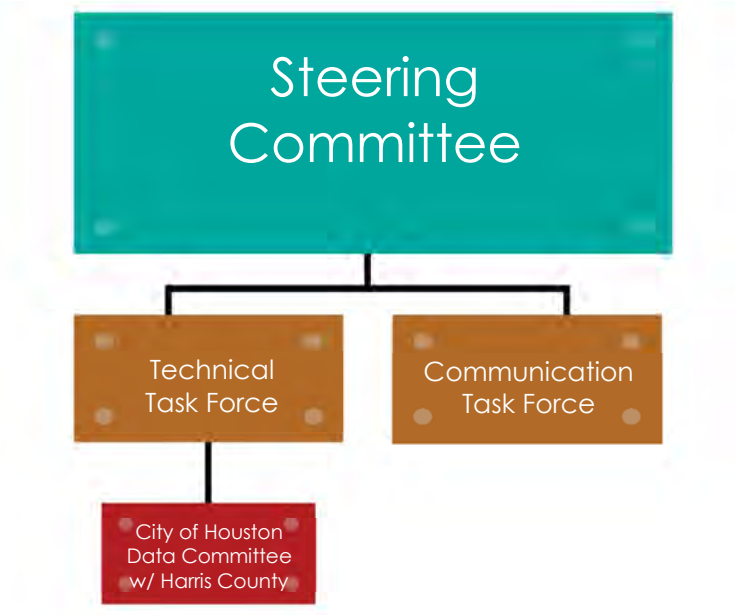
- Vision Zero Steering Committee - was responsible for championing the development and implementation of Vision Zero. The committee included grassroots and local community leaders, advocacy groups for persons with disabilities, and public agencies**,** such as the Metropolitan Transit Authority of Harris County (METRO), the Texas Department of Transportation (TxDOT), the Houston-Galveston Area Council (H-GAC), and LINK Houston.

- Technical Task Force - was charged with leading the planning effort for Vision Zero.

- Communication Task Force - led meaningful engagement with the Steering Committee members as well as the broader community through public meetings, workshops, and online surveys.

- City of Houston Data Committee – collaborate with the City of Houston to implement consistent methodology and processes for data analysis for both the City of Houston and Harris County.

The committee members helped catalog previous and current safety initiatives implemented by local agencies, governments, and advocacy groups in Harris County, as documented in *Appendix C. Local Safety Initiatives*. Some of the local agencies involved in this collaborative effort included, the Harris County Judge's Office, local cities in Harris County, the Metropolitan Transit Authority of Harris County (METRO), the Texas Department of Transportation (TxDOT), the Houston-Galveston Area Council (H-GAC), and LINK Houston.



Steering Committee Members

- **Anderson, Stephanie**- Gradient
- **Arguelles, Pancho**- Living Hope Wheechair Association
- **Becker, Nancy**- Creekside Park Village Association
- **Blair, Oni**- Link Houston
- **Blount, John**- HCED
- **Calderon, Hadill**- HC Precinct 1
- **Campbell, Augustus**- Association of Water Board Directors-Texas
- **Cantu, Ethan** - Gradient
- **Cantu, Richard**- East Aldine Mgmt. Dist., Hawes Hill Calderon
- **Cheng, Albert**- HC Public Health
- **Cheng, Lieutenant Simon**- HCSO
- **Dangerfield, Chuntania**- HCED
- **Davis, Tara**- Hollaway Environmental & Communications
- **Davwa, Aresha**- HCJO
- **Dorman, Steve**- HC Precinct 3
- **Drake, Stacy Ann**-HC Institute of Forensic Sciences
- **Dunn, Aaron**- HCJO
- **Gage, Stephen**- H-GAC
- **Garvin, Claire**- Hollaway Environmental & Communications
- **Genest Lindberg, Genevieve**- Galveston Bay Foundation, Cycle Clear Lake
- **Hicks, Brannan**- HCED
- **Holcombe, T Wayne**- Gradient
- **Hollaway, Leslie**- Hollaway Environmental & Communications
- **Jackson, Charlotte**- NAMI of Greater Houston
- **Lesniewski, Bob**- Creekside Park Village Association
- **Longoria, Isabel M**- Public Policy & Outreach
- **Mallet-Fontenot, Coretta**- HISD Teacher
- **Martinez, Rosaura**-Hollaway Environmental & Communications
- **Max, Alisa**- HCED
- **McConnell, Captain Anthony**- HCSO
- **Morman, Jack**- Harris County Precinct 4
- **Mohite, Amar**- HC Precinct 1
- **Pappas, P.E., Eleni**- TEI I Traffic Engineers, Inc.
- **Peng, Jeannie**- HCED
- **Pillai, Parul**- HC Public Health
- **Rahman, Milton**- HC Precinct 2
- **Reese, Allison**- HC Institute of Forensic Sciences
- **Reyna, Rebecca**- Greater Northside MGMT District
- **Schaffer, Michael**- HC Public
- **Sevcik, Greg**- Hollaway Environmental & Communications
- **Sims, Gwen**- HC Public Health
- **Skabowski, Andrew**- METRO
- **Stokes, Connor**- Hollaway Environmental & Communications
- **Townsend, Derek**- City of Tomball
- **Wallace-Brown, Margaret**- COH Planning & Development
- **Wheeler, Bill**- HCOEM
- **Whitlock, Anne**- Connect Community
- **Wiesner, Sarah**- HC Precinct 4
- **Wright, Linc** - Gradient

Technical Task Force

- **Anderson, Stephanie**- Gradient
- **Brooks, Jonathan** - Link Houston
- **Cagan, Sean**- Metro
- **Chambers, Leah** - HCJO
- **Gage, Stephen** - H-GAC
- **Genest Lindberg, Genevieve**- Galveston Bay Foundation, Cycle Clear Lake
- **Hicks, Brannan**- HCED
- **Holcombe, T Wayne**- Gradient
- **Max, Alisa**- HCED
- **Reese, Allison**- HC Institute of Forensic Sciences
- **Ughanze, Ugonna**- TXDOT
- **Wolfe, Dr. Dwayne**- HC Institute of Forensic Sciences

Communications Task Force

- **Calderon, Hadill**- HC Precinct 1
- **Cheng, Albert**- HC Public Health
- **Davis, Tara**- Hollaway Environmental & Communications
- **Gage, Stephen**- H-GAC
- **Garvin, Claire**- Hollaway Environmental & Communications
- **Hollaway, Leslie**- Hollaway Environmental & Communications
- **Martinez, Rosaura**-Hollaway Environmental & Communications
- **Max, Alisa**- HCED
- **McKeel, Geoff**- HCED
- **Peng, Jeannie**- HCED
- **Pillai, Parul**- HC Public Health
- **Sevcik, Greg**- Hollaway Environmental & Communications
- **Stokes, Connor**- Hollaway Environmental & Communications
- **Wiesner, Sarah**- HC Precinct 4

Vision Zero Goals

Communication with the committees was focused on principles that helped guide the Action Plans for each goal. They serve as a guide for decision-making as the County implements Vision Zero actions to eliminate deaths and severe injuries among those traveling on unincorporated County roadways:

GOAL 1: PROMOTE A CULTURE OF TRAFFIC SAFETY

No loss of human life in traffic deaths on unincorporated Harris County roadways is acceptable. The County will partner with local law enforcement, media, and general public to inform and educate on the best practices and procedures for promoting a culture of traffic safety.

GOAL 2: ENHANCE HARRIS COUNTY PROCESSES AND COLLABORATION

It is essential for all four precincts to be on the same page when it comes to traffic safety in Harris County. Vision Zero will ensure that the right processes are in place, adequate funding is secure, and communication is streamlined in order to address the areas of safety concern throughout the county.

GOAL 3: BUILD SAFE STREETS THAT PROVIDE TRANSPORTATION EQUITY FOR ALL USERS

All users should feel equally confident and safe when accessing the roadway. Creating a street network that is safe for all user types and abilities promotes a healthier lifestyle and creates a community driven environment. Areas of concern throughout Harris County will be addressed using the most up-to-date design practices and available technologies.

GOAL 4: IMPROVE DATA COLLECTION AND EVALUATION

Establish a data driven approach to both the pre- and post-analysis steps of the Vision Zero implementation process. Working with local partners to create procedures for collecting and analyzing data at safety concern sites as well as auditing those sites thereafter will always keep a pulse on the initiative.

Critical Actions

The Vision Zero Action Plan focuses on the County's efforts to achieve the goal of eliminating traffic-related fatalities and serious injuries on unincorporated County roadways by 2030. The Action Plans that were developed for Harris County were focused around the 6 "Es."

Education- Teach the community about walking, biking, and driving safely, particularly where pedestrians, bicyclists, and vehicles may interact.

Engineering- Provide improvements to the built walking, biking, and driving environment.

Encouragement- Reinforce safe walking, biking, and driving practices by hosting special events and school-based competitions.

Enforcement- Work with law enforcement on targeted efforts to reduce speeding, intoxicated driving, or disobeying traffic laws.

Evaluation- Measure Vision Zero outputs and outcomes to ensure strategies are working and revised if needed. Harris County will measure walking, biking, and vehicle traffic data to evaluate the operational and safety impacts of projects.

Equity- Ensure all roadway projects are designed with all user types and abilities in mind.

Vision Zero Pledge

The Vision Zero Pledge is an important component of culture change. No loss of life by traffic crash is acceptable, and we can prevent people from dying on our roadways. Everyone deserves safe, accessible streets and sidewalks. No matter how you move around our region, whether you drive, walk, use a wheelchair, bike, scoot, skate, or ride transit, we all contribute to safe streets. By acknowledging our role, we can help to prevent traffic deaths and serious injuries. Join us in pledging to commit to streets that are safe and accessible, shared by everyone with appropriate driving speeds, no distractions, and no impairment. You can find the Harris County Vision Zero Pledge here: Vision Zero Pledge (hctx.net)

I pledge to:

- ✓ Stop for pedestrians.
- ✓ Respect the speed limit.
- ✓ Not text and drive.
- ✓ Be safe behind the wheel.
- ✓ Bike safely.
- ✓ Slow down.
- ✓ Drive safely for our children.
- ✓ Bike safely.

Methodology

The Vision Zero Crash Dataset and High Injury Network for Harris County was developed jointly with the City of Houston's Vision Zero Data Team to provide a common High Injury Network for the region. As such, the dataset and network encompass Harris, Montgomery, and Fort Bend counties since the Houston city limits extend into all three counties. Detailed analysis of the Vision Zero Crash Data Methodology is available in *Appendix B. Vision Zero Crash Data Methodology*.

Data Collection and Reduction. The 5-Year dataset from the Texas Department of Transportation (TxDOT) Crash Records Information System (CRIS) was sourced for the Vision Zero dataset. The crash data for Harris, Montgomery, and Fort Bend Counties was obtained for years 2014, 2015, 2016, 2017, and 2018. This data went through a data collection and reduction process to remove any crashes that did not include the following attributes:

- Vehicular crashes: The analysis for these crashes includes all single or multiple vehicle crashes that resulted in a fatality or incapacitating injury
- Pedestrian and bicycle crashes: The analysis for these crashes included pedestrian or bicycle crashes that resulted in a fatality or incapacitating injury to the pedestrian or bicyclist,
- Fatality crashes, and
- Serious Injury crashes

5-Year Dataset (2014 – 2018)

Source: TxDOT Crash Records Information System

All single or multiple vehicle crashes that resulted in a fatality or incapacitating injury

Pedestrian- or bicycle-vehicle crashes that resulted in a ***fatality or incapacitating injury*** to the pedestrian or bicyclist

Creation of the High Injury Network and Crash Location. After the data was selected, the creation of the High Injury Network began. The crash locations were spatially located by the latitude and longitude fields assigned by TxDOT or geocoded by their block number and street

name if the latitude and longitude were not available. Crashes were then removed from on-system roadways such as freeways and limited access facilities and any roads that were not categorized correctly in the data such as BF1960A and SH 6. All crashes identified through these query steps were excluded from the High Injury Network. This crash data was then spatially joined to the roadway network provided by the Houston-Galveston Area Council's Southeast Texas Addressing and Referencing Map (STAR*Map) with a 50-foot buffer around the roadway centerline and divided into ½ mile segments.

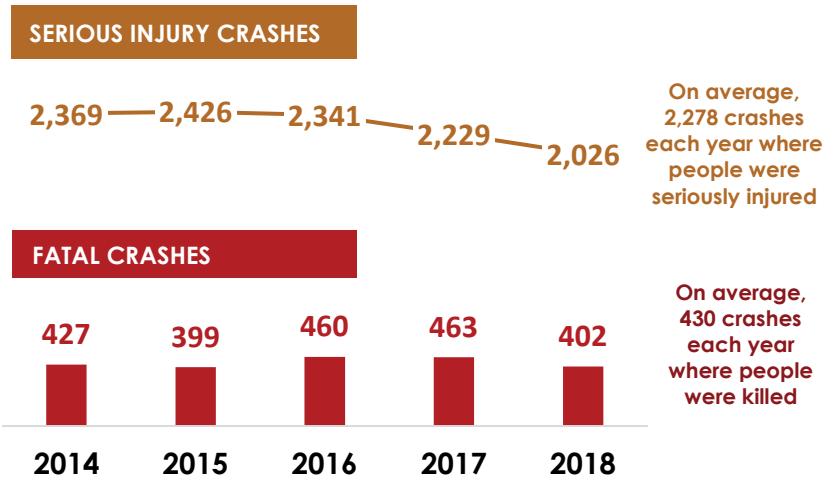
Calculating the Crash Rate. Crash rates were then calculated for the total, vehicular, pedestrian, and bicycle crashes to reflect the density of crashes by mode on each roadway segment. To focus the location of the crashes for the entire region, a target of 60th percentile of fatal serious injury crashes for each mode was agreed upon by Harris County and the City of Houston's Vision data teams. The following crash rates were selected by mode (vehicular, pedestrian, bicyclist) and hot spot maps were created for each mode as shown in ***Figures 5-8:***

- "TotalCrash" ≥ 3.5 for the total HIN
- "VehicleCrashRate" ≥ 2.5 for the vehicle mode
- "PedCrashRate" ≥ 2 for pedestrian mode
- "BikeCrashRate" ≥ 2 for bicycle mode

Harris County Needs Vision Zero

The data analysis for this project provided supportive evidence that Harris County needs to develop a plan to address the safety of the roadway network for all users. Traffic crashes are a major cause of accidental deaths in Harris County[1]. ***Figure 1*** indicates from 2014-2018, there were on average 430 crashes where someone was killed and 2,278 crashes where someone was seriously injured in Harris County each year. This equates to every day, someone dying in a traffic crash, and at least five people severely injured. Less than 20% of these crashes and one quarter of fatal crashes occur on roadways in unincorporated parts of Harris County.

Figure 1. Fatal and Serious Injury Traffic Crashes in Harris County
Source: TxDOT Crash Records Information System, Fatal and Incapacitating Injuries, 2014-2018



A **"serious injury crash"** is defined by the Texas Department of Transportation as incapacitating, meaning at least one person was unable to leave the crash scene without assistance. Serious injuries can include severe lacerations, broken bones, skull or chest injuries, abdominal injuries, or unconsciousness.

A **"fatal crash"** means at least one person sustained an injury that resulted in their death within 30 days of the crash.

[1] *A 5-year crash dataset (2014-2018) from the Texas Department of Transportation's Crash Records Information System (CRIS) was sourced for the analysis. The methodology is detailed in Appendix B.*

Figures 2 and 3 detail how the crashes were broken down by mode (vehicle, pedestrian, and bicyclist) by the year of the crash and the crash severity (serious injury or fatality). Vehicular crashes include all single or multiple vehicle crashes that resulted in a fatality or incapacitating injury. Pedestrian and bicycle crashes included pedestrian or bicycle crashes that resulted in a fatality or incapacitating injury to the pedestrian or bicyclist.

Figure 2. Serious Injury Traffic Crashes by Mode in Harris County, 2014-2018
Source: TxDOT Crash Records Information System, Fatal and Incapacitating Injuries, 2014-2018

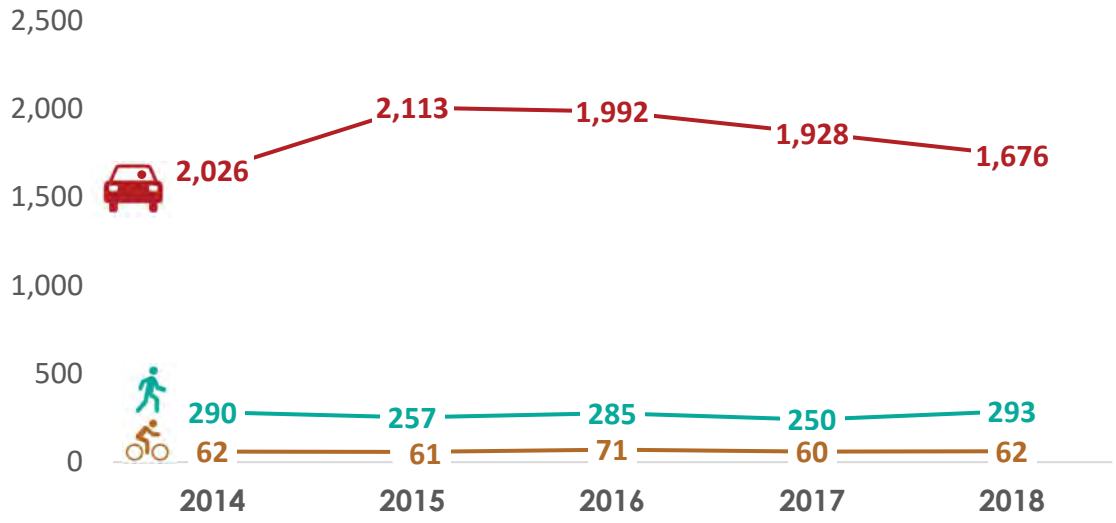
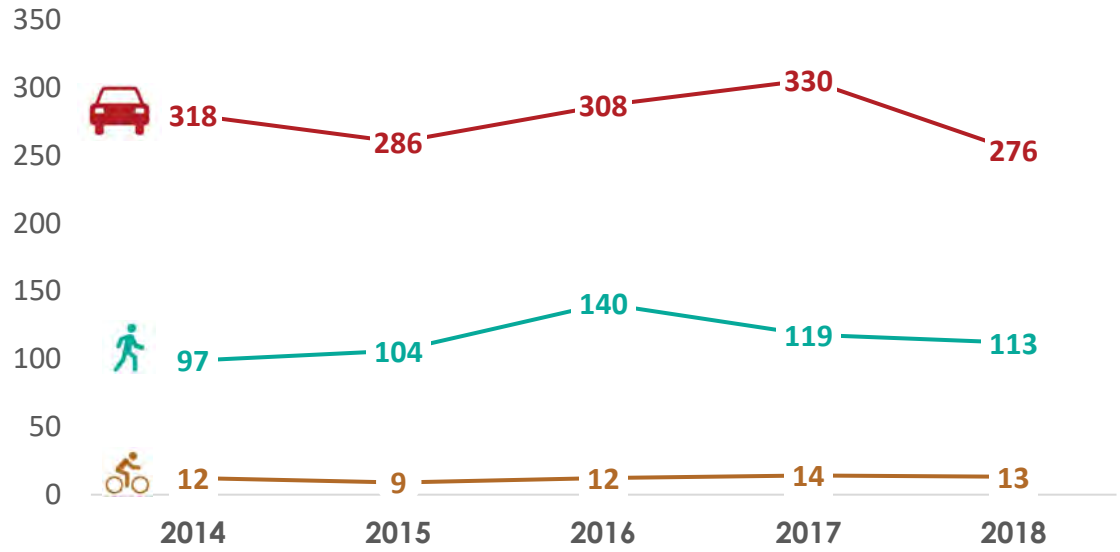


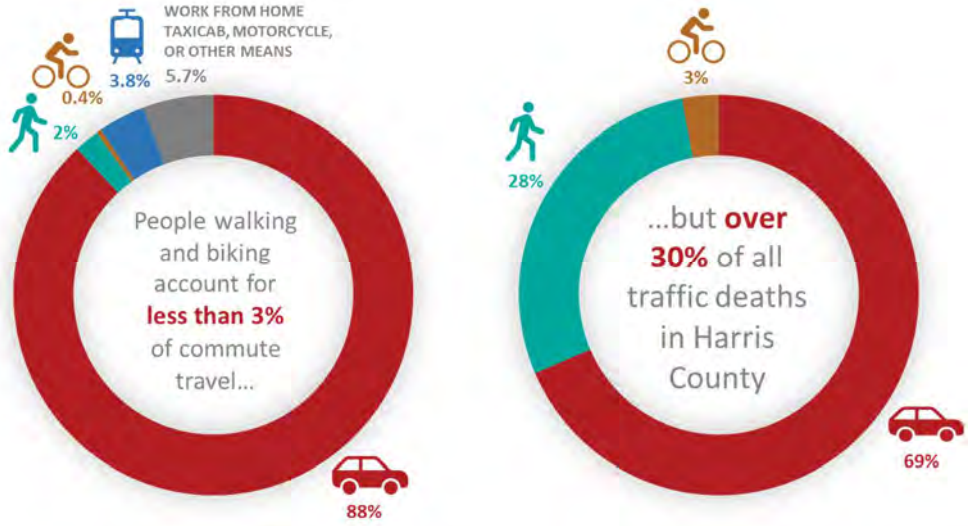
Figure 3. Fatal Traffic Crashes by Mode in Harris County, 2014-2018
Source: TxDOT Crash Records Information System, Fatal and Incapacitating Injuries, 2014-2018



Vulnerable Road Users

People walking and biking are vulnerable roadway users because they are more likely to be killed or seriously injured when involved in a crash. These road users account for less than 3 percent of commute mode share yet are involved in 31 percent of all fatal traffic crashes in Harris County. (***Figure 4***)

Figure 4. Travel Mode vs. Traffic Deaths
Source: American Community Survey, Means of Transportation to Work and TxDOT Crash Records Information System, Fatality Crashes, 2014-2018



High Injury Network

Figure 5 highlights the roadway segments with 3.5 or more severe or fatal crashes per mile. Collectively, these roadways make up 6% of the roadway network but account for 60% of severe or fatal crashes. These high-risk roadway segments make up the County's High Injury Network and indicate where injuries are most concentrated in the region, and subsequently, where Vision Zero safety improvements could have the biggest potential impact. Because safety treatments are typically selected differently depending on mode of transportation, the High Injury Network is broken out into a composite of the highest injury roadway segments for driving, walking, and biking (***Figures 5 through 8***, respectively).

The High Injury Network for Harris County was developed jointly with the City of Houston's Vision Zero Data Team to provide a common High Injury Network for the region. It does not include crashes that occurred on Interstates, U.S. and State Highways, toll roads, and other limited access roadways. Although these crashes constitute a significant portion of fatalities and serious injuries in the region, they were excluded from the map so that the County can focus its limited resources on roadways that are under its maintenance and enforcement jurisdiction. Roadways that do not fall under the umbrella of Harris County will be addressed by TxDOT's End the Streak Campaign which shares many of the same goals as Harris County's Vision Zero Plan.

Figure 5. Vision Zero High Injury Network (All Modes)

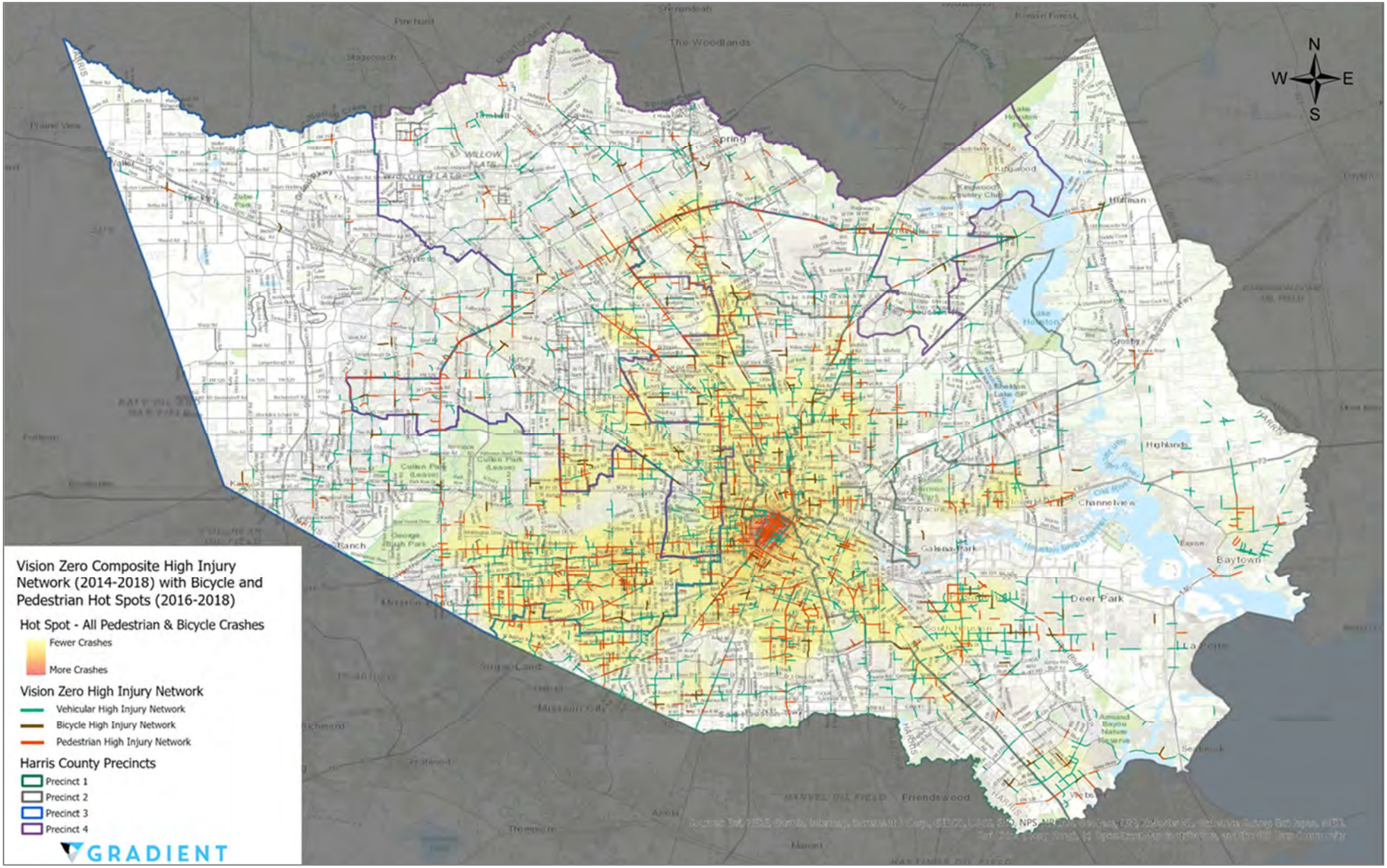


Figure 6. Vision Zero High Injury Network (Vehicular)

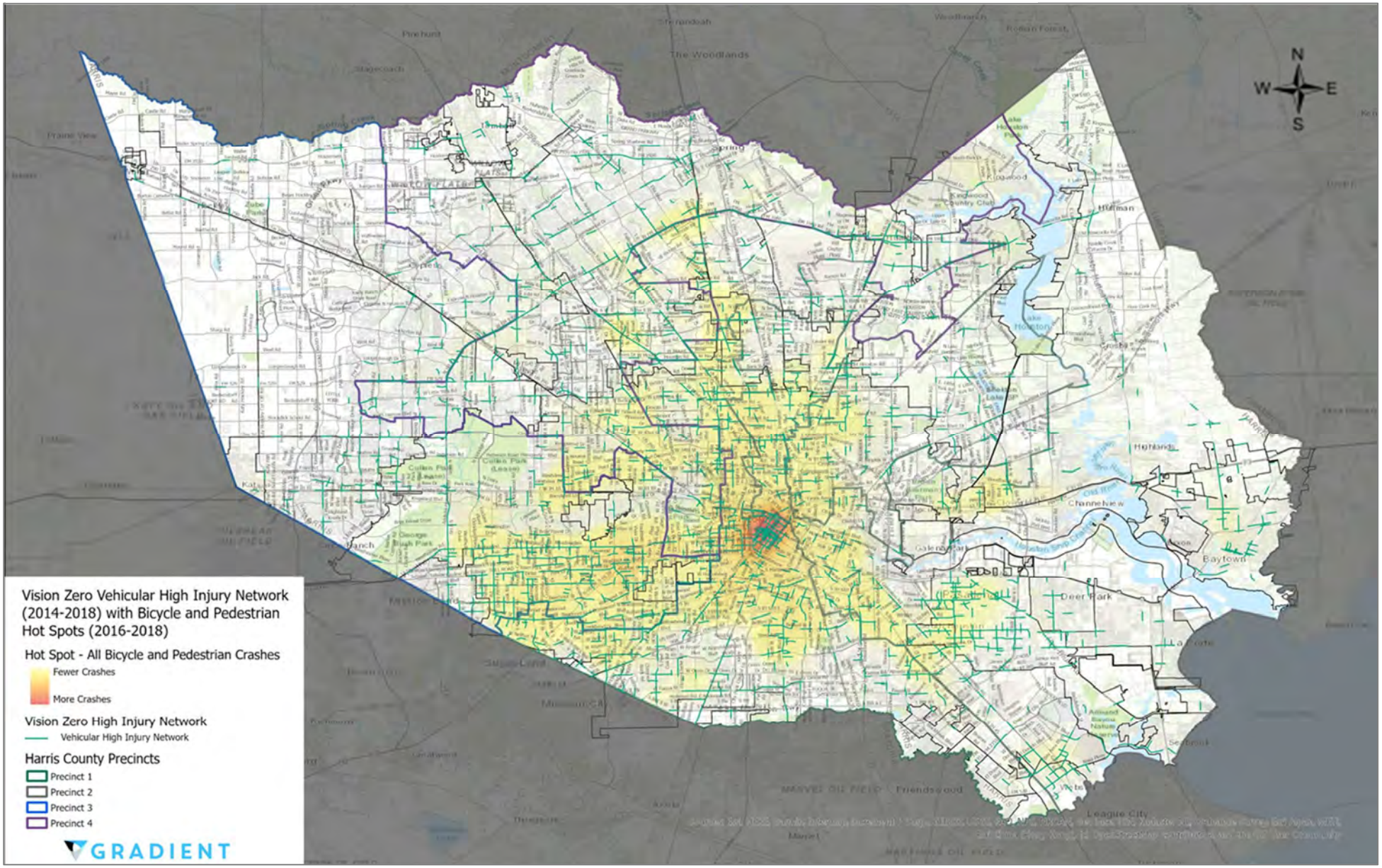


Figure 7. Vision Zero High Injury Network: Pedestrian

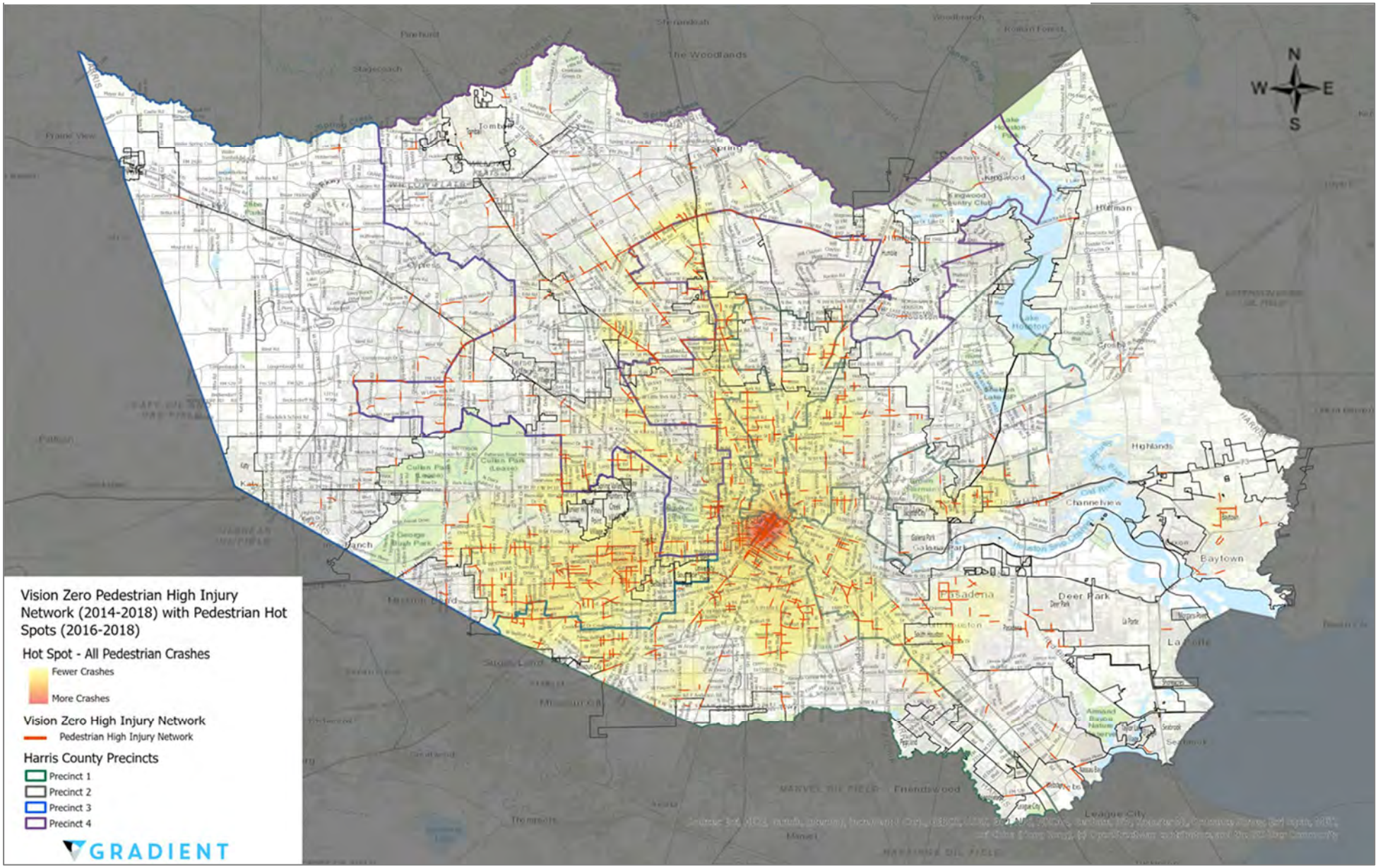
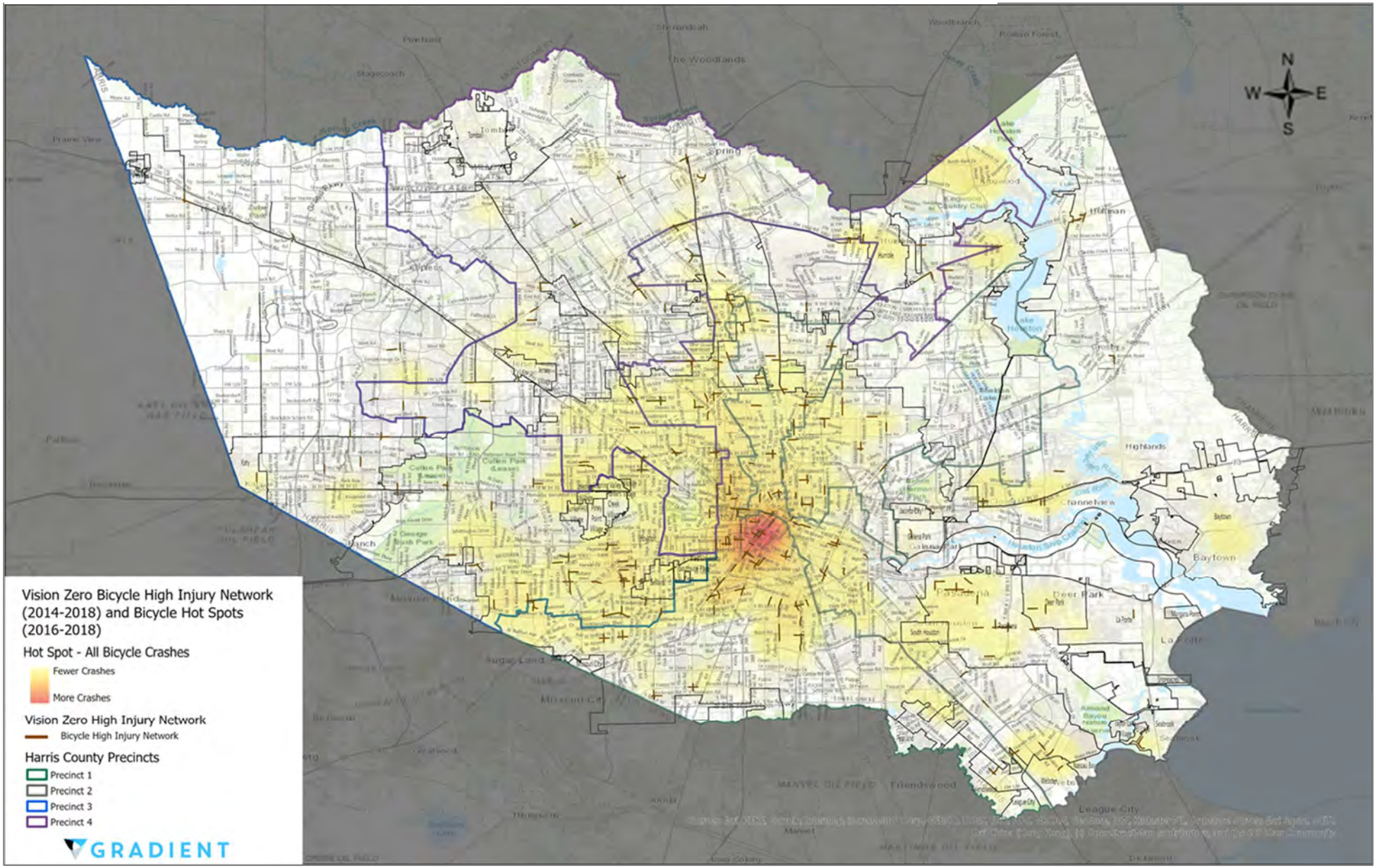


Figure 8. Vision Zero High Injury Network: Bicycle



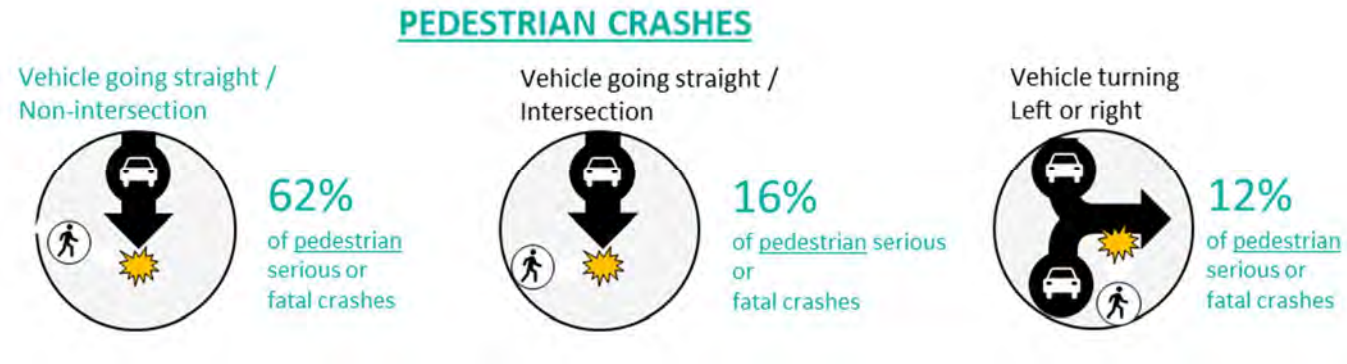
Common Crash Types

Vehicle crashes account for **80%** of all serious or fatal crashes in Harris County. Shown below in ***Figure 9***, single vehicle crashes/ run off the road account for **27%** of the serious or fatal vehicle crashes in Harris County followed by Angle/ Intersection crashes at **21%** and Rear end crashes at **12%**.

Figure 9. Common Vehicle Crash Types
Source: TxDOT Crash Records Information System, Fatal and Incapacitating Injuries, 2014-2018

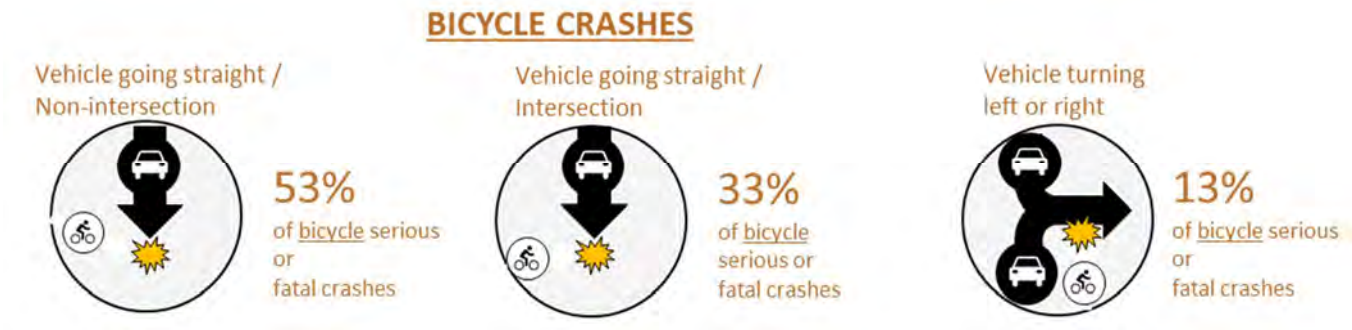
Pedestrian crashes account for **17%** of the total serious or fatal crashes in Harris County. ***Figure 10*** illustrates the top three crash types for pedestrians. Vehicle going straight/ Non-intersection represented **62%** of the total pedestrian crashes, followed by Vehicle going straight/ Intersection at **16%** and Vehicle turning left or right at **12%**.

Figure 10. Common Pedestrian Crash Types
Source: TxDOT Crash Records Information System, Fatal and Incapacitating Injuries, 2014-2018



Bicycle crashes account for **3%** of all serious or fatal crashes in Harris County. ***Figure 11*** depicts Vehicle going straight/ Non-intersection as the top cause for bicycle crashes at **53%**. The second leading cause was Vehicle going straight/ Intersection at **33%** followed by Vehicle turning left or right at **13%**.

Figure 11. Common Bicycle Crash Types
Source: TxDOT Crash Records Information System, Fatal and Incapacitating Injuries, 2014-2018

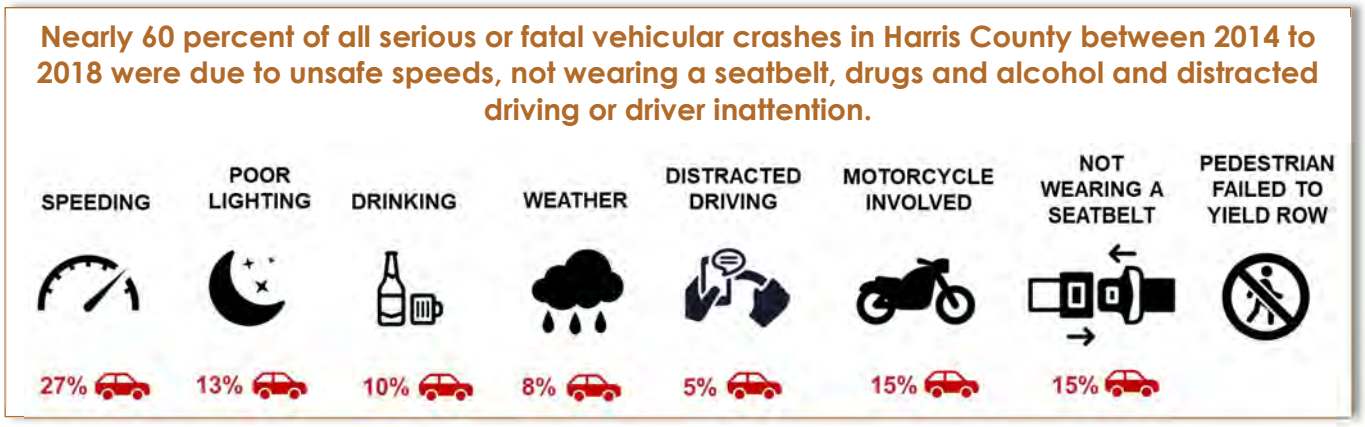


Common Risk Factors

For vehicular crashes, several behavioral factors stand out as problems in the County (outlined in ***Figure 12***):

- Unsafe Speeds were a factor in **27%** of vehicular crashes that result in deaths and serious injuries and nearly **30%** of fatal crashes.
- Not Wearing a Seatbelt contributes to increased injury severity. Lack of restraint use was a factor in **15%** of vehicular crashes that result in deaths and serious injuries, yet **40%** of fatal crashes.
- Drugs and Alcohol were involved in **10%** of serious or fatal vehicular crashes, yet more than **30%** of fatal crashes.
- Distracted Driving or Driver Inattention was cited as a contributing factor in **5%** of vehicular serious or fatal vehicular crashes and **3%** of fatal vehicular crashes. However, these numbers are likely underestimated, since it is not always clear whether a person was using their phone at the time of a collision. In addition, traffic analytics firm ZenDrive estimates that **60%** of drivers used their phones during part of their commute in 2019[2].

Figure 12. Vehicle Common Risk Factors
Source: TxDOT Crash Records Information System, Fatal and Incapacitating Injuries, 2014-2018



[2] "Houston and Dallas Lead the Nation in Distracted Driving." Texas Monthly, April 2019. https://www.texasmonthly.com/news/houston-and-dallas-lead-the-nation-in-distracted-driving/

The majority of pedestrian and bicycle crashes are attributed to a combination of behavioral and environmental factors (outlined in ***Figure 13***):

- Pedestrian Failure to Yield the Right-of-Way to vehicles was a factor in 46 percent of serious or fatal pedestrian crashes. Nearly one-third of these crashes involved pedestrians using their cell phones or under the influence of drugs or alcohol.
- Poor Lighting was a factor in nearly a quarter of serious or fatal pedestrian and bicycle crashes.
- Bicyclist Failure to Yield Right-of-Way to vehicles was a factor in 13 percent of serious or fatal bicycle crashes, while vehicle failure to yield right-of-way to bicyclists was a factor in 12 percent of serious or fatal bicycle crashes.
- Impaired Driving was a factor in 10 percent of serious or fatal pedestrian crashes.

Figure 13. Pedestrian and Bicycle Common Risk Factors
Source: TxDOT Crash Records Information System, Fatal and Incapacitating Injuries, 2014-2018

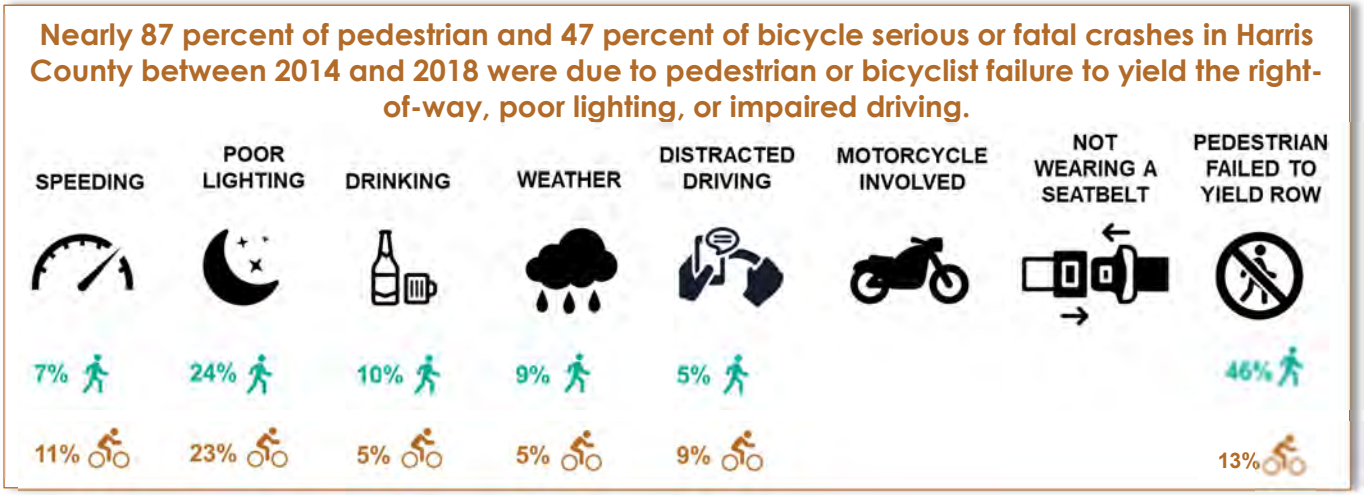


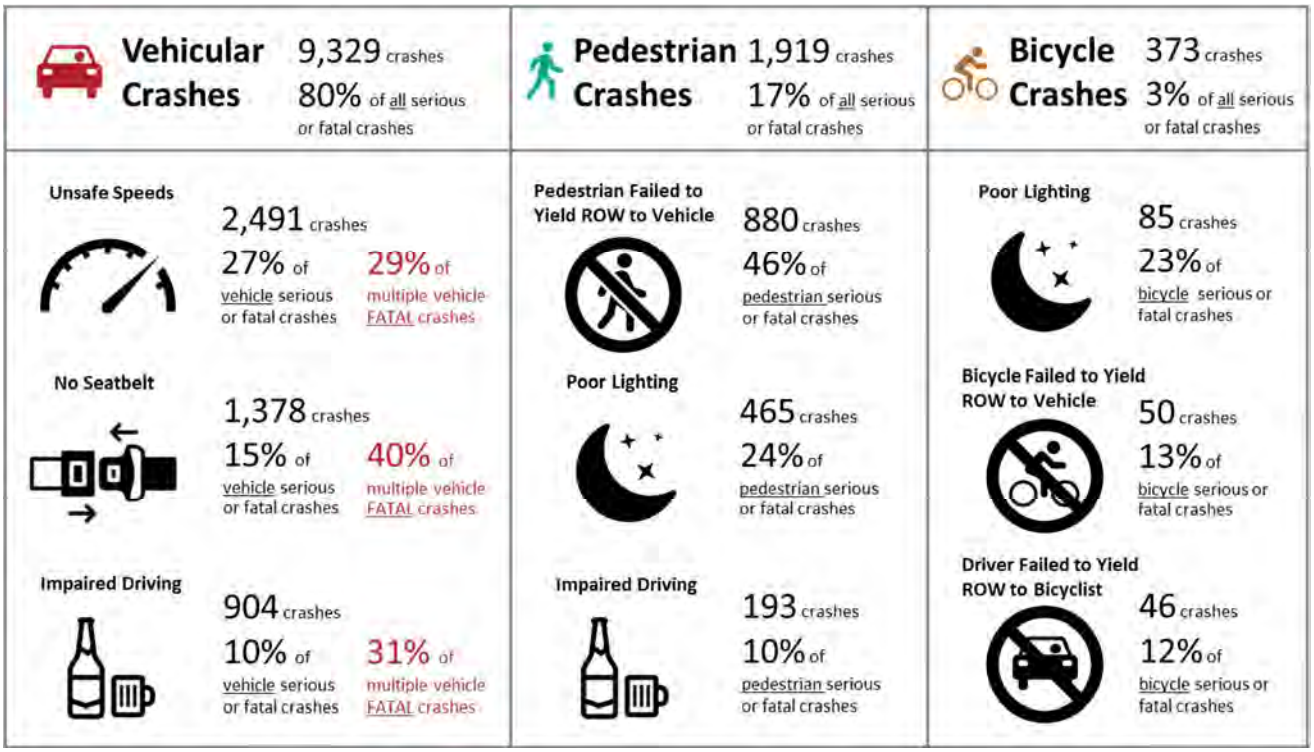
Figure 14 highlights the common risk factors in serious and fatal crashes for vehicles, pedestrians, and bicycles.

The top three risk factors for vehicular crashes were:
- Unsafe speeds
- No seatbelt
- Impaired driving

The top risk factor for pedestrian crashes were:
- Pedestrian failed to yield ROW to vehicle
- Poor lighting
- Impaired driving

The top three risk factors for bicyclists were:
- Poor lighting,
- Bicycle failed to yield ROW to vehicle
- Driver failed to yield ROW to bicyclist

Figure 14. Common Risk Factors in Serious and Fatal Crashes
Source: TxDOT Crash Records Information System, Fatal and Incapacitating Injuries, 2014-2018



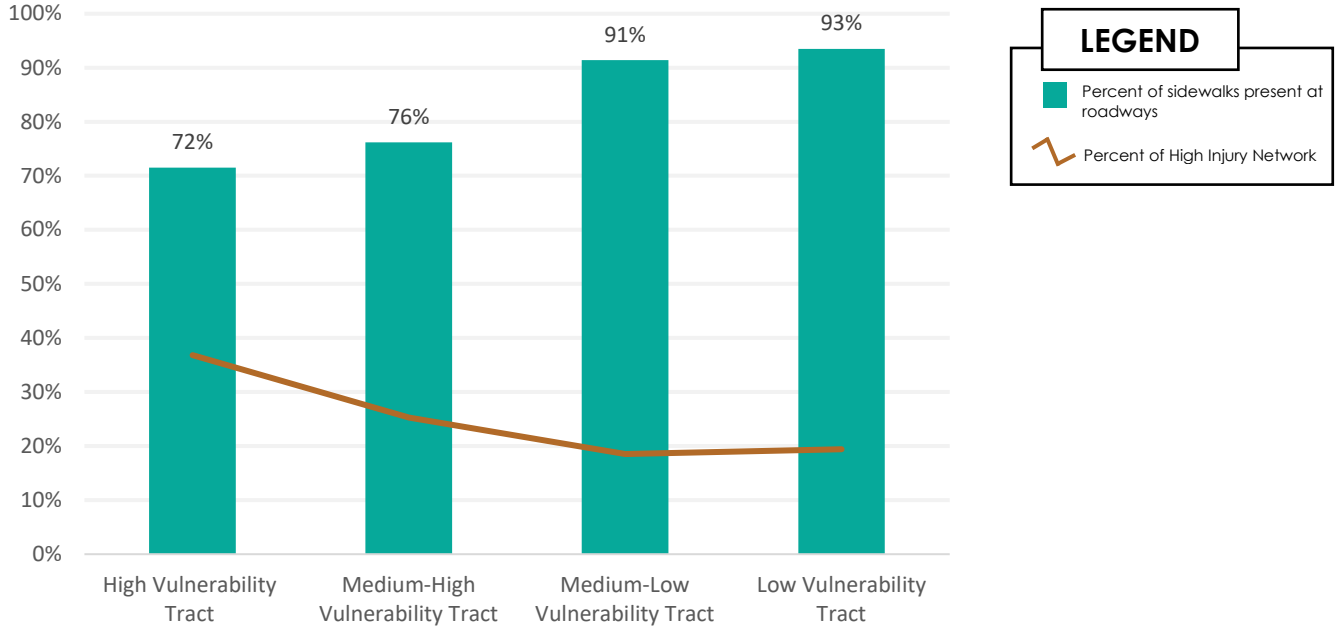
Equity Regarding Serious and Fatal Crashes

Socially vulnerable communities with the highest rates of poverty, unemployment, minority communities, low English proficiency, crowded households, and/or lack of vehicle access appear to have higher crash rates in Harris County. **37%** of the streets with the most serious and fatal crashes are in these communities, yet they make up only **24%** percent of regional roads in the County. Socially vulnerable communities are also about **20%** less likely to have sidewalks, which forces pedestrians to create rut paths or walk-in travel lanes when there is no sidewalk present, putting them more at risk.

Figure 15 highlights the percentage of the roadway network with sidewalks in relation to the percentage of the roads in the community located in the high injury network.

27% of the total crashes resulting in a serious or fatal injury in Harris County involved 20-29-year-olds, however they only make up 15% of the total population. Black drivers were involved in 33% of serious or fatal crashes but only account for about 19% of the population. White drivers were also overrepresented in the data set, accounting for 39% of crashes but making up 29% of the population.

Figure 15. Percent of Roadway Network with Sidewalks, Based on Social Vulnerability
Source: TxDOT Crash Records Information System, Serious Injury and Fatality Crashes, 2014-2018



According to the crash reports along the high injury network, different demographics are disproportionally represented in the crash data. Shown in ***Figure 16***, 20–29-year-olds are overrepresented in the percent of crashes in relation to their standing in the total Harris County population (**27%** of crashes to **≈15%** of total population). When studying the percent of crashes by ethnicity, it was found that the white and black populations were overrepresented in the percent of crashes in relation to their amount of the Harris County population. Black individuals were nearly **15%** overrepresented (**33%** of crashes, **≈19%** of population) and white individuals **10%** (**39%** of crashes, **29%** of population). Hispanics, while making up the largest percentage of the Harris County population, were underrepresented in the crash data in relation to their population percentage by **≈1.5%** (**≈42%** of crashes, **≈43%** of crashes).

Figure 17 shows where Socially Vulnerable Communities are located by census tract in relation to the high injury network.

37% of the streets with the most serious and fatal crashes are in Socially Vulnerable Communities yet they make up only 24% of regional roads in the County. Socially vulnerable communities are also about 20% less likely to have sidewalks, which forces pedestrians to create rut paths or walk-in travel lanes when there is no sidewalk present, putting them more at risk.

Figure 16. *Age and Ethnicity in Crash Reports*
Source: TxDOT Crash Records Information System, Serious Injury and Fatality Crashes, 2014-2018

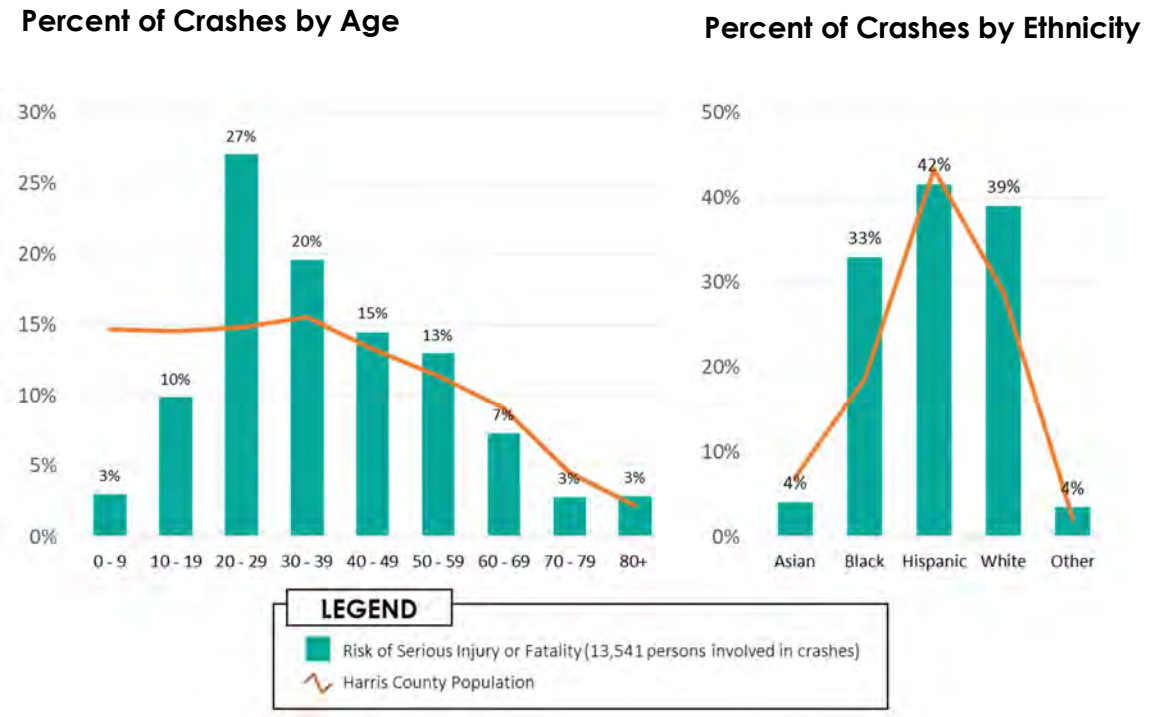
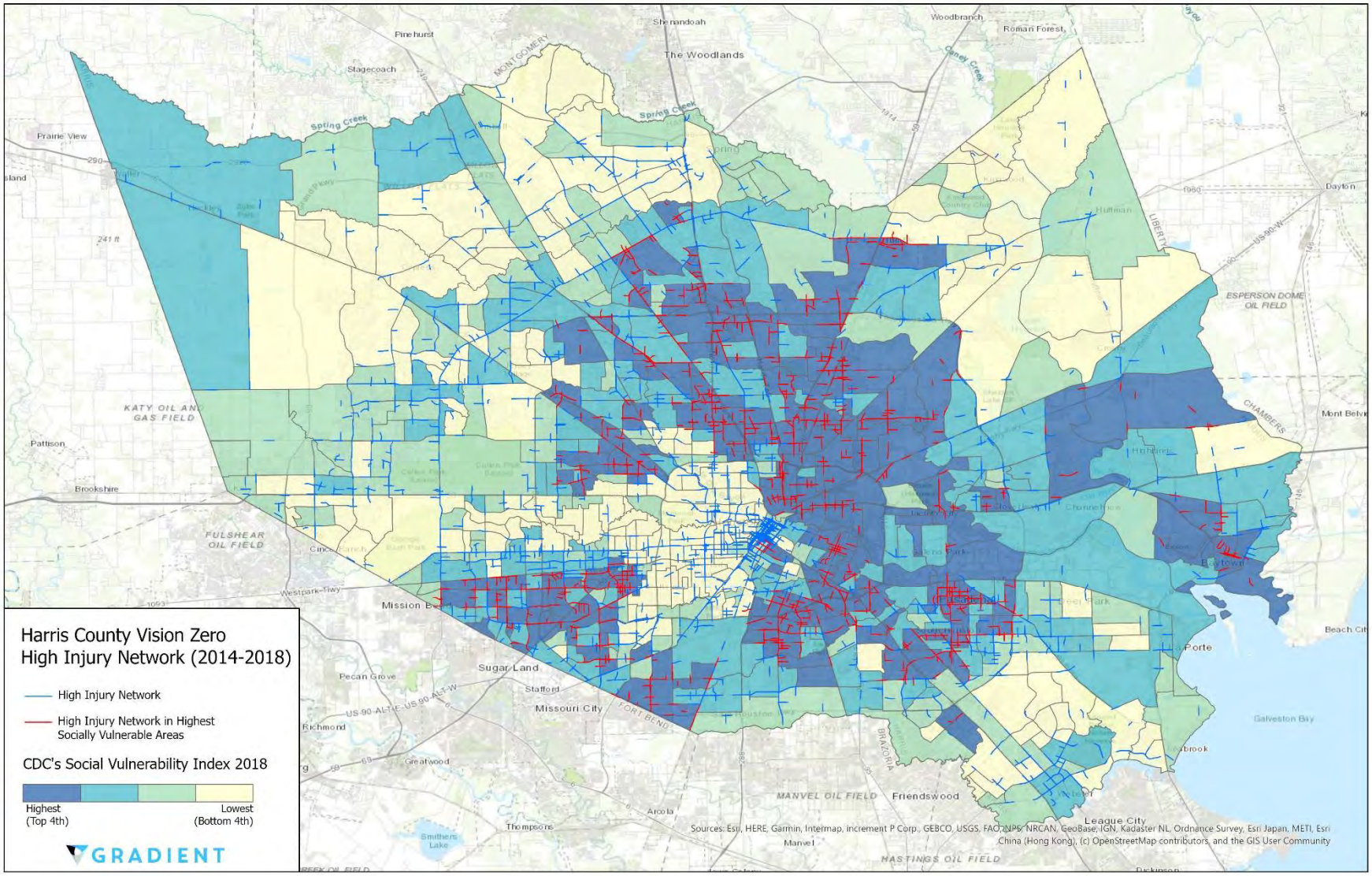


Figure 17. High Injury Network Segments in Socially Vulnerable Areas



Community Engagement

Vision Zero is a transformative campaign that challenges traditional approaches to eliminating road injuries and fatalities. The Vision Zero plan took into consideration public input, concerns, and questions to build a stronger and more relatable initiative.

Harris County communities, local stakeholders, and their unique visions and needs for transportation safety have fueled the Vision Zero campaign. Engaging with the public is critical to identifying opportunities, responsibilities, key audiences, tools, and strategies to support all future Harris County transportation projects. The community engagement activities for Vision Zero ensured that all members of the community were able to participate.

The COVID 19 pandemic forced traditional, in-person outreach efforts to pivot to the virtual environment and follow state and local public health guidelines.

Vision Zero Public Meetings

Public meetings served as the Vision Zero initiative's primary form of public engagement. This form of engagement allowed Harris County residents to ask questions and provide input about the initiative.

The first virtual public meeting was held on September 2, 2020 from 6 to 7 p.m. Throughout the presentation, the audience was encouraged to engage with the project team by asking questions and providing comments through the Zoom webinar's Q&A feature. The meeting was interpreted live in Spanish and allowed attendees to listen to the meetings in real-time in either English or Spanish. Meeting and project materials were provided in English and Spanish.

During this presentation, several QR codes were provided to enable attendees to take the Vision Zero survey, visit the website, and interact with the Vision Zero map tool. Questions and comments received during the virtual public meeting focused on transportation safety concerns in certain areas around Harris County. All comments received were incorporated into the Vision Zero map tool.

An additional virtual public meeting was held on October 7, 2020 for the Harris County Transportation Plan where information on Vision Zero goals and strategies were discussed with the community.

Stakeholder Kits

Stakeholder kits were developed for distribution to Harris County precincts, commissioners, community leaders, and Harris County officials. These materials asked Harris County leaders and officials to take the survey, pledge to work toward safer streets, learn about Vision Zero, and attend future Harris County transportation-related meetings.

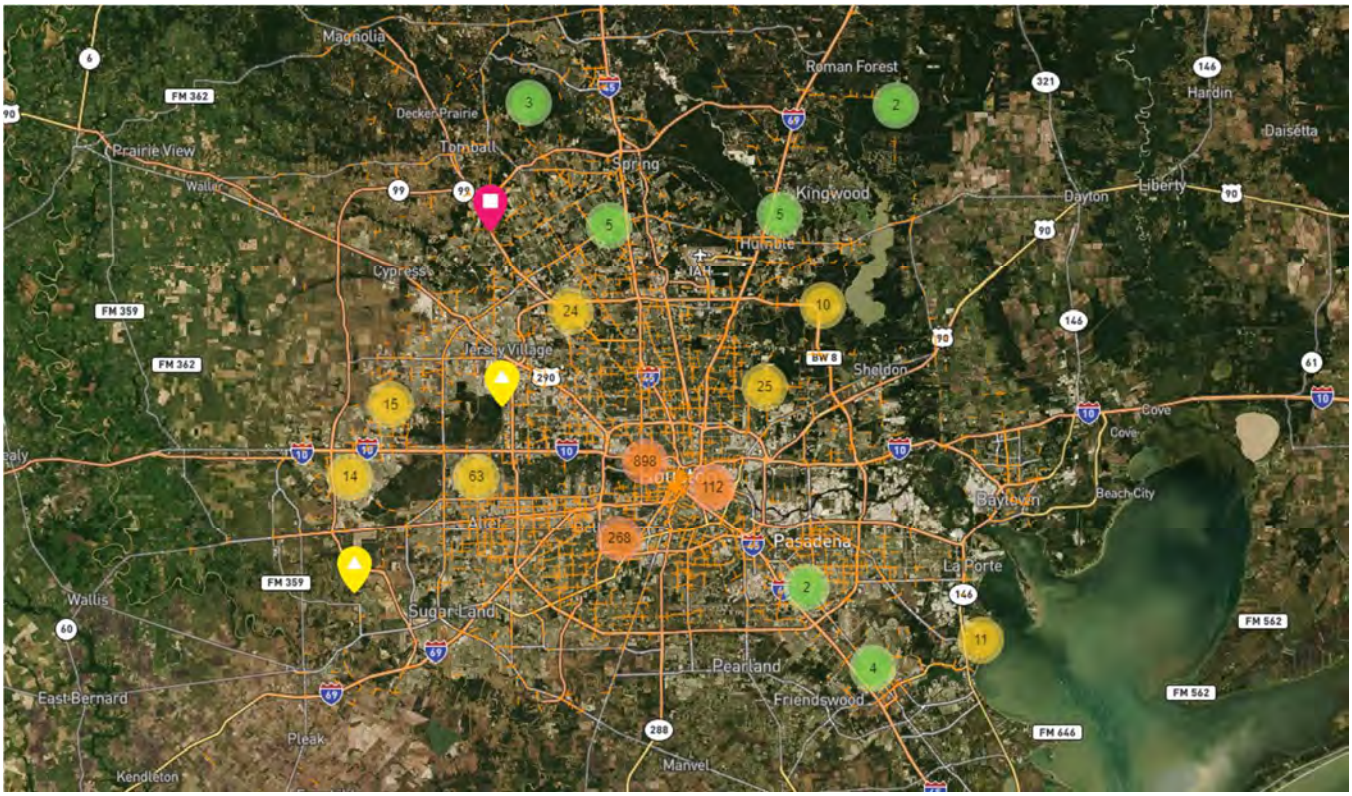
Each kit contained informational flyers about Vision Zero and upcoming Harris County Transportation Series meetings. The kits also included promotional merchandise that symbolized the goal, objectives, and purpose of Vision Zero. All stakeholder kit material was available in English and Spanish.

Survey

The Vision Zero Steering Committee survey was developed to receive input on the strategies proposed in the Vision Zero Action Plan. . The Steering Committee members, including community leaders representing the four Harris County precincts, the County Judge's Office, various Harris County departments, safety and traffic experts, advocacy groups, community organizations, and local municipalities, provided input on key strategies and actions proposed in the Vision Zero Action Plan. After the survey was completed, the project team and Steering Committee worked together to finalize that feedback into the Vision Zero Action Plan. Results from the survey can be found in *Appendix F: Action Plan Survey Comments.*

Map Tool

The Vision Zero map tool is hosted in collaboration with the City of Houston and provides an interactive map to gather location-specific safety concerns from the public. Anyone who visits the map tool can view all safety issues submitted by others across Houston and Harris County. The information gathered from the map is used carefully to assess areas with a higher risk of traffic-related safety concerns.



Key Public Involvement Findings

The public, through the online map tool, identified over 1400 locations they deemed as traffic safety concerns. Out of these over 1400 locations, the points were narrowed down to only include points within Harris County boundaries. The points were further narrowed down to only include points within 75ft of a Harris County maintained road, then removed from all cities within Harris County. After the points had been condensed to meet the criteria necessary for the study, there were 57 specific locations of concerns left. The breakdown of the concern by type is:

- 33% Concerned walking in their specified area
- 1% Concerned using a wheelchair in their specified area
- 49% Concerned driving in their specified area
- 16% Concerned biking in their specified area

In *Appendix C: Online Contributor Comment Matrix,* each point contains the location as well as a corresponding comment describing their issue with the area. There is a link alongside the point that opens the exact location on the Let's Talk Houston Interactive Map webpage.

Utilizing the comments given alongside each of the 57 points identified during the study, a word cloud was created (***Figure 18***) based on the words most often used by contributors in the comment section. A few of the words that were most frequent throughout the comments were "stop, traffic, street, sign, and speed". This word cloud is another tool to utilize when considering recommendations and actions to take regarding roadway safety. The comment locations were mapped and available in ***Figure 19*** Vision Zero Contributor Comment Point Locations.

Figure 18: Word Cloud Based on Contributor Comments

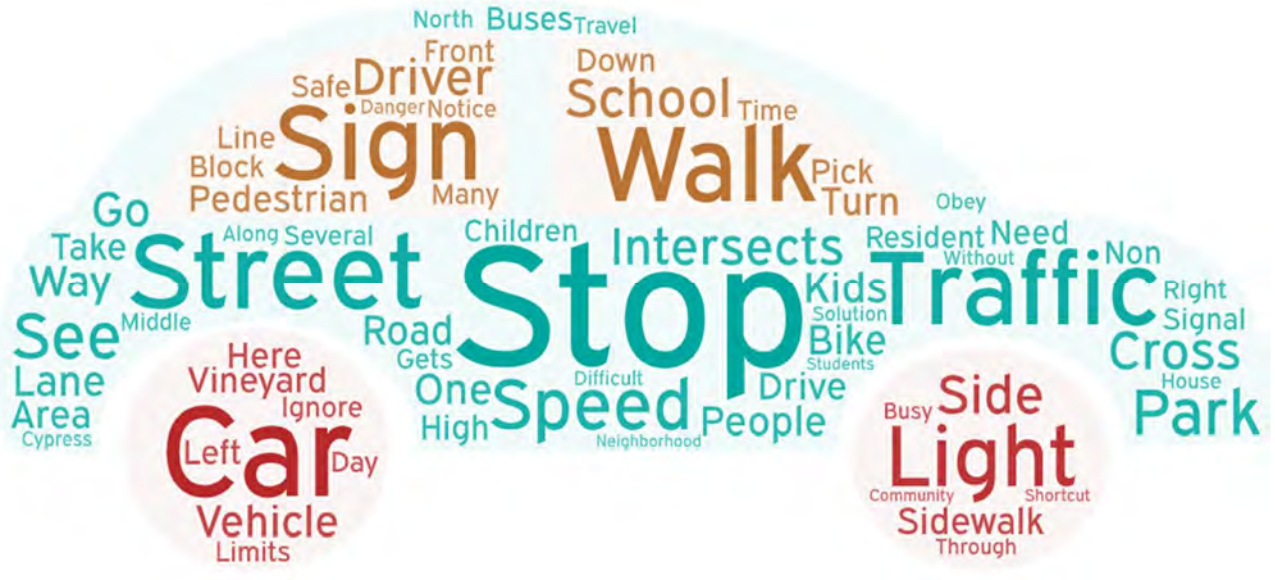
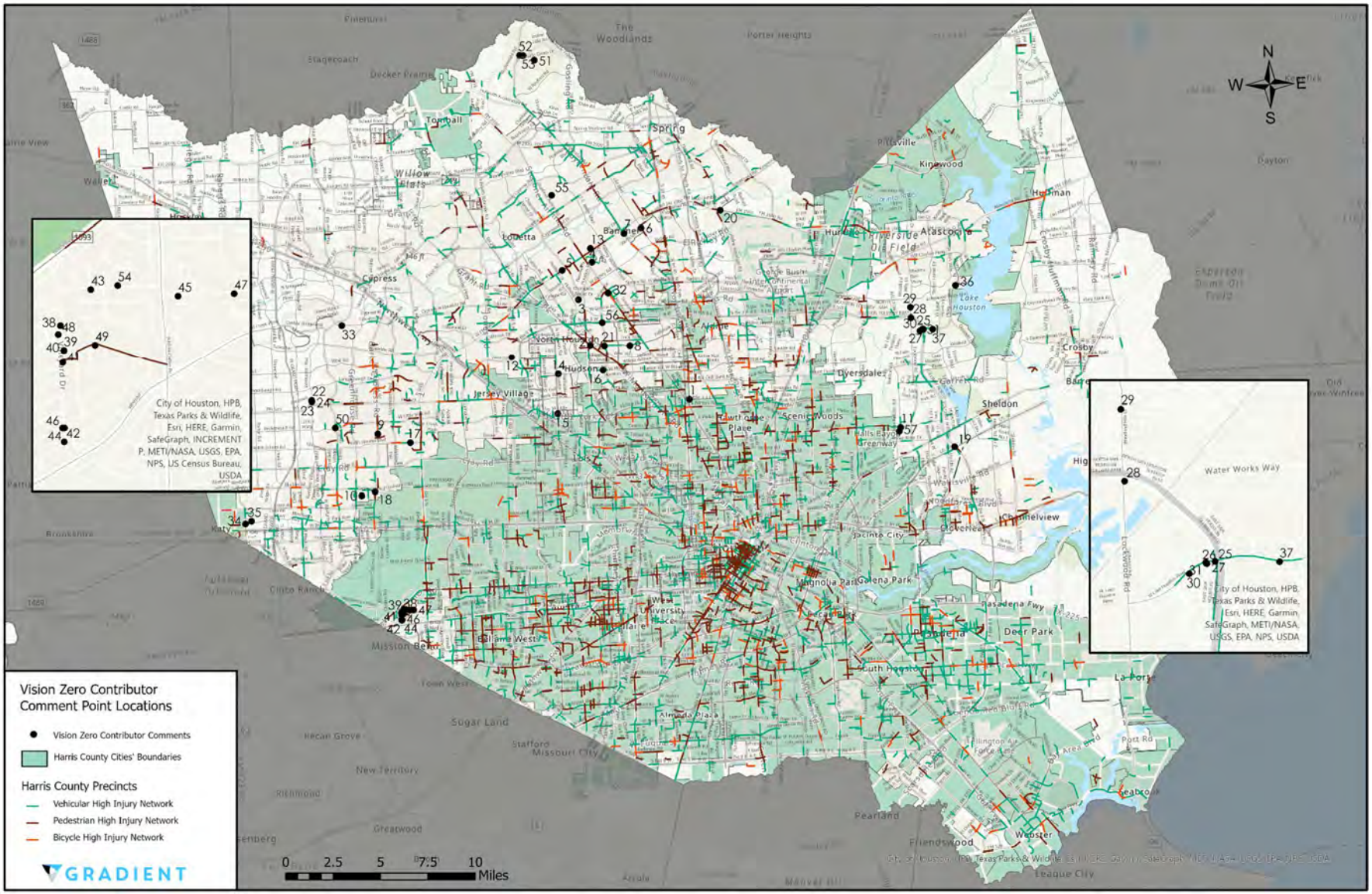


Figure 19. Vision Zero Contribution Comment Point Locations



Vision Zero Action Plan

Vision Zero Action Items were developed using the Harris County High Injury Network and were categorized underneath the four goals by the 6 E's (Education, Engineering, Encouragement, Enforcement, Evaluation, and Equity). The comprehensive list of actions items reviewed by the Steering Committee are available in *Appendix F: Action Plan Survey Comments.*

Education

-Maintain a comprehensive website to provide information on Vision Zero initiatives, projects, programs, and progress.

-Develop and implement training on public communication about safety and provide materials and resources in multiple languages and media outlets

-Develop new education resources identifying responsible behavior for bicyclists, pedestrians, and motorists.

Enforcement

-Incorporate Vision Zero education into the County's defensive driving curriculum for all County employees with fleet driving permissions to renew defensive driving more often.

-Encourage law enforcement to increase focus on vehicle violations that are hazardous to all modes of transportation (ex. parking in bike lanes, improper turns, signal violations, phoning/ texting, DUI, etc.)

- Work with law enforcement to advance development of safe walking and biking curriculum for students or when Law Enforcement and Fire Department visit schools, daycares, or public events.

Engineering

-Adopt Complete Streets and Multimodal Thoroughfare Planning concept on future projects.

-Create design guidelines to determine appropriate safety improvements, such as traffic calming measures, roundabouts, shared use paths, and roadway diets. Examples include the Pedestrian/Bike Safety Toolbox and Harris County Pedestrian Controlled/Uncontrolled Crossing Guidelines.

-Establish a guideline to determine appropriate roadway speed limits that considers all users, crash statistics, land use, and roadway characteristics.

Evaluation

-Publish an annual report on the progress of Vision Zero implementation using geospatial crash data and maps.

-Conduct before and after studies of safety upgrades using teams to develop programs and policies.

-Update the Vision Zero High Injury Network every three years to determine where and when severe crash types are likely to occur.

-Work with local agency partners to develop a GIS-based intersection inventory for analysis of design factors associated with intersection crashes.

Encouragement

-Collaborate with Houston-Galveston Area Council on regional safety campaigns focused on unsafe driving and support their region wide Vision Zero program.

-Incorporate Vision Zero data and recommendations into the 2040 Harris County Transportation Plan, Harris County Multimodal Thoroughfare Plan, and Harris County Equity in Transportation Plan

- Collaborate with local agencies to develop safe routes to school plans and comprehensive sidewalk/shared-use path program

Equity

-Include grassroots and local community leaders in Harris County to provide input on transportation equity.

-Establish a permanent funding source for the Vision Zero Program in Harris County's Capital Improvement Program.

-Ensure and expand a percentage of bicycle and pedestrian improvements each year to socially vulnerable communities

Vision Zero Implementation

Through the leadership of the Harris County team, the direct contact with the City of Houston's Vision Zero team, and support from the Steering Committee, Communication Task Force, and Technical Task Force, actions are underway to support the **Harris County Vision Zero initiative to reach zero traffic fatalities and severe injuries by 2030**.

- The Houston- Galveston Area Council approved a Vision Zero initiative to combine efforts from the Texas Department of Transportation, the City of Houston, and Harris County to eliminate traffic fatalities throughout the eight-county region by 2050 *(Appendix E. Houston-Galveston Vision Zero Policy)*

- Harris County is considering the creation of a safe passageway statute through the legislature system to enforce the powers in unincorporated Harris County, as a method to mirror the City of Houston's ordinance

- Harris County is working towards developing design standards and guidelines for multi modal thoroughfare plans and traffic calming measures

- Harris County is requiring an audible pedestrian pushbutton in addition to the countdown pedestrian signal head for all design projects

Harris County will measure progress towards achieving zero traffic fatalities and severe injuries through periodic reporting of crash data related to benchmarks identified in the Vision Zero Action Plan. This will include updating and evaluating crash data for vehicles, bicyclists, and pedestrians; and comparing to the baseline data established in the Action Plan, particularly for roadway segments where safety improvement projects have been completed.

Vision Zero Implementation Committee

These implementation measures are just the beginning. An Implementation Committee will be created to make this initiative part of the daily operations of the Harris County organization by categorizing the Action Plan items in immediate, medium-term, and long-term increments and priorities up to 2030. The Implementation Committee can help accomplish actions such as:

- Providing oversight of the implementation of Vision Zero safety projects

- Communicate key messaging about safety in the region

- Update design guidelines, standards, and specifications

- Incorporate roadway safety elements in existing and upcoming plans, such as the Harris County Transportation Plan, Harris County Multimodal Thoroughfare Plan, Harris County Equity in Transportation Plan

The committee will consist of no more than 12 key stakeholders including Harris County Staff that specialize in their Vision Zero area of focus. For example, the Harris County Engineering Department would oversee the implementation of the engineering action items while the Harris County Sheriff's Office would focus mainly on the enforcement portion of the action items. Other members of the committee could include the Texas Department of Transportation (TxDOT), the Metropolitan Transit Authority of Harris County (METRO), Harris County Communications and Media Relations. While these action items will all have specific champions leading the implementation, some items may take more than one team to achieve success.

As champions and leaders are being assigned for each action item, it will be their responsibility to maintain accountability on their portion of the project. Leaders should ensure that strategies are being properly implemented, progress is being evaluated, goals periodically reassessed, and transparency upheld throughout. The implementation committee will also need to decide what success looks like for each action item. Success may look different for each one of the action items, but all should include a realistic timeframe to expect implementation as well as methods to measure how well the implementation is going.

References

TxDOT Crash Records Information System, Fatal and Incapacitating Injuries, 2014-2018

Best Practices Review:
Atlanta Vision Zero: Transportation Safety
Chicago Vision Zero
New York
Philadelphia
Portland, Oregon
San Francisco

Appendix A. Vision Zero Court Letter

21.b.5

Harris County Precinct One

PRECINCT ONE

xc: Brandon Dudley

RODNEY ELLIS
COMMISSIONER

AGENDA ITEM

October 8, 2019

Vote of the Court:

	Yes	No	Abstain
Judge Hidalgo	☑	☐	☐
Comm. Ellis	☑	☐	☐
Comm. A. Garcia	☑	☐	☐
~~Comm. Radack~~	☐	☐	☐
~~Comm. Cagle~~	☐	☐	☐

County Judge Lina Hidalgo
Members of Commissioners Court

RE: Request for consideration and approval of the creation of a Vision Zero Working Group

Dear Judge Hidalgo and Commissioners Cagle, Garcia, and Radack:

Precinct One respectfully requests consideration of and approval to create a Vision Zero Working Group to support the County in creating a strategy to eliminate traffic fatalities and injuries, and ensure safe, healthy, equitable mobility for all residents.

Precinct One proposes that the Vision Zero Working Group be comprised of representatives from each member of Commissioners Court, and that it be coordinated by a representative of the Engineering Department. The Group will be tasked with creating a Vision Zero Executive Committee comprised of necessary stakeholders and experts to guide the process of developing, implementing, and maintaining a Harris County Vision Zero Action Plan, which can be incorporated into the ongoing development of the County Transportation Plan (CTP).

On May 14, 2019, Commissioners Court authorized the Engineering Department to engage Gradient Group, LLC in the development of a Countywide Pedestrian and Bicycle Safety Study – Phase I, which includes primary components of a Vision Zero Action Plan. It is further proposed to engage Gradient Group, LLC to continue their ongoing engineering services contract, and assist in the development of a Vision Zero Action Plan for Harris County.

The Vision Zero Working Group should report back to this Court in 90 days with initial recommendations.

Thank you for your consideration.

Sincerely,

Commissioner Rodney Ellis

RE: HJC

xc: Brandon Dudley

Presented to Commissioners Court
OCT 08 2019
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Recorded Vol___Page___

19 OCT -1 PM 4:03

1001 Preston Avenue, Suite 950 • Houston, Texas 77002 • (713) 274-1000
El Rio Service Center • 7901 El Rio Street • Houston, Texas 77054 • (713) 991-6881

Appendix B. Vision Zero Resolution

Harris County Precinct One

RODNEY ELLIS
Commissioner

	YES	NO	ABSTAIN
Judge Lina Hidalgo	☑	☐	☐
Comm. Rodney Ellis	☑	☐	☐
Comm. Adrian Garcia	☑	☐	☐
Comm. Steve Radack	☑	☐	☐
Comm. R. Jack Cagle	☐	☑	☐

SUPPLMENTAL AGENDA ITEM

August 11, 2020

County Judge Lina Hidalgo
Members of Commissioners Court

RE: Request for discussion and approval of a resolution regarding the official public launch of the Harris County Vision Zero Initiative by the Harris County Engineering Department.

Dear Judge Hidalgo and Commissioners Cagle, Garcia, and Radack:

Precinct One respectfully requests discussion and approval of a resolution regarding the official public launch of the Harris County Vision Zero Initiative by the Harris County Engineering Department. This initiative is a major component of the Harris County Transportation Plan and focuses on achieving zero traffic fatalities and severe injuries in our region by 2030.

Thank you for your consideration.

Sincerely,

Commissioner Rodney Ellis

RE: HC

xc: Brandon Dudley

Presented to Commissioners Court

August 11, 2020

Approve: E/G

Recorded Vol 321 Page 245-246

STATE OF TEXAS · HARRIS COUNTY
PRECINCT ONE

Resolution

A **RESOLUTION** on the Official Public Launch of the Harris County Vision Zero Initiative

WHEREAS: Vision Zero is a nationwide initiative to reach zero traffic deaths or severe injuries, committing to a fundamental shift in how communities approach traffic safety; and

WHEREAS: This approach acknowledges that safe mobility depends on a variety of factors including but not limited to roadway design, speeds, behaviors, technology, and policies; and

WHEREAS: Roadway accidents cause numerous fatalities and serious injuries of people driving, biking, and walking every year in the Houston and Harris County region; and

WHEREAS: Harris County Vision Zero will be an integrated part of future transportation plans and projects to reach the overarching goal of zero traffic fatalities and severe injuries in Harris County by the year 2030; and

WHEREAS: Harris County and the City of Houston have each engaged in separate yet collaborative Vision Zero efforts to ensure all residents are taken into account in the future of regional roadway safety; and

WHEREAS: Harris County and the City of Houston are each implementing large-scale, coordinated, evergreen awareness and engagement campaigns; and

WHEREAS: Harris County has spearheaded local efforts by leading a diverse team of stakeholders with equity and transparency as guiding principles in their approach to the Vision Zero Initiative; and

WHEREAS: These efforts followed the Harris County approved October 8, 2019 item requesting the creation of a Vision Zero Working Group to support the county in creating a strategy to eliminate traffic fatalities and injuries, and ensure safe, healthy, equitable mobility for all residents; and

BE IT RESOLVED that Harris County Commissioner's Court recognizes this as the official public launch of the Vision Zero Initiative following months of committee and stakeholder coordination and data analysis to create high injury network maps for all of Harris County; and

BE IT FURTHER RESOLVED that the Harris County Engineering Department continue their efforts through the use of virtual public engagement meetings beginning September 2nd 2020 as part of their Harris County Transportation Plan series; and

BE IT FURTHER RESOLVED that the Harris County Engineering Department continue to provide transparency and provide additional avenues for community engagement via the Harris County Vision Zero website at https://www.eng.hctx.net/Vision-Zero that allows for public education and project input pertaining to Harris County's Vision Zero efforts; and

BE IT FURTHER RESOLVED that Harris County Commissioners Court encourages residents of Harris County to visit the Harris County Vision Zero website and take the pledge for safer roads for all roadway users, including motorists, bicyclists, and pedestrians.

It is hereby **ORDERED** that this Resolution be spread upon the minutes of Commissioners Court this 11th day of August, 2020.

LINA HIDALGO, County Judge

RODNEY ELLIS, Commissioner
Precinct One

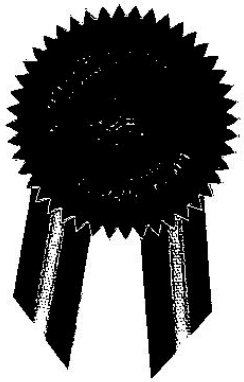
ADRIAN GARCIA, Commissioner
Precinct Two

STEVE RADACK, Commissioner
Precinct Three

R. JACK CAGLE, Commissioner
Precinct Four

ATTEST:

Christopher G. Hollins.County Clerk
Harris County, Texas



Appendix C. Local Safety Initiatives

The table below summarizes recent and current safety initiatives conducted by local governments and advocacy groups, including Harris County Departments and Precincts, local cities in Harris County, the Metropolitan Transit Authority of Harris County (METRO), the Texas Department of Transportation (TxDOT), the Houston-Galveston Area Council (H-GAC), and LINK Houston.

Organization	Safety Initiatives	Link
Harris County Judge's Office	The Harris County Judge's Office "is reimagining what it means to oversee roads and bridges by looking beyond fixing potholes to the future of green, comprehensive, and equitable transportation infrastructure" Key accomplishments for the Office include expanding Tow and Go across Harris County, performing the first- ever countywide mobility needs assessment, and reforming the allocation of county transportation dollars.	https://cjo.harriscountytx.gov/Transportation-Infrastructure
Texas Department of Transportation End the Streak Campaign	#EndTheStreakTX is a social media movement aiming to end the 20-year streak of daily deaths in the state of Texas. In 2019, the Texas Transportation Commission adopted a new goal of cutting the total number of roadway deaths by 2035 and eliminating deaths by 2050.	https://www.txdot.gov/inside-txdot/media-center/psas/end-streak.html
Metropolitan Transit Authority of Harris County (METRO)	Bus operators at METRO go through an annual defensive driving training course based on the Smith System's Guidelines. METRO is also working towards the same Smith Style training for all of their non-bus operators. A task force has also been assembled to target accident reduction associated with their fleet.	https://www.ridemetro.org/Pages/index.aspx
Farm&City: Vision Zero Texas	On November 17, 2019, on the World Day of Remembrance for the Victims of Traffic Violence, Farm&City launched Every City, Every County, Every Life campaign. "Every city, county, metropolitan planning organization, and transportation agency in Texas needs to adopt responsible goals and action plans to end traffic deaths and serious injuries."	https://www.farmandcity.org/sample-page/vision-zero-texas/

Organization	Safety Initiative	Link
City of Houston Vision Zero Initiative	In August 2019, the City's mayor signed an executive order to adopt Vision Zero Houston. An executive committee to include leaders from city departments, the Counties, METRO, and TxDOT will be formed and charged with the development of a Vision Zero Action Plan by Fall 2020. The City is also conducting road safety audits to identify and fix some of the most dangerous intersections in Houston, the construction of high comfort bike lanes to provide a safer way to travel by bike, and a new Safer Streets Initiative that will provide a coordinator whose sole job is to make city streets safer.	http://www.houstontx.gov/visionzero/index.html
City of Houston: Houston Tomorrow	The vision for Houston Tomorrow is for Houston to be home to the healthiest, happiest, most prosperous people in the United States by Houston's 200th birthday. Houston Tomorrow is working towards finding meaningful ways to reduce traffic deaths and injuries.	http://www.houstontomorrow.org/initiatives/story/vision-zero-for-houston-report-released/
LINK Houston Safer Streets: Prioritizing Intersections for Improvements	Study to identify and assess 10 most dangerous intersections for people walking or biking in Houston. Includes interactive maps, identification of top 10 priority intersections for improvement (weighted crash impacts by severity), conducting road safety audits for these locations, and making recommendations for infrastructure, enforcement, and education improvements. Top 10 intersections include: 1. Fannin & Pierce 2. Ranchester & Bellaire 3. Westheimer & S. Dairy Ashford 4. Long Point & Gessner 5. Westpark Dr & US 59 South 6. Old Spanish Trail & 288 South 7. Fondren & West Bellfort 8. Bissonnet & Wilcrest 9. West & Airline 10. Bellaire & S. Gessner	https://linkhouston.org/reports-briefings/ped-bike-safety-in-houston-2016-2017/ https://linkhouston.org/reports-briefings/safer-streets-prioritizing-intersections/

Organization	Safety Initiative	Link
Bike Houston	The goals of Bike Houston align with those of Vision Zero. Their vision is to be a safer, more accessible, gold level bike-friendly city by 2027. The Houston Bike Plan was adopted by City Council on March 22, 2017 and focuses on, improving safety, increasing access and ridership, and developing and maintaining facilities.	http://houstonbikeplan.org/
The Kinder Institute for Urban Research	This think and do tank located at Rice University is focusing on urban issues in Houston and around the world. The institute performs research and analysis to serve as a tool for leaders and lawmakers to make informed decisions on critical urban issues.	The Kinder Institute for Urban Research | (rice.edu)
Houston-Galveston Area Council	The Houston- Galveston Area Council has implemented many safety programs and initiatives through their allocation of funding. The MPO adopted a new Regional Safety Plan in August of 2018. Many of these programs aim at eliminating roadway deaths which aligns with the goals of Vision Zero.	http://www.h-gac.com/home/default.aspx

H-GAC Safety Programs (2018 Regional Safety Plan)

The Houston- Galveston Area Council (H-GAC) developed and implemented a Regional Safety Plan (RSP) in 2018 that uses a data- driven approach to outline goals that are both measurable and attainable for the MPO. The RSP identifies multiple factors (location of crashes, demographics of individuals involved, most frequent crash types, etc.) to tell the story of what is driving the dangerous spike in vehicular accidents and fatalities. H-GAC is a part of a motley of safety programs aimed to address specific issues throughout the region, and these programs have made and will continue to make a positive impact on the goal set by Vision Zero. The tasks outlined in the RSP are outlined in detail below:

DWI/DUI Task Force As discussed in the RSP, this region of Texas leads the state in fatalities and injuries regarding alcohol related crashes. The goals of the DWI/ DUI Task Force are to increase enforcement throughout the Houston- Galveston region while also decreasing the overall number of alcohol related fatalities, injuries, and crashes. A secondary goal of the task force is to increase public awareness on the principle that driving intoxicated is unacceptable. H-GAC is working alongside TxDOT to allow officers from smaller agencies to participate in enforcement and reducing crashes. The 12 agencies that make up the task force are:

- Fort Bend County Constables Precinct 4
- Fort Bend County Sheriff's Office
- Galveston County Sheriff's Office
- City of Kemah Police Department

- City of La Porte Police Department
- City of Magnolia Police Department
- Montgomery County Constables Precinct 4
- City of Pearland Police Department
- City of Rosenberg Police Department
- City of Splendora Police Department
- City of Sugar Land Police Department
- City of Willis Police Department

H-GAC acts as the grant administrator for this task force and is responsible for much of the back-end work that makes the task force run. This allows these agencies to spend the majority of their focus on enforcement and crash reduction.

Teens in the Driver Seat Program Throughout the United States, the leading cause of death for teen drivers is motor vehicle crashes. In the Houston- Galveston region, teens make up about seven percent of the driving population but account for 18% of all motor vehicle crashes. The Teens in the Driver Seat Program was created in 2002 by Esperanza Hope Andrade and the Texas Transportation Institute and the H-GAC began working closely with them in 2010. The program takes a peer-based approach to reach out to young drivers and educate them on the importance of safe driving practices.

Regional Incident Management H-GAC, along with other regional partners, has worked on a Traffic Management Enhancement Program to help reduce congestion and crashes resulting from disabled commercial and personal vehicles. This program has four features that actively help it manage the region and consist of:

- Motorist Assistance Program

  The MAP was started in 1986 as a no cost service to assist in the removal of stalled vehicles and crashes. The program consists of one sergeant, one clerk, and eighteen patrol deputies and they provide traffic control support to increase public safety while decreasing traffic disruption associated with the removal of these vehicles.

- Freeway Surveillance

  The Harris County Sheriff's Office utilizes Houston TranStar to manage the freeway system and monitor multiple freeways in a cost-effective manner. Law enforcement and dispatch personnel are stationed at Houston TranStar and are readily available to provide and dispatch services. These personnel, while primarily focused on providing assistance to traffic incidents, are able to monitor and respond to natural disasters and terrorist acts.

- Tow and Go Program

  In order to reduce the congestion and accidents caused by stalled and disabled vehicles, the Tow and Go program partners with towing operators and reimburses them for responding to incidents and quickly removing them (vehicles not involved in crashes) from the area. This program subsidizes tows from all lanes rather than just from the freeway shoulder.

- Quick Clearance Outreach Campaign

  The Quick Clearance Outreach Campaign is designed to educate the driving public about which services are no-cost through the program and which services will result in a fee for the driver as well as how to receive the assistance if need be. The campaign also explains how participating tow operators are working with law enforcement to ensure the public's safety and provide these services.

Traffic Incident Management Training TIM training provides monthly incident management training opportunities for first responders and tow operators throughout the Houston- Galveston region. All responder disciplines are trained together during their sessions and work towards the National Unified Goal for TIM. The National Unified Goal is focused on Responder Safety; Safe, Quick Clearance; and Prompt, Reliable, Interoperable Incident Communications. This training has changed TIM on a national scale by bringing together a national curriculum in a standardized training format.

Child Safety Outreach Activities In an effort to expand awareness on crashes involving children and improper child restraint installation, H-GAC partnered with Texas Children's Hospital Center for Childhood Injury Prevention and its Safe Kids Coalition. The partnership allowed for additional training of child seat installation technicians, expanded bicycle safety education, the supplying of bicycle helmets to lower income recipients of new bicycles through the B-Cycle program.

No Zone Safety Campaign The "No Zone" Safety Campaign is designed by the Federal Motor Carrier Safety Administration to educate motorists about how to safely share the road with commercial trucks and buses. Commercial vehicle crashes only account for about 5% of regional crashes but pose a logistical nightmare when it comes to mobility and public safety. The campaign's goal is to educate drivers about the dangers of driving in blind spots of commercial vehicles and buses and to ultimately reduce the number of accidents and deaths associated with these crashes.

Appendix D. Vision Zero Crash Data Methodology

The Vision Zero Crash Dataset and High Injury Network for Harris County was developed jointly with the City of Houston's Vision Zero Data Team to provide a common High Injury Network for the region. As such, the dataset and network encompass Harris, Montgomery, and Fort Bend counties since the Houston city limits extend into all three counties.

Data Collection

A 5-Year dataset from the Texas Department of Transportation (TxDOT) Crash Records Information System (CRIS) was sourced for the Vision Zero dataset. Crash data for Harris, Montgomery, and Fort Bend Counties was obtained for years 2014, 2015, 2016, 2017, and 2018.

The crash data in CRIS is comprised of eight database tables: Crash, Unit, Primary Person, Person, Damages, Endorsement, Restrictions, and Charges. These database tables contain data from the reported CR-3 crash forms, interpreted data fields, system generated fields, and appended data fields. The Vision Zero analysis was conducted using the Crash (data about the crash itself), Unit (data about the vehicles involved, including contributing factors), and Primary Person (data for each driver or primary person involved in the crash) database tables.

Data Reduction

The Vision Zero dataset focuses on the following crashes:

- Vehicular crashes: The analysis for these crashes includes all single or multiple vehicle crashes that resulted in a fatality or incapacitating injury.
- Pedestrian and bicycle crashes: The analysis for these crashes included pedestrian or bicycle crashes that resulted in a fatality or incapacitating injury to the pedestrian or bicyclist.

These crashes were identified through a data reduction process using Microsoft Access as described below.

Fatality and Serious Injury Crashes

Crashes that resulted in a fatality or serious injury were identified using the overall crash severity field in the Crash database table:

- Fatality crashes were determined if the Crash Severity is a fatality (Crash_Sev_ID=4 in the Crash database table).
- Serious injury crashes were determined if the Crash Severity is an incapacitating injury (Crash_Sev_ID=1 in the Crash database table).

Crashes that resulted in less serious injuries were removed from the Vision Zero dataset.

Pedestrian and Bicycle Crashes

Crashes involving people walking or biking are identified using specific CRIS data fields in the Crash and Primary Person database tables. These definitions are consistent with the Texas Strategic Highway Safety Plan.

- A pedestrian crash is defined as a crash involving at least one pedestrian and one motor vehicle. These crashes were determined if the First Harmful Event is pedestrian (Harm_Evnt_ID = 1 in the Crash database table) OR if the Person Type is pedestrian (Prsn_Type_ID = 4 in the Primary Person database table).

- A bicycle crash is defined as a crash involving at least one bicycle and one motor vehicle. These crashes were determined if the First Harmful Event is pedalcyclist (Harm_Evnt_ID = 5 in the Crash database table) OR if the Person Type is pedalcyclist (Prsn_Type_ID = 3 in the Primary Person database table).

Since pedestrian and bicycle crashes are determined based on data contained in both the Crash and Primary Person database tables, the Query function in Access was used to link these tables together based on the common Crash ID. Access' Expression Builder function was used to count the number of pedestrians and bicyclists involved in each crash based on whether the appropriate data fields in the Crash and Primary Person database tables met the criteria above. A value greater than zero indicates pedestrian or bicyclist involved crashes.

Injury severity is defined based on injury to the pedestrian or bicyclist, not the overall crash severity and not total number of fatalities or serious injuries in each crash. Often the pedestrian does sustain the most severe injury, but not always. Access' Expression Builder function was used to count the number of fatalities and serious injuries to the pedestrian(s) or bicyclist(s) involved in each crash. This is based on values in the Primary Person database table:

- A fatality is counted if the Person Type is pedestrian or pedalcylist (Prsn_Type_ID=3 or 4) and the Person Injury Severity is a fatality (Prsn_Inj_Sev_ID=4).

- A serious injury is counted if the Person Type is pedestrian or pedalcylist (Prsn_Type_ID=3 or 4) and the Person Injury Severity is an incapacitating injury (Prsn_Inj_Sev_ID=1).

High Injury Network

The Vision Zero crash dataset was imported into ArcGIS to support the identification of a high injury network.

Assign Coordinates for Crash Records

Three sources of information from the TxDOT CRIS dataset were used to assign geographic coordinates and map the crash records:

1. Latitude and longitude fields (roadway centerline coordinates assigned by TxDOT)

2. For crashes without valid coordinates, the location was geocoded based on the Rpt_block_num and Rpt_Street_Name fields.

3. For crashes that occurred on frontage roads (Road_Prt_ID =2 in the Crash database table), the Report latitude and longitudewas used as reported by officials at the scene of the crash, since it is more accurate for depicting frontage road crash locations than the roadway centerline coordinates (per Houston-Galveston Area Council).

Remove Freeway Crashes

Although freeway crashes constitute a significant portion of fatalities and serious injuries in the region, they were excluded from the high injury network (but retained in the Vision Zero dataset and trend analysis) so that Harris County and City of Houston staff can prioritize where improvements will have the biggest impact on roadways under local agency jurisdiction. Frontage road crashes were retained in the high injury network since some are under Harris County's maintenance jurisdiction.

Crash records were queried based on several attributes to only select surface-level crashes on the road network. Using ArcGIS, the following steps were applied to isolate crashes occurring on freeways and other limited access facilities (and subsequently exclude them from the high injury network):

1. Freeway and limited access facility crashes were identified if the roadway functional classification is an Interstate, U.S. or State Highway, or tollway (Road_Cls_ID = 1, 2, or 6 in the Crash database table)

2. Selection crashes were removed that occurred on frontage roads (Road_Prt_Adj_ID = 2 or 7) to only include crashes on main lanes, entrance or exit ramps, or connectors/flyovers (Road_Prt_Adj_ID = 1, 3, 4, or 5 in the Crash database table).

3. The Street_Name field was used in the Crash database table to remove from selection crashes on certain roads that were incorrectly identified in the previous steps. These include SS0261, SH0035, SH0003, SH0006, SH 6, SH0242, BF1960A, BS0146E, BS0146D, BS0249B, BU0090U, BU0290H, BU0059L, NASA PKWY, NASA PARKWAY, and SHNASA. Crashes were also removed where Street_Name contains the text 'FM'.

4. A subset of the road network was examined to remove from selection crashes on segments of freeways that have surface-level sections, such as the Tomball Highway portion of SH 249 and the Old Spanish Trail section of U.S. 90 Alternate. Crash records were removed within 20 feet from the current selection by location (based on "Street_Name" = MAIN ST, OLD SPANISH TRL, S WAYSIDE DR, TOMBALL PKWY, or W MOUNT HOUSTON RD.

All crashes identified through these query steps were excluded from the High Injury Network.

Assign Crashes to Roadway Segments

The Houston-Galveston Area Council's Southeast Texas Addressing and Referencing Map (STAR*Map) was used as the basis for development of the High Injury Network. Using ArcGIS, the roadway network was split into half-mile segments, and each street segment was assigned a unique ID.

Crashes included in the High Injury Network (VZ_ReportableFl = "Y") were then spatially joined to the half-mile segmented road network to determine the roadway segment where crashes occurred. Since many crashes are geolocated to the roadway centerline, a 50-foot buffer radius was used to assign crashes to individual roadway segments. This buffer radius helped

identify crashes near intersections by identifying both intersecting corridors.

It should be noted that this method may duplicate crashes located near segmentation changes. Removing duplication in these areas would require a special tool to look up the street name of the joined unique ID number of the roads joined by this tool. If the street names of both ID's are identical, the tool could identify the nearest road segment to the point and only include that one. As of now, there is no such tool.

Calculate Crash Rates for Roadway Segments

As part of the Vision Zero initiative, crashes that resulted in either a fatality or serious injury were specifically accessed, with special emphasis on crashes that involved either a pedestrian or bicyclist fatality or serious injury. To calculate the frequency of crashes for these travel modes, the number of crashes by mode occurring on each roadway segment was counted first:

- Total crashes: Total number of fatality or serious injury crashes.
- Vehicular crashes: Total number of vehicular fatality or serious injury crashes, calculated as the total crashes minus pedestrian and bicycle crashes.
- Pedestrian crashes: Total number of pedestrian fatality or serious injury crashes based on the pedestrian crash flag assigned during the data reduction process.
- Bicycle crashes: Total number of bicyclist fatality or serious injury crashes based on the bicycle crash flag assigned during the data reduction process.

The crash counts were then normalized by segment length (in miles) to calculate a "crash rate" to reflect density of crashes by mode on each roadway segment. All corridors less than ¼ mile in length were removed from consideration in the High Injury Network to avoid having the crash rates skewed too much by the corridor's length.

Determine High Injury Network Criteria

The High Injury Network will include a composite map of the top crash segments for driving, bicycling, and walking. The following criteria were applied to select roadway segments for inclusion in the High Injury Network:

- Ranked the roadway segments in descending order by their crash rate.
- Established a target of at least 60 percent of fatal and serious injury crashes. This target was mutually established based on coordination between the Harris County and City of Houston's Vision Zero data teams. The goal was to strike a balance between the inclusion of as many fatal and serious injury crashes and as few streets as possible. This will allow for a more focused approach impacting the most problematic and severe crash areas.
- In accordance with the HIN target, selected the top 60th percentile of all fatal and serious injury crashes based on the cumulative total of fatal and serious injury crashes. This equates to the following crash rates by mode:
    - "TotalCrash" ≥ 3.5 for the total HIN
    - "VehicleCrashRate" ≥ 2.5 for the vehicle mode
    - "PedCrashRate" ≥ 2 for pedestrian mode
    - "BikeCrashRate" ≥ 2 for bicycle mode

Crash Trend Analysis

Listed in the tables below are the types of common crashes as well as the high-risk conditions studied during the crash trend analysis. They are separated by crash type and include the definition as well as the CRIS data codes found in the police report data.

Common Crash Types

Crash Type	Definition	CRIS Data Codes
Single Vehicle / Run off the Road / Hit Fixed Object	A single vehicle crash where the impact of the first harmful event occurred on the shoulder, beyond the shoulder or in the median of the roadway and which resulted in hitting a fixed object.	ROAD_RELAT_ID Values = 2 – Off Roadway, or 3 – Shoulder, or 4 – Median, AND COLLSN_ID = 1 – One Motor Vehicle (OMV) Vehicle Going Straight, or 2 – OMV Vehicle Turning Right, or 3 – OMV Vehicle Turning Left, or 4 – OMV Vehicle Backing, or 5 – OMV Other, AND HARM_EVNT_ID = 7 – Fixed Object
Single Vehicle / Run off the Road / Overturned	A single vehicle crash where the impact of the first harmful event occurred on the shoulder, beyond the shoulder or in the median of the roadway and which resulted in the vehicle overturning.	ROAD_RELAT_ID Values = 2 – Off Roadway, or 3 – Shoulder, or 4 – Median, AND COLLSN_ID = 1 – One Motor Vehicle (OMV) Vehicle Going Straight, or 2 – OMV Vehicle Turning Right, or 3 – OMV Vehicle Turning Left, or 4 – OMV Vehicle Backing, or 5 – OMV Other, AND HARM_EVNT_ID = 10 – Overturned
Vehicle Angle / Intersection Crash	A multi-vehicle accident occurring at an intersection when vehicles driving on perpendicular roads collide.	COLLSN_ID = 10 – Angle – Both Going Straight 11 – Angle – One Straight – One Backing 12 – Angle – One Straight – One Stopped 13 – Angle – One Straight – One Right Turn 14 – Angle – One Straight – One Left Turn 15 – Angle – Both Right Turn 16 – Angle – One Right Turn – One Left Turn 17 – Angle – One Right Turn – One Stopped 18 – Angle – Both Left Turn 19 – Angle – One Left Turn – One Stopped

Crash Type	Definition	CRIS Data Codes
Vehicle Rear End Crash	A multi-vehicle crash that occurs when one vehicle crashes into the one in front of it.	COLLSN_ID = 20 – Same Direction – Both Going Straight – Rear End 22 – Same Direction – One Straight – One Stopped 23 – Same Direction – One Straight – One Right Turn 24 – Same Direction – One Straight – One Left Turn

High Risk Conditions

Crash Type	Definition	CRIS Data Codes
Speeding	A crash in which at least one driver was speeding above the limit, driving at an unsafe speed, or failed to control their speed.	CONTRIB_FACTR_ID = 22 – Failed to Control Speed 60 – Speeding - Unsafe (Under Limit), or 61 – Speeding - (Over Limit), or 73 – Road Rage
Distracted Driving	A crash in which at least one driver was distracted, inattentive, or using a cell phone.	CONTRIB_FACTR_ID = 19 – Distraction in Vehicle 20 – Driver Inattention 72 – Cell/Mobile Phone Use 75 – Cell/Mobile Device Use 76 – Cell/Mobile Device Use - Texting 77 – Cell/Mobile Device Use - Other 78 – Cell/Mobile Device Use - Unknown
Weather	A crash in which the weather condition was reported as rain, sleet/hail, snow, fog, blowing sand/snow, or severe crosswinds.	WTHR_COND_ID = 2 – Rain 3 – Sleet/Hail 4 – Snow 5 – Fog 6 – Blowing Sand/Snow 7 – Severe Crosswinds
Poor Lighting	A crash in which the lighting condition was reported as dawn, dark not lighted, dusk, or dark unknown lighting.	LIGHT_COND_ID = 2 – Dawn 3 – Dark, Not Lighted 5 – Dusk 6 – Dark, Unknown Lighting
Driving Under the Influence (DUI) of Alcohol or Drugs	A crash involving at least one driver under the influence of alcohol or other drug.	CONTRIB_FACTR_ID = 45 – Had Been Drinking, or 62 – Taking Medication 67 – Under Influence – Alcohol, or 68 – Under Influence – Drug
Not Wearing Seatbelt	An incapacitating injury or death to a vehicle driver or occupant (where restraint usage is known and applicable), involved in any crash, who was not restrained.	PRSN_TYPE_ID = 1 – Driver, or 2 – Passenger/Occupant, AND REST_ID = 8 – None
Pedestrian Failed to Yield ROW	A crash involving at least one pedestrian who failed to yield right of way to a vehicle.	PRSN_TYPE_ID = 4 – Pedestrian, AND CONTRIB_FACTR_ID = 59 – Pedestrian Failed to Yield ROW to Vehicle

Appendix E. Vision Zero Online Contributor Comments

Number	Address	Your Comment
1	Sweetwater Lane, Houston, Texas 77037, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-22946	I want to bike to work but unless im taking the lane, im not feeling as safe since i have noticed a few aggressive drivers here and it is very poorly light that if i get hit, im afraid noone will see the vehicle that hits me.
2	13706 Tomball Parkway, Houston, Texas 77086, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-22969	No sidewalks...poor ada ramps...too wide...in accessible bus stops
3	6111 Bourgeois Road, Houston, Texas 77066, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-23008	no street lights - very dark skinny street
4	14155 Bammel North Houston Road, Houston, Texas 77014, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-23020	Blind on Bammel North Houston Road when stopped eastbound on Torrey Chase
5	5822 Cypress Creek Parkway, Houston, Texas 77069, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-23050	There are signs, cars, and frequently tires placed in such a manner that southbound traffic is obscured on Cypress Creek from Paradise Valley. There is already a light at the intersection, which is ignored regularly. Making this intersection safer is simple and inexpensive, only requiring the property owner to move the items, and keep the line of vision clear of obstacles.

Number	Address	Your Comment
6	16526 Ella Boulevard, Houston, Texas 77090, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-23432	There are multiple schools, neighborhoods, churches along Ella but there is a lack of walk friendly infrastructure. There should be signage, crosswalks, islands to help make it safer for the kids and community.
7	15603 Kuykendahl Road, Houston, Texas 77090, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-23433	There needs to be better signage or multiple lanes for those getting off Kuykendahl to Cypress Creek Parkway. People get confused as to which lane to be in and the one lane that takes you to Cypress Creek Parkway gets backed up.
8	Fallbrook Drive, Houston, Texas 77038, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-25984	I lost two family members due to the driver of the other vehicle speeding and have seen so many car accidents and fatalities due to wreckles driving.
9	Gummert Road, Houston, Texas 77084, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-26001	No traffic light. People making left turns to cross always block middle of the road. There's at least 1 or 2 accidents a week
10	18859 Ashley Road, Houston, Texas 77084, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-26368	Drivers speed and ignore signage. Drivers don't yield to pedestrians/bikers in crosswalk. See image of bike/vehicle collision. See schools on map.

Number	Address	Your Comment
11	8918 John Ralston Road, Houston, Texas 77044, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-26923	Need a side walk to Brock Golf Park.
12	9822 Green Valley Lane, Houston, Texas 77064, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-26972	No sidewalk ramp.
13	14647 Gladebrook Drive, Houston, Texas 77068, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-26982	There are two schools in this neighborhood and the kids are forced to walk in the street or in peoples yards, I believe that the amount to traffic from school buses and parents dropping off and picking up their children warrants the addition of sidewalks.
14	8550 Breen Drive, Houston, Texas 77064, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27212	No lighting, deep ditches, heavy mixed traffic, no shoulder or sidewalk.
15	6904 Fairbanks North Houston Road, Houston, Texas 77040, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27214	Shoulders constantly have debris and broken glass, no lighting, curvy road without lighting, sewer grates extend into travel lane, no facilities, high-speed mixed-use traffic

Number	Address	Your Comment
16	6306 Breen Drive, Houston, Texas 77086, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27215	narrow lanes, no shoulders, aggressive animals, no lighting, no refuge
17	16706 Kieth Harrow Boulevard, Houston, Texas 77084, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27272	Added LED pole lights here a few years ago. The white light glare is very bad at night.
18	Morton Road, Houston, Texas 77084, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27290	Glare from excessive and misdirected lighting of gas stations and other businesses at the intersection makes it difficult to see.
19	East Sam Houston Tollway North, Houston, Texas 77049, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27377	There have been several accidents in this area. The traffic signals go out a lot, speeding and failure to obey traffic laws.
20	3403 Theiss Road, Humble, Texas 77338, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27734	Numerous bicyclists, pedestrians, and wheelchair/scooter users cross this intersection, especially in periods of darkness. In addition, the proximity of the Aldine ISD bus barn makes this a dangerous intersection. Turning left from the middle lane of 1960 onto Theiss Rd is difficult and downright dangerous during the bulk of the day. Best solution is a traffic signal combined with pedestrian signals.

Number	Address	Your Comment
21	Antoine Drive, Houston, Texas 77086, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27751	Had 2 incidents in this intersection in a single week, cars do not know how to yield properly ever since they put those new Yield Traffic Lights.
22	Westgreen Boulevard, Cypress, Texas 77433, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27903	no street lights can't see when driving
23	Westgreen Boulevard, Cypress, Texas 77433, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27904	NO SIDE WALKS, theirs a high school and middle school across the street several kids walking to and from...also several people exercising
24	Westgreen Boulevard, Cypress, Texas 77433, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27905	no sidewalks to ride bikes or walk.... no lighting or cross walks for kids to cross to go to school
25	12310 West Lake Houston Parkway, Houston, Texas 77044, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27923	my kids and I fear for our lives when we cross this intersection

Number	Address	Your Comment
26	12310 West Lake Houston Parkway, Houston, Texas 77044, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27924	everyone think that they has the right of way
27	12310 West Lake Houston Parkway, Houston, Texas 77044, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27925	there are no pedestrian crossing areas along this part of the road
28	Lockwood Road, Humble, Texas 77396, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27926	very confusing, no one sees you or your children
29	Woodland Hills Drive, Humble, Texas 77396, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27927	sidewalk is very narrow for the amount of pedestrian traffic
30	12310 West Lake Houston Parkway, Houston, Texas 77044, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27928	children walking from school need to be careful here as there is no pedestrian crossing fro them

Number	Address	Your Comment
31	12310 West Lake Houston Parkway, Houston, Texas 77044, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-27947	dangerous
32	12033 Veterans Memorial Drive, Houston, Texas 77067, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28079	No pedestrian crosswalk. Have witnessed pedestrian struck by vehicle while attempting to cross.
33	Cypress North Houston Road, Cypress, Texas 77433, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28221	Speeding motorists make it unsafe to walk or ride bicycles. Since the road is basically a straight path between Barker Cypress and Fry, and no houses face the road, motorists are speeding excessively including young drivers using it as a drag strip.
34	Katy Fort Bend Road, Katy, Texas 77493, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28222	This street has no sidewalks for people to safely walk
35	Colonial Parkway, Katy, Texas 77493, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28223	There are no sidewalks for people to walk and the cars drive pretty fast

Number	Address	Your Comment
36	15909 Lakeshore Landing Drive, Houston, Texas 77044, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28225	I see people turning left in front of cars going straight here. I've seen many close calls. A protected left turn arrow would help.
37	12710 West Lake Houston Parkway, Houston, Texas 77044, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28282	There are no sidewalks between Hunters Lake and the commercial businesses in Summerwood. This is also a walking and biking route for students of Woodcreek Middle and Summercreek High. When it rains and becomes muddy, Bikers and pedestrians forced into busy West Lake Houston Pkwy to avoid mud.
38	3618 Vineyard Drive, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28412	Non-resident drivers using this Vineyard Drive as shortcut. NOT obeying stop signs or speed limits
39	3647 Vineyard Drive, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28416	Non-resident drivers using this Vineyard Drive as shortcut. NOT obeying stop signs or speed limits
40	3647 Vineyard Drive, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28417	Non-resident drivers using this Vineyard Drive as shortcut. NOT obeying stop signs or speed limits

Number	Address	Your Comment
41	3703 Vineyard Drive, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28426	There is a 3-way STOP at Manfield and Vineyard. When I STOP at this intersection, speeding cars on Vineyard honk and whip AROUND me without even slowing down. This happens going both ways and this is at the amenities area where people are walking, and children are playing. Speedsters disregard school buses with STOP signals that use Vineyard several times a day, morning and afternoon for pickup and drop-off school children of all ages. On the amenities side of the street, the walkway is immediately next to the street. Walkers can "feel" the speeding cars inches next to them, pulled by the draft of the cars.
42	3927 Vineyard Drive, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28557	Residents and non-residents use vineyard drive as a raceway. About 80% fail to stop at the stop signs as if they don't even exist. This happens while Children waiting for the school bus in the morning. They speed down the street at all hrs. My husband had to remove a dead cat from the street in front of our house bc it kept getting ran over. This is a regular occurrence and my concern is that next it will be someone's child. Thank you
43	15915 Wingdale Drive, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28569	Wingdale Dr has become an extreme danger with many cars parked on both sides of the street, leaving a narrow one-lane passage for cars that have to take turns to travel through. Loud, revving engines followed by speeding sounds are heard at night, afternoons and weekends. The street is often used as a mini-drag race strip in spite of the obstacles of parked vehicles. Wingdale is lined with single family homes with small children who play in the front yards. Speedsters step the pedal to the metal completely disregarding the safety of residents and pets or considering property damage.
44	3927 Vineyard Drive, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28570	There is a 3-way Stop at Olive Glen and Vineyard. Cars coming off Westpark use Vineyard as a shortcut when traffic is bottlenecked on the main roads, especially FM1093. Speeding cars race through the stop signs, ignore school buses with flashing lights and Stop Alert signs stopped for students. Cars pick up speed through Vineyard during busy morning and afternoon commutes endangering local community traffic trying to carefully exit residential streets. The Stop sign at Olive

		Glen is a fairly recent installation, but there is no reason for running a RED STOP SIGN anywhere anytime on Vineyard. Speed bumps have limited effectiveness for the true speedsters and can cause costly damage to vehicles, especially to heavily equipped emergency vehicles. Patients being transported are subjected to added pain and discomfort on streets with speed bumps -- a short-sighted solution to contain "outside" speedsters at a great inconvenience and with unreasonable disadvantages to local residents. There is a Senior Assisted Living community on West Park that is adjacent to Wingate residential homes.
45	14943 Gray Ridge Drive, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28616	All along Gray Ridge, there are NO PARKING ANYTIME signs. Huge semis line both sides of the street blocking these signs. They brazenly park right next to the NO PARKING signs leaving barely enough space for one car to pass safely. At the Gray Ridge - Addicks Clodine intersection, cars traveling north turn right only to face steel cliffs of semis on both sides. The entrance to the Clayton Trace subdivision is always blocked and is a grave hazard for school buses picking up and dropping off students. Vehicles, walkers, bike riders, as well as all the apartment residents who walk to the convenience stores nearby are at high risk when crossing the street.

46	*16103 Olive Glen Drive, Houston, Texas 77082, United States* *http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28627*	The stop sign at the intersection of Vineyard and Olive Glen is an anomaly. While drivers approaching the stop sign from south (off Westpark) are likely to stop, drivers coming from the north, who have passed many similar intersections without stop signs, are not expecting a stop sign at this intersection and tend to blow right through it. We need a warning sign for drivers, alerting them to the anomalous stop, or we need a speedbump to slow them down long enough to notice the stop sign. Both solutions would be preferable. Another solution would be to add stop signs to other similar three-way intersections along Vineyard. That would certainly help with the speeding issue as non-residents use Vineyard as a through street to avoid traffic on Westheimer.
47	15255 Gray Ridge Drive, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28628	Local traffic uses Gray Ridge often to get to Home Depot and Walmart. These photos are on a good day, tusually semis line both sides all the way from Addicks Clodine to Green Crest. Notice the NO PARKING ANY TIME signs right next to the trucks. The gray pickup on the 2nd and 3rd shot looks like a casualty of this grossly negligent parking infraction cluster. School buses stop to pick up students several times a day in front of the two heavily populated apartment complexes. Limited space for buses to travel thru makes for risky crossing for children. Baffling how our county authorities find time and effort to track down lost dogs and not take 10 minutes to eliminate basic and blatant driving violations that endanger human lives and property.
48	16003 Ridgegreen Drive, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28629	To many drivers speed well over 45+ mile per hour on the residential neighborhood through street. Is it going to take some child getting killed before something is done?
49	15910 Manfield Drive, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-	This curved section of Manfield is not only visually obstructed, it is blocked on both sides by parked vehicles. Without a doubt, emergency vehicles would, at minimum, be delayed to calls where seconds could make all the difference in someone's life

	zero/maps/vision-zero-map-tool?reporting=true#marker-28631	or lasting health issues.
50	6103 Fry Road, Katy, Texas 77449, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28677	This entire area (529 to I-10 and 99 to 6) needs more sidewalks on major thoroughfares. This area has a plethora of low-income/minority communities. I see people walking often. There are clusters of neighborhoods with no safe way to walk to commercial areas. Fry Road, specifically, is high-speed with no marked crossings.
51	267 New Harmony Trail, Spring, Texas 77389, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28997	Lake Paloma Trail intersects Creekside Green Dr at an odd angle making it difficult for drivers to see cross traffic. Adding stop signs on Creekside Green to make this a four-way stop would greatly increase safety.
52	278 Rockwell Park Boulevard, Spring, Texas 77389, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28998	Median dividing north and south bound Kendrick Pines makes for a confusing intersection. Addition of "cross traffic does not stop" signs at stop signs on Rockwell Park Blvd would provide key information to advise drivers.
53	26400 Kuykendahl Road, Spring, Texas 77389, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-28999	Pedestrian walk signal does not provide "walk" signal in timely fashion. Pedestrians thus ignore the signal and dart across traffic to cross the street. Signal as currently configured is ignored and therefore useless.
54	3415 Wingdale Court, Houston, Texas 77082, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-29259	This very short cul-de-sac (Wingdale Ct) in Forestview 1 ressembles a barricade with work trucks on both sides leaving a tight one-car passage. Parking so close to the corner is a violation that is blindly allowed in subdivisions, even though it is a very real hazard -- prevents a clear view of oncoming traffic and blocks the street entrance. There was a huge house fire on the next cul-de-sac (Cascadia) in 2018 where firetrucks had to maneuver carefully in a tight space. Notice in the 4th photo down that the water hydrant on Wingdale Ct is mid-way down the street next to a mailbox that is in front of a house. Just how

		to reach that hydrant with an entrance that is impassable to regular traffic, much less to heavily equipped firetrucks. Any violation that makes hydrants difficult to access is plainly a negligent oversight for traffic authorities to ignore. Five years ago, there was no problem on this street (last photo at bottom). Clear passage, easy access to fire hydrant. Who/What happened in that period?
55	17655 Seven Pines Drive, Spring, Texas 77379, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-29507	Lots of Traffic as school ends with pick up cars parked, kids walking everywhere
56	3551 North Sam Houston Parkway West, Houston, Texas 77038, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-29518	I have seen/ heard several car wrecks here. Antoine @ Beltway 8.
57	8510 John Ralston Road, Houston, Texas 77044, United States http://www.letstalkhouston.org/vision-zero/maps/vision-zero-map-tool?reporting=true#marker-29794	We have had multiple pedestrian fatalities in the last 3 months alone on this street and in this area in particular. This area does not have street lights to be able to see pedestrians walking or cycling at night.

Appendix F: Action Plan Survey Comments

This appendix includes the raw data received for the survey comments and were not altered in any way; however, this section was formatted for the branding to match the report. On December 17, 2020, an Action Plan Survey was sent to the 53 steering committee members to garner feedback on the areas of importance for each action item categorized under each of the four goals for Vision Zero. On January 8, 2021, feedback was received from approximately 30% of the steering committee members. Using the frequency of the answers received, the key actions committee members wanted to focus on for each goal were able to be narrowed down. The answers below in bold text were used in the formulation of the Vision Zero Action Plan and its subsequent implementation teams.

Q1 What actions do you feel have the greatest impact on promoting a safety culture among partner agencies, the media, and the public? Select your top 4 actions.

Answered: 17 Skipped: 1

ANSWER CHOICES	RESPONSES	NUMBER
Implement a county-wide communications campaign to deliver (regionally consistent) key messaging through audio, television, social media, dynamic message sign messages, and potential giveaways.	82.35%	14
Collaborate with Houston-Galveston Area Council on regional safety campaigns focusing on Impaired Driving, Distracted Driving, and Aggressive Driving.	64.71%	11
Implement communications training for speaking to the public and media about crashes. Create materials and resources in multiple languages.	47.06%	8
Work with law enforcement to advance implementation of a high visibility traffic enforcement campaigns focused on speeding.	47.06%	8
Work with law enforcement to advance implementation of a "Dusk and Darkness" Safety Campaign to protect pedestrians and cyclists, with a day of awareness for Law Enforcement and Public Departments to educate and engage drivers, increase evening and nighttime enforcement, and target ads when daylight savings begins.	41.18%	7
Coordinate community walks, Walk to School events, Bike to Work Week rides, and other events that encourage biking and walking with community partners.	41.18%	7
Work with print, television, and social media leaders to frame traffic crashes as tragic and preventable occurrences when reporting on them.	35.29%	6

Increase distribution of safety equipment including bike lights, helmets, bells, reflectors, safety vests, and safe biking/walking tip cards at Harris County events.	29.41%	5
Identify opportunities to partner with private companies to educate employees on Vision Zero and to take the pledge during safety meetings.	1.76%	2
Total Respondents: 17		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	None of the above are effective tools for the long-term development of a safety culture among potentially collaborative populations. This would be a more appropriate path forward for promoting safety: 1. Detailed analysis on accidents, incidents, and hazard areas that create elevated risk for motorists, bicyclists, and pedestrians - there has already been some of this done, but I am curious if anyone/any group has synthesized all of this data beyond "Houston 10 worst road spots." This analysis cannot be outsourced - this removes the responsibility of Harris County for the maintenance and analysis capability of hazard reporting. 2. Detailed analysis of practices, policies, and laws that are currently on the books or should be on the books to promote safety. Cell phone use in a vehicle is a prime candidate for reanalysis. Also, what policies and practices do businesses and similar organizations have in place to promote safety in these capacities? 3. What is law enforcement's objective with traffic enforcement? Is that clearly defined? Does law enforcement have a messaging strategy for traffic enforcement? 4. Develop a media strategy for messaging what the heck "Vision Zero" means to people and how every person can contribute to a city-wide safety culture. "Reducing fatalities and injuries" is nice but not necessarily palatable to an individual. Needs to be in Spanish, Chinese, Korean, Vietnamese, and maybe a few other languages. 5. Mass transit = only way to mitigate road deaths.	1/5/2021 5:39 PM
2	Enforcement of any means will be a good start.	12/17/2020 11:56 AM

Q2 What actions do you feel have the greatest impact on integrating Vision Zero into existing safety education? Select your top 3 actions.

Answered: 18 Skipped: 0

ANSWER CHOICES	RESPONSES	NUMBER
Work with law enforcement to advance development of safe walking and biking curriculum for elementary school students or when Law Enforcement and Fire visit schools, daycares, or public events.	83.33%	15
Develop new education resources to provide instruction in lawful, responsible behavior among bicyclists, pedestrians, and motorists. Key messaging should include countywide statistics on crashes and the dangerous effects of speeding and impaired/distracted driving/walking/biking.	77.78%	14
Collaborate with H-GAC to establish Teens in the Driver Seat Programs at schools in or near high frequency crash locations and zip codes with the highest number of drivers involved in impaired driving and distracted driving crashes.	66.67%	12
Develop educational materials (brochures, one-pagers, PowerPoint, etc.) to be distributed at all Harris County events.	38.89%	7
Encourage and promote national and regional senior driving education programs, such as the "We Need to Talk" program.	27.78%	5
Total Respondents: 18		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	Crash stats should be on a human level (1 crash per hour, etc.)	1/4/2021 3:02 PM

Q3 What actions do you feel have the greatest impact on promoting safety culture among county staff? Select your top 4 actions.

Answered: 18 Skipped: 0

ANSWER CHOICES	RESPONSES	NUMBER
Incorporate Vision Zero education into the County's defensive driving courses and curriculum for all County employees receiving fleet driving permissions.	66.67%	12
Encourage and promote a flexible schedule across all Harris County Departments to reduce the vehicle miles traveled on the roadway network.	55.56%	10
Require County employees to renew defensive driving training every year for commercial drivers and every three years for non-commercial drivers.	50.00%	9
Incorporate "safety talks" into regular meetings among County staff. Topics could include Vision Zero safe driving/walking/biking messaging and lessons learned from HC evaluations of top pedestrian/bicycle/vehicle crash locations.	50.00%	9
Encourage Harris County staff to take the Vision Zero pledge: to stop at all red lights and stop signs, obey the rules of the road when driving, walking and biking, etc., upon onboarding and with the next round of performance evaluations.	44.44%	8
Incorporate Vision Zero messaging into existing media training for staff.	38.89%	7
Total Respondents: 18		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	1. Flexible work arrangements to minimize road travel. 2. Training for leadership on best safety practices - for example, safety huddles and/or periodic safety meetings - to manage staffs. 3. Repeated employee training on safe practices and operations integrity.	1/5/2021 5:39 PM

Q4 What actions do you feel have the greatest impact on strengthening safety enforcement? Select your 3 top actions.

Answered: 17 Skipped: 1

ANSWER CHOICES	RESPONSES	NUMBER
Encourage law enforcement to increase focus on vehicle violations that are hazardous to bicyclists and pedestrians, such as parking in bike lanes, improper turns, signal violations, not stopping behind the stop bar, not following the Safe Passing ordinance, and phoning/texting while driving.	88.24%	15
Support law enforcement efforts to apply for Selective Traffic Enforcement Program (STEP) grant funding to allow them to focus additional efforts on enforcement of speeding, seat belt usage, and distracted driving laws at the precinct level.	70.59%	12
Support law enforcement efforts to use crash data to identify relevant geographic and demographic information about pedestrian crashes and carry over into enforcement activities. Install High Injury Network on police officers' electronic device(s) to have data for enforcement locations or knowing high injury areas when arriving on scene of crash or citation.	64.71%	11
Support law enforcement efforts to purchase advanced speed detection equipment (LIDAR guns), upgrade speed detection technology available to precincts, and train additional personnel.	47.06%	8
Total Respondents: 17		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	I think it's critical that any recommendations for law enforcement are viewed through not only a safety lens but also an equity lens. Safety is critical but would hate for encouraging enforcement that can lead to disparaging results as traffic violations disproportionally impact minorities and people of color. We all speed. We shouldn't. But we do. But much data indicates those that are actually found in violation to not demographically represent the larger geographical area, indicating biases in enforcement.	1/8/2021 5:08 PM
2	Does law enforcement have/want to enforce safety?	1/5/2021 5:39 PM
3	Violations program should start with a warning period of at least one year	1/4/2021 3:02 PM

Q5 What actions do you feel have the greatest impact on local and statewide legislative efforts? Select your top 3 actions.

Answered: 18 Skipped: 0

ANSWER CHOICES	RESPONSES	
Support statewide efforts to reform DUI standards related to Blood Alcohol Content, arrest and adjudication process, and repeat offenders.	72.22%	13
Support efforts to reduce the speed limits within residential areas to 25 mph.	66.67%	12
Support the City of Houston's efforts to establish a group with law enforcement, prosecutors, and judges to analyze citations and court convictions and inform enhanced penalties for serious driving offenses, such as killing another road user, driving under the influence (DUI), running red lights and speeding, and repeat offenders.	44.44%	8
Support statewide efforts to revise distracted driving laws, including enforcement and increase of fines.	44.44%	8
Support local efforts to adopt a Hands-Free ordinance which prohibits the use of all electronic hand-held devices while operating a vehicle.	44.44%	8
Total Respondents: 18		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	Can I vote for lowering the speed limit to 25mph three times!?!?!?	1/8/2021 5:08 PM
2	Increase funding for treatment options. Lower BAC to 0.05 statewide.	1/4/2021 3:02 PM

Q6 What actions do you feel have the greatest impact on supporting an ongoing Vision Zero program? Select your top 3 actions.

Answered: 17 Skipped: 1

ANSWER CHOICES	RESPONSES	
Create an internal committee to review and recommend projects as part of the Vision Zero program to ensure projects are considered in the Capital Improvement Program.	76.47%	13
Maintain a comprehensive website to provide information on the projects, programs, and progress of Vision Zero via a dashboard and annual reports.	64.71%	11
Publish an annual report on the progress of Vision Zero implementation and make changes if necessary.	52.94%	9
Oversee implementation of the Vision Zero Action Plan.	47.06%	8
Update the Vision Zero High Injury Network every three years.	47.06%	8
Total Respondents: 17		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
	There are no responses.	

Q7 What actions do you feel have the greatest impact on enhancing county processes? Select your top 2 actions.

Answered: 16 Skipped: 2

ANSWER CHOICES	RESPONSES	
Establish a permanent funding source for the Vision Zero Program in Harris County's Capital Improvement Program.	68.75%	11
Dedicate set-aside funding for low-cost spot safety and traffic calming projects in areas identified in the work order system and/or in response to citizen complaints.	56.25%	9
Incorporate safety concerns reported via the Vision Zero Map Tool into the Harris County's work order system.	37.50%	6
Develop system to track, manage, respond to, and prioritize citizen requests and safety concerns.	31.25%	5
Total Respondents: 16		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	Finding ways to remove vehicles from the road.	1/5/2021 5:43 PM

Q8 What actions do you feel have the greatest impact on incorporating Vision Zero concepts into project design? Select your top 4 options.

Answered: 17 Skipped: 1

ANSWER CHOICES	RESPONSES	
Incorporate Vision Zero data and recommendations into transportation elements of the 2040 Harris County Transportation Plan, Harris County Multimodal Thoroughfare Plan, and Harris County Equity in Transportation Plan.	70.59%	12
Update Harris County's infrastructure design manual to consider available tools and design standards, including those recommended in the Harris County Phase 1 Bicycle and Pedestrian Safety Study Toolbox, National Association of City and Transportation Officials (NACTO) Guides, and other best practices to enhance safety for both motorized and non- motorized road users.	64.71%	11
Use the Vision Zero High Injury Network to help prioritize engineering and education efforts and require comprehensive safety improvements when designing these corridors where feasible and appropriate.	64.71%	11
Create guideline to determine whether safety improvements are applicable for new developments. This includes considering roundabouts, shared use paths, dedicated bike lanes, sidewalks at a minimum of 6' wide, chicanes, raised sidewalks for pedestrians to cross the street with curb extensions, audible pedestrian countdowns, installing lighting, improving wheelchair access, consider narrowing streets, lowering speed limits, flashing yellow traffic signals, etc.	58.82%	10
Update Harris County's guidelines, design standards, specifications, detail sheets, and manuals to incorporate Vision Zero, safe systems, and complete streets concepts.	47.06%	8
Establish a design policy to consider posted reduced speeds through construction zones (e.g., 10 mph below posted speed limit) when it involves lane closures or in the presence of bicyclist and pedestrian facilities.	35.29%	6
Develop a Harris County traffic control plan standards that require sites under construction to provide adequate access (or maintain existing levels of access) and signing so that people walking and biking have a specific safe route through the construction zone area.	23.53%	4
Modify Harris County traffic control plan standard to require sites under construction to post a CW13-1P speed limit sign (rather than optional signage) through construction zones when it involves lane closures or in the presence of bicyclist and pedestrian facilities.	11.76%	2
Total Respondents: 17		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	Strengthen the language for "create guidelines to determine whether safety improvements are applicable for new developments." Safety improvements should be considered with any new development, and only not included with a variance if not applicable.	1/4/2021 3:40 PM

Q9 Which of the following actions would have the greatest impact to create partnerships that would ensure the success of Vision Zero? Select your top 3 actions.

Answered: 17 Skipped: 1

ANSWER CHOICES	RESPONSES	
Include grassroots organizations and local community leaders in Harris County Vision Zero committees to provide input on transportation equity in Vision Zero.	82.35%	14
Work with TxDOT, H-GAC, the City of Houston, and other local agencies to establish a funding category to reduce the number of crashes on the high injury network and provide a mechanism in the Transportation Improvement Program to award additional points when High Injury Network crashes are addressed.	82.35%	14
Support the H-GAC efforts to create a Vision Zero program for the entire Houston-Galveston region, and share the high injury network and methodologies the City of Houston and Harris County are using to identify high crash locations.	58.82%	10
Work with the H-GAC to incorporate Vision Zero in the Regional Transportation Plan and Unified Planning Work Program as a method to increase safety in the Houston-Galveston region.	47.06%	8
Work with social service providers to improve safety for urban campers, including educational outreach, improving visibility, and establishing safe crossings.	23.53%	4
Total Respondents: 17		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
	There are no responses.	

Q10 Which roadway elements would have the greatest impact on reducing traffic deaths? Select your top 2 actions.

Answered: 17 Skipped: 1

ANSWER CHOICES	RESPONSES	
Adopt Complete Streets and Multimodal Thoroughfare Plan countywide. Consider sidewalks, bicycle lanes, traffic signals and audible pedestrian signals when a street and drainage reconstruction project is underway.	94.12%	16
Evaluate feasibility of converting existing streets targeted for roadway improvements to multimodal thoroughfares, based on corridors identified in the High Injury Network.	76.47%	13
Evaluate feasibility of alternative intersection designs such as roundabouts where feasible	23.53%	4
Total Respondents: 17		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	Strengthen language of "consider sidewalks, bicycle lanes, etc." Those safety improvements should be standard and required with any reconstruction project, and not simply "considered" as an option.	1/4/2021 3:46 PM
2	Recently we have had a large number of auto pedestrian accidents. Many times there is either no shoulder (or small shoulder) and lighting is poor in the area. This has shown to be an issue with people riding bikes or walking. We can require them to wear a vest or put reflectors on their bikes but in the end, we need to really consider lighting issues throughout the county.	12/18/2020 11:51 AM

Q11 What actions do you feel have the greatest impact on reducing vehicle speeds? Select your top 2 actions.

Answered: 16 Skipped: 2

ANSWER CHOICES	RESPONSES	
Implement speed management measures such as traffic signal timing, traffic calming measures, enforcement, and education campaigns such as those available through NHTSA's speed campaign toolkit. Consider speed studies and traffic calming measures to limit traffic deaths and serious injuries in high crash areas.	93.75%	15
Apply a safe system approach when setting roadway speed limits that accounts for all road users, as well as factors such as crash statistics, adjacent land use, presence of driveways and intersections, and roadway characteristics. Identify opportunities to reduce posted speed limits on existing roadways.	68.75%	11
Develop a county-wide speed management program to include collection of data, development, and implementation of an Action Plan to prioritize speed and safety improvements and evaluations to measure the success of implemented projects.	31.25%	5
Total Respondents: 16		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	Remove. Vehicles. From. The. Road. All the measures listed above will not help.	1/5/2021 5:47 PM
2	Greatest impact on reducing vehicle speeds is reducing the design speed. Changing posted speed limits and educational campaigns will not be fully effective without doing that. Vision Zero should prioritize road diets, narrowed lanes, and multi-modal infrastructure.	1/4/2021 3:46 PM

Q12 What actions do you feel have the greatest impact on addressing equity in transportation? Select your top 3 actions.

Answered: 17 Skipped: 1

ANSWER CHOICES	RESPONSES	
Dedicate a percentage of bicycle and pedestrian improvements each year to socially vulnerable communities (e.g., areas with people of color, low- income households, older adults and youth, people with disabilities, people with limited English proficiency and households with limited vehicle access).	76.47%	13
Expand the Harris County Bike and Pedestrian Safety Study to identify and prioritize filling gaps in infrastructure where those gaps contribute to fatalities and serious injuries such as connecting the existing and planned off-street system to on-street systems county-wide.	58.82%	10
Establish a policy to require lighting along multi-use paths at underpasses and intersections with along key urban corridors where lighting is missing or where nighttime visibility of pedestrians is a concern.	58.82%	10
Finalize the Harris County Bicycle and Pedestrian Safety Study – Phase II to identify and prioritize safety improvements in each precinct.	47.06%	8
Coordinate with existing Municipal Utility Districts (MUDs) on annual allotment to install streetlights in residential subdivisions where lighting is missing or where nighttime visibility of pedestrians or bicyclists is a concern (e.g., residential entrances along major thoroughfares, parks, schools, bus stops, or areas of high nighttime activity).	47.06%	8
Total Respondents: 17		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
	There are no responses.	

Q13 In your opinion, which of the following actions would have the greatest impact to protect bicyclists and pedestrians? Select your top 3 actions.

Answered: 16 Skipped: 2

ANSWER CHOICES	RESPONSES	
Adopt requirements to determine whether sidewalks and/or shared use paths should be created with new residential and commercial development.	75.00%	12
Establish a sidewalk program with dedicated funding to construct new sidewalks and ramps (or fill gaps in existing sidewalks) along streets leading to schools, along major thoroughfares, or along routes to improve accessibility for people with disabilities.	68.75%	11
Install pedestrian barriers to prevent mid-block pedestrian crossings in problem areas (on the High Injury Network, high speed or high-volume roadways, adjacent to bus stops, etc.).	68.75%	11
Establish a policy to evaluate vehicle turn restrictions ("No Turn on Red") at intersections with high pedestrian crossing volumes, high pedestrian crash rates, or at intersections located near schools with high student-pedestrian volumes.	37.50%	6
Establish a policy to require accessible pedestrian pushbuttons and pedestrian countdown signals every time the County builds a new traffic signal or does other signal maintenance or sidewalk tie-in work.	31.25%	5
Continue to implement new technologies to block cell phone use and texting while driving in school zones.	12.50%	2
Total Respondents: 16		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	Remove vehicles from near pedestrians and bicyclists. That's it.	1/5/2021 5:47 PM

Q14 What actions would improve Vision Zero data availability? Select your top 2 actions.

Answered: 17 Skipped: 1

ANSWER CHOICES	RESPONSES	
Publish maps and statistics on the Vision Zero website to educate the public where bicycle, pedestrian and vehicle crashes are the most prevalent countywide and to document the steps that are taken each year to reduce crashes.	82.35%	14
Create a platform and/or process to share geospatial crash data and maps cross County departments and precincts.	64.71%	11
Support law enforcement efforts to allocate electronic devices and applicable software to integrate the Vision Zero High Injury Network and High Crash Locations for Bicycle, Pedestrian and Vehicular data available and make available on their machines.	52.94%	9
Total Respondents: 17		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	Outreach to communities that do not have substantial access to the technology where this information exists.	1/5/2021 5:49 PM

Q15 What actions do you feel have the greatest impact on enhancing data collection and management? Select your top 4 actions.

Answered: 17 Skipped: 1

ANSWER CHOICES	RESPONSES	
Work with local agency partners to link crash data with Harris County Public Health and Human Services, Medical Examiner, EMS, and hospital and trauma registry data and incorporate that data into the Vision Zero High Injury Network.	82.35%	14
Work with law enforcement to ensure latitude and longitude coordinates are collected for all crashes that involved a fatality or serious injury.	64.71%	11
Work with local agency partners to develop a GIS-based intersection inventory to enable easier and more thorough analysis of design factors associated with intersection crashes.	64.71%	11
Establish a pedestrian and bicyclists count program that counts the number of people walking and biking in high pedestrian and bicyclist crash areas.	58.82%	10
Establish a condition assessment program for all County maintained roadways, sidewalks and ADA ramps.	47.06%	8
Work with local partners to develop a data-driven procedure for comparing observed crashes with Highway Safety Manual predicted crash rates at high crash intersections and segments and incorporate into H-GAC's project selection criteria.	35.29%	6
Modify the Harris County CR-3 form to include a field for "Suspected Homeless Victim" to better analyze pedestrian crash trends involving suspected homeless individuals.	17.69%	3
Total Respondents: 17		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
1	In reference to modifying the CR-3 form, I don't believe we could since it is a State form. At least with HCSO, we use the CRIS online system through TEXDOT. Sorry I did not notice that before.	12/18/2020 11:58 AM

Q16 What actions do you feel have the greatest impact on understanding the benefits of Vision Zero? Select your top 4 actions.

Answered: 17 Skipped: 1

ANSWER CHOICES	RESPONSES	
Conduct before and after studies of the safety improvements implemented through the Vision Zero program to determine the impacts of the program.	88.24%	15
Update the Vision Zero High Injury Network every three years to determine where and when severe crash types are likely to occur.	58.82%	10
Continue to evaluate crash data to monitor the magnitude, frequency, and location of high risk behaviors contributing to crashes, such as impaired driving, distracted driving, and speeding/aggressive driving crashes.	52.94%	9
Establish a Fatal Crash Review Team to review fatal crashes on unincorporated Harris County roads and identify if any improvements can be made to address the cause of the crash. Prioritize funds for rapid response infrastructure improvements at fatal crash sites.	47.06%	8
Conduct road safety audits to examine existing and future roads or intersections.	41.18%	7
Conduct a minimum of 10 walk audits for bicycles, pedestrians, and people in wheelchairs. Conduct before/after studies of safety improvements.	23.53%	4
Collaborate with H-GAC to develop and maintain data to identify correlations between impaired driving stops/crashes and Alcohol Beverage Control licensing data by road type and corridors in Harris County.	17.65%	3
Expand the Harris County Bicycle and Pedestrian Safety Study Phase 2 project to include an assessment of how improvement recommendations have reduced crashes five years from the day it was completed.	17.65%	3
Total Respondents: 17		

#	ADDITIONAL SUGGESTIONS (100 CHARACTERS)	DATE
	There are no responses.	

Appendix G. Houston-Galveston Vision Zero Policy

The Houston- Galveston Area Council approved a Vision Zero initiative to combine efforts from the Texas Department of Transportation, the City of Houston, and Harris County to eliminate traffic fatalities throughout the eight-county region by 2050.

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TPC Agenda Item 9
Mailout – 10/16/20

Transportation Policy Council — Metropolitan Planning Organization
Galveston * Harris * Liberty * Montgomery * Waller * Brazoria * Chambers * Fort Bend

Resolution

No. 2020-36

RESOLUTION SUPPORTING THE ELIMINATION OF REGIONAL TRAFFIC FATALITIES

Whereas, the safety of all roadway users is the most important consideration in transportation planning and engineering. The transportation projects and programs should not only improve mobility but also enhance safety.

Whereas, all traffic fatalities are preventative. The elimination of traffic fatalities is achievable and should be the primary focus of all transportation planning and implementation activities.

Whereas, our region's transportation systems expand and mature the elimination of traffic fatalities will bring greater community well-being and prosperity because the social, emotional, and financial burdens associated with traffic fatalities will be removed.

Whereas, the existence and efforts of the Transportation Policy Council are to improve the quality of life for those who live in or pass through this region, and,

Whereas, the region suffered more than 600 traffic fatalities in 2019, and,

Whereas, the Transportation Policy Council finds that the continued loss of lives on the region's streets and highways is unacceptable; and,

Whereas, the State of Texas, and local jurisdictions have adopted policies to eliminate traffic fatalities, and

NOW, THEREFORE, BE IT RESOLVED THAT THE TRANSPORTATION POLICY COUNCIL COMMITS TO SUPPORT TRANSPORTATION PROJECTS AND PROGRAMS TO ELIMINATE TRAFFIC FATALITIES IN THE REGION BY THE YEAR 2050.

Passed and approved, this 23rd day of October 2020, at a regularly called meeting of the Transportation Policy Council of the Houston–Galveston Transportation Management Area.

APPROVED:

DocuSigned by:
AEE9EF6C8BE64CA...

Hon. Kenneth Clark, Chairman
Transportation Policy Council

ATTEST:

DocuSigned by:
4051E14BF53C455...

Hon. Tom Reid, Secretary
Transportation Policy Council

Appendix H. City of Houston Vision Zero Resolution

City of Houston Ordinance No. 2020-893

AN ORDINANCE AMENDING CHAPTER 26 OF THE CODE OF ORDINANCES, HOUSTON, TEXAS, BY ADDING NEW SECTION 26-100, RELATING TO ON-STREET PARKING RESTRICTIONS IN DEDICATED BICYCLE LANES; DECLARING CERTAIN CONDUCT TO BE UNLAWFUL AND PROVIDING A CIVIL PENALTY THEREFOR; CONTAINING FINDINGS AND OTHER PROVISIONS RELATING TO THE FOREGOING SUBJECT; PROVIDING FOR SEVERABILITY; AND DECLARING AN EMERGENCY.

* * * *

WHEREAS, Chapter 26 of the Code of Ordinances (the "Code"), Houston, Texas, regulates the stopping, standing and parking of vehicles; and

WHEREAS, the City of Houston's (the "City") parking official, designated by the Director of the Administration and Regulatory Affairs Department ("ARA"), is responsible for managing and enforcing all on-street parking regulations in residential and commercial areas; and

WHEREAS, the ParkHouston Division ("ParkHouston"), a division of ARA, worked with the City's Bicycle Advisory Committee and the Planning and Development Department to identify issues pertaining to bicycle safety in public roadways; and

WHEREAS, the City's Bicycle Advisory Committee recommended amending Chapter 26 of the Code to create a separate violation for parking in a bicycle lane; and

WHEREAS, the parking, standing or stopping of vehicles in dedicated bicycle lanes interferes with the safe movement of bicyclists; and

WHEREAS, the proposed revisions to Chapter 26 have been presented to the Regulatory and Neighborhood Affairs Committee of the City Council and submitted for public comment; and

WHEREAS, the proposed Ordinance supports the City's Vision Zero Houston goal to eliminate traffic deaths and serious injuries by 2030; and

WHEREAS, City Council finds that the proposed Ordinance will enhance the ability of parking compliance officers to address the safety hazards created by parked cars in dedicated bicycle lanes and to protect the safety and welfare of bicyclists; **NOW, THEREFORE,**

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF HOUSTON, TEXAS:

Section 1. That the findings contained in the preamble of this Ordinance are determined to be true and correct and are hereby adopted as a part of this Ordinance.

Section 2. That Article II of Chapter 26 of the Code of Ordinances, Houston, Texas, is hereby amended by adding a new section that reads as follows:

"**Sec. 26-100. Blocking bicycle lanes.**

(a) *Definitions.* As used in this section, the following terms and phrases shall have the following meanings:

Approved Bicycle Friendly Driver Training Class means a class, approved by the parking official, designed to teach violators best practices in considering the road safety of bicyclists and other non-motorists on shared rights-of-way.

Bicycle means a vehicle with two wheels in tandem, usually propelled by pedals connected to the rear wheel by a chain or an integrated motor, and having handlebars for steering and a saddle-like seat.

Bicycle lane means a dedicated portion of the roadway separated from motor vehicle traffic with striping and/or physical delineation intended for the exclusive use of bicyclists.

Bicyclist means a person riding a bicycle.

(b) No person shall stop, stand, or park any vehicle upon a bicycle lane. The provision of this subsection shall not apply to on-street bikeways where travel lanes are shared by vehicles and bicyclists and where the city permits on-street parking.

(c) In lieu of paying a fine pursuant to section 26-10 of this Code, a person who has not previously received a citation for violation of this section may appear for an instanter hearing before an adjudication hearing officer within 30 days of the date of the offense and make a request to take an Approved Bicycle Friendly Driver Training Class. A person who requests to take an Approved Bicycle Friendly Driver Training Class must do so within 90 days of the request being granted and shall return proof of completion within that time period. Upon receiving acceptable proof of completion, an adjudication hearing officer shall enter a finding of not liable in the case. The presiding judge of the municipal courts department and the parking official are authorized to prescribe rules and regulations for the administration of this section.

(d) In addition to any applicable fine, any vehicle parked or left in violation of this section shall be subject to being towed to a place of impoundment in the manner provided by law."

Section 3. That violations of Section 26-100 of the Code of Ordinances, Houston, Texas, as adopted in **Section 2** of this Ordinance, are civil offenses and punishable by not less than $1.00 nor more than $200.00 as provided in Section 26-10 of the Code of Ordinances, Houston, Texas. The parking official shall post a list of Approved Bicycle Friendly Driver Training Classes on the ParkHouston and Municipal Courts website no later than 90 days after the effective date of this Ordinance.

Section 4. That the City Attorney is hereby authorized to direct the publisher of the Code of Ordinances, Houston, Texas, (the "Code") to make such nonsubstantive

changes to the Code as are necessary to conform to the provisions adopted in this Ordinance, and also to make such changes to the provisions adopted in this Ordinance to conform them to the provisions and conventions of the published Code.

Section 5. That, if any provision, section, subsection, sentence, clause, or phrase of this Ordinance, or the application of same to any person or set of circumstances is for any reason held to be unconstitutional, void or invalid, the validity of the remaining portions of this Ordinance or their application to other persons or sets of circumstances shall not be affected thereby, it being the intent of the City Council in adopting this Ordinance that no portion hereof or provision or regulation contained herein shall become inoperative or fail by reason of any unconstitutionality, voidness or invalidity of any other portion hereof, and all provisions of this Ordinance are declared to be severable for that purpose.

Section 6. That there exists a public emergency requiring that this Ordinance be passed finally on the date of its introduction as requested in writing by the Mayor; therefore, this Ordinance shall be passed finally on such date and shall take effect immediately upon its passage and approval by the Mayor.

PASSED AND APPROVED this 14th day of October, 2020.

Sylvester Turner
Mayor of the City of Houston

Prepared by Legal Dept. _____
TKL:aw 09/04/2020 Assistant City Attorney
Requested by Tina Paez, Director, Department of Administration and Regulatory Affairs
L.D. File No. 0392000078001

VISION ZERO ACTION PLAN: ADDENDUM

Harris County VISION ZERO

Safer Streets. Safer You.

s+v+traffic

snyder | voigt traffic engineers

STATE OF TEXAS
DENA D. SNYDER
91847
LICENSED
PROFESSIONAL ENGINEER

SV TRAFFIC, LLC 09/12/2022
F-22244

1. Introduction

This Vision Zero Action Plan Addendum (Addendum) identifies potential safety improvements for the highest risk corridors on Harris County's High Injury Network. The document is intended to accompany and serve as an addendum to the Vision Zero Action Plan (August 2022).

This Addendum represents the first of several phases to address traffic safety challenges on the High Injury Network. While roadway safety improvements are needed throughout the entire High Injury Network, the County must focus its limited resources on roadways that are under its maintenance and enforcement jurisdiction. The Addendum identifies safety projects for thirty-three of the highest risk corridors, which together comprise 73 miles or about 20 percent of the total miles of High Injury Network roadways located within the County's jurisdiction.

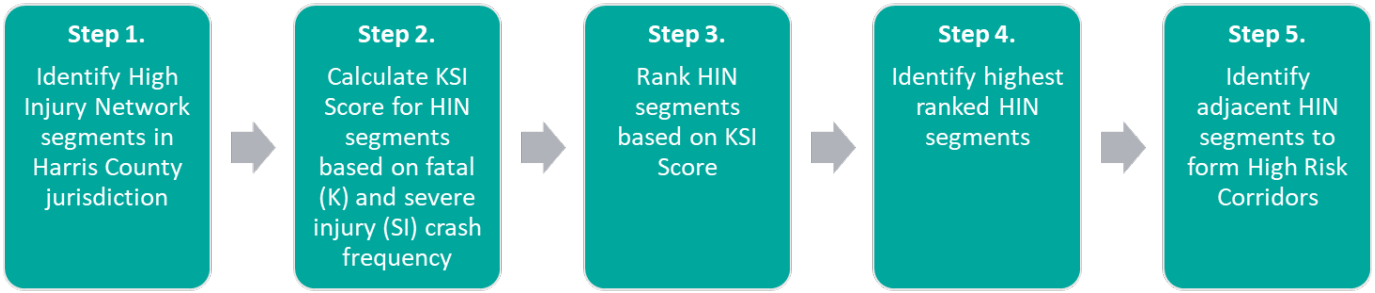
The Addendum identifies proven safety countermeasures that could be addressed quickly and/or at a low cost, as well as long-term roadway improvements needed to address traffic safety challenges on these highest risk corridors. Harris County will endeavor to fund, design, and implement these safety improvements over the next five to ten years to move closer to its goal of zero traffic related deaths and/or serious injuries on County roadways by 2030. The County will also seek opportunities to partner with State and local agency partners to implement safety projects on corridors that cross multiple jurisdictions.

2. High Risk Corridor Selection

As documented in the County's Vision Zero Action Plan, the High Injury Network (HIN) represents the six percent of local agency roadways that account for sixty percent of fatal and serious injury crashes during the 5-year timeframe from 2014 through 2018. Developed collaboratively with the City of Houston's Vision Zero Data Team, the High Injury Network consists of ½-mile roadway segments spatially joined to fatal and severe injury crash locations that occurred along or within 50- feet of the segment.

As shown in Figure 1, a data-driven screening process was used to examine the 2014-2018 Vision Zero High Injury Network and identify segments within Harris County's jurisdiction with the highest frequency of fatal and severe injury crashes. Section 5 provides supplemental details on the corridor selection methodology.

Figure 1. High Risk Corridor Selection



First, all High Injury Network segments within Harris County's jurisdiction were identified based on a geospatial comparison to Harris County's Road Log (roadway inventory database). A total of 812 High Injury Network segments (totaling 381 miles) were determined to be within Harris County's jurisdiction. Then, segments were scored separately based on the frequency of fatal (K) and serious injury (SI) crashes that occurred during the 5-year period from 2014 through 2018. The scoring methodology was inclusive of all modes and provided equal consideration for the worst segments for driving, bicycling, and walking (that is, segments with the highest number of pedestrian and bicyclist KSI crashes were scored the same as segments with the highest number of vehicular KSI crashes). The resulting KSI score (0 to 20) was used to rank and prioritize the highest ranked segments (identified as having a KSI score of 10 or higher) where safety improvements could reduce KSI crashes across all modes. Section 5 provides the ranking results for all High Injury Network segments in Harris County jurisdiction.

Next, the highest ranked segments were expanded into High Risk Corridors, which were selected based on logical project limits and include the highest ranked ½-mile High injury Network segments, as well as lower ranked segments of the High Injury Network in close proximity to the highest ranked segments. The project team worked closely with Harris County staff to ensure the ranking methodology and High Risk Corridor locations adequately reflect the highest risk segments based on staff knowledge of problem areas, ongoing or recently completed capital improvement projects, and priority needs for safety evaluation. The High Risk Corridor locations are summarized in Table 1 and Figure 2.

Table 1. High Risk Corridor Locations

No.	Roadway	Corridor Limits	Length (mi)
1	Rankin Road	East of IH 45 NBFR to Imperial Valley Drive	1.0
2	Veterans Memorial Dr	FM 1960 to N Sam Houston Parkway W	4.2
3	Aldine Mail Road	Aldine Westfield Road to Easthampton Drive	2.6
4	Antoine Drive	Veterans Memorial Drive to N Sam Houston Parkway W	1.7
5	Stuebner Airline Road	North of Spring Cypress Road to FM 1960	5.2
6	Veterans Memorial Dr	N Sam Houston Parkway W to SH 249	3.4
7	W Montgomery Road	SH 249 to Wavell Street	2.0
8	Spencer Highway	Galveston Road to Somerton Drive	8.0
9	Dominion Park Drive	Kuykendahl Road to IH 45 Southbound Frontage Road	0.5
10	W Mount Houston Rd	IH 45 Northbound Frontage Road to Airline Drive	0.9
11	Barbers Hill Road	Garth Road to Crosby Barbers Hill Road	0.5
12	Hollow Tree Lane	Cali Drive to IH 45 Northbound Frontage Road	1.0
13	Ella Boulevard	At Barren Springs Drive	n/a
14	Jones Road	Grant Road to Ranchstone Drive	4.0
15	West Road	Veterans Memorial Drive to IH 45	1.75
16	Atascocita Road	Kings Parkway to FM 1960	0.9
17	Grant Road	Perry Road to SH 249	0.5
18	Louetta Road	SH 249 to Cannaberry Way	8.4
19	Airline Drive	N of West Road to Canino Road	3.5
20	Homestead Road	N of Tidwell Road to S of Miley Street	2.5
21	Homestead Road	S of Old Humble Road to Winfield Road	0.6
22	Huffman Cleveland Rd	Hickory Ridge Drive to Commons Vista Drive	1.7
23	W Lake Houston Pkwy	Pine Cup Drive to Atascocita Middle School	1.0
24	Bissonnet Street	Sugar Land Howell Road to Synott Road	1.3

No.	Roadway	Corridor Limits	Length (mi)
25	Fry Road	N of Keith Harrow Boulevard to Franz Road	3.5
26	Fallbrook Drive	W of NW Park Drive to Veterans Memorial Drive	2.3
27	Spears Road	Veterans Memorial Drive to W of TC Jester	1.0
28	Spring Cypress Road	Memorial Spring Drive to W of Valka Road	2.2
29	W Little York Road	E of Hempstead Road to W of Fairbanks N Houston Rd	1.2
30	Alice Road	Green Meadow Road to SH 249	0.5
31	Barker Cypress Road	N of West Little York Road at Gummert Rd	0.7
32	Greenhouse Road	Clay Road to Golden Wave Drive	1.3
33	Greenhouse Road	IH-10 to Misty Cove Drive	2.5

3. High Risk Corridor Equity Impact

High Risk Corridors were evaluated based on their proximity to socially vulnerable population groups utilizing 2018 5-Year American Community Survey estimates. As shown in Table 2, High Risk Corridor census tracts comprise over 40 percent of all socially vulnerable population compared to the overall High Injury Network. Of the total number of persons living in poverty (372,687) in the High Injury Network census tracts, 165,448 or 44 percent are living in High Risk Corridor census tracts. Similarly, 43 percent of the minority population (all persons except White, non-Hispanic) who live in the High Injury Network census tracts are in High Risk Corridor census tracts. Of the households with no vehicles available, who, as bicyclists and pedestrians, are among the most vulnerable road users, 43 percent live in High Risk Corridor census tracts. Furthermore, almost half, or 48 percent, of the persons who speak English less than well in the High Injury Network census tracts are in the High Risk Corridor census tracts. Of the total population of persons aged 65 years or older in the High Injury Network census tracts, 39 percent live in the High Risk Corridor census tracts.

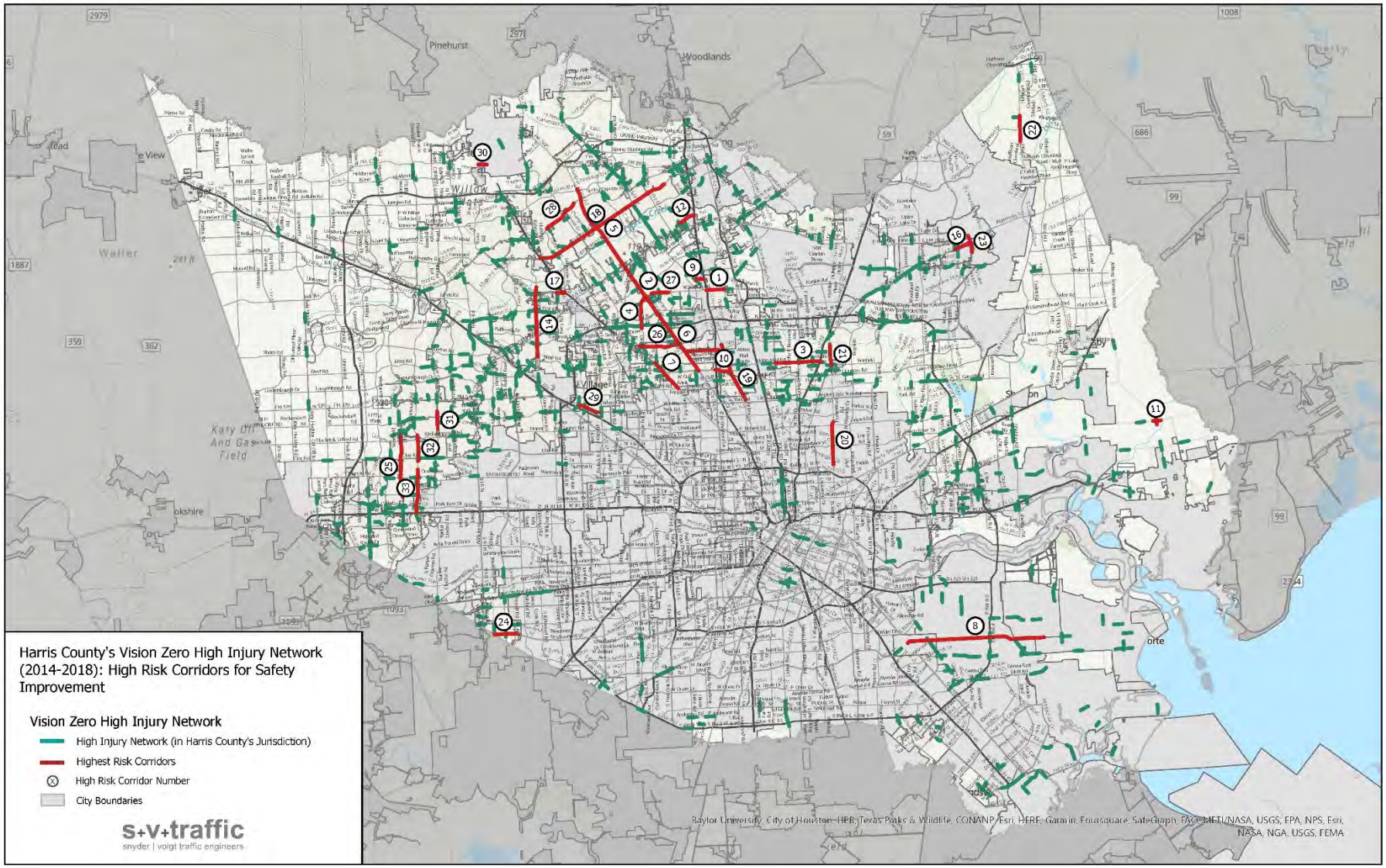
In other words, the High Risk Corridors rank high not only because of higher KSI Scores but also because approximately 40 percent of the socially vulnerable population in the High Injury Network census tracts lives in the High Risk Corridor census tracts. Therefore, the proposed roadway safety improvements in the High Risk Corridor locations will impact roadway safety for a significant portion of socially vulnerable persons living in the High Injury Network census tracts.

Table 2. Social Vulnerability

Socially Vulnerable Population Groups	Population in High Injury Network Census Tracts	Population in High Risk Corridor Census Tracts	Percent of High Injury Network Census Tracts that is in Priority Network Census Tracts
Persons Below Poverty	372,687	165,448	44
Minority (All Persons Except White, non-Hispanic)	1,874,565	804,064	43
Households With No Vehicle Available	38,706	16,563	43
Persons (age 5+) Who Speak English "Less Than Well"	256,211	124,230	48
Persons Age 65 Years or Older	242,915	93,599	39

Source: 2014-2018 American Community Survey 5-Year Estimates

Figure 2. High Risk Corridor Locations



4. High Risk Corridor Safety Improvements

A high-level safety assessment was conducted to evaluate the roadway and traffic characteristics for each High Risk Corridor, as well as the locations, contributing factors, and types of fatal and severe injury crashes. Section 6 provides supplemental details on the criteria used to categorize crash characteristics for the corridors. Crash trends were evaluated for the 5-year period of 2014 through 2018 (consistent with the Vision Zero Action Plan), as well as for the 3-year period from 2019 through 2021 (to assess recent fatal and severe injury crashes occurring on the corridor).

The corridors summaries on the following pages provide a snapshot of roadway and crash characteristics and social vulnerability (low, medium, or high) for each High Risk Corridor. Note that corridors are listed in order based on the KSI score for the highest ranked ½-mile High Injury Network segment on that corridor and not for the corridor as a whole. Corridors were defined based on logical project limits and may be comprised of multiple highest ranked ½-mile High Injury Network segments, as well as lower ranked segments in close proximity.

Each corridor was evaluated based on existing roadway cross-section, daily traffic volumes, and predominant crash characteristics to identify applicable safety countermeasures for each High Risk Corridor. FHWA's collection of Proven Safety Countermeasures offer significant, measurable impacts in reducing roadway fatalities and serious injuries. These countermeasures address common roadway safety challenges such as speeding, intersection-related, roadway departure, or pedestrian/bicyclist-related crashes, as well as crosscutting strategies that address multiple focus areas. In some cases, major roadway cross section improvements may be needed to address crash challenges along the corridor. Figure 3 summarizes the proven safety countermeasures and roadway safety improvements considered for implementation on High Risk Corridors. Road safety audits and setting appropriate speed limits for all road users will be considered for all corridors.

Figure 3. Safety Countermeasures

Speed Management & Roadway Departure	Intersection	Pedestrian/Bicyclist	Cross Cutting
• Appropriate speed limits for all road users • Wider edge lines • Enhanced delineation for horizontal curves • Longitudinal rumble strips and stripes • Roadside design improvements at curves • Paved shoulders	• Reflective backplates* • Low-cost countermeasures at stop-controlled intersections • Yellow change intervals • Traffic signal modifications • Traffic signal installation • Corridor access management • Left- and right-turn lanes at intersections	• Crosswalk visibility enhancements • Actuated pedestrian flashing beacons • Leading pedestrian intervals • Pedestrian refuge islands • Road diets (roadway reconfiguration) • Sidewalk improvements • Bicycle lanes	• Pavement friction management • Safety lighting • Road safety audits • Roadway cross section improvements (boulevard with raised median & curb/ gutter drainage)

* Note: Reflective backplates may be considered as a safety countermeasure depending on intersection conditions, roadway characteristics, and maintenance considerations.

1. Rankin Road

E. of IH 45 Northbound Frontage Road to Imperial Valley Drive

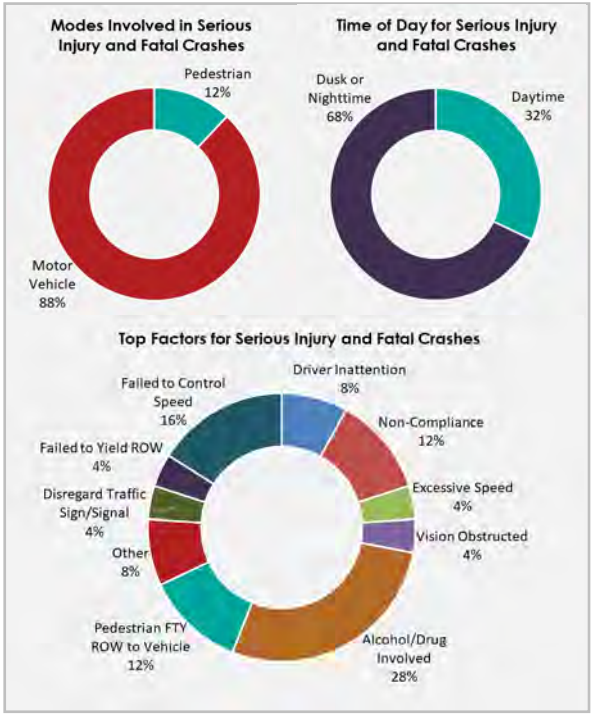
Corridor Characteristics

Precinct	**1**
Length	**1.0 mi**
Functional Classification	**Major thoroughfare**
Posted Speed	**45 mph**
Right of Way Width	**80 ft**
Existing Cross Section	**4-lane undivided**
Drainage	**Open ditch**
Daily Traffic Volume (21)	**22,800**
Social Vulnerability	**High**

Crash Severity (2014-2021)

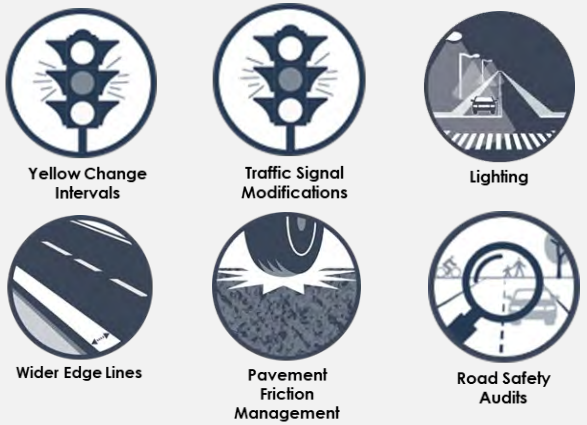
Fatal (K) Crashes	**4**
Serious Injury (SI) Crashes	**21**
Total KSI Crashes	**25**
KSI Crashes per Mile	**25.0**

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)



Long-Term (5 to 8 years)

2. Veterans Memorial Drive
FM 1960 to N. Sam Houston Parkway W.

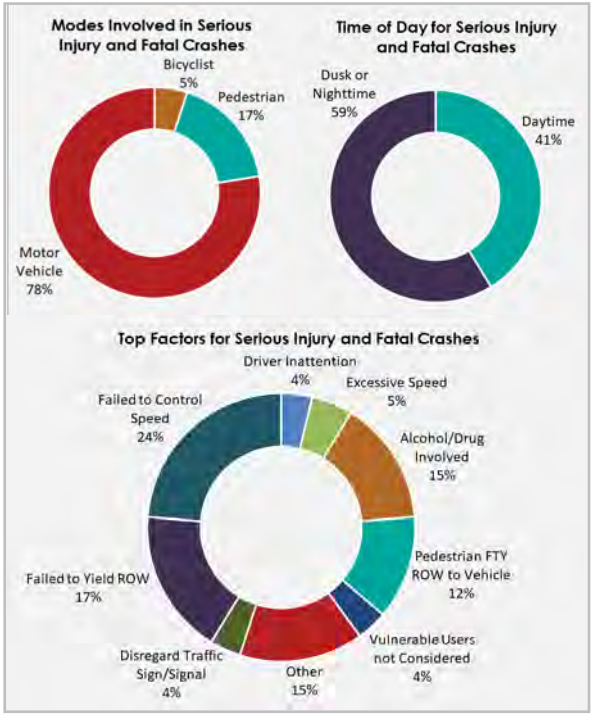
Corridor Characteristics

Precinct	**1**
Length	**4.2 mi**
Functional Classification	**Major thoroughfare**
Posted Speed	**45 mph**
Right of Way Width	**100 ft**
Existing Cross Section	**4-lane undivided**
Drainage	**Open ditch**
Daily Traffic Volume (21)	**21,100-28,500**
Social Vulnerability	**High**

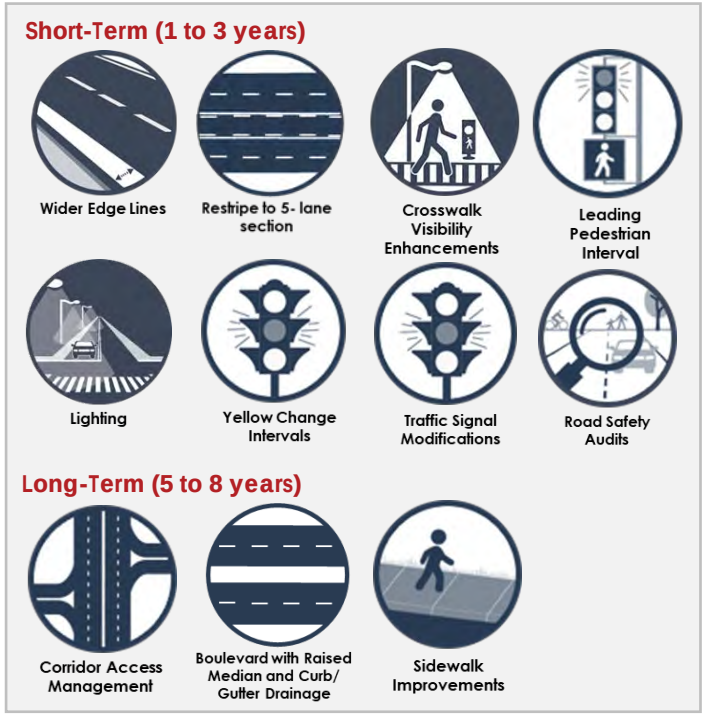
Crash Severity (2014-2021)

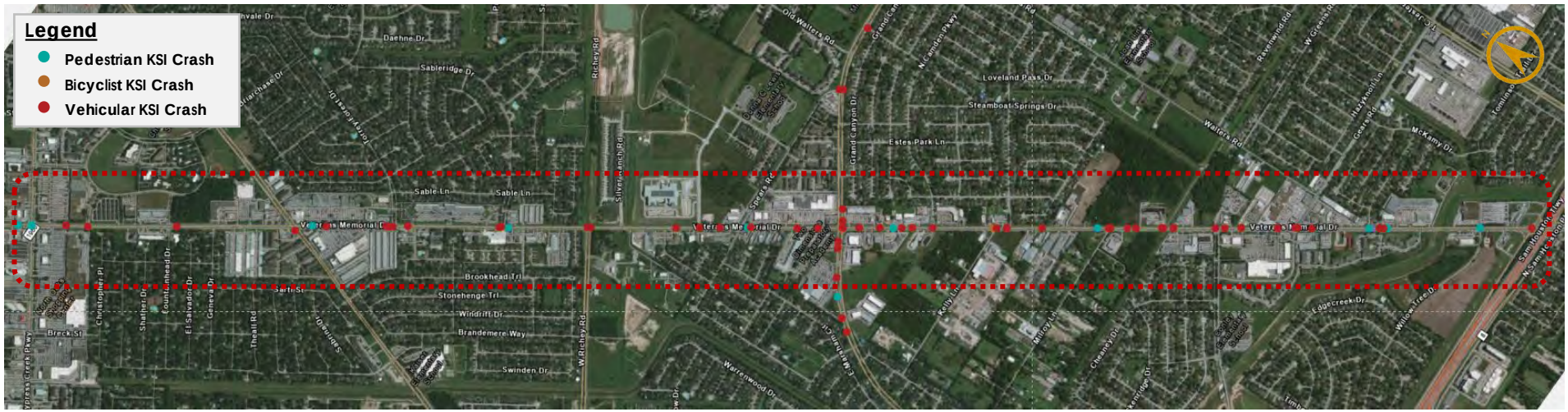
Fatal (K) Crashes	**16**
Serious Injury (SI) Crashes	**64**
Total KSI Crashes	**80**
KSI Crashes per Mile	**19.0**

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations





3. Aldine Mail Road

Aldine Westfield Road to Easthampton Drive

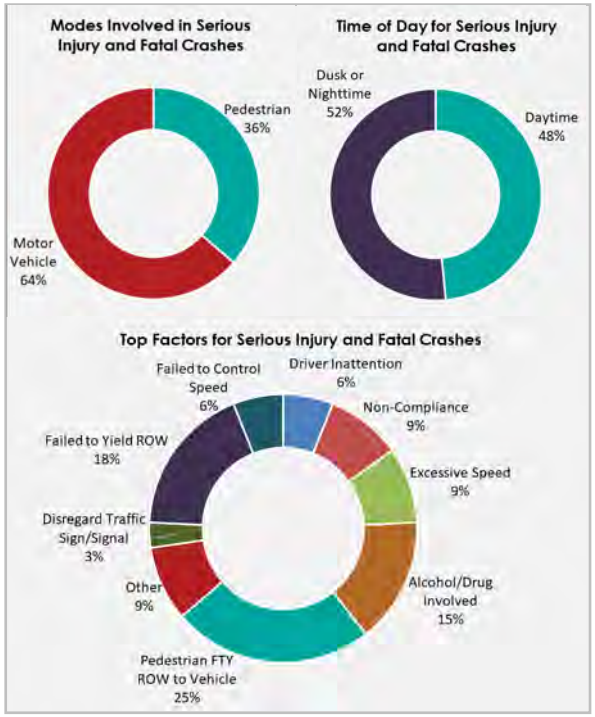
Corridor Characteristics

Precinct	2
Length	2.6 mi
Functional Classification	Major thoroughfare
Posted Speed	35 mph
Right of Way Width	80 ft
Existing Cross Section	4-lane undivided
Drainage	Open ditch
Daily Traffic Volume (21)	16,600-22,500
Social Vulnerability	High

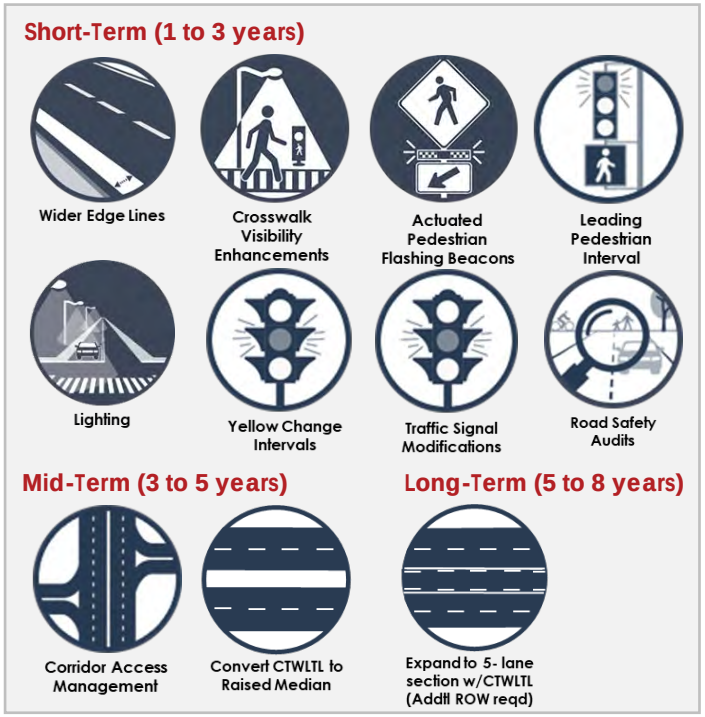
Crash Severity (2014-2021)

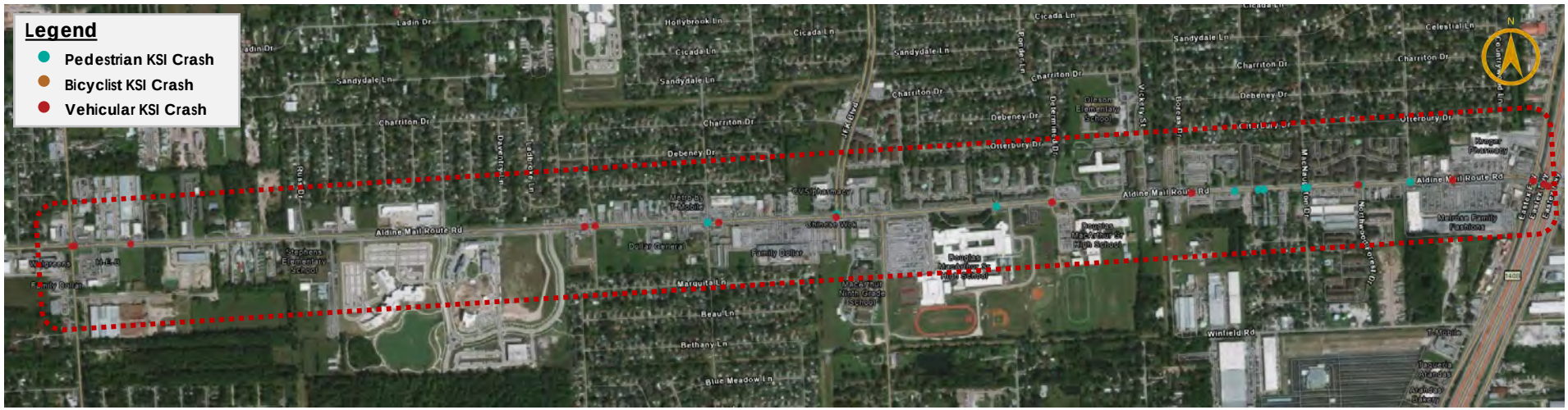
Fatal (K) Crashes	9
Serious Injury (SI) Crashes	24
Total KSI Crashes	33
KSI Crashes per Mile	12.7

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations





4. Antoine Drive

Veterans Memorial Drive to N. Sam Houston Parkway W.

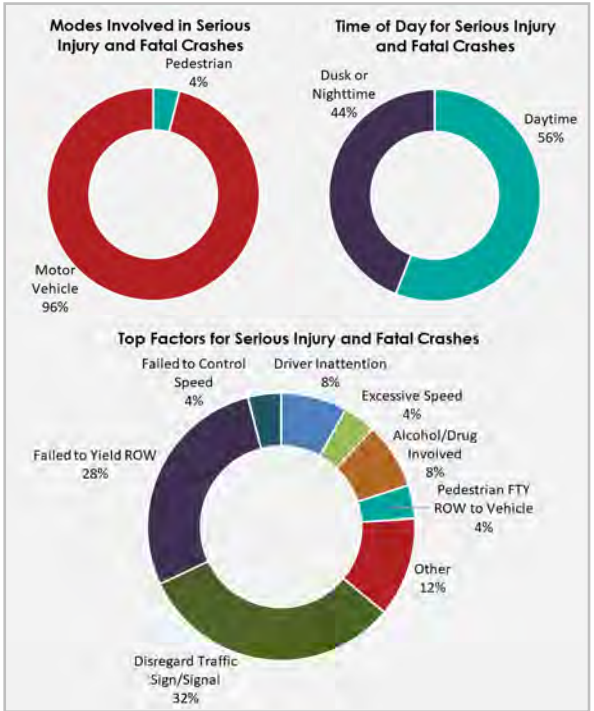
Corridor Characteristics

Precinct	1
Length	1.7 mi
Functional Classification	Major thoroughfare
Posted Speed	30-35 mph
Right of Way Width	100 ft
Existing Cross Section	4-lane divided
Drainage	Storm Sewer
Daily Traffic Volume (21)	15,200-17,400
Social Vulnerability	Medium

Crash Severity (2014-2021)

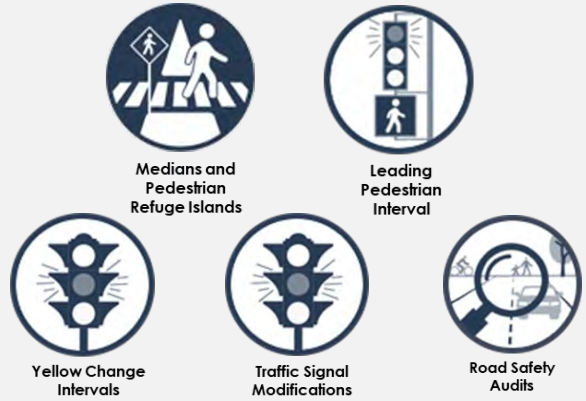
Fatal (K) Crashes	3
Serious Injury (SI) Crashes	22
Total KSI Crashes	25
KSI Crashes per Mile	14.7

Crash Trends (2014-2021)

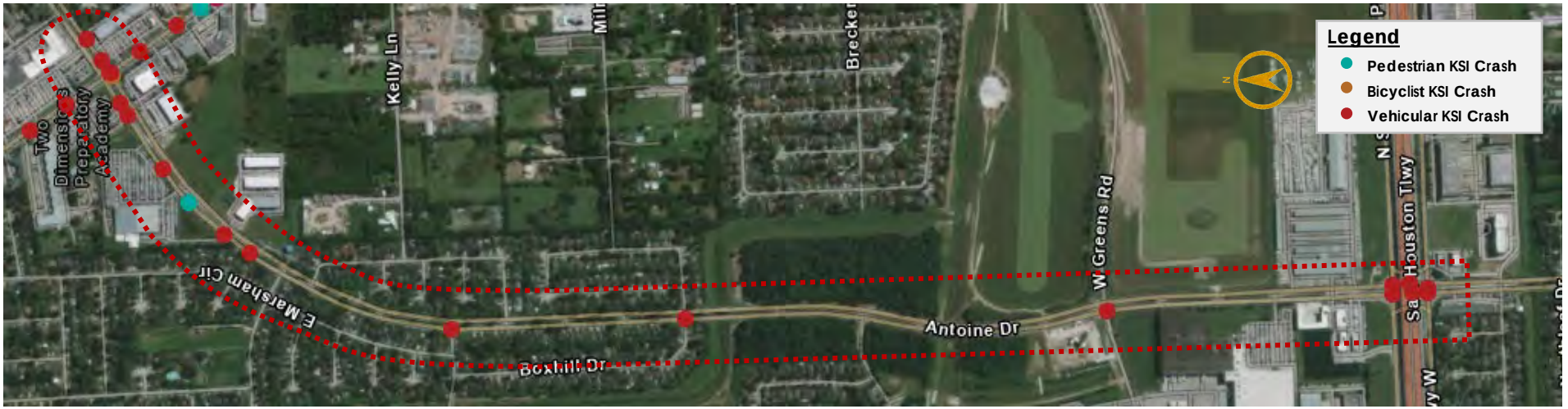


Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)



Mid-Term (3 to 5 years)



5. Stuebner Airline Road

N. of Spring Cypress Road to FM 1960

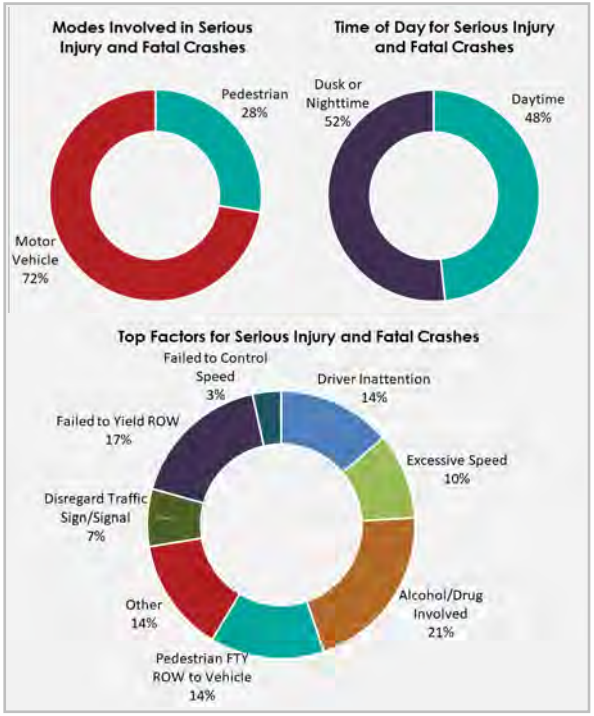
Corridor Characteristics

Precinct	3
Length	5.2 mi
Functional Classification	Major thoroughfare
Posted Speed	40-45 mph
Right of Way Width	100-120 ft
Existing Cross Section	Varies
Drainage	Varies
Daily Traffic Volume (21)	17,900-22,700
Social Vulnerability	Low

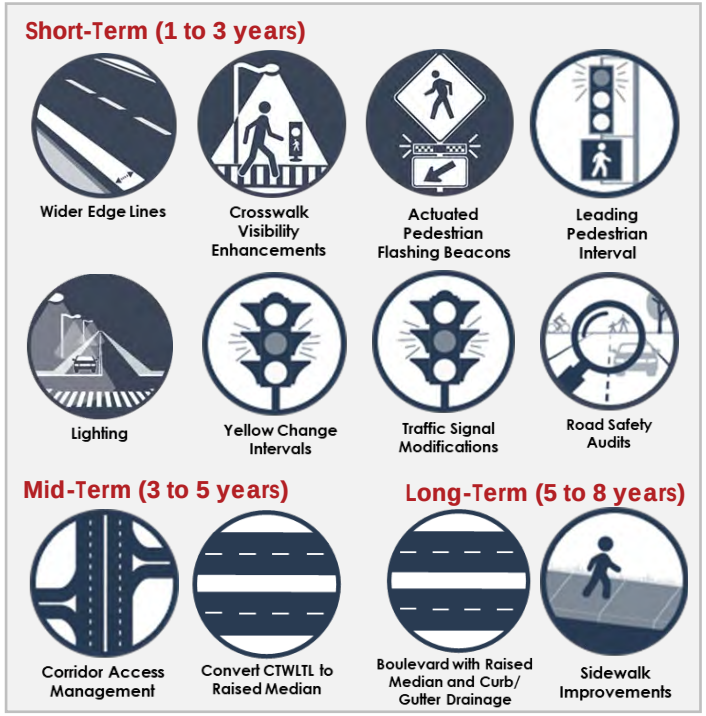
Crash Severity (2014-2021)

Fatal (K) Crashes	8
Serious Injury (SI) Crashes	21
Total KSI Crashes	29
KSI Crashes per Mile	5.6

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations



6. Veterans Memorial Drive

N. Sam Houston Parkway W. to SH 249

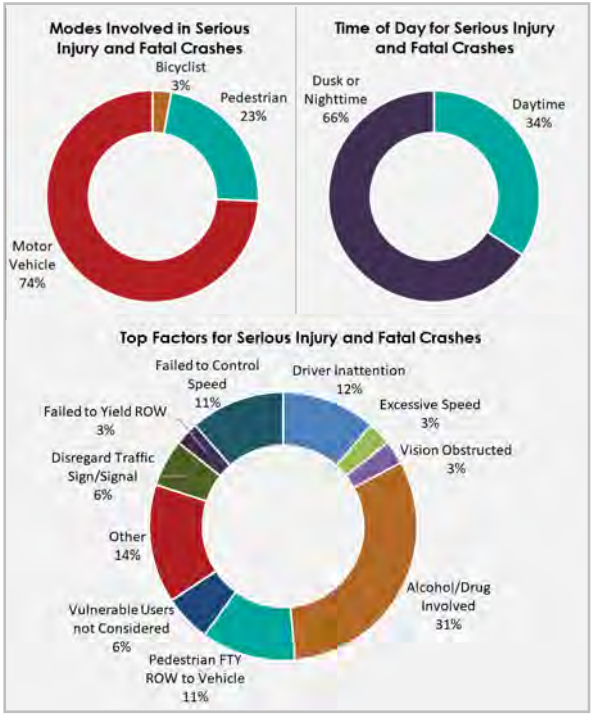
Corridor Characteristics

Precinct	2
Length	3.4 mi
Functional Classification	Major thoroughfare
Posted Speed	45 mph
Right of Way Width	100 ft
Existing Cross Section	4-lane undivided
Drainage	Open ditch
Daily Traffic Volume (21)	18,600-21,600
Social Vulnerability	High

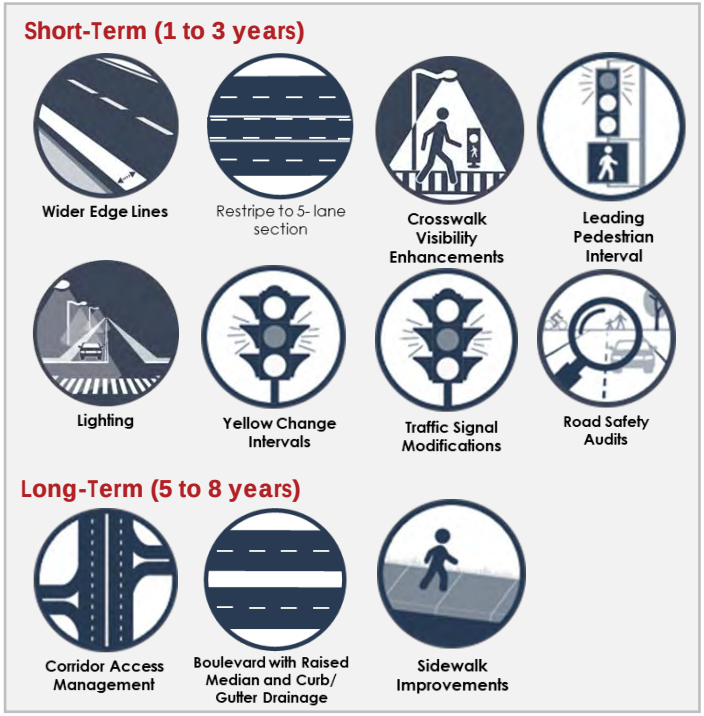
Crash Severity (2014-2021)

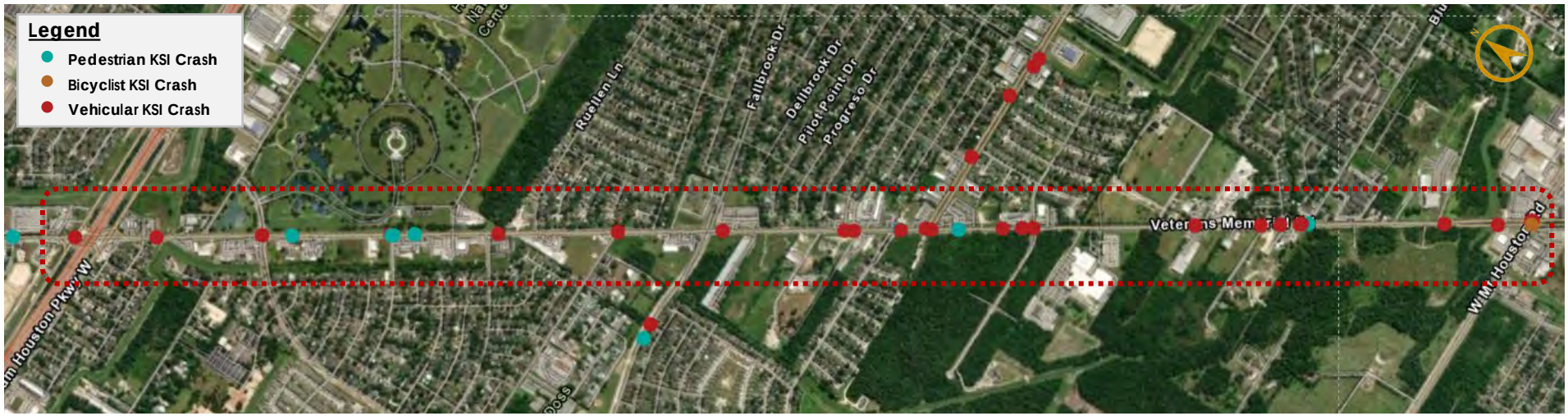
Fatal (K) Crashes	8
Serious Injury (SI) Crashes	27
Total KSI Crashes	35
KSI Crashes per Mile	10.3

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations





7. W. Montgomery Road
SH 249 to Wavell Street

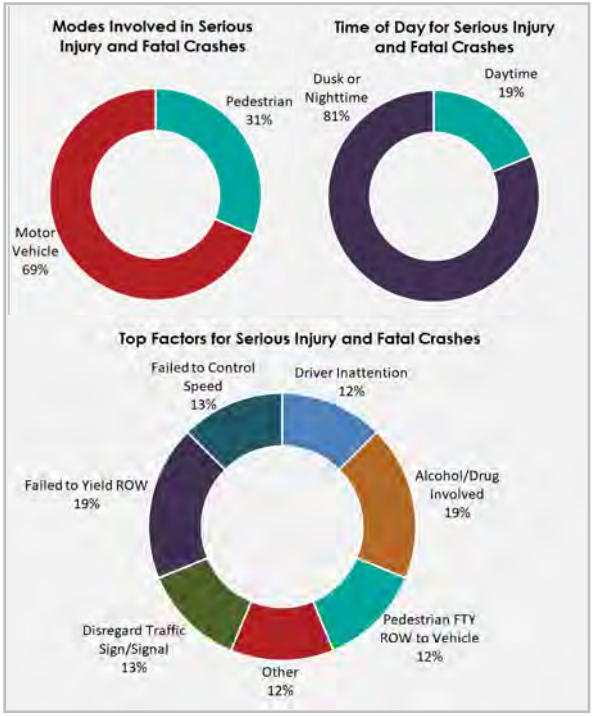
Corridor Characteristics

Precinct	1
Length	2.0 mi
Functional Classification	Major thoroughfare
Posted Speed	30-35 mph
Right of Way Width	40 ft
Existing Cross Section	4-lane divided
Drainage	Open ditch
Daily Traffic Volume (21)	11,000-17,700
Social Vulnerability	High

Crash Severity (2014-2021)

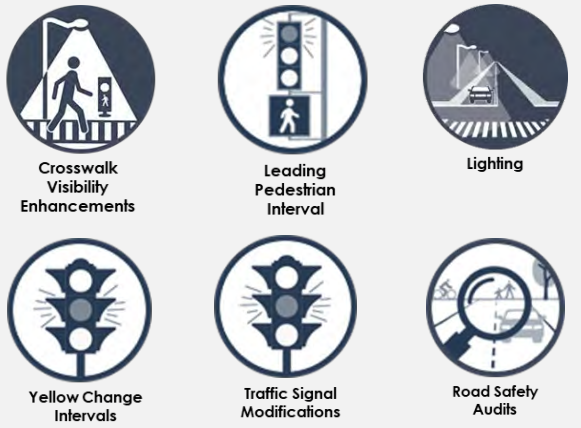
Fatal (K) Crashes	4
Serious Injury (SI) Crashes	12
Total KSI Crashes	16
KSI Crashes per Mile	8.0

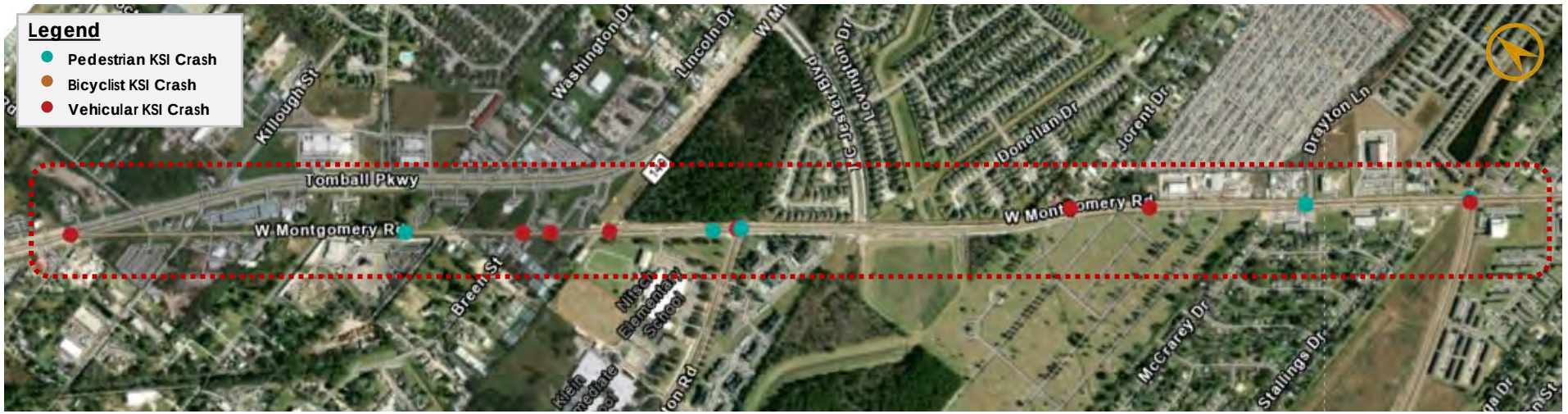
Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)





8. Spencer Highway

Galveston Road/Houston Boulevard to Somerton Drive

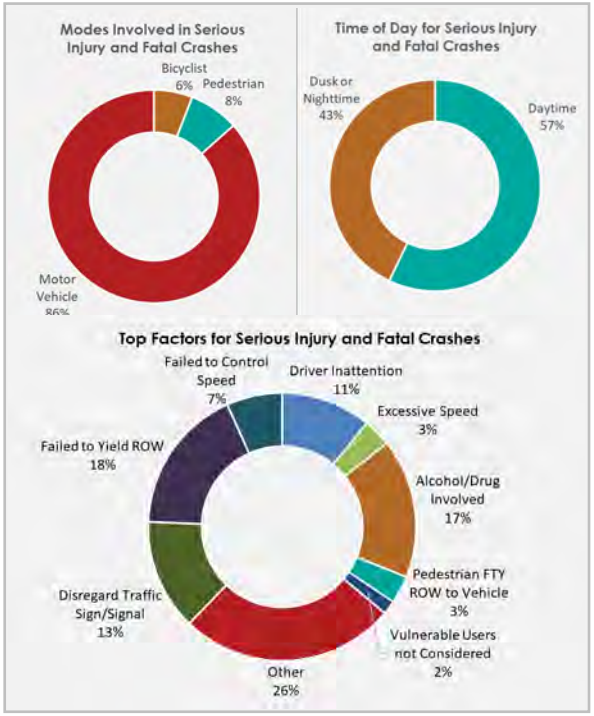
Corridor Characteristics

Precinct	**2**
Length	**8.0 mi**
Functional Classification	**Major thoroughfare**
Posted Speed	**35-40 mph**
Right of Way Width	**100 ft**
Existing Cross Section	**7-lane w/CTWLTL**
Drainage	**Storm sewer**
Daily Traffic Volume (21)	**19,300-26,400**
Social Vulnerability	**Medium**

Crash Severity (2014-2021)

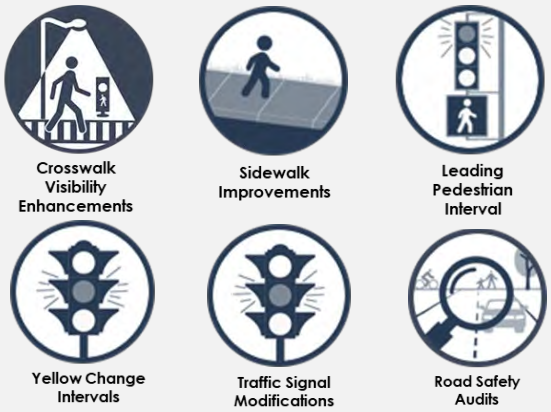
Fatal (K) Crashes	**18**
Serious Injury (SI) Crashes	**101**
Total KSI Crashes	**119**
KSI Crashes per Mile	**14.9**

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)



Mid-Term (3 to 5 years)

9. Dominion Park Drive

Kuykendahl Road to IH 45 Southbound Frontage Road

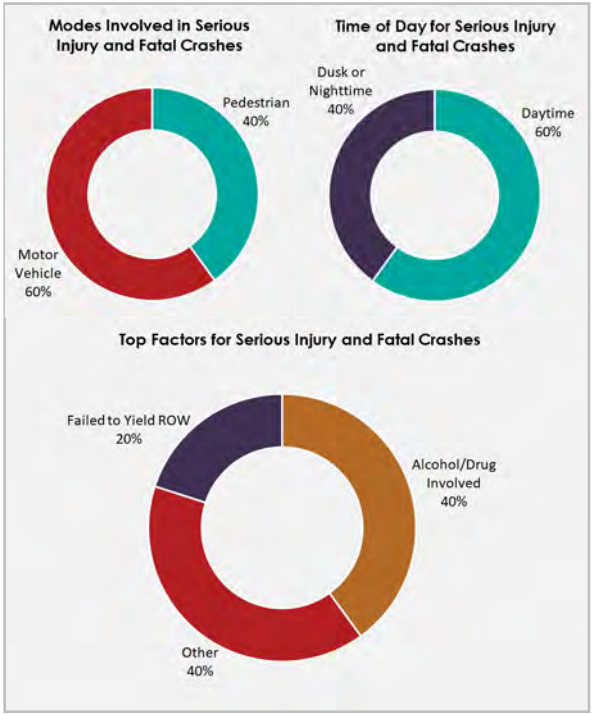
Corridor Characteristics

Precinct	1
Length	0.5 mi
Functional Classification	Collector
Posted Speed	35 mph
Right of Way Width	45 ft
Existing Cross Section	4-lane divided
Drainage	Storm Sewer
Daily Traffic Volume (21)	5,200
Social Vulnerability	High

Crash Severity (2014-2021)

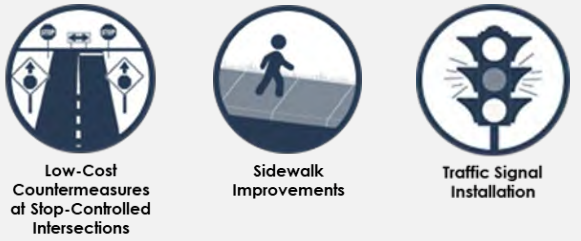
Fatal (K) Crashes	2
Serious Injury (SI) Crashes	3
Total KSI Crashes	5
KSI Crashes per Mile	10.0

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)



10. W. Mount Houston Road

IH 45 Northbound Frontage Road to Airline Drive

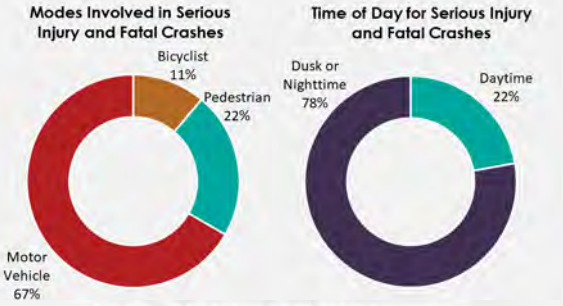
Corridor Characteristics

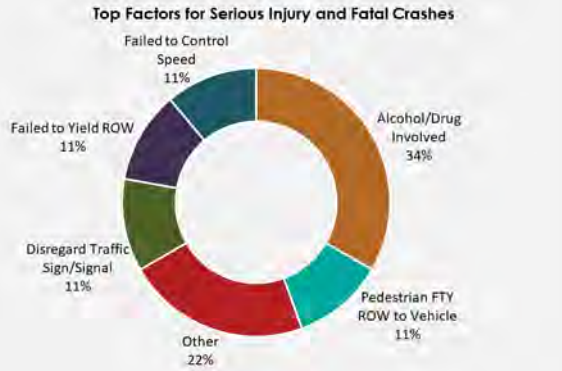
Precinct	2
Length	0.9 mi
Functional Classification	Collector
Posted Speed	35 mph
Right of Way Width	60 ft
Existing Cross Section	2- to 4-lane undivided
Drainage	Storm sewer
Daily Traffic Volume (21)	8,800
Social Vulnerability	High

Crash Severity (2014-2021)

Fatal (K) Crashes	2
Serious Injury (SI) Crashes	7
Total KSI Crashes	9
KSI Crashes per Mile	10.0

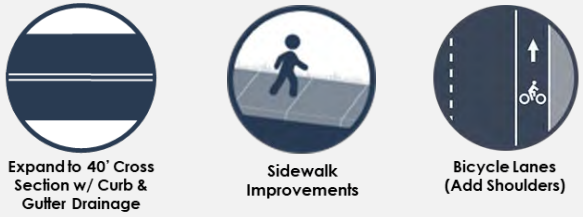
Crash Trends (2014-2021)





Vision Zero Safety Improvement Considerations

Long-Term (5 to 8 years)



11. Barbers Hill Road

Garth Road to Crosby Barbers Hill Road

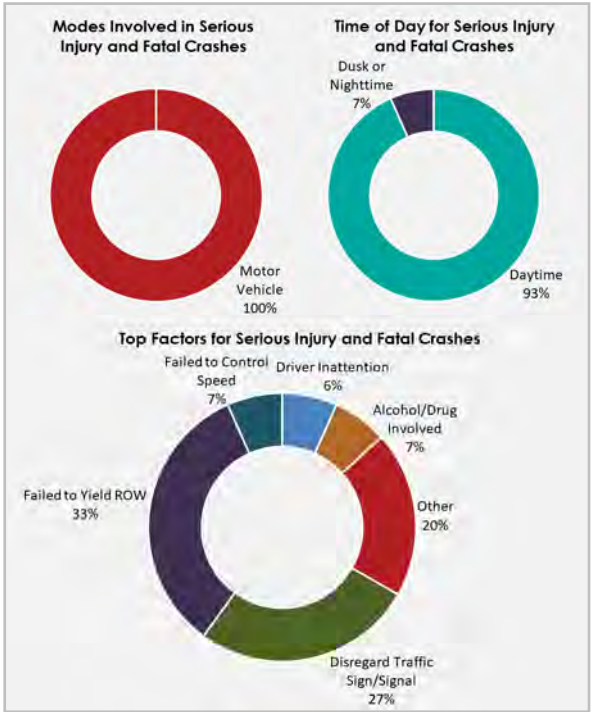
Corridor Characteristics

Precinct	3
Length	0.5 mi
Functional Classification	Major thoroughfare
Posted Speed	40 mph
Right of Way Width	60 ft
Existing Cross Section	2-lane undivided
Drainage	Open ditch
Daily Traffic Volume (21)	2,200 (Garth Rd 7,400)
Social Vulnerability	High

Crash Severity (2014-2021)

Fatal (K) Crashes	2
Serious Injury (SI) Crashes	13
Total KSI Crashes	15
KSI Crashes per Mile	30.0

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)

Lighting

12. Hollow Tree Lane

Cali Drive to IH-45 Northbound Frontage Road

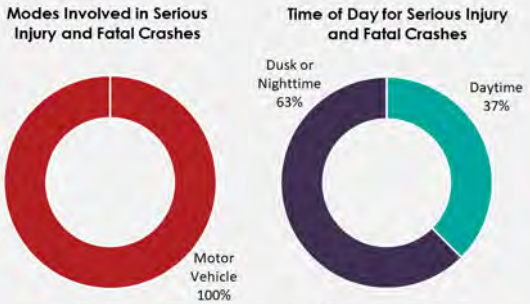
Corridor Characteristics

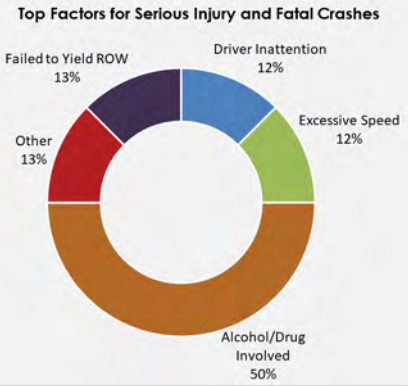
Precinct	1
Length	1.0 mi
Functional Classification	Residential
Posted Speed	20-30 mph
Right of Way Width	60 ft
Existing Cross Section	2-lane undivided
Drainage	Storm sewer
Daily Traffic Volume (21)	13,100
Social Vulnerability	Medium

Crash Severity (2014-2021)

Fatal (K) Crashes	3
Serious Injury (SI) Crashes	5
Total KSI Crashes	8
KSI Crashes per Mile	8.0

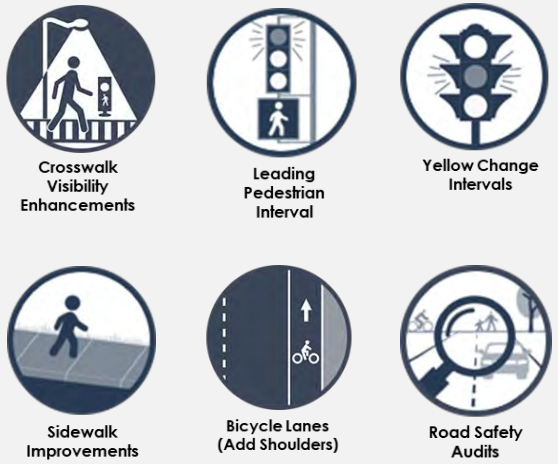
Crash Trends (2014-2021)





Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)



13. Ella Boulevard
At Barren Springs Drive

Corridor Characteristics

Precinct	1
Length	n/a
Functional Classification	Major thoroughfare
Posted Speed	40 mph |
Right of Way Width	100 ft
Existing Cross Section	4-lane divided | 2-lane undivided
Drainage	Storm sewer
Daily Traffic Volume (21)	17,100 | 4,100
Social Vulnerability	Medium

Crash Severity (2014-2021)

Fatal (K) Crashes	0
Serious Injury (SI) Crashes	9
Total KSI Crashes	9

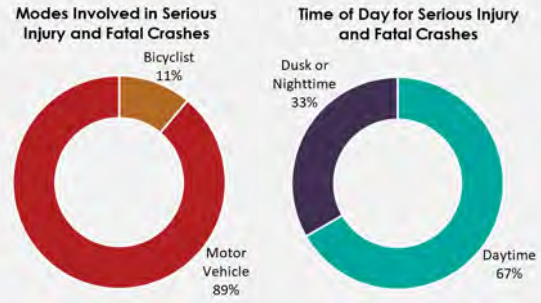
Safety Improvement Considerations

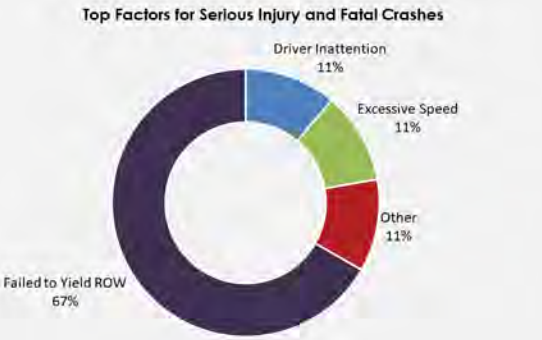
Short-Term (1 to 3 years)

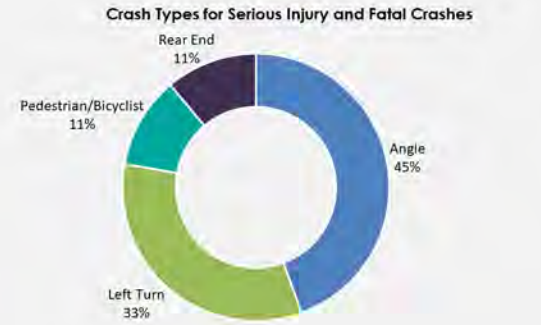
Low-Cost Countermeasures at Stop-Controlled Intersections

Traffic Signal Installation

Crash Trends (2014-2021)







14. Jones Road
Grant Road to Ranchstone Drive

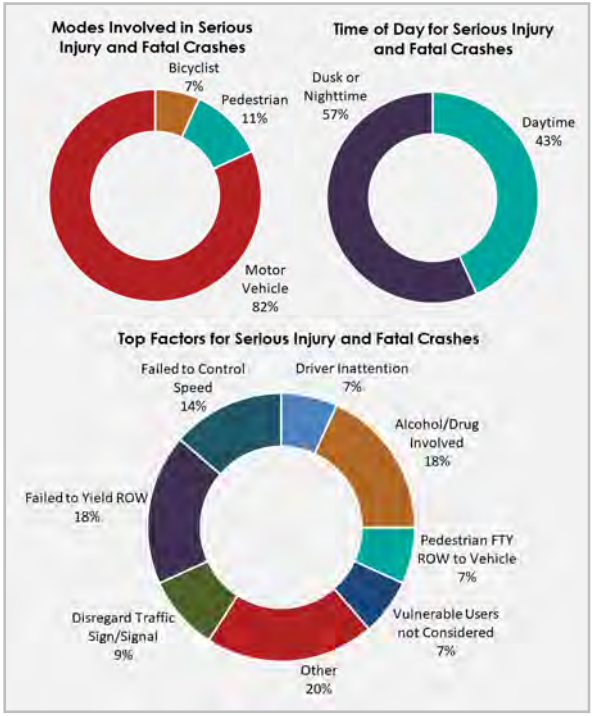
Corridor Characteristics

Precinct	3
Length	4.0 mi
Functional Classification	Major thoroughfare
Posted Speed	40 mph
Right of Way Width	100 ft
Existing Cross Section	7-lane w/CTWLTL
Drainage	Open ditch
Daily Traffic Volume (21)	16,900 – 39,400
Social Vulnerability	Low

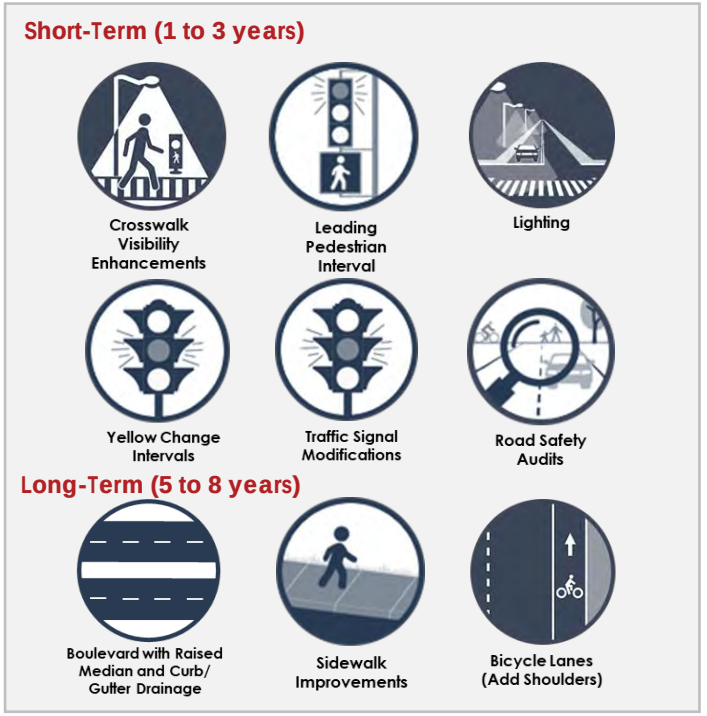
Crash Severity (2014-2021)

Fatal (K) Crashes	8
Serious Injury (SI) Crashes	36
Total KSI Crashes	44
KSI Crashes per Mile	11.0

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations



15. West Road

Veterans Memorial Drive to IH-45 Northbound Frontage Road

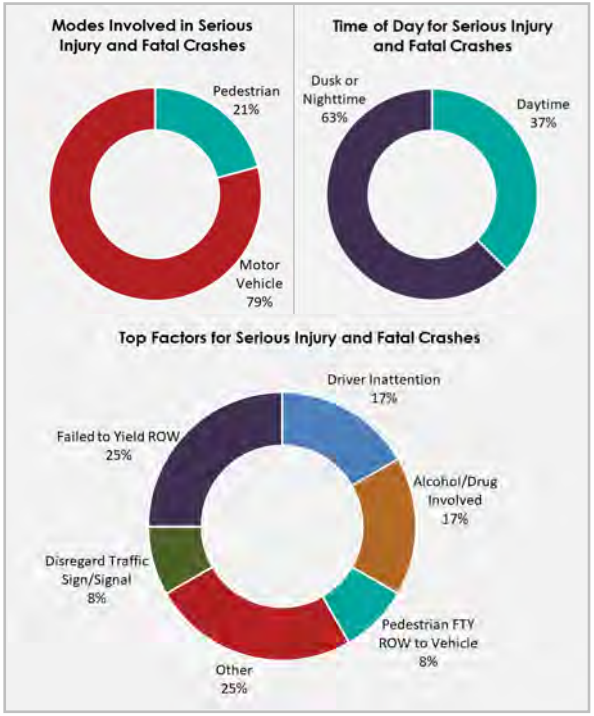
Corridor Characteristics

Precinct	2
Length	1.75 mi
Functional Classification	Major thoroughfare
Posted Speed	45 mph
Right of Way Width	100 ft
Existing Cross Section	4-lane divided
Drainage	Storm sewer
Daily Traffic Volume (21)	4,100-26,500
Social Vulnerability	Medium

Crash Severity (2014-2021)

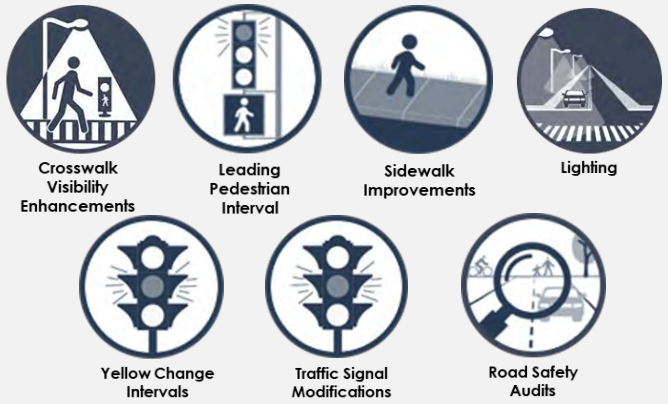
Fatal (K) Crashes	6
Serious Injury (SI) Crashes	18
Total KSI Crashes	24
KSI Crashes per Mile	13.7

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)



Mid-Term (3 to 5 years)

16. Atascocita Road
Kings Parkway to FM 1960

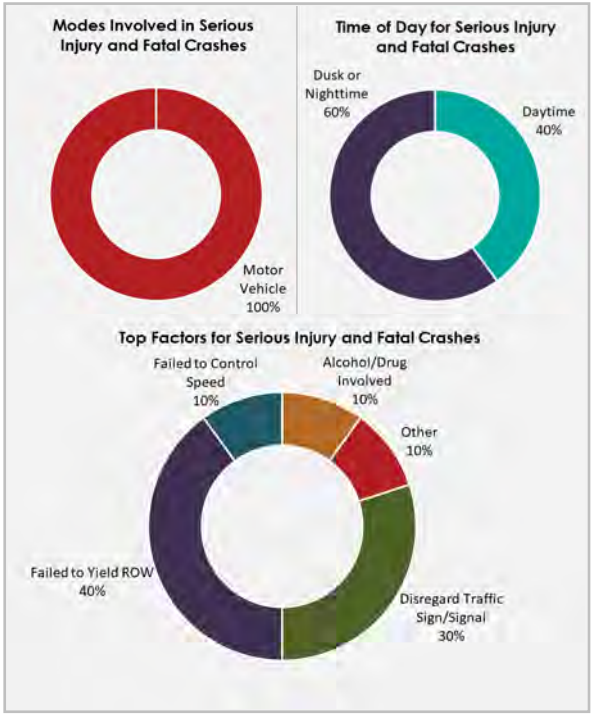
Corridor Characteristics

Precinct	3
Length	0.9 mi
Functional Classification	Major thoroughfare
Posted Speed	45 mph
Right of Way Width	80 ft
Existing Cross Section	5-lane w/CTWLTL
Drainage	Storm sewer
Daily Traffic Volume (21)	15,800
Social Vulnerability	Low

Crash Severity (2014-2021)

Fatal (K) Crashes	1
Serious Injury (SI) Crashes	9
Total KSI Crashes	10
KSI Crashes per Mile	11.1

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)

Mid-Term (3 to 5 years)

17. Grant Road

Perry Road to State Highway 249

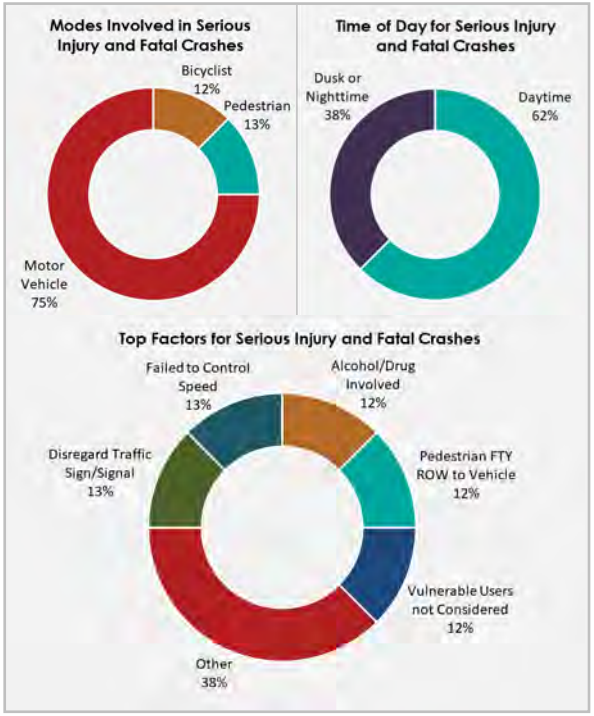
Corridor Characteristics

Precinct	3
Length	0.5 mi
Functional Classification	Major thoroughfare
Posted Speed	40 mph
Right of Way Width	120 ft
Existing Cross Section	5-lane w/CTWLTL
Drainage	Storm sewer
Daily Traffic Volume (21)	16,700
Social Vulnerability	Low

Crash Severity (2014-2021)

Fatal (K) Crashes	2
Serious Injury (SI) Crashes	6
Total KSI Crashes	8
KSI Crashes per Mile	16.0

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)

18. Louetta Road

State Highway 249 to Cannaberry Way

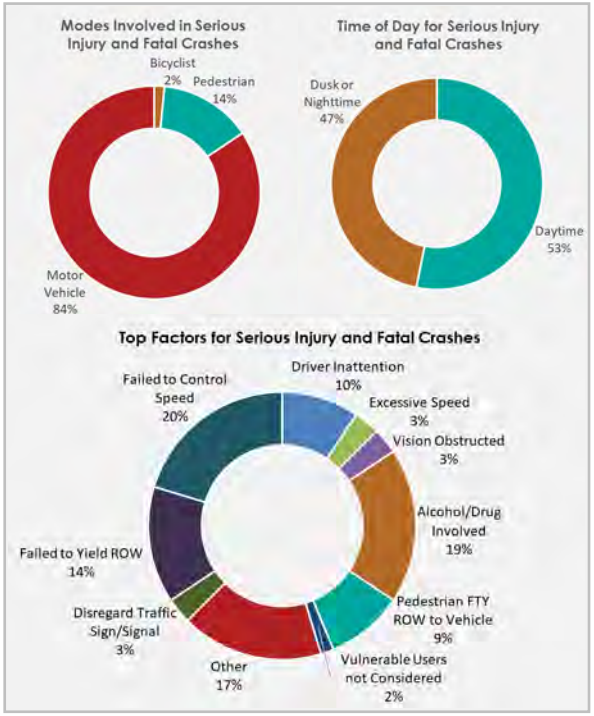
Corridor Characteristics

Precinct	**3**
Length	**8.4 mi**
Functional Classification	**Major thoroughfare**
Posted Speed	**40 mph**
Right of Way Width	**100 ft**
Existing Cross Section	**Varies**
Drainage	**Varies**
Daily Traffic Volume (21)	**31,200-35,800**
Social Vulnerability	**Low**

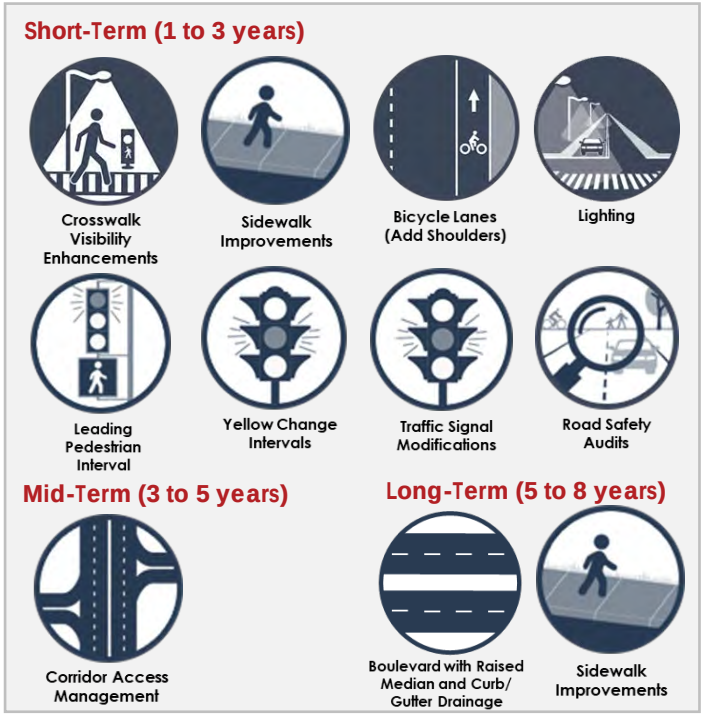
Crash Severity (2014-2021)

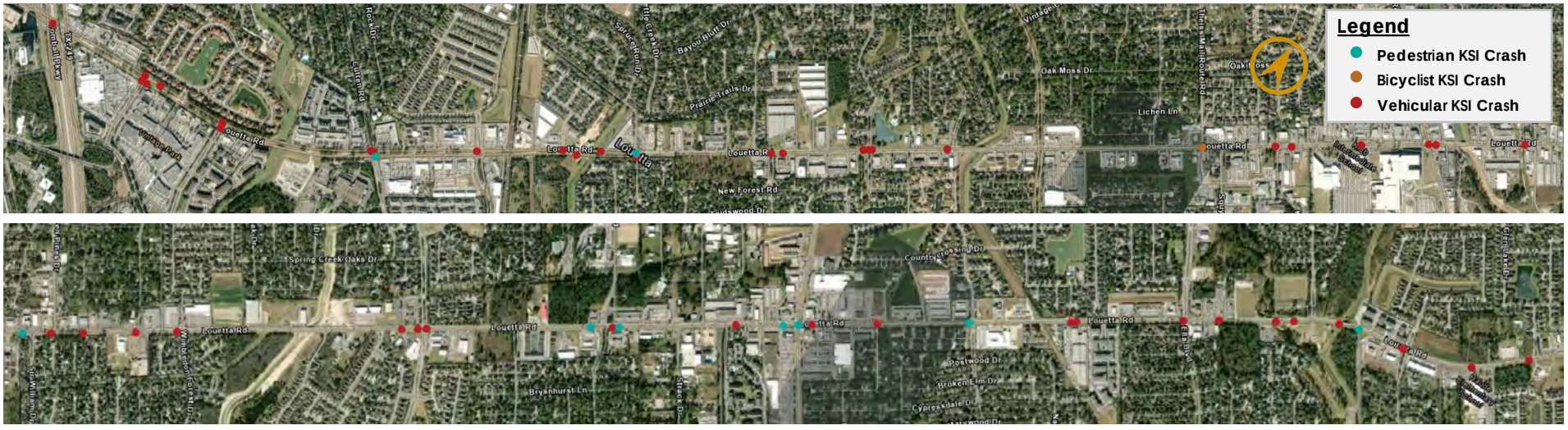
Fatal (K) Crashes	**9**
Serious Injury (SI) Crashes	**55**
Total KSI Crashes	**64**
KSI Crashes per Mile	**7.6**

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations





19. Airline Drive
N. of West Road to Canino Road

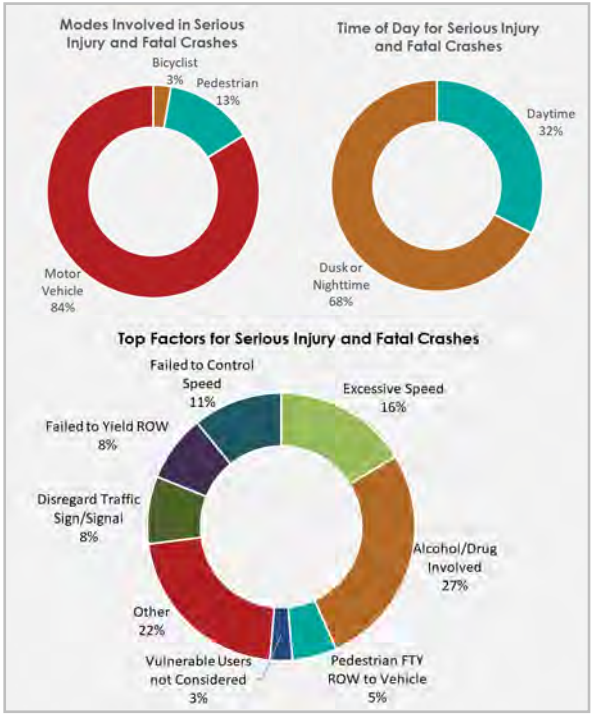
Corridor Characteristics

Precinct	2
Length	3.5 mi
Functional Classification	Major Thoroughfare
Posted Speed	35 mph
Right of Way Width	120 ft
Existing Cross Section	Varies
Drainage	Storm sewer
Daily Traffic Volume (21)	17,000-20,400
Social Vulnerability	Medium

Crash Severity (2014-2021)

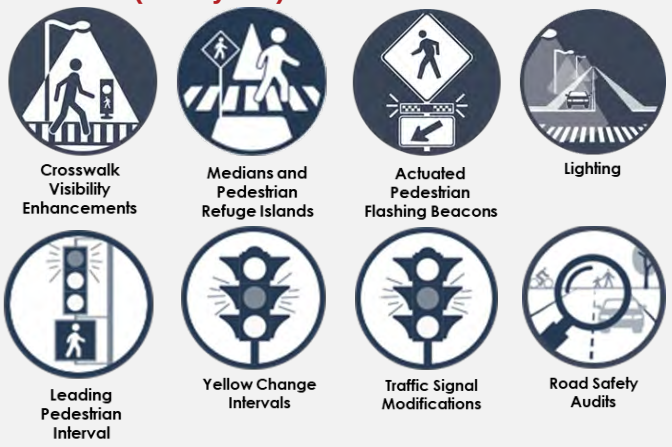
Fatal (K) Crashes	10
Serious Injury (SI) Crashes	27
Total KSI Crashes	37
KSI Crashes per Mile	10.6

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)



Mid-Term (3 to 5 years)

20. Homestead Road

N. of Tidwell Road to S. of Miley Street

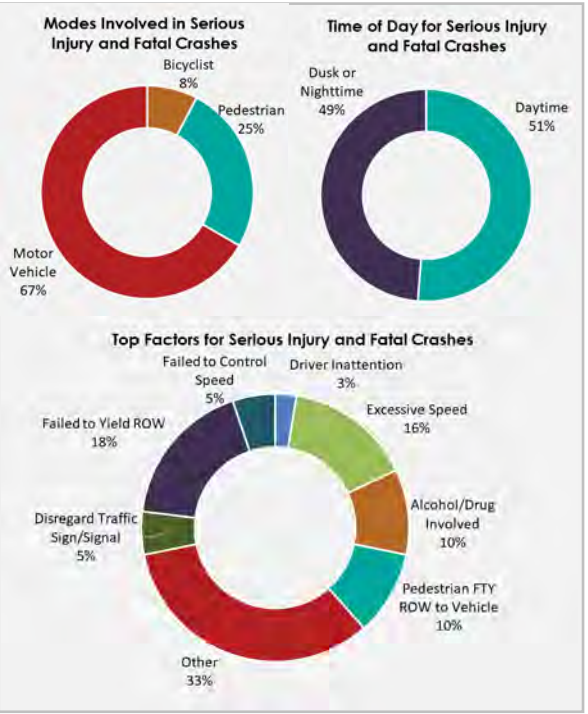
Corridor Characteristics

Precinct	1
Length	2.5 mi
Functional Classification	Major thoroughfare
Posted Speed	40 mph
Right of Way Width	100 ft
Existing Cross Section	6-lane divided
Drainage	Storm sewer
Daily Traffic Volume (21)	14,500-16,100
Social Vulnerability	High

Crash Severity (2014-2021)

Fatal (K) Crashes	6
Serious Injury (SI) Crashes	33
Total KSI Crashes	39
KSI Crashes per Mile	15.6

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)

Mid-Term (3 to 5 years)

21. Homestead Road

S. of Old Humble Road to Winfield Road

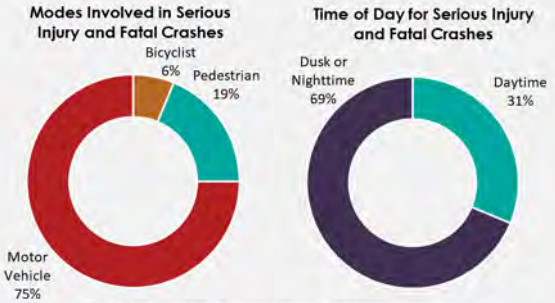
Corridor Characteristics

Precinct	1 & 2
Length	1.2 mi
Functional Classification	Major thoroughfare
Posted Speed	40 mph
Right of Way Width	100 ft
Existing Cross Section	4-lane divided
Drainage	Storm sewer
Daily Traffic Volume (21)	17,300
Social Vulnerability	High

Crash Severity (2014-2021)

Fatal (K) Crashes	3
Serious Injury (SI) Crashes	13
Total KSI Crashes	16
KSI Crashes per Mile	13.3

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)

Mid-Term (3 to 5 years)

22. Huffman Cleveland Road

Hickory Ridge Drive to Commons Vista Drive

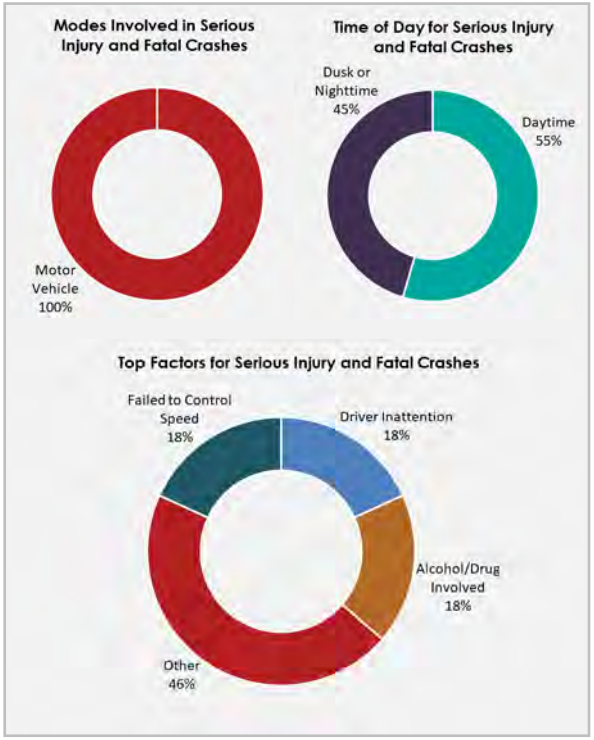
Corridor Characteristics

Precinct	**3**
Length	**1.7 mi**
Functional Classification	**Major thoroughfare (to be widened)**
Posted Speed	**45 mph**
Right of Way Width	**60 ft**
Existing Cross Section	**2-lane undivided**
Drainage	**Open ditch**
Daily Traffic Volume (21)	**10,700**
Social Vulnerability	**Low**

Crash Severity (2014-2021)

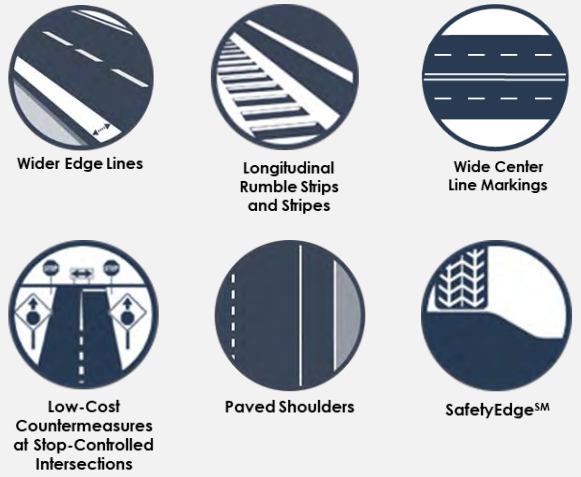
Fatal (K) Crashes	**4**
Serious Injury (SI) Crashes	**7**
Total KSI Crashes	**11**
KSI Crashes per Mile	**6.5**

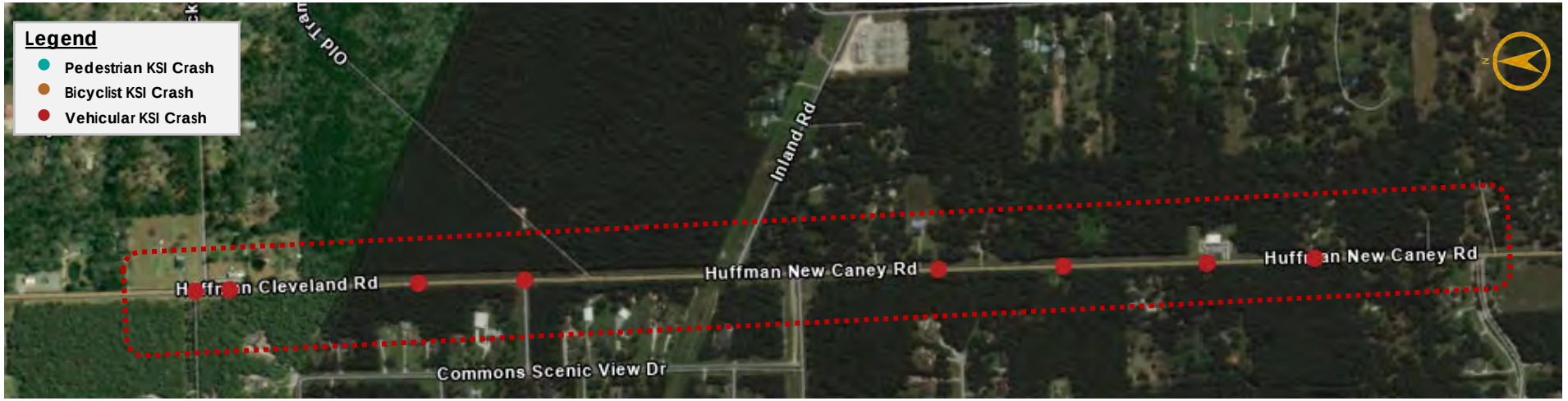
Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Mid-Term (3 to 5 years)





23. W. Lake Houston Parkway

Pine Cup Drive to Atascocita Middle School South Boundary

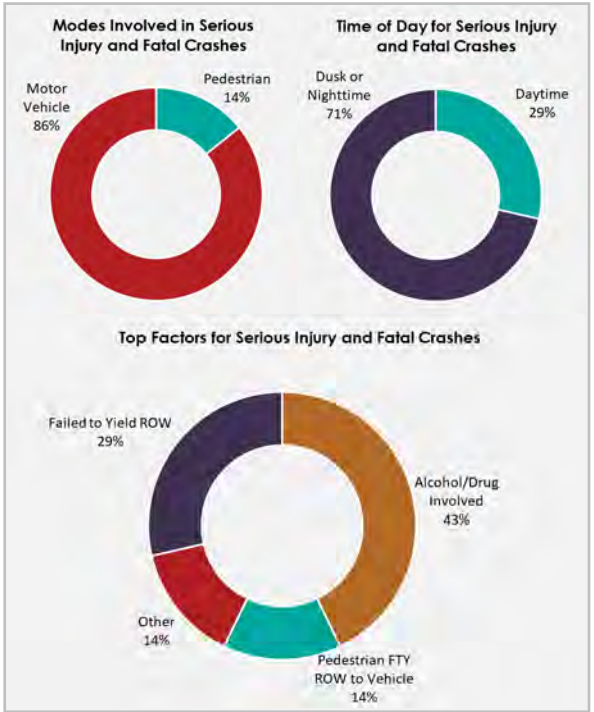
Corridor Characteristics

Precinct	3
Length	1.0 mi
Functional Classification	Major thoroughfare
Posted Speed	35 mph
Right of Way Width	100 ft
Existing Cross Section	4-lane divided
Drainage	Storm sewer
Daily Traffic Volume (21)	22,600-24 000
Social Vulnerability	Low

Crash Severity (2014-2021)

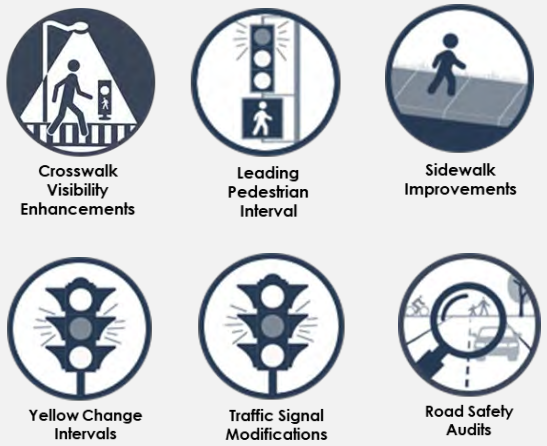
Fatal (K) Crashes	2
Serious Injury (SI) Crashes	5
Total KSI Crashes	7
KSI Crashes per Mile	7.0

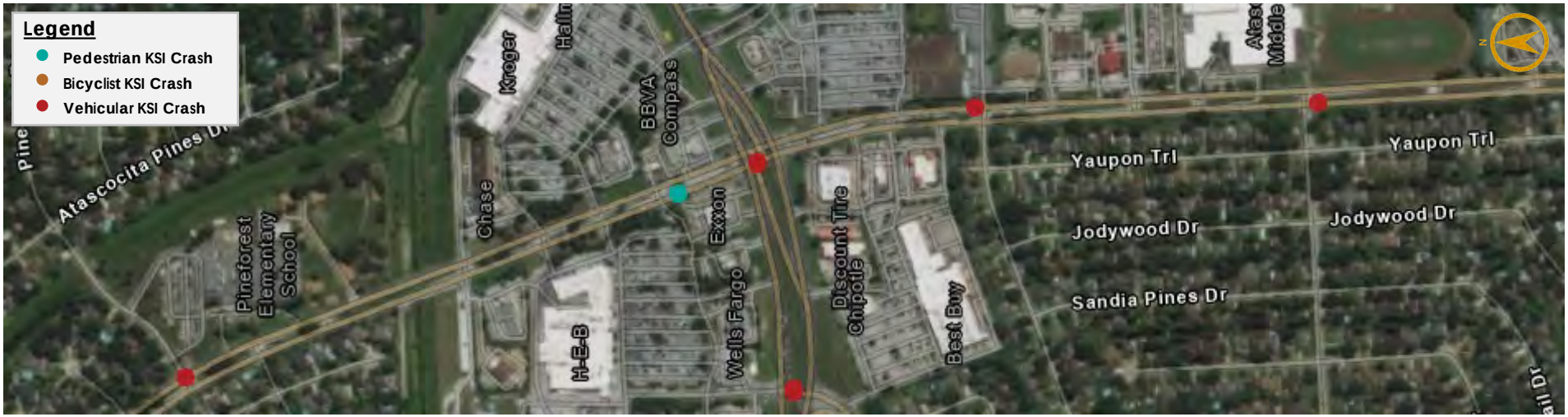
Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)





24. Bissonnet Street
Sugar Land Howell Road to Synott Road

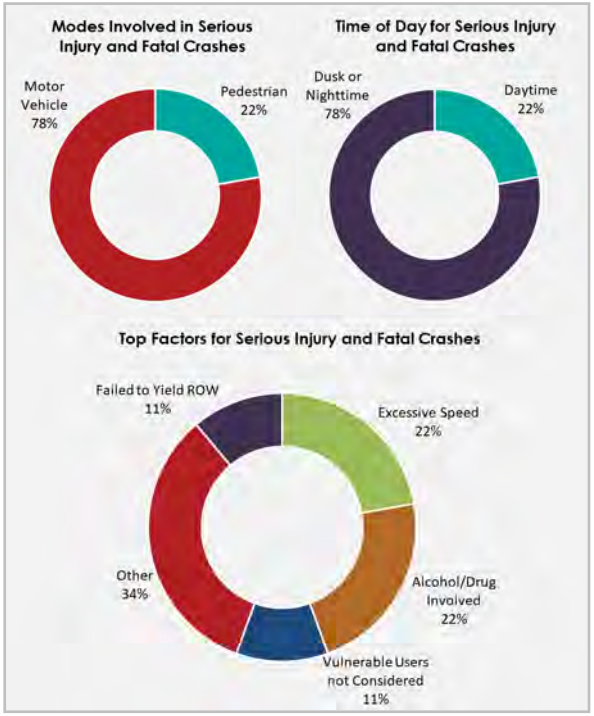
Corridor Characteristics

Precinct	4
Length	1.3 mi
Functional Classification	Major thoroughfare
Posted Speed	35 mph
Right of Way Width	120 ft
Existing Cross Section	4-lane divided
Drainage	Storm sewer
Daily Traffic Volume (21)	20,100
Social Vulnerability	Medium

Crash Severity (2014-2021)

Fatal (K) Crashes	5
Serious Injury (SI) Crashes	4
Total KSI Crashes	9
KSI Crashes per Mile	6.9

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)

25. Fry Road

N. of Keith Harrow Boulevard to Franz Road

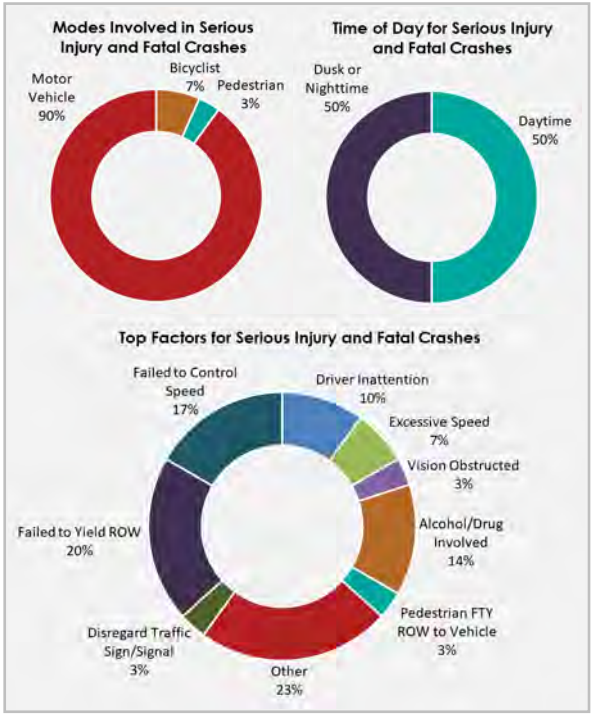
Corridor Characteristics

Precinct	4
Length	3.5 mi
Functional Classification	Major thoroughfare
Posted Speed	40 mph
Right of Way Width	100 ft
Existing Cross Section	4-lane divided
Drainage	Varies
Daily Traffic Volume (21)	27,100-39,600
Social Vulnerability	Low

Crash Severity (2014-2021)

Fatal (K) Crashes	4
Serious Injury (SI) Crashes	26
Total KSI Crashes	30
KSI Crashes per Mile	8.6

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)

26. Fallbrook Drive

W. of Northwest Park Drive to Veterans Memorial Drive

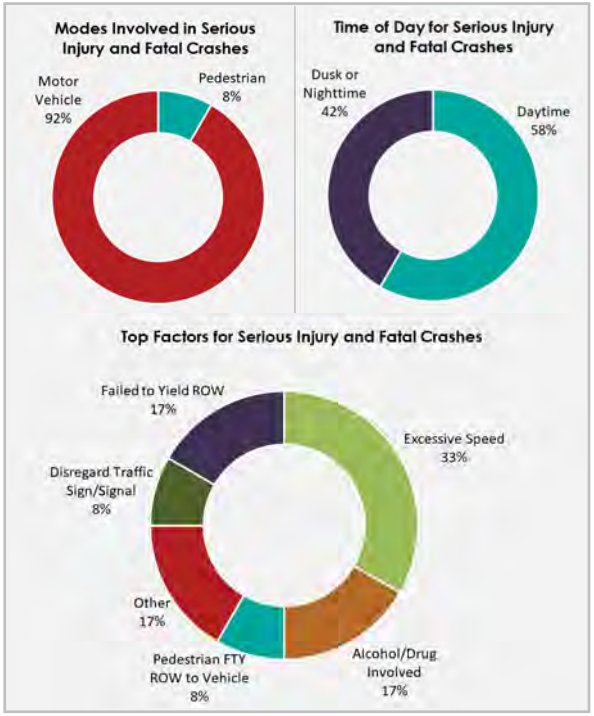
Corridor Characteristics

Precinct	1 & 2
Length	2.3 mi
Functional Classification	Major thoroughfare
Posted Speed	35 mph
Right of Way Width	100 ft
Existing Cross Section	4-lane divided
Drainage	Storm sewer
Daily Traffic Volume (21)	5,800
Social Vulnerability	Medium

Crash Severity (2014-2021)

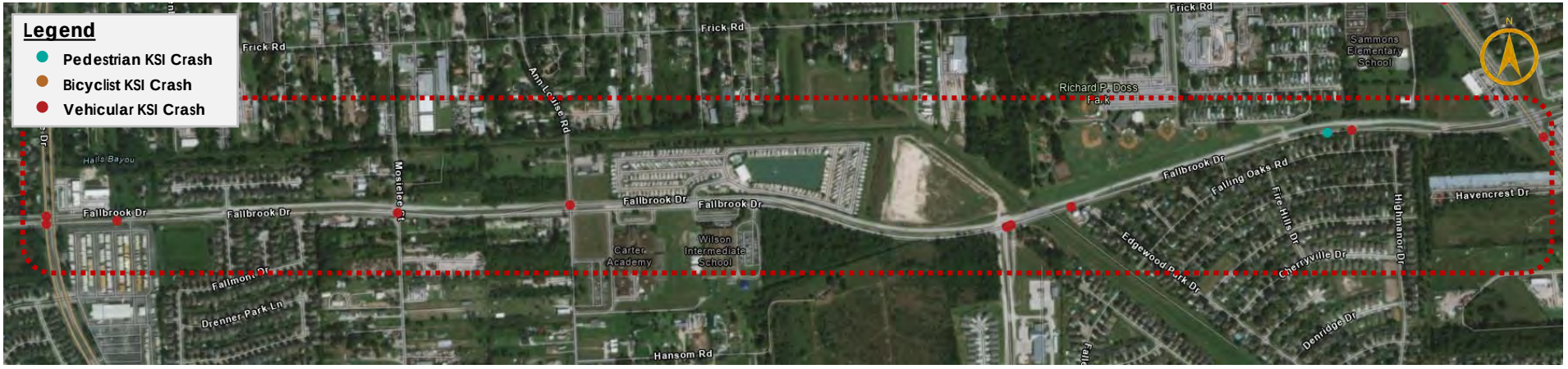
Fatal (K) Crashes	5
Serious Injury (SI) Crashes	7
Total KSI Crashes	12
KSI Crashes per Mile	5.2

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)



27. Spears Road
Antoine Drive to W. of T.C. Jester

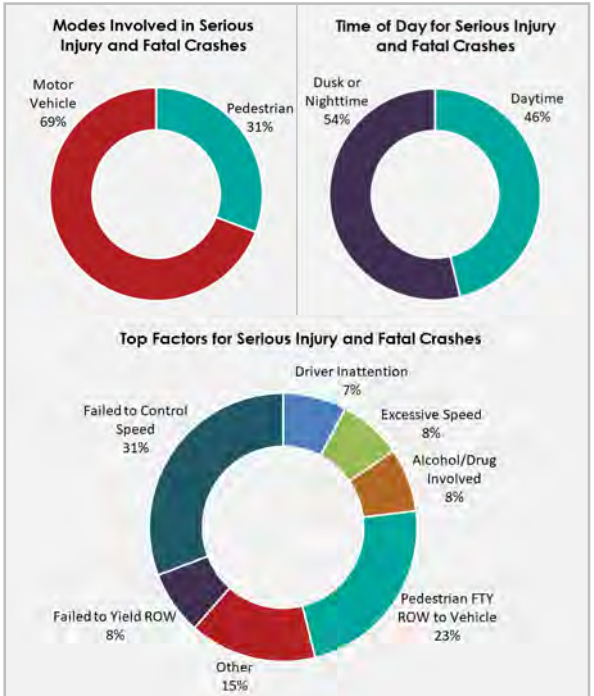
Corridor Characteristics

Precinct	1
Length	1.0 mi
Functional Classification	Major thoroughfare
Posted Speed	40 mph
Right of Way Width	100 ft
Existing Cross Section	4-lane divided
Drainage	Storm Sewer
Daily Traffic Volume (21)	20,400
Social Vulnerability	Medium

Crash Severity (2014-2021)

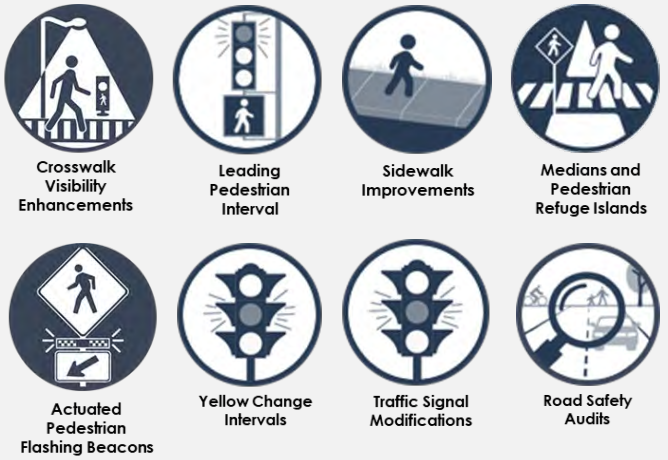
Fatal (K) Crashes	3
Serious Injury (SI) Crashes	10
Total KSI Crashes	13
KSI Crashes per Mile	13.0

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)



28. Spring Cypress Road
Memorial Springs Drive to W. of Valka Road

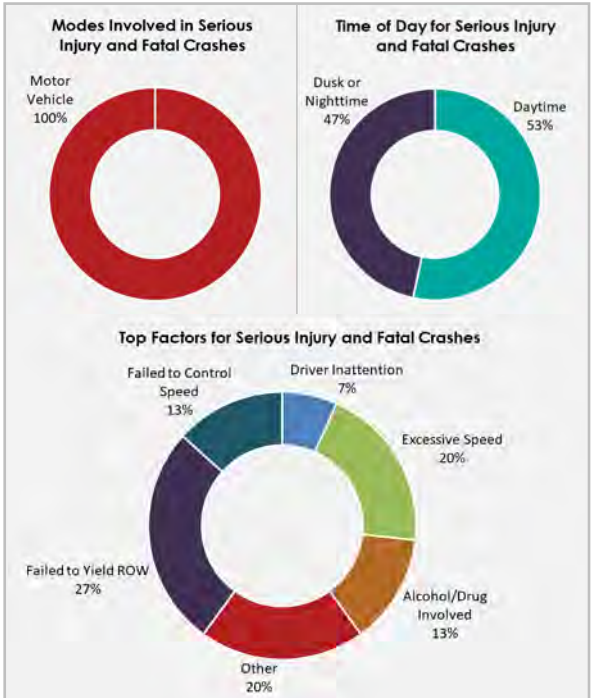
Corridor Characteristics

Precinct	3
Length	2.2 mi
Functional Classification	Major thoroughfare
Posted Speed	
Right of Way Width	100 ft
Existing Cross Section	4-lane undivided
Drainage	Open ditch
Daily Traffic Volume (21)	29,700-34,600
Social Vulnerability	Low

Crash Severity (2014-2021)

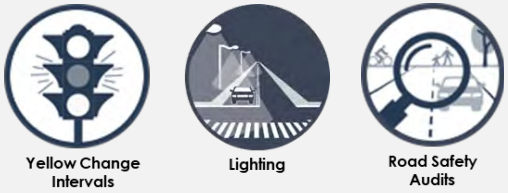
Fatal (K) Crashes	4
Serious Injury (SI) Crashes	11
Total KSI Crashes	15
KSI Crashes per Mile	6.8

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)



Mid-Term (3 to 5 years)

29. W. Little York Road

Empire Central Drive to W. of Fairbanks North Houston Road

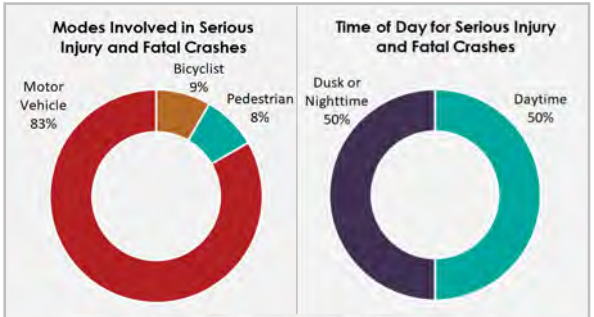
Corridor Characteristics

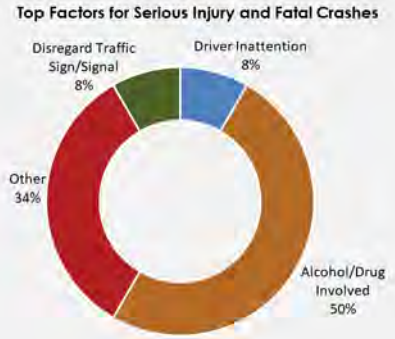
Precinct	1
Length	1.2 mi
Functional Classification	Major thoroughfare
Posted Speed	40 mph
Right of Way Width	120 ft
Existing Cross Section	4-lane undivided
Drainage	Open ditch
Daily Traffic Volume (21)	14,700-17,000
Social Vulnerability	High

Crash Severity (2014-2021)

Fatal (K) Crashes	4
Serious Injury (SI) Crashes	8
Total KSI Crashes	12
KSI Crashes per Mile	10.0

Crash Trends (2014-2021)





Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)

Yellow Change Intervals

Road Safety Audits

Long-Term (5 to 8 years)

Expand to 5- lane section w/CTWLTL (Addtl ROW reqd)

Bicycle Lanes (Add Shoulders)

30. Alice Road

Green Meadow Road to State Highway 249 Business

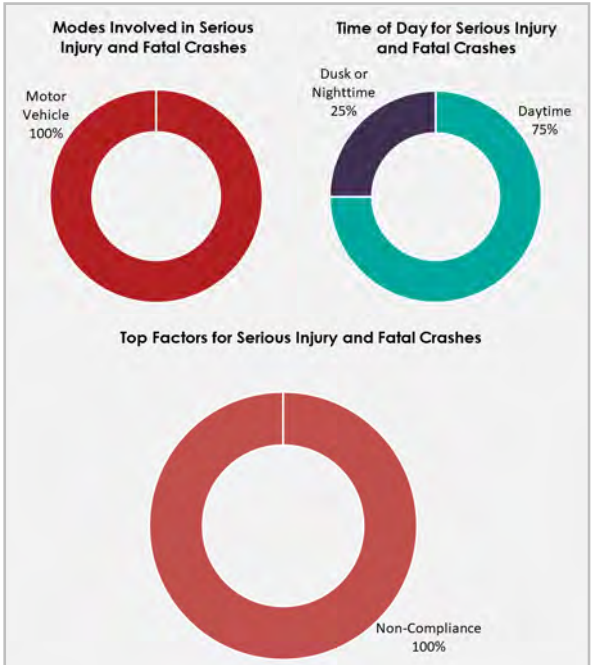
Corridor Characteristics

Precinct	4
Length	0.5 mi
Functional Classification	Residential
Posted Speed	35 mph
Right of Way Width	60 ft
Existing Cross Section	2-lane undivided
Drainage	Open ditch
Daily Traffic Volume (21)	3,400
Social Vulnerability	Medium

Crash Severity (2014-2021)

Fatal (K) Crashes	2
Serious Injury (SI) Crashes	2
Total KSI Crashes	4
KSI Crashes per Mile	8.0

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)

Long-Term (5 to 8 years)

31. Barker Cypress Road

N. of West Little York Road to Gummert Road

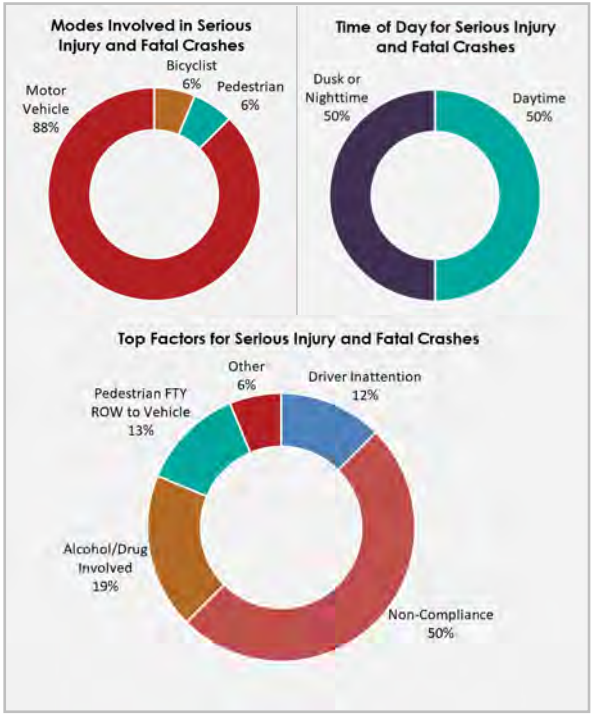
Corridor Characteristics

Precinct	4
Length	0.7 mi
Functional Classification	Major thoroughfare
Posted Speed	45 mph
Right of Way Width	100 ft
Existing Cross Section	4-lane divided
Drainage	Storm sewer
Daily Traffic Volume (21)	32,000
Social Vulnerability	Low

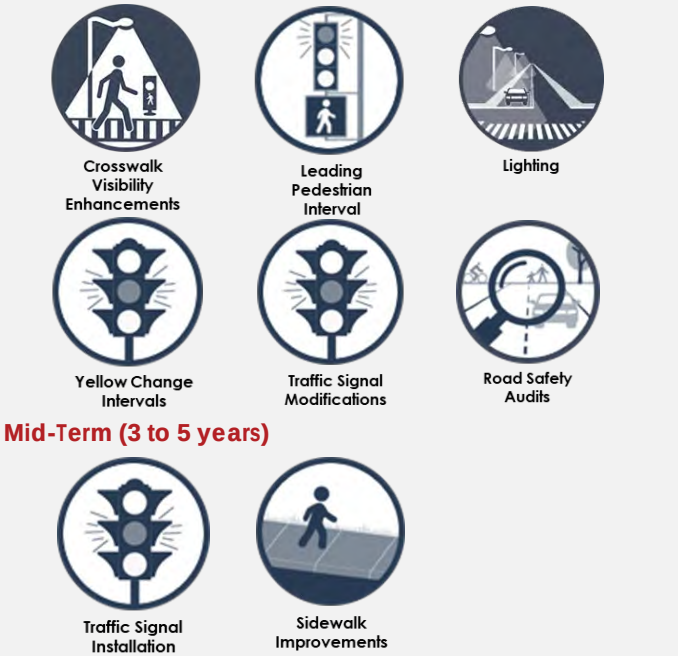
Crash Severity (2014-2021)

Fatal (K) Crashes	4
Serious Injury (SI) Crashes	12
Total KSI Crashes	16
KSI Crashes per Mile	22.9

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations



32. Greenhouse Road
Clay Road to Golden Wave Drive

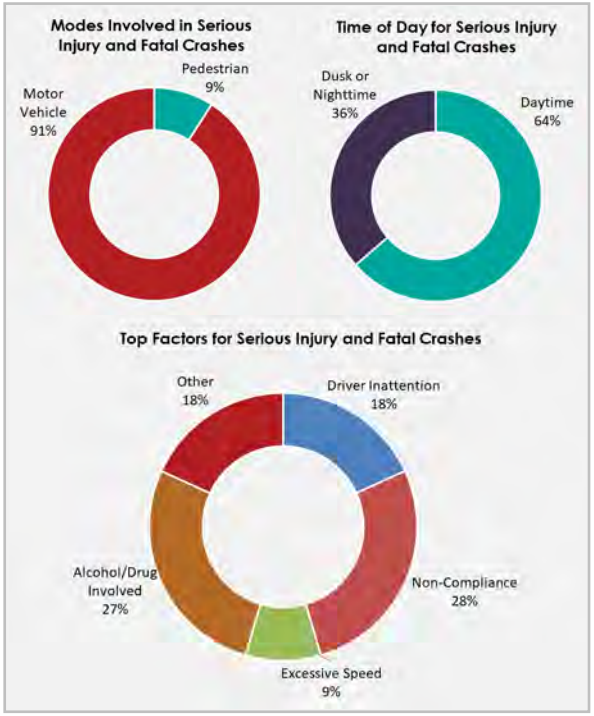
Corridor Characteristics

Precinct	4
Length	1.3 mi
Functional Classification	Major thoroughfare
Posted Speed	45 mph
Right of Way Width	100 ft
Existing Cross Section	4-lane divided
Drainage	Storm sewer
Daily Traffic Volume (21)	26,000
Social Vulnerability	Low

Crash Severity (2014-2021)

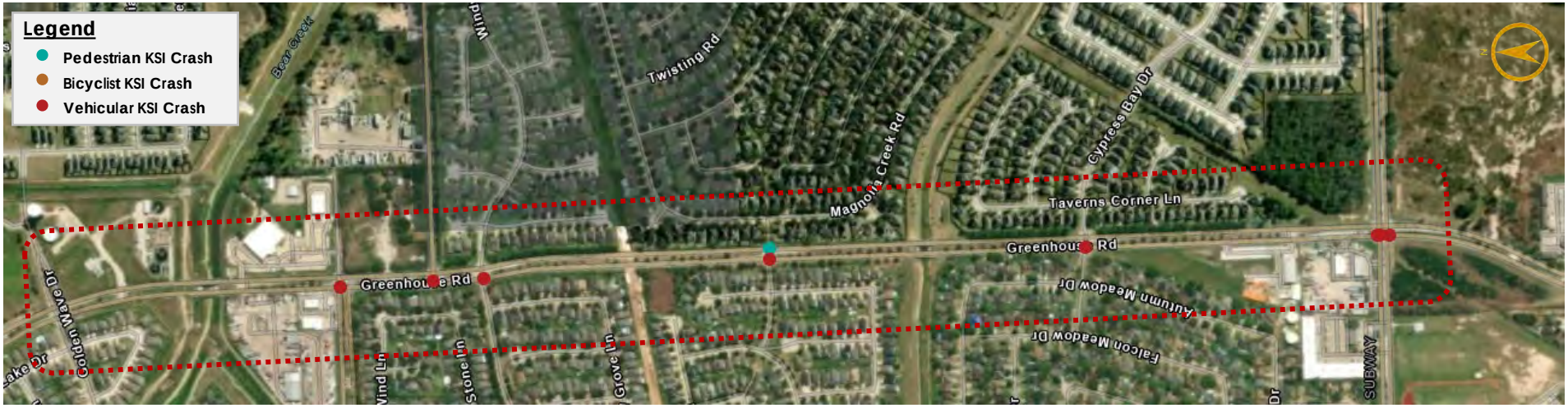
Fatal (K) Crashes	2
Serious Injury (SI) Crashes	9
Total KSI Crashes	11
KSI Crashes per Mile	8.5

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations

Short-Term (1 to 3 years)



33. Greenhouse Road

IH-10 to Misty Cove Drive

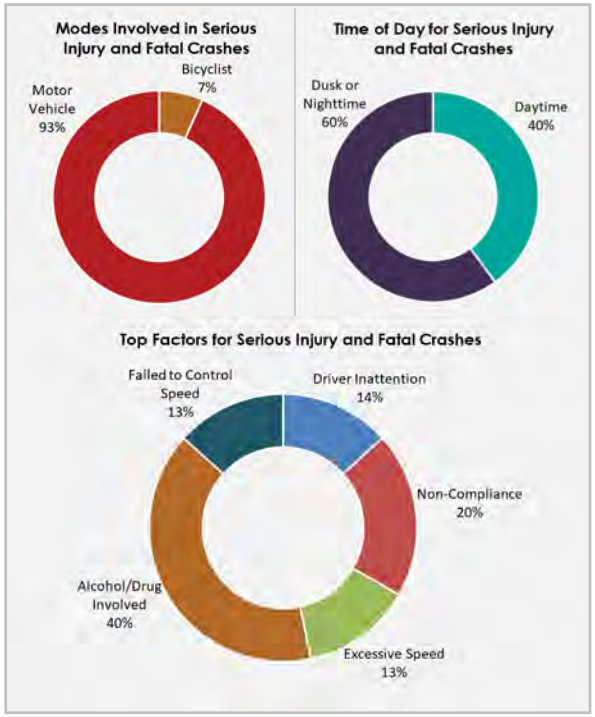
Corridor Characteristics

Precinct	4
Length	2.5 mi
Functional Classification	Major thoroughfare
Posted Speed	40-45 mph
Right of Way Width	100 ft
Existing Cross Section	4-lane divided
Drainage	Storm sewer
Daily Traffic Volume (21)	33,300
Social Vulnerability	Low

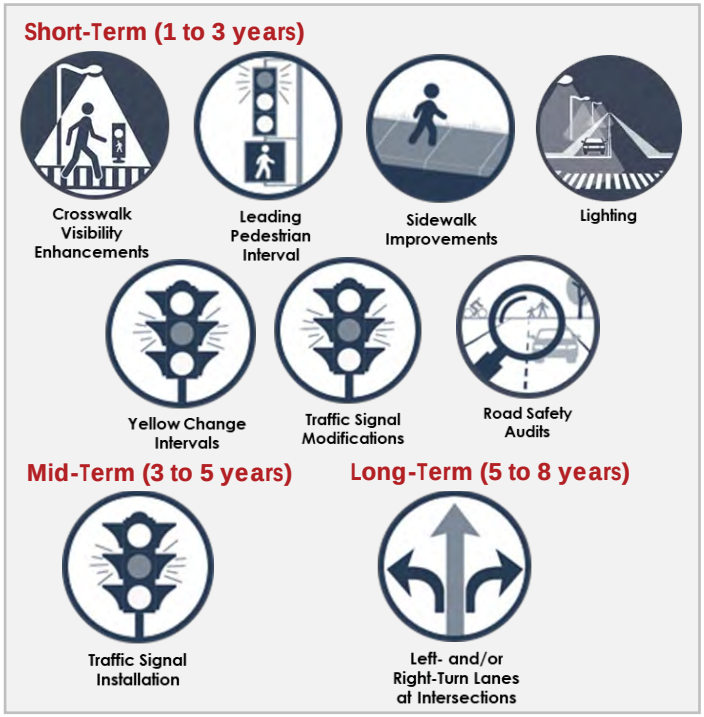
Crash Severity (2014-2021)

Fatal (K) Crashes	6
Serious Injury (SI) Crashes	9
Total KSI Crashes	15
KSI Crashes per Mile	6.0

Crash Trends (2014-2021)



Vision Zero Safety Improvement Considerations



Potential safety improvements for each High Risk Corridor are provided in more detail in Table 3. The improvements include both low-cost, quick-build safety projects that could be constructed within one to three years, as well as longer term roadway improvement needs for each corridor. The actual timeframe for implementation will depend on grants and other funding opportunities available to implement the projects.

A preliminary, planning-level cost estimate of the investment needed to construct the improvements is also provided in the table. The estimates are categorized based on magnitude of cost (low, medium, or high) using a simplified cost estimating method as detailed in Section 7. The estimates focus on safety improvements only and do not include right-of-way acquisition, detention, and other costs associated with full corridor revitalization. Further refinement of proposed safety improvements and cost estimates are expected to occur as part of the Vision Zero Phase 2 project.

Table 3. Vision Zero Safety Improvement Considerations for High Risk Corridors

Rank	Roadway	Corridor Limits	Length (mi)	Vision Zero Safety Improvement Considerations	Planning Level Cost Estimate Low: <$2.5M Medium: $2.5-$10M High: >$10M
1	Rankin Road	East of IH 45 NBFR to Imperial Valley Drive	1.0	Short Term: Install wider edge line pavement markings, wider centerline pavement markings (may require minor widening since existing lanes are 11' wide), street lighting, traffic signal timing & synchronization improvements, and install ADA ramps and leading pedestrian intervals at Imperial Valley. Install pedestrian/bicycle access extensions (beyond the limits of ROW) to: 1) the skate park in the southwest quadrant of I-45, 2) METRO Kuykendahl Park and Ride, and 3) Greens bayou and the adjacent HCFCD detention pond site. Long term: Construct 4-lane boulevard section with raised median, curb/gutter drainage, and sidewalks.	High
2	Veterans Memorial Dr	FM 1960 to N Sam Houston Parkway W	4.2	Short term: Restripe existing 5-lane section w/CTWLTL between FM 1960 & Richey Road (1.5 mi) & between Antoine Drive & Greens Road (1 mi); driveway consolidation; add pedestrian signals/crosswalks at Fountainhead Drive, Sableridge Drive, Blackpool Lane, Spears Road, Antoine Drive, S. Camden Parkway, & Willow Tree Drive; signal warrant/potential traffic signal at Veterans Memorial at Kelly Lane (2 fatalities at this intersection) (could operate split phase with intersection at S. Camden Parkway), street lighting, leading pedestrian intervals/traffic signal timing & synchronization at all signals. Long term: boulevard section with raised median and curb/gutter drainage, sidewalks.	High

Rank	Roadway	Corridor Limits	Length (mi)	Vision Zero Safety Improvement Considerations	Planning Level Cost Estimate Low: <$2.5M Medium: $2.5-$10M High: >$10M
3	Aldine Mail Road	Aldine Westfield Road to Easthampton Drive	2.6	Short term: Add pedestrian refuge island w/actuated flashing beacon near midblock crossing at MacArthur High School (possible candidate for Safe Routes to Schools funding), street lighting. Mid term: Convert CTWLTL to raised median between John F. Kennedy Boulevard and IH-45 & consolidate driveways; crosswalk visibility enhancements. Long term: Add CTWLTL between Aldine Westfield Road to Russ Drive (0.4 mi), including left turn lanes at signalized intersections (additional ROW required).	Medium
4	Antoine Drive	Veterans Memorial Drive to N Sam Houston Parkway W	1.7	Short term: Traffic signal timing/synchronization at Veterans Memorial Drive (improve yellow intervals and leading pedestrian interval), traffic signal modifications at Veterans Memorial Drive (add crosswalks, ADA pedestrian ramps, pedestrian signals, pedestrian refuge island, and extend sidewalk access to remove gaps); unobstructed visibility easement analysis to examine potential encroachment of trees/vegetation on the southwest corner at Claverton Drive. Mid-term: Add bike lane improvements.	Low

Rank	Roadway	Corridor Limits	Length (mi)	Vision Zero Safety Improvement Considerations	Planning Level Cost Estimate Low: <$2.5M Medium: $2.5-$10M High: >$10M
5	Stuebner Airline Road	North of Spring Cypress Road to FM 1960	5.2	**Short term:** Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at Spring Cypress Road (upgrade ped signals to HCED standard), Creekfield Drive (update ped signals to HCED standard), Theisswood Road (add ADA ramps & pedestrian signals), Oakwood Glen Boulevard (add additional signal heads on Stuebner Airline Road approaches), Louetta Road (add additional signal heads on Stuebner Airline Road approaches, ADA compliant/countdown ped signals), Mittlesteadt Road/Brightwood Drive (add crosswalks, ADA ramps, and pedestrian signals), and FM 1960 (ADA compliant/countdown ped signals); add actuated pedestrian flashing beacon at mid-block crossing at Klein High Loop/Worcester Drive; add sidewalk on east side of Stuebner Airline Road between Lyons School Road and Louetta Road, street lighting. **Mid term:** Convert CTWLTL to raised median between Mintwood Lane and Klein High Loop/Worcester Drive (0.6 mi) and between Mittlesteadt Road/Brightwood Drive and FM 1960 (0.9 mi); driveway consolidation (between Fernglad Drive and FM 1960). **Long term:** Convert to full boulevard section (divided with raised median and curb/gutter drainage) and add sidewalks.	High
6	Veterans Memorial Dr	N Sam Houston Parkway W to SH 249	3.4	**Short term:** restripe to 5-lane section w/CTWLTL between Fallbrook and SH 249 (1.9 mi), add pedestrian signals/crosswalks at Blue Bell Rd & West Road, driveway consolidation at Bluebell Rd, street lighting, add sidewalks; crosswalk visibility enhancements. **Long term:** boulevard section with raised median and curb/gutter drainage, sidewalks.	High

Rank	Roadway	Corridor Limits	Length (mi)	Vision Zero Safety Improvement Considerations	Planning Level Cost Estimate Low: <$2.5M Medium: $2.5-$10M High: >$10M
7	W Montgomery Road	SH 249 to Wavell Street	2.0	Short term: Traffic signal timing/synchronization (improve yellow intervals and leading pedestrian intervals), traffic signal modifications at W. Gulf Bank & Breen Road (refresh pavement markings/crosswalks, update ped signs to ADA standard), crosswalk visibility enhancements, street lighting. NOTE: CIP projects currently underway for sidewalk improvements from Breen Drive to West Gulf Bank Road, as well as traffic signal installation and intersection improvements at intersection with T.C. Jester Boulevard.	Low
8	Spencer Highway	Galveston Road to Somerton Drive	8.0	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at Texas/York (crosswalks, ADA ramps, pedestrian signals), 8th Street (ped signals, additional signal heads), Allen Genoa Road (crosswalks, ADA ramps, additional signal heads), Perez (ADA ramps, additional signal heads), Shaver St (ADA ramps), Westside Drive (ADA ramps); Watters Road (ADA ramps), Sinclair Street (crosswalks, ADA ramps, pedestrian signals), Luella Drive (add signal heads) and Somerton Drive (crosswalks, ADA ramps); evaluate FYA operations at Sinclair Street, Dedman Street, Space Center Boulevard, Trebor Street, Red Bluff Road, Kyle Chapman, & Center Street (and upgrade FYA signage/signal modification if needed); crosswalk visibility enhancements. Mid term: Access management improvements to convert existing center two-way left turn lane to a raised median with turn bays, and consolidate driveways; bike lane improvements; and intersection configuration improvements at York/Texas.	High
9	Dominion Park Drive	Kuykendahl Road to IH 45 Southbound Frontage Road	0.5	Short term: Install sidewalks on both sides of Dominion Park Drive; unobstructed visibility easement analysis to examine potential encroachment on east ROW on Kuykendahl Road; conduct traffic signal warrant analysis to evaluate the need for a traffic signal at the intersection of Kuykendahl Road at Dominion Park Drive; install traffic signal at Kuykendahl Road if warranted.	Low

Rank	Roadway	Corridor Limits	Length (mi)	Vision Zero Safety Improvement Considerations	Planning Level Cost Estimate Low: <$2.5M Medium: $2.5-$10M High: >$10M
10	W Mount Houston Rd	IH 45 Northbound Frontage Road to Airline Drive	0.9	Long term: Expand roadway to a 40-ft cross-section with curb/gutter drainage, sidewalk, and bike lane improvements. Improve intersection configuration at Sweetwater Lane and Helms Road. Consolidate driveways/parking lot configuration to limit access to W. Mount Houston Road.	Medium
11	Barbers Hill Road	Garth Road to Crosby Barbers Hill Road	0.5	Short term: Street lighting. NOTE: All-way stop control recently installed at the intersection with Garth Road. This low-cost safety project focuses on improving visibility at both intersections.	Low
12	Hollow Tree Lane	Cali Drive to IH 45 Northbound Frontage Road	1.0	Short term: Traffic signal timing/synchronization at Cypress Station Drive (yellow intervals and leading pedestrian intervals); add sidewalks and bike lane improvements on both sides of the roadway; add marked crosswalks at the intersection of Hollow Tree Lane at Cali Drive (if AWSC is warranted) and at Westfield Place Drive (currently AWSC); crosswalk visibility enhancements.	Low
13	Ella Boulevard	At Barren Springs Drive	n/a	Short term: Conduct traffic signal warrant analysis to evaluate the need for a traffic signal at this intersection. Install traffic signal if warranted. If not warranted, implement "Stop Ahead" intersection warning sign with oversize Stop sign. NOTE: CIP projects currently underway for sidewalk and transit stop improvements in the vicinity, which should help mitigate pedestrian/bicycle crashes that occurred on this corridor. This safety project focuses on the cluster of serious injury crashes at the intersection with Barren Springs Drive.	Low

Rank	Roadway	Corridor Limits	Length (mi)	Vision Zero Safety Improvement Considerations	Planning Level Cost Estimate Low: <$2.5M Medium: $2.5-$10M High: >$10M
14	Jones Road	Grant Road to Ranchstone Drive	4.0	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards); crosswalk visibility enhancements, street lighting. Long term: Construct boulevard section with raised median and curb/gutter drainage from Grant Road to FM 1960 (2.3 mi), add sidewalks and bike lanes on both sides of roadway throughout study corridor.	High
15	West Road	Veterans Memorial Drive to IH 45	1.75	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals), traffic signal modifications at all intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards), add sidewalks on both sides of the roadway, crosswalk visibility enhancements, street lighting. Mid term: Access management (hooded left turn lanes) at Winding Bayou Trace and shopping center driveway to reduce conflict points.	Medium
16	Atascocita Road	Kings Parkway to FM 1960	0.9	Short term: Evaluate FYA operations at Atascocita Trace Drive; traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals), traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards), sidewalk improvements, street lighting. Mid Term: Access management (hooded left turn lanes or turn bays with curbed divider) at shopping center driveways to reduce conflict points.	Low
17	Grant Road	Perry Road to SH 249	0.5	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); add sidewalks on both sides of roadway, street lighting.	Low

Rank	Roadway	Corridor Limits	Length (mi)	Vision Zero Safety Improvement Considerations	Planning Level Cost Estimate Low: <$2.5M Medium: $2.5-$10M High: >$10M
18	Louetta Road	SH 249 to Cannaberry Way	8.4	Short term: Improved signage at three-legged intersections; traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals), traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards), restripe existing shoulder between Old Louetta Road and Cannaberry Way to provide bike lane (6.8 mi), add sidewalk on section between SH 249 and Old Louetta Road (1.6 mi), crosswalk visibility enhancements, street lighting. Mid term: Access management improvements at shopping center driveways to reduce conflict points, driveway consolidation. Long term: Convert to full boulevard section (divided with raised median and curb/gutter drainage) between Old Louetta Road and Cannaberry Way and add sidewalks.	High
19	Airline Drive	N of West Road to Canino Road	3.5	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals), traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards), midblock crossing/pedestrian refuge with actuated pedestrian signal at Lucky Land Asian Culture Park, crosswalk visibility enhancements, street lighting. Mid term: Convert CTWLTLT to raised median between West Road and W. Gulf Bank Road and between Lucky Land Asian Culture Park and Canino Road.	High

Rank	Roadway	Corridor Limits	Length (mi)	Vision Zero Safety Improvement Considerations	Planning Level Cost Estimate Low: <$2.5M Medium: $2.5-$10M High: >$10M
20	Homestead Road	N of Tidwell Road to S of Miley Street	2.5	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards); sidewalk improvement (shared path width); crosswalk visibility enhancements, particularly to address bicycle/pedestrian crash cluster at S. Hall Street, street lighting. Mid term: access management and driveway consolidation to reduce conflict points at shopping centers. NOTE: A portion of Homestead Road is located in City of Houston. A joint project is currently underway to convert Homestead Road from a 6-lane divided to a 4-lane divided cross-section (road diet) and add bicycle lanes.	Medium
21	Homestead Road	S of Old Humble Road to Winfield Road	0.6	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards); signage improvements near Hamill Road; sidewalk improvements (shared path width); crosswalk visibility enhancements; street lighting. Mid term: Driveway consolidation near Hamill Road.	Low
22	Huffman Cleveland Rd	Hickory Ridge Drive to Commons Vista Drive	1.7	Mid term: Add wide edge lines, rumble strips, enhanced signage on two-way stop-controlled approaches, wide center lines, add paved shoulders, clear zone widening. NOTE: 2023-2026 TIP project planned to reconstruct and widen Huffman Cleveland Road from a 2-lane undivided to a 4-lane divided roadway (sponsored by TxDOT Houston District).	Low

Rank	Roadway	Corridor Limits	Length (mi)	Vision Zero Safety Improvement Considerations	Planning Level Cost Estimate Low: <$2.5M Medium: $2.5-$10M High: >$10M
23	W Lake Houston Pkwy	Pine Cup Drive to Atascocita Middle School	1.0	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards); add sidewalks between Chase Bank driveway and Tournament Trail Drive; crosswalk visibility enhancements.	Low
24	Bissonnet Street	Sugar Land Howell Road to Synott Road	1.3	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards); add sidewalks on both sides of the roadway; crosswalk visibility enhancements, street lighting.	Medium
25	Fry Road	N of Keith Harrow Boulevard to Franz Road	3.5	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards); add sidewalks to fill infrastructure gaps; street lighting.	Medium
26	Fallbrook Drive	W of NW Park Drive to Veterans Memorial Drive	2.3	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards); evaluate FYA operations; sidewalk improvements between Antoine Drive and Mosielee Street (0.5 mi); street lighting.	Low

Rank	Roadway	Corridor Limits	Length (mi)	Vision Zero Safety Improvement Considerations	Planning Level Cost Estimate Low: <$2.5M Medium: $2.5-$10M High: >$10M
27	Spears Road	Veterans Memorial Drive to W of TC Jester	1.0	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards); evaluate FYA operations; pedestrian refuge/raised median on south leg of intersection of Spears Road at Walters Road; crosswalk visibility enhancements; evaluate need for midblock crossing just east of Walters Road (near convenience store); sidewalk improvements.	Low
28	Spring Cypress Road	Memorial Spring Drive to W of Valka Road	2.2	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals), street lighting. Mid term: Access management improvements and driveway consolidation to reduce conflicts at midblock intersections and commercial driveways.	Medium
29	W Little York Road	E of Hempstead Road to W of Fairbanks N Houston Rd	1.2	Short term: Traffic signal timing/synchronization at all intersections (yellow intervals). Long term: Add CTWLTL, install bike lane (add shoulder).	Medium
30	Alice Road	Green Meadow Road to SH 249	0.5	Short term: wider edge lanes, refresh centerline pavement markings, traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards). Long term: capacity improvements east and west of SH 249B, sidewalk improvements.	Medium

Rank	Roadway	Corridor Limits	Length (mi)	Vision Zero Safety Improvement Considerations	Planning Level Cost Estimate Low: <$2.5M Medium: $2.5-$10M High: >$10M
31	Barker Cypress Road	N of West Little York Road at Gummert Rd	0.7	Short term: traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (marked crosswalks at intersections, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards), crosswalk visibility enhancements, street lighting. Mid term: intersection lighting, sidewalks, signal at Brenwood Drive.	Low
32	Greenhouse Road	Clay Road to Golden Wave Drive	1.3	Short term: traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards); connect neighborhood sidewalks to Greenhouse intersections (e.g., at Cardinal Lake Road, Windy Stone Drive and others); crosswalk visibility enhancements, street lighting.	Low
33	Greenhouse Road	IH-10 to Misty Cove Drive	2.5	Short term: traffic signal timing/synchronization at all intersections (yellow intervals and leading pedestrian intervals); traffic signal modifications at intersections (crosswalks, pedestrian signals, additional signal heads, and other improvements to meet ADA/HCED standards); connect discontinuous sidewalks; street lighting. Mid term: study possible signal at Oak Ridge Park w/pedestrian treatments. Long term: offset left turn bays at intersections; grade separate Mayde Creek Phase II Shared Use Path at Greenhouse Road.	Medium

5. Supplemental Details on Network Screening and Ranking Methodology

The following methodology was used to score and rank all High Injury Network (HIN) segments under Harris County's jurisdiction (381 miles) and identify priority segments/corridors for further safety evaluation.

1. **Identify HIN segments located in Harris County jurisdiction. An ArcGIS spatial join was performed to identify HIN segments that are included within or overlap with Harris County's Road Log. The spatial join results were manually verified against Road Log limits and refined as needed. A total of 812 HIN segments (totaling 381 miles) were identified to be within Harris County's jurisdiction.**

2. **Select network screening performance measures. Average crash frequency was selected as the primary performance measure for ranking priority segments based on data availability and ease of calculation given the schedule constraints for the overall Vision Zero Phase 2 project. Crash rate was considered as a potential measure since it normalizes the frequency of crashes with exposure (i.e., traffic volumes on the segment). However, the usability of this measure for ranking purposes is limited since traffic volume data is not readily available for all HIN segments.**

3. **Calculate score for frequency of fatal and serious injury crashes on HIN segments. Since Harris County's Vision Zero program focuses on reducing both fatal and serious injury crashes, HIN segments were scored separately based on the frequency of fatal and serious injury crashes on HIN segments. The scoring methodology was inclusive of all modes and provides equal consideration for the worst segments for driving, bicycling, and walking. The resulting KSI score is intended to prioritize locations where safety improvements could reduce KSI crashes across all modes.**

    a. **Calculate K Score for frequency of fatal (K) crashes. This score ranges from 0 to 10 and represents the severity and number of fatal crashes on the segment. The scoring criteria was determined based on the range of fatal crash frequencies observed across the HIN segments.**
        i. **Segments were scored a 0 if there were 0 fatal crashes.**
        ii. **Segments were scored a 5 if there was 1 fatal crash.**
        iii. **Segments were scored an 8 if there were 2 fatal crashes.**
        iv. **Segments were scored a 10 if there were 3 or more fatal crashes.**

    b. **Calculate SI Score for frequency of serious injury (SI) crashes. This score ranges from 0 to 10 and represents the severity and number of serious injury crashes on the segment. The scoring criteria was determined based on the range of potential values observed across the HIN segments. Segments with a high number of pedestrian and/or bicycle crashes were given equal consideration in the scoring range to represent the vulnerability of these modes.**
        i. **Segments were scored a 0 if there were 0 serious injury crashes.**
        ii. **Segments were scored a 2 if there were 0 serious injury bike/ped crashes and 1 or 2 serious injury vehicular crashes.**

iii. Segments were scored a 4 if there was 1 serious injury bike/ped crashes or 3 or 4 serious injury vehicular crashes.
iv. Segments were scored a 6 if there were 2 serious injury bike/ped crashes or 5 or 6 serious injury vehicular crashes.
v. Segments were scored an 8 if there were 3 serious injury bike/ped crashes or 7 or 8 serious injury vehicular crashes.
vi. Segments were scored a 10 if there were 4 serious injury bike/ped crashes or 9 or more serious injury vehicular crashes.

c. Calculate total KSI Score. A total KSI Score was calculated for each HIN segment by summing the K Score and SI Score. The range of possible KSI scores is 0 to 20.

4. Rank HIN segments. All HIN segments were assigned a numerical ranking based on the total score for frequency of fatal and serious injury crashes (KSI Score) in descending order. Table 4 provides the ranking results for all ½-mile High Injury Network segments in Harris County jurisdiction.

5. Identify the highest ranked HIN segments. The HIN segments with the highest frequency of fatal and serious injury crashes were identified as having a KSI Score of 10 or higher.

6. Identify nearby HIN segments to form High Risk Corridors. We examined the locations of the highest ranked HIN segments and identified HIN segments that are in close proximity to the (either adjoining or located a short distance away from the highest ranked HIN segment) to identify potential "High Risk Corridors" for safety mitigation. We assigned logical corridor limits and determined overall High Risk Corridor length.

7. Review CIP project scopes. We evaluated CIP project scopes for recently completed, ongoing, or programmed projects with potential to address the primary crash types occurring on the corridor. We then refined the corridor list. For example, Ella Boulevard has three HIN segments with a KSI score greater than 10. These segments all had a high number of pedestrian and bicycle crashes, although there was a cluster of vehicular crashes at the intersection of Ella Boulevard at Barren Springs Drive, which is currently unsignalized. There is a recent CIP project to improve sidewalks, ADA ramps, and bus shelters along the corridor. There was also a recent median construction at the northern end of the HIN segment. The improvements have potential to address the pedestrian and bicycle related crashes, but it was determined that a safety assessment should be conducted for the intersection with Barren Springs Drive to address the cluster of crashes occurring at this location.

8. Refine High Risk Corridor Locations. We worked closely with Harris County staff to ensure the ranking methodology adequately captures the highest risk segments based on staff knowledge of problem areas and priority needs for safety evaluation.

Table 5 provides the KSI scores for each of the 33 High Risk Corridors. Note that the corridors are listed in order based on the KSI score for the highest ranked ½-mile High Injury Network segment on the corridor, and not for the corridor as a whole.

Table 4. KSI Ranking Results for All HIN Segments in Harris County Jurisdiction

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
ADDICKS SATSUMA RD	0.5	2	0	0	2	0	2	2	724
AIRLINE DR	0.5	3	1	0	2	10	0	10	39
AIRLINE DR	0.5	2	0	1	1	0	4	4	410
AIRLINE DR	0.5	2	0	0	2	8	0	8	141
AIRLINE DR	0.5	4	2	0	2	5	6	11	29
AIRLINE DR	0.5	2	0	1	1	0	4	4	411
AIRLINE DR	0.5	5	0	0	5	5	4	9	73
AIRLINE DR	0.5	3	1	0	2	0	4	4	412
AIRTEX DR	0.5	4	1	0	3	0	4	4	413
AIRTEX DR	0.3	1	0	0	1	0	2	2	580
ALDINE MAIL RD	0.5	2	0	2	0	0	6	6	305
ALDINE MAIL RD	0.5	4	0	0	4	5	4	9	81
ALDINE MAIL RD	0.5	8	4	0	4	8	8	16	3
ALDINE MAIL RD	0.5	3	2	0	1	5	4	9	64
ALDINE MAIL RD	0.5	3	0	0	3	5	2	7	220
ALDINE WESTFIELD RD	0.5	2	1	0	1	5	4	9	58
ALDINE WESTFIELD RD	0.5	6	2	0	4	5	4	9	98
ALDINE WESTFIELD RD	0.5	2	0	0	2	8	0	8	153
ALDINE WESTFIELD RD	0.5	2	1	0	1	5	2	7	264
ALDINE WESTFIELD RD	0.5	2	0	0	2	5	2	7	265
ALICE RD	0.5	5	0	0	5	5	4	9	99
ALIEF CLODINE RD	0.4	5	0	0	5	0	6	6	327
ALIEF CLODINE RD	0.5	2	0	0	2	0	2	2	682
ALIEF CLODINE RD	0.5	3	0	0	3	5	2	7	243
ALIEF CLODINE RD	0.5	2	0	0	2	5	2	7	244
ALIEF CLODINE RD	0.5	4	1	0	3	0	4	4	457
ALLEN GENOA RD	0.5	3	0	0	3	5	2	7	174
ALLEN GENOA RD	0.3	1	0	0	1	0	2	2	590
ALLEN GENOA RD	0.5	2	0	0	2	0	2	2	591
ALLEN GENOA RD	0.5	3	0	0	3	0	4	4	359
ALVIN A KLEIN DR	0.5	2	0	0	2	0	2	2	725
ANDERSON RD	0.5	2	2	0	0	0	6	6	319
ANDERSON RD	0.5	3	0	0	3	5	2	7	193
ANTOINE DR	0.5	2	1	0	1	8	0	8	154
ANTOINE DR	0.5	2	0	0	2	5	2	7	165
ANTOINE DR	0.5	9	2	1	6	8	8	16	4
ANTOINE DR	0.5	2	0	0	2	0	2	2	726
ANTOINE DR	0.5	8	0	0	8	5	8	13	15
ANTOINE DR	0.5	2	0	0	2	5	2	7	266

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
APACHE TRL	0.3	2	0	0	2	0	2	2	654
ATASCA SOUTH DR	0.5	2	0	0	2	0	2	2	655
ATASCOCITA RD	0.5	3	1	0	2	5	4	9	100
ATASCOCITA RD	0.5	4	0	1	3	0	4	4	495
ATASCOCITA RD	0.5	3	0	1	2	5	4	9	101
ATASCOCITA RD	0.5	4	0	0	4	0	4	4	496
ATASCOCITA RD	0.5	2	0	0	2	0	2	2	727
ATASCOCITA RD	0.5	6	0	0	6	5	6	11	33
ATASCOCITA RD	0.5	3	1	0	2	0	4	4	434
ATASCOCITA RD	0.5	4	0	0	4	0	4	4	435
ATASCOCITA RD	0.5	2	0	0	2	0	2	2	728
ATASCOCITA RD	0.3	2	0	0	2	0	2	2	656
AVE C	0.5	2	1	0	1	5	2	7	221
BADTKE RD	0.5	2	0	0	2	0	2	2	683
BAMMEL NORTH HOUSTON RD	0.5	4	2	0	2	0	6	6	335
BAMMEL NORTH HOUSTON RD	0.5	5	0	0	5	5	4	9	102
BAMMEL NORTH HOUSTON RD	0.5	2	0	0	2	5	2	7	194
BAMMEL NORTH HOUSTON RD	0.5	2	0	0	2	0	2	2	729
BAMMEL RD	0.5	2	0	0	2	0	2	2	581
BAMMEL VILLAGE DR	0.3	2	2	0	0	0	6	6	320
BARBERS HILL RD	0.5	2	0	0	2	5	2	7	175
BARBERS HILL RD	0.5	5	0	0	5	8	4	12	21
BARKER CLODINE RD	0.3	2	0	0	2	0	2	2	684
BARKER CYPRESS RD	0.4	3	1	0	2	0	4	4	458
BARKER CYPRESS RD	0.5	2	1	0	1	5	2	7	267
BARKER CYPRESS RD	0.5	5	0	1	4	5	4	9	103
BARKER CYPRESS RD	0.5	4	0	0	4	0	4	4	459
BARKER CYPRESS RD	0.5	2	0	1	1	0	4	4	460
BARKER CYPRESS RD	0.5	4	0	0	4	5	4	9	71
BARKER CYPRESS RD	0.5	10	1	0	9	5	8	13	14
BARREN SPRINGS DR	0.5	7	0	1	6	5	6	11	30
BARTLETT DR	0.3	1	1	0	0	0	4	4	497
BAUER RD	0.5	2	0	1	1	5	4	9	72
BAY AREA BLVD	0.5	4	0	0	4	0	4	4	436
BEACH	0.3	1	1	0	0	0	4	4	414
BEAMER RD	0.3	2	0	0	2	0	2	2	626
BEAMER RD	0.5	6	0	0	6	0	6	6	321
BEAR BAYOU DR	0.5	2	0	0	2	5	2	7	222
BEAR BAYOU DR	0.5	3	0	1	2	5	4	9	82
BEARD RD	0.3	1	0	0	1	0	2	2	627

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
BEAUMONT HWY	0.5	7	0	0	7	10	4	14	7
BEAUMONT HWY	0.5	2	0	0	2	5	2	7	195
BECKER RD	0.5	2	0	0	2	5	2	7	245
BEECHNUT ST	0.5	6	0	0	6	0	6	6	328
BEECHNUT ST	0.5	2	0	0	2	5	2	7	246
BEECHNUT ST	0.5	2	0	0	2	8	0	8	147
BELLAIRE BLVD	0.5	5	0	0	5	0	6	6	329
BELLEAU WOOD DR	0.5	2	0	0	2	0	2	2	730
BERTRAND ST	0.5	3	0	0	3	0	4	4	437
BICKWOOD DR	0.3	1	0	0	1	0	2	2	628
BISSONNET ST	0.5	2	0	0	2	5	2	7	247
BISSONNET ST	0.5	3	1	0	2	8	2	10	47
BLACKHAWK BLVD	0.5	2	0	0	2	0	2	2	629
BLACKSTONE TRAILS DR	0.4	2	0	1	1	0	4	4	498
BLENHEIM PALACE LN	0.3	2	0	0	2	8	0	8	155
BLODGETT ST	0.4	2	0	0	2	0	2	2	630
BOHEMIAN HALL RD	0.5	3	0	0	3	5	2	7	223
BOUDREAUX RD	0.5	4	0	0	4	5	4	9	104
BOUDREAUX RD	0.4	4	0	0	4	5	4	9	105
BOUDREAUX RD	0.5	3	0	0	3	5	2	7	268
BOULDER OAKS DR	0.5	2	0	0	2	0	2	2	731
BREEN DR	0.5	2	0	0	2	5	2	7	269
BREEN DR	0.5	2	0	0	2	0	2	2	732
BRIDGE PARK DR	0.4	2	0	0	2	0	2	2	733
BRIDGEVIEW LN	0.5	2	0	1	1	0	4	4	499
BRITTMOORE RD	0.5	3	0	0	3	5	2	7	270
BURKE RD	0.5	2	0	0	2	0	2	2	592
BURKE RD	0.5	2	0	1	1	0	4	4	360
BUTTE CREEK DR	0.5	3	1	0	2	0	4	4	500
C E KING PKWY	0.5	2	0	0	2	0	2	2	631
CALI DR	0.5	3	2	0	1	5	4	9	106
CAMDEN PKWY	0.5	3	0	0	3	0	4	4	501
CAMDEN PKWY	0.4	2	0	0	2	0	2	2	734
CAPE FORWARD DR	0.3	1	0	0	1	0	2	2	685
CARLANG ST	0.4	2	1	1	0	5	4	9	83
CAVALCADE ST	0.5	3	0	0	3	0	4	4	415
CENTER ST	0.5	4	1	0	3	0	4	4	361
CHAMPION FOREST DR	0.5	2	1	0	1	0	4	4	502
CHAMPIONS DR	0.4	3	1	0	2	0	4	4	503
CHESHIRE PARK RD	0.3	1	0	0	1	0	2	2	632

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
CHIPPEWA BLVD	0.5	2	1	0	1	0	4	4	504
CHRISMAN RD	0.5	2	0	0	2	0	2	2	657
CHRISMAN RD	0.5	2	1	0	1	5	4	9	84
CIDERWOOD DR	0.3	2	0	0	2	0	2	2	735
CLAY RD	0.5	2	0	0	2	0	2	2	686
CLAY RD	0.5	2	0	0	2	0	2	2	687
CLAY RD	0.5	3	0	0	3	5	2	7	248
CLAY RD	0.5	5	0	1	4	0	4	4	461
CLAY RD	0.5	5	0	0	5	0	6	6	330
CLAY RD	0.5	3	0	0	3	5	2	7	249
CLAY RD	0.5	2	1	0	1	5	4	9	107
CLAY RD	0.5	2	0	0	2	0	2	2	688
CLINTON DR	0.5	2	1	0	1	8	0	8	136
COBIA DR	0.5	2	0	0	2	0	2	2	689
COLDFIELD DR	0.3	1	0	0	1	0	2	2	736
COLLEGE AVE	0.5	5	1	0	4	5	4	9	65
COLONIAL PKWY	0.5	2	0	0	2	0	2	2	690
CORDOBA DR	0.3	1	0	0	1	0	2	2	737
CORNERSTONE VILLAGE DR	0.5	2	1	0	1	0	4	4	505
COSSEY RD	0.3	1	0	0	1	0	2	2	738
COUNTRY SPRING DR	0.5	2	0	0	2	0	2	2	691
COVE HOLLOW DR	0.3	1	1	0	0	5	0	5	351
COVENTRY PARK DR	0.5	2	1	0	1	5	2	7	271
COVENTRY PARK DR	0.3	1	0	0	1	0	2	2	739
CRENSHAW RD	0.5	2	0	0	2	0	2	2	593
CRESCENT CLOVER DR	0.3	1	0	0	1	0	2	2	740
CROCKETT ST	0.3	1	0	0	1	5	0	5	347
CROSBY LYNCHBURG RD	0.5	3	0	0	3	5	2	7	224
CULLEN BLVD	0.5	3	1	0	2	5	2	7	196
CULLEN BLVD	0.5	2	1	0	1	0	4	4	416
CULLEN BLVD	0.5	3	0	0	3	5	2	7	197
CULLEN BLVD	0.5	2	1	0	1	0	4	4	417
CUTTEN RD	0.5	2	0	0	2	0	2	2	741
CUTTEN RD	0.5	3	0	0	3	0	4	4	506
CYPRESS CHURCH RD	0.4	2	1	0	1	0	4	4	462
CYPRESS HILL DR	0.3	1	0	0	1	0	2	2	742
CYPRESS N HOUSTON RD	0.5	2	0	0	2	5	2	7	184
CYPRESS N HOUSTON RD	0.5	2	0	0	2	0	2	2	692
CYPRESS N HOUSTON RD	0.5	2	1	0	1	0	4	4	463
CYPRESS N HOUSTON RD	0.5	2	1	0	1	8	0	8	139

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
CYPRESS N HOUSTON RD	0.5	3	0	0	3	0	4	4	464
CYPRESS N HOUSTON RD	0.5	3	1	0	2	0	4	4	465
CYPRESS N HOUSTON RD	0.5	3	0	0	3	0	4	4	396
CYPRESS N HOUSTON RD	0.5	4	0	0	4	0	4	4	507
CYPRESS N HOUSTON RD	0.5	2	1	0	1	5	4	9	108
CYPRESS ROSEHILL RD	0.3	1	0	0	1	5	0	5	345
CYPRESS ROSEHILL RD	0.5	2	0	0	2	0	2	2	743
CYPRESS ROSEHILL RD	0.5	2	0	0	2	0	2	2	744
CYPRESS STATION DR	0.5	2	1	0	1	0	4	4	508
CYPRESS TRL	0.3	2	0	0	2	0	2	2	610
CYPRESSWOOD DR	0.5	4	0	0	4	0	4	4	509
CYPRESSWOOD DR	0.5	2	0	0	2	0	2	2	745
CYPRESSWOOD DR	0.5	2	0	0	2	0	2	2	746
CYPRESSWOOD DR	0.3	4	0	0	4	5	4	9	109
CYPRESSWOOD DR	0.5	2	1	0	1	0	4	4	510
DOMINION PARK DR	0.5	3	2	0	1	8	4	12	19
DULANEY RD	0.5	3	0	0	3	0	4	4	466
DUNCUM ST	0.5	2	1	1	0	5	4	9	85
E AIRTEX DR	0.5	2	0	0	2	0	2	2	582
E CYPRESSWOOD DR	0.5	2	0	1	1	0	4	4	511
E HARDY RD	0.5	3	0	0	3	5	2	7	198
E LOUETTA RD	0.3	2	0	0	2	5	2	7	272
E MEDICAL CENTER BLVD	0.5	4	0	0	4	0	4	4	362
E MEDICAL CENTER BLVD	0.3	3	0	0	3	0	4	4	363
E PASADENA BLVD	0.5	2	0	0	2	0	2	2	594
E RICHEY RD	0.5	4	1	0	3	0	4	4	355
E RICHEY RD	0.5	2	0	0	2	0	2	2	583
E SAM HOUSTON PKWY	0.5	2	0	0	2	5	2	7	166
E SAM HOUSTON PKWY N	0.5	2	0	0	2	0	2	2	633
E SAM HOUSTON PKWY S	0.5	4	0	0	4	0	4	4	364
E SAM HOUSTON PKWY S	0.5	3	0	0	3	0	4	4	365
E SAM HOUSTON PKWY S	0.5	4	0	1	3	0	4	4	366
E WALLISVILLE RD	0.5	2	0	0	2	0	2	2	595
E WALLISVILLE RD	0.5	2	0	0	2	0	2	2	658
EAGLE'S GLIDE DR	0.3	1	0	0	1	0	2	2	634
EL CAMINO REAL	0.4	2	0	0	2	0	2	2	596
EL DORADO BLVD	0.5	3	0	1	2	0	4	4	367
ELGIN ST	0.5	3	1	2	0	0	8	8	142
ELLA BLVD	0.3	2	1	0	1	5	2	7	199
ELLA BLVD	0.5	2	0	1	1	5	2	7	200

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
ELLA BLVD	0.5	7	3	0	4	5	8	13	13
ELLA BLVD	0.5	2	1	1	0	5	4	9	74
ELLA BLVD	0.5	8	1	1	6	5	6	11	26
ELLA BLVD	0.5	5	3	0	2	5	8	13	12
ELLA BLVD	0.5	2	1	0	1	0	4	4	512
ELLIS SCHOOL RD	0.5	2	2	0	0	0	6	6	324
ELYSIAN ST	0.5	2	1	0	1	0	4	4	418
ELYSIAN ST	0.5	2	1	0	1	5	2	7	225
EMPANADA DR	0.5	3	2	0	1	0	6	6	331
EMPIRE CENTRAL DR	0.5	2	0	0	2	0	2	2	747
ENCHANTED PATH DR	0.3	1	0	0	1	0	2	2	635
FAIRBANKS N HOUSTON RD	0.5	2	0	0	2	0	2	2	748
FAIRBANKS N HOUSTON RD	0.5	2	0	0	2	0	2	2	749
FAIRMONT PKWY	0.5	3	0	0	3	5	2	7	176
FAIRMONT PKWY	0.5	4	0	0	4	0	4	4	368
FAIRMONT PKWY	0.5	2	0	0	2	0	2	2	597
FAIRMONT PKWY	0.5	5	0	0	5	0	6	6	306
FAIRMONT PKWY	0.5	3	0	0	3	5	2	7	177
FAIRMONT PKWY	0.5	2	0	0	2	0	2	2	598
FAIRMONT PKWY	0.5	3	1	0	2	5	2	7	178
FAIRMONT PKWY	0.5	5	0	0	5	0	6	6	307
FALLBROOK DR	0.4	2	0	0	2	5	2	7	273
FALLBROOK DR	0.5	2	0	0	2	0	2	2	750
FALLBROOK DR	0.5	3	1	0	2	10	0	10	50
FALLBROOK DR	0.3	2	0	0	2	5	2	7	274
FALLBROOK DR	0.5	2	0	0	2	0	2	2	751
FALLBROOK DR	0.5	2	0	0	2	5	2	7	275
FALLING CREEK DR	0.5	2	0	0	2	0	2	2	752
FALVEL RD	0.5	3	0	0	3	5	2	7	276
FARMINGHAM DR	0.5	2	0	0	2	0	2	2	659
FARRELL RD	0.5	2	0	0	2	5	2	7	201
FARRELL RD	0.5	2	0	0	2	0	2	2	636
FARRELL RD	0.5	2	0	0	2	5	2	7	202
FEDERAL RD	0.5	3	0	0	3	0	4	4	438
FOREST TRAILS DR	0.4	2	0	0	2	0	2	2	693
FOXBRICK LN	0.3	2	0	0	2	8	0	8	156
FOXWOOD GARDEN DR	0.3	1	0	0	1	0	2	2	753
FREEPORT BLVD	0.5	5	3	1	1	10	4	14	8
FRICK RD	0.5	2	0	0	2	0	2	2	754
FRY RD	0.5	6	1	0	5	0	6	6	332

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
FRY RD	0.5	4	0	0	4	8	2	10	48
FRY RD	0.5	4	0	1	3	0	4	4	467
FRY RD	0.5	2	0	0	2	5	2	7	250
FRY RD	0.5	3	2	0	1	5	4	9	110
FRY RD	0.5	3	0	0	3	0	4	4	468
FRY RD	0.5	6	0	0	6	0	6	6	333
FRY RD	0.5	4	0	0	4	5	4	9	92
FRY RD	0.5	3	0	0	3	0	4	4	469
FRY RD	0.5	2	1	0	1	5	2	7	251
FURAY RD	0.5	2	0	0	2	8	0	8	143
FURMAN RD	0.5	4	0	0	4	0	4	4	419
GAINESVILLE ST	0.3	1	0	0	1	0	2	2	660
GARRETT RD	0.5	3	0	0	3	5	2	7	203
GARRETT RD	0.5	3	0	0	3	5	2	7	167
GARRETT RD	0.5	2	0	0	2	0	2	2	584
GARRETT RD	0.5	2	0	0	2	5	2	7	204
GARTH RD	0.5	2	0	0	2	5	2	7	226
GARTH RD	0.5	2	0	0	2	0	2	2	661
GARTH RD	0.4	5	0	0	5	8	4	12	22
GATEBROOK DR	0.3	1	0	1	0	0	4	4	369
GEARS RD	0.5	2	0	0	2	8	0	8	157
GEARS RD	0.5	3	0	0	3	8	2	10	51
GEARS RD	0.5	2	0	0	2	0	2	2	755
GENOA RED BLUFF RD	0.5	4	0	1	3	0	4	4	370
GENOA RED BLUFF RD	0.5	3	0	0	3	0	4	4	371
GENOA RED BLUFF RD	0.5	3	0	0	3	0	4	4	372
GENOA RED BLUFF RD	0.5	2	1	0	1	5	4	9	66
GENOA RED BLUFF RD	0.5	2	0	0	2	5	2	7	227
GENOA RED BLUFF RD	0.5	2	0	0	2	0	2	2	599
GESSNER RD	0.5	2	0	0	2	0	2	2	756
GESSNER RD	0.5	3	0	0	3	5	2	7	277
GLEANNLOCH FOREST DR	0.3	3	0	0	3	0	4	4	513
GLEN CHASE DR	0.5	6	2	0	4	10	6	16	5
GOLDEN EAGLE DR	0.5	2	1	0	1	0	4	4	514
GOSLING RD	0.5	2	0	0	2	0	2	2	757
GOSLING RD	0.5	3	0	0	3	0	4	4	515
GRANT RD	0.5	4	1	1	2	5	6	11	34
GRANT RD	0.5	4	0	0	4	5	4	9	111
GRANT RD	0.5	2	0	0	2	5	2	7	252
GRANT RD	0.5	2	0	0	2	5	2	7	188

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
GRANT RD	0.5	2	0	0	2	0	2	2	758
GREEN RIVER DR	0.5	2	0	0	2	5	2	7	205
GREENBROOK DR	0.5	2	0	0	2	5	2	7	206
GREENHOUSE RD	0.5	3	0	0	3	5	2	7	253
GREENHOUSE RD	0.5	3	0	0	3	0	4	4	470
GREENHOUSE RD	0.5	2	0	0	2	5	2	7	254
GREENHOUSE RD	0.5	3	0	0	3	5	2	7	255
GREENHOUSE RD	0.5	2	0	0	2	0	2	2	618
GREENHOUSE RD	0.5	2	0	0	2	0	2	2	611
GREENHOUSE RD	0.5	4	0	1	3	5	4	9	93
GREENHOUSE RD	0.5	4	1	0	3	0	4	4	397
GREENLAND WAY	0.3	2	0	0	2	0	2	2	694
GREENS RD	0.5	2	0	0	2	5	2	7	168
GREENWOOD FOREST DR	0.5	2	1	0	1	5	2	7	278
GROESCHKE RD	0.4	2	0	0	2	0	2	2	695
GULF BANK RD	0.5	2	1	0	1	0	4	4	439
HARDY RD	0.3	3	1	0	2	5	2	7	228
HARDY RD	0.5	2	0	0	2	0	2	2	600
HARDY ST	0.5	2	0	0	2	0	2	2	637
HARDY ST	0.5	2	0	1	1	5	4	9	75
HARDY ST	0.5	2	1	0	1	0	4	4	420
HARDY ST	0.5	2	1	0	1	5	4	9	86
HARDY ST	0.3	1	0	0	1	0	2	2	638
HARE RD	0.4	3	0	0	3	0	4	4	440
HARGRAVES RD	0.4	2	0	0	2	5	2	7	229
HERMANN RD	0.5	2	0	0	2	5	2	7	207
HIGHLAND KNOLLS DR	0.5	2	0	0	2	0	2	2	697
HILLCROFT AVE	0.5	2	0	0	2	5	2	7	208
HILLCROFT AVE	0.5	3	1	1	1	5	4	9	76
HILLCROFT AVE	0.5	3	0	0	3	0	4	4	421
HILLCROFT AVE	0.5	2	0	0	2	0	2	2	698
HOLLISTER ST	0.5	3	0	0	3	0	4	4	516
HOLLISTER ST	0.5	3	0	0	3	0	4	4	517
HOLLOW TREE LN	0.5	4	0	0	4	0	4	4	518
HOLLOW TREE LN	0.5	4	0	0	4	10	2	12	23
HOLZWARTH RD	0.4	2	0	0	2	5	2	7	279
HOLZWARTH RD	0.3	2	0	0	2	0	2	2	759
HOLZWARTH RD	0.5	2	1	0	1	5	4	9	112
HOLZWARTH RD	0.5	2	0	0	2	5	2	7	280
HOMESTEAD RD	0.5	5	3	0	2	0	8	8	144

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
HOMESTEAD RD	0.5	4	1	0	3	0	4	4	422
HOMESTEAD RD	0.5	3	1	0	2	8	2	10	40
HOMESTEAD RD	0.5	5	0	0	5	5	4	9	77
HOMESTEAD RD	0.5	4	1	0	3	8	2	10	41
HOPPER RD	0.5	4	1	0	3	5	4	9	87
HOPPER RD	0.5	3	0	0	3	0	4	4	373
HUFFMAN CLEVELAND RD	0.5	3	0	0	3	8	2	10	44
HUFFMAN CLEVELAND RD	0.5	2	0	0	2	5	2	7	230
HUFFMAN CLEVELAND RD	0.4	2	0	0	2	8	0	8	145
HUFFMAN CLEVELAND RD	0.5	2	0	0	2	0	2	2	662
HUFFMEISTER RD	0.5	2	0	0	2	0	2	2	619
HUFFMEISTER RD	0.5	3	2	0	1	0	6	6	314
HUFFMEISTER RD	0.5	2	0	0	2	0	2	2	612
HUFFMEISTER RD	0.4	2	0	0	2	0	2	2	699
HUFFMEISTER RD	0.5	2	1	0	1	0	4	4	398
HUFSMITH KOHRVILLE RD	0.5	2	0	0	2	0	2	2	760
HUFSMITH KOHRVILLE RD	0.5	2	2	0	0	0	6	6	336
HUFSMITH KOHRVILLE RD	0.5	3	0	0	3	0	4	4	519
HUFSMITH KOHRVILLE RD	0.5	3	0	0	3	0	4	4	520
HUFSMITH KOHRVILLE RD	0.5	4	0	0	4	0	4	4	521
HUFSMITH KOHRVILLE RD	0.5	4	0	0	4	5	4	9	113
HUFSMITH RD	0.4	5	1	0	4	5	4	9	114
HUGH RD	0.4	2	1	0	1	0	4	4	522
IMPERIAL VALLEY DR	0.5	2	0	1	1	0	4	4	356
IMPERIAL VALLEY DR	0.5	2	0	1	1	5	4	9	59
IMPERIAL VALLEY DR	0.5	2	1	0	1	0	4	4	357
INDEPENDENCE PKWY S	0.5	3	0	0	3	0	4	4	374
INDEPENDENCE PKWY S	0.5	2	0	0	2	0	2	2	601
INDIAN SHORES RD	0.5	3	0	0	3	5	2	7	231
ISOM ST	0.4	2	0	1	1	0	4	4	441
JACK RABBIT RD	0.5	3	1	0	2	0	4	4	523
JOAN OF ARC ST	0.4	2	0	0	2	5	2	7	232
JOHN F KENNEDY BLVD	0.5	3	2	0	1	5	4	9	88
JOHN RALSTON RD	0.5	2	0	0	2	5	2	7	209
JOHN RALSTON RD	0.3	2	0	0	2	5	2	7	169
JONES RD	0.4	2	0	1	1	0	4	4	524
JONES RD	0.5	4	1	0	3	5	4	9	115
JONES RD	0.5	2	0	0	2	0	2	2	761
JONES RD	0.5	2	0	0	2	0	2	2	762
JONES RD	0.5	5	0	0	5	0	6	6	315

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
JONES RD	0.5	3	1	0	2	5	2	7	281
JONES RD	0.5	6	1	0	5	5	6	11	28
JONES RD	0.5	4	0	0	4	0	4	4	405
JONES RD	0.5	4	0	0	4	0	4	4	399
JONES RD	0.5	2	1	0	1	0	4	4	400
JONES RD	0.5	2	0	0	2	0	2	2	620
KATY FORT BEND RD	0.5	4	0	0	4	0	4	4	471
KATY FWY	0.5	2	0	0	2	0	2	2	700
KATY GAP RD	0.5	3	0	0	3	0	4	4	472
KATY HOCKLEY CUT OFF RD	0.5	2	0	0	2	0	2	2	701
KATY HOCKLEY RD	0.5	2	0	0	2	0	2	2	702
KATY HOCKLEY RD	0.5	2	0	0	2	5	2	7	256
KEMPWOOD DR	0.5	3	0	0	3	0	4	4	401
KENSWICK DR	0.5	3	0	0	3	5	2	7	282
KENSWICK DR	0.5	3	0	0	3	5	2	7	210
KICKAPOO RD	0.5	2	0	1	1	0	4	4	473
KIETH HARROW BLVD	0.5	2	0	1	1	0	4	4	406
KIETH HARROW BLVD	0.5	3	0	0	3	5	2	7	189
KINGS PARK WAY	0.5	3	0	0	3	0	4	4	525
KINGSLAND BLVD	0.5	3	0	0	3	5	2	7	257
KINGSLAND BLVD	0.5	3	0	0	3	5	2	7	258
KIRBY RD	0.3	3	0	0	3	0	4	4	375
KITZMAN RD	0.5	2	1	0	1	5	2	7	283
KRENEK RD	0.5	2	1	0	1	5	2	7	233
KUYKENDAHL RD	0.5	3	0	0	3	5	2	7	284
KUYKENDAHL RD	0.5	5	1	0	4	5	4	9	60
KUYKENDAHL RD	0.5	5	1	0	4	5	4	9	61
KUYKENDAHL RD	0.5	2	0	0	2	0	2	2	763
KUYKENDAHL RD	0.5	2	0	1	1	0	4	4	526
KUYKENDAHL RD	0.5	2	1	0	1	5	2	7	285
KUYKENDAHL RD	0.5	3	1	0	2	5	4	9	116
KUYKENDAHL RD	0.5	3	0	0	3	0	4	4	527
KUYKENDAHL RD	0.5	2	0	0	2	8	0	8	158
KUYKENDAHL RD	0.5	3	1	0	2	0	4	4	528
KUYKENDAHL RD	0.5	3	0	0	3	0	4	4	529
KUYKENDAHL RD	0.5	3	0	0	3	0	4	4	530
KUYKENDAHL RD	0.5	4	0	0	4	0	4	4	531
KUYKENDAHL RD	0.5	2	0	0	2	5	2	7	286
KUYKENDAHL RD	0.5	5	0	0	5	5	4	9	117
KUYKENDAHL RD	0.5	3	0	0	3	0	4	4	532

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
LAKEVIEW HAVEN DR	0.3	3	0	0	3	0	4	4	474
LANGLEY RD	0.5	3	0	1	2	0	4	4	442
LAUDER RD	0.5	3	1	0	2	0	4	4	376
LAUDER RD	0.5	3	1	1	1	5	4	9	67
LEE RD	0.5	2	1	0	1	5	2	7	170
LEE RD	0.4	3	0	0	3	0	4	4	533
LEINAD DR	0.3	1	0	0	1	0	2	2	764
LILLJA RD	0.5	2	0	0	2	0	2	2	639
LILLJA RD	0.3	2	0	0	2	5	2	7	234
LITTLE YORK RD	0.5	2	0	0	2	0	2	2	663
LITTLE YORK RD	0.5	2	0	0	2	5	2	7	171
LITTLE YORK RD	0.5	3	0	0	3	0	4	4	377
LOG CRADLE DR	0.5	2	0	0	2	0	2	2	765
LONE OAK RD	0.3	2	0	1	1	0	4	4	443
LONGENBAUGH RD	0.5	2	0	0	2	0	2	2	703
LONGENBAUGH RD	0.5	2	0	0	2	0	2	2	704
LONGENBAUGH RD	0.5	2	1	0	1	0	4	4	402
LOUETTA CROSSING	0.3	2	2	0	0	5	4	9	118
LOUETTA RD	0.5	2	0	0	2	5	2	7	287
LOUETTA RD	0.5	6	0	0	6	5	6	11	35
LOUETTA RD	0.5	5	0	0	5	0	6	6	337
LOUETTA RD	0.5	4	1	0	3	0	4	4	534
LOUETTA RD	0.5	3	0	0	3	5	2	7	288
LOUETTA RD	0.5	4	0	1	3	0	4	4	535
LOUETTA RD	0.5	2	0	0	2	0	2	2	766
LOUETTA RD	0.5	4	1	0	3	5	4	9	119
LOUETTA RD	0.5	2	0	0	2	0	2	2	767
LOUETTA RD	0.5	2	1	0	1	5	4	9	120
LOUETTA RD	0.5	2	1	0	1	0	4	4	536
LOUETTA RD	0.5	4	0	0	4	0	4	4	537
LOUETTA RD	0.5	2	0	0	2	5	2	7	289
LOUETTA RD	0.5	2	0	0	2	0	2	2	768
LUNDAR LN	0.3	1	0	0	1	0	2	2	769
LUTHERAN CHURCH RD	0.5	3	1	0	2	0	4	4	538
MACNAUGHTON DR	0.5	2	1	0	1	0	4	4	444
MAIN ST	0.5	4	0	0	4	0	4	4	423
MAIN ST	0.5	2	1	0	1	0	4	4	424
MAIN ST	0.5	2	1	0	1	0	4	4	425
MANOR ST	0.5	2	0	0	2	0	2	2	664
MARILYNN LN	0.4	2	0	0	2	5	2	7	290

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
MAXIMILIAN ST	0.3	3	0	0	3	0	4	4	445
MAYWOOD FOREST DR	0.4	2	0	0	2	0	2	2	640
MC FARLAND RD	0.5	2	0	0	2	0	2	2	641
MCKENDREE PARK DR	0.3	1	0	0	1	0	2	2	770
MEADOW EDGE DR	0.4	2	0	0	2	5	2	7	291
MEDICAL CENTER BLVD	0.3	3	0	0	3	0	4	4	378
MEMORIAL CHASE RD	0.5	3	1	0	2	0	4	4	539
MEMORIAL CHASE RD	0.3	1	0	0	1	0	2	2	771
MESA DR	0.5	2	0	0	2	0	2	2	642
MESA DR	0.5	2	0	0	2	0	2	2	772
MILLER ROAD NO 1	0.5	2	0	0	2	0	2	2	585
MILLS RD	0.5	2	0	0	2	0	2	2	773
MITCHELL RD	0.5	2	0	0	2	5	2	7	211
MOREWOOD DR	0.3	3	2	0	1	5	4	9	121
MORNING DEW LN	0.3	2	0	0	2	0	2	2	774
MORTON RD	0.5	2	0	0	2	0	2	2	705
MORTON RD	0.5	2	0	0	2	8	0	8	148
MORTON RD	0.5	4	0	0	4	0	4	4	475
MOUNT HOUSTON RD	0.5	4	0	0	4	0	4	4	446
MOUNT HOUSTON RD	0.5	3	0	0	3	0	4	4	379
MOUNT HOUSTON RD	0.5	3	0	0	3	8	2	10	37
MUESCHKE RD	0.5	2	0	0	2	0	2	2	613
MUESCHKE RD	0.5	2	0	0	2	0	2	2	706
MUESCHKE RD	0.5	3	1	0	2	0	4	4	476
N ELDRIDGE PKWY	0.5	5	0	0	5	0	6	6	316
N ELDRIDGE PKWY	0.5	3	0	0	3	0	4	4	540
N ELDRIDGE PKWY	0.5	5	1	0	4	0	4	4	541
N ELDRIDGE PKWY	0.5	2	0	0	2	5	2	7	292
N ELDRIDGE PKWY	0.5	2	0	0	2	0	2	2	621
N ELDRIDGE PKWY	0.5	2	0	0	2	0	2	2	707
N ELDRIDGE PKWY	0.5	3	1	0	2	5	2	7	190
N ELDRIDGE PKWY	0.5	2	1	0	1	0	4	4	542
N GESSNER RD	0.5	3	0	0	3	0	4	4	543
N HOUSTON ROSSLYN RD	0.5	2	0	0	2	0	2	2	775
N HOUSTON ROSSLYN RD	0.3	4	2	0	2	0	6	6	338
N MAIN ST	0.5	2	0	1	1	5	2	7	235
N MAIN ST	0.5	2	0	0	2	0	2	2	665
N MAIN ST	0.5	2	0	0	2	0	2	2	666
N MASON RD	0.5	2	0	0	2	0	2	2	708
N MASON RD	0.5	2	0	1	1	0	4	4	477

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
N REPSDORPH RD	0.5	4	0	1	3	0	4	4	380
N SAM HOUSTON PKWY E	0.5	2	0	0	2	0	2	2	776
N SAM HOUSTON PKWY E	0.5	2	0	0	2	0	2	2	777
N SAM HOUSTON PKWY E	0.5	2	1	0	1	0	4	4	544
N SAM HOUSTON PKWY E	0.5	2	0	0	2	0	2	2	778
N SAM HOUSTON PKWY W	0.5	2	0	0	2	0	2	2	779
N SAM HOUSTON PKWY W	0.5	3	0	0	3	0	4	4	545
N SAM HOUSTON PKWY W	0.5	5	0	0	5	0	6	6	339
N SAM HOUSTON PKWY W	0.5	3	0	0	3	0	4	4	546
N SAM HOUSTON PKWY W	0.5	3	0	0	3	0	4	4	547
N SAM HOUSTON PKWY W	0.5	3	0	0	3	0	4	4	548
N SAM HOUSTON PKWY W	0.5	5	0	0	5	5	4	9	122
N SAM HOUSTON PKWY W	0.5	2	0	0	2	5	2	7	293
N SAM HOUSTON PKWY W	0.5	2	1	0	1	0	4	4	549
N SHAVER ST	0.3	3	0	0	3	5	2	7	236
N SILVER GREEN DR	0.3	1	0	0	1	0	2	2	586
N TEXAS AVE	0.5	2	0	0	2	0	2	2	602
N WESTGREEN BLVD	0.5	4	0	0	4	0	4	4	478
NANES DR	0.4	2	0	1	1	5	2	7	212
NAVIGATION BLVD	0.5	3	0	0	3	0	4	4	447
NAVIGATION BLVD	0.5	3	1	1	1	0	6	6	325
NAVIGATION BLVD	0.5	3	0	1	2	5	4	9	89
NEUENS RD	0.3	2	0	1	1	5	4	9	123
NORMANDY ST	0.5	7	2	0	5	0	6	6	308
NORTHGREEN DR	0.5	2	0	0	2	5	2	7	237
NORTHPOINTE BLVD	0.5	6	1	0	5	0	6	6	340
NORTHWEST FWY	0.5	2	1	0	1	0	4	4	479
NORTHWEST FWY	0.5	3	0	0	3	0	4	4	480
NORTHWEST PARK DR	0.5	2	1	0	1	5	2	7	294
NUECES LN	0.3	1	0	0	1	5	0	5	352
OAK RIDGE PARK DR	0.3	3	0	0	3	5	2	7	259
OAKLAND AVE	0.4	2	0	0	2	0	2	2	667
OAKWOOD GLEN BLVD	0.3	1	0	0	1	0	2	2	780
OIL CENTER BLVD	0.5	2	0	0	2	0	2	2	643
OLD BAMMEL N HOUSTON RD	0.5	2	2	0	0	0	6	6	341
OLD FOLTIN RD	0.5	2	1	0	1	0	4	4	550
OLD HUMBLE RD	0.5	2	1	0	1	0	4	4	426
OLD HUMBLE RD	0.3	2	0	0	2	0	2	2	781
PADDOCK BEND DR	0.3	2	0	0	2	0	2	2	709
PARK ROW DR	0.5	3	0	0	3	0	4	4	481

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
PARK ROW DR	0.5	3	0	0	3	0	4	4	482
PARK ROW DR	0.5	2	0	0	2	0	2	2	710
PARK ROW DR	0.5	5	0	0	5	5	4	9	95
PASADENA BLVD	0.5	2	0	0	2	0	2	2	603
PASADENA BLVD	0.5	2	0	1	1	0	4	4	448
PASADENA BLVD	0.5	4	0	0	4	0	4	4	381
PASADENA BLVD	0.5	3	1	1	1	0	6	6	309
PEACH LEAF ST	0.5	3	0	0	3	0	4	4	449
PEAKWOOD DR	0.3	1	1	0	0	5	0	5	353
PEBBLE LAKE DR	0.3	1	0	0	1	0	2	2	711
PERRY RD	0.5	3	0	1	2	5	4	9	124
PILGRIMS POINT DR	0.5	2	0	1	1	0	4	4	427
PILGRIMS POINT DR	0.5	2	0	0	2	0	2	2	644
PINE FOREST DR	0.5	2	0	0	2	0	2	2	712
PINELAKES BLVD	0.5	2	0	0	2	0	2	2	782
PLANTATION COVE LN	0.5	3	1	0	2	0	4	4	407
PLUM RIDGE DR	0.5	2	0	0	2	0	2	2	783
PRIMEWEST PKWY	0.5	3	0	0	3	0	4	4	483
PROSPECT MEADOWS DR	0.3	1	1	0	0	0	4	4	484
PROVINCIAL BLVD	0.5	2	1	0	1	0	4	4	485
QUEENSTON BLVD	0.5	5	0	0	5	0	6	6	317
QUEENSTON BLVD	0.5	2	0	0	2	0	2	2	622
QUEENSTON BLVD	0.5	2	0	0	2	0	2	2	614
QUEENSTON BLVD	0.5	2	0	0	2	0	2	2	615
QUEENSTON BLVD	0.5	2	1	0	1	0	4	4	486
QUEENSTON BLVD	0.5	2	0	0	2	0	2	2	623
QUITMAN ST	0.5	4	0	1	3	0	4	4	450
QUITMAN ST	0.4	2	0	0	2	0	2	2	645
RAINTREE VILLAGE DR	0.5	2	0	0	2	0	2	2	713
RAINTREE VILLAGE DR	0.5	2	0	0	2	5	2	7	260
RAINY RIVER DR	0.4	2	1	0	1	5	2	7	213
RALSTON RD	0.5	3	0	0	3	0	4	4	551
RAMBLEWOOD DR	0.5	2	0	0	2	0	2	2	784
RANKIN RD	0.5	7	4	0	3	10	8	18	1
RANKIN RD	0.5	2	0	0	2	0	2	2	587
RED BLUFF RD	0.5	2	0	0	2	0	2	2	604
RED BLUFF RD	0.5	2	0	0	2	0	2	2	605
RED BLUFF RD	0.5	4	0	0	4	0	4	4	451
REYNALDO DR	0.3	1	0	0	1	0	2	2	785
RHODES RD	0.5	2	0	0	2	5	2	7	295

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
RHODES RD	0.5	2	0	0	2	5	2	7	296
RICHEY ST	0.5	2	1	1	0	0	6	6	310
ROUND ROBIN DR	0.3	1	0	0	1	0	2	2	786
ROYAL MILE LN	0.5	2	1	0	1	0	4	4	552
S 8TH ST	0.5	2	0	0	2	0	2	2	668
S ALLEN GENOA RD	0.5	2	0	0	2	5	2	7	179
S ALLEN GENOA RD	0.5	2	1	0	1	0	4	4	382
S CHERRY ST	0.5	2	0	0	2	0	2	2	787
S ELDRIDGE PKWY	0.5	2	0	0	2	0	2	2	714
S ELDRIDGE PKWY	0.5	2	0	0	2	0	2	2	715
S ELDRIDGE PKWY	0.5	4	2	0	2	0	6	6	334
S FRY RD	0.5	3	0	0	3	0	4	4	487
S GESSNER RD	0.5	6	0	0	6	0	6	6	322
S GREENHOUSE RD	0.5	4	0	0	4	5	4	9	96
S HOUSTON AVE	0.5	4	0	0	4	0	4	4	553
S LAKE HOUSTON PKWY	0.4	2	0	0	2	0	2	2	588
S MAIN ST	0.5	2	0	0	2	5	2	7	238
S MASON RD	0.5	3	0	0	3	0	4	4	488
S MASON RD	0.5	2	0	0	2	5	2	7	261
S MASON RD	0.5	8	0	0	8	0	8	8	149
S MASON RD	0.5	4	1	0	3	0	4	4	489
S SAM HOUSTON PKWY W	0.5	2	0	0	2	5	2	7	214
S SAM HOUSTON PKWY W	0.5	2	0	0	2	5	2	7	215
S SAM HOUSTON PKWY W	0.5	2	0	0	2	0	2	2	646
SABLECHASE DR	0.5	2	0	0	2	0	2	2	647
SABLEGROVE LN	0.3	1	0	0	1	0	2	2	788
SAM HOUSTON PKWY	0.5	3	0	0	3	0	4	4	383
SAM HOUSTON PKWY	0.5	3	0	0	3	5	2	7	216
SAM HOUSTON PKWY	0.5	3	1	0	2	0	4	4	428
SAUMS RD	0.5	2	1	0	1	5	2	7	262
SAWYER ST	0.5	2	0	0	2	0	2	2	669
SCHILLER RD	0.3	2	0	0	2	8	0	8	150
SCIAACA RD	0.5	3	0	0	3	8	2	10	52
SCOTTER LN	0.3	1	1	0	0	0	4	4	429
SELLERS RD	0.5	2	0	2	0	0	6	6	326
SENS RD	0.5	4	0	2	2	5	4	9	68
SEVEN MILE LN	0.5	2	0	0	2	0	2	2	670
SHADY LN	0.5	2	0	0	2	5	2	7	239
SHADY LN	0.5	2	0	0	2	0	2	2	671
SHAVER ST	0.5	5	0	0	5	0	6	6	311

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
SHELDON RD	0.5	2	0	1	1	0	4	4	384
SHELDON RD	0.5	3	1	0	2	5	2	7	240
SHELDON RD	0.5	2	0	0	2	5	2	7	241
SHELDON RD	0.5	2	0	0	2	5	2	7	217
SHELDON RD	0.5	2	1	0	1	8	0	8	137
SILVER BEND DR	0.3	1	0	0	1	5	0	5	348
SILVER SHADOWS LN	0.3	1	0	0	1	5	0	5	354
SJOLANDER RD	0.5	2	0	0	2	8	0	8	146
SMITHSTONE DR	0.5	3	1	0	2	0	4	4	554
SPACE CENTER BLVD	0.5	3	0	0	3	0	4	4	385
SPACE CENTER BLVD	0.5	2	0	0	2	5	2	7	180
SPACE CENTER BLVD	0.5	2	0	0	2	0	2	2	606
SPEARS RD	0.5	2	1	0	1	0	4	4	555
SPEARS RD	0.5	5	1	0	4	0	4	4	556
SPEARS RD	0.5	3	2	0	1	8	2	10	53
SPENCER HWY	0.5	6	0	0	6	8	4	12	17
SPENCER HWY	0.5	6	0	2	4	5	4	9	69
SPENCER HWY	0.5	11	0	0	11	0	10	10	38
SPENCER HWY	0.5	2	0	0	2	0	2	2	672
SPENCER HWY	0.5	3	0	0	3	5	2	7	181
SPENCER HWY	0.5	3	0	0	3	0	4	4	386
SPENCER HWY	0.5	3	1	0	2	0	4	4	387
SPENCER HWY	0.5	4	0	1	3	0	4	4	388
SPENCER HWY	0.5	6	1	0	5	0	6	6	312
SPENCER HWY	0.5	8	0	1	7	5	6	11	27
SPENCER HWY	0.5	4	0	1	3	0	4	4	389
SPENCER HWY	0.5	3	0	0	3	0	4	4	390
SPENCER HWY	0.5	4	0	0	4	0	4	4	391
SPENCER HWY	0.5	4	0	0	4	0	4	4	452
SPENCER HWY	0.5	7	0	0	7	0	8	8	138
SPRING CROSSING BLVD	0.5	2	0	0	2	0	2	2	789
SPRING CYPRESS RD	0.5	2	0	0	2	5	2	7	185
SPRING CYPRESS RD	0.4	2	0	0	2	5	2	7	263
SPRING CYPRESS RD	0.5	2	0	0	2	5	2	7	186
SPRING CYPRESS RD	0.5	2	0	0	2	8	0	8	159
SPRING CYPRESS RD	0.5	2	1	0	1	0	4	4	557
SPRING CYPRESS RD	0.5	3	1	0	2	5	4	9	125
SPRING CYPRESS RD	0.5	4	0	0	4	8	2	10	54
SPRING CYPRESS RD	0.5	2	0	0	2	0	2	2	790
SPRING CYPRESS RD	0.5	2	0	0	2	5	2	7	297

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
SPRING CYPRESS RD	0.5	2	0	0	2	5	2	7	298
SPRING CYPRESS RD	0.5	2	0	0	2	0	2	2	791
SPRING CYPRESS RD	0.5	2	1	0	1	0	4	4	558
SPRING CYPRESS RD	0.5	2	0	0	2	0	2	2	792
SPRING CYPRESS RD	0.5	5	0	1	4	0	4	4	559
SPRING STUEBNER RD	0.5	2	0	0	2	0	2	2	793
SPRING STUEBNER RD	0.5	4	1	0	3	5	4	9	126
SPRING STUEBNER RD	0.5	3	0	0	3	0	4	4	560
SPRING STUEBNER RD	0.5	2	1	0	1	5	4	9	127
STEEPLEWAY BLVD	0.5	2	0	1	1	0	4	4	561
STUEBNER AIRLINE RD	0.3	6	5	0	1	8	8	16	6
STUEBNER AIRLINE RD	0.5	2	2	0	0	0	6	6	342
STUEBNER AIRLINE RD	0.5	2	1	0	1	5	2	7	299
STUEBNER AIRLINE RD	0.5	2	2	0	0	5	4	9	128
STUEBNER AIRLINE RD	0.5	2	0	0	2	0	2	2	794
STUEBNER AIRLINE RD	0.5	3	0	0	3	0	4	4	562
STUEBNER AIRLINE RD	0.5	3	0	0	3	0	4	4	563
STUEBNER AIRLINE RD	0.3	1	0	0	1	0	2	2	795
SUGARLAND HOWELL RD	0.5	2	0	0	2	0	2	2	716
SUGARLAND HOWELL RD	0.5	2	0	0	2	0	2	2	717
SUTTONFORD DR	0.3	2	0	0	2	0	2	2	796
SWEETWATER LN	0.5	2	1	0	1	5	4	9	78
SWEETWATER LN	0.5	2	0	1	1	0	4	4	430
T C JESTER BLVD	0.3	2	1	0	1	0	4	4	564
T C JESTER BLVD	0.5	3	0	1	2	5	4	9	129
T C JESTER BLVD	0.5	2	0	0	2	5	2	7	218
T C JESTER BLVD	0.5	2	0	0	2	0	2	2	797
T C JESTER BLVD	0.3	2	0	0	2	0	2	2	798
TALCOTT LN	0.4	2	1	0	1	5	2	7	219
TANNER RD	0.5	2	0	0	2	0	2	2	799
TELGE RD	0.5	3	0	0	3	5	2	7	187
TELGE RD	0.5	3	1	0	2	0	4	4	490
TELGE RD	0.5	3	0	0	3	0	4	4	403
TELGE RD	0.5	2	0	0	2	0	2	2	616
TELGE RD	0.3	1	0	0	1	0	2	2	617
TELGE RD	0.5	4	0	0	4	5	4	9	130
TELGE RD	0.5	2	0	0	2	0	2	2	800
TELGE RD	0.4	2	0	0	2	0	2	2	624
THEISS MAIL ROUTE RD	0.5	2	0	1	1	0	4	4	565
THISTLE DOWN	0.3	1	0	0	1	0	2	2	801

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
THOMPSON RD	0.5	3	0	0	3	0	4	4	453
TIDAL RD	0.5	2	0	0	2	0	2	2	607
TIDWELL RD	0.5	2	0	0	2	0	2	2	648
TIDWELL RD	0.5	2	0	0	2	0	2	2	649
TODVILLE RD	0.5	2	0	0	2	0	2	2	608
TOMBALL PKWY	0.5	4	1	0	3	0	4	4	566
TOMBALL PKWY	0.5	2	0	0	2	0	2	2	802
TOWER OAKS BLVD	0.5	2	0	0	2	0	2	2	718
TOWN CENTER BLVD	0.3	2	0	0	2	0	2	2	803
TREASCHWIG RD	0.5	5	0	0	5	5	4	9	131
TREASCHWIG RD	0.5	2	1	0	1	0	4	4	567
TREASCHWIG RD	0.5	2	0	0	2	8	0	8	160
TREASCHWIG RD	0.5	2	0	0	2	8	0	8	161
TREGARNON DR	0.3	1	0	0	1	0	2	2	673
TUCKERTON RD	0.5	2	0	0	2	0	2	2	719
ULRICH LN	0.3	1	0	1	0	5	0	5	349
UNDERWOOD RD	0.5	4	0	0	4	0	4	4	392
UPLAND WILLOW AVE	0.3	2	1	0	1	0	4	4	568
UVALDE RD	0.5	4	1	0	3	5	4	9	70
UVALDE RD	0.5	7	0	0	7	5	6	11	31
UVALDE RD	0.5	2	1	0	1	5	2	7	172
VARNELL ST	0.3	1	0	0	1	5	0	5	350
VETERANS MEMORIAL DR	0.5	5	0	0	5	5	4	9	132
VETERANS MEMORIAL DR	0.5	5	3	0	2	8	6	14	10
VETERANS MEMORIAL DR	0.5	3	1	0	2	8	2	10	42
VETERANS MEMORIAL DR	0.5	11	4	1	6	8	10	18	2
VETERANS MEMORIAL DR	0.5	7	1	1	5	10	4	14	11
VETERANS MEMORIAL DR	0.5	7	0	0	7	0	8	8	162
VETERANS MEMORIAL DR	0.5	3	2	0	1	8	4	12	24
VETERANS MEMORIAL DR	0.5	7	1	0	6	0	6	6	343
VETERANS MEMORIAL DR	0.5	4	2	0	2	5	4	9	133
VETERANS MEMORIAL DR	0.5	3	0	0	3	5	2	7	300
VETERANS MEMORIAL DR	0.5	2	0	0	2	0	2	2	804
VETERANS MEMORIAL DR	0.5	6	3	0	3	0	8	8	163
VETERANS MEMORIAL DR	0.5	4	1	0	3	8	2	10	55
VETERANS MEMORIAL DR	0.5	7	1	1	5	0	6	6	323
VICTORIA ST	0.5	2	1	0	1	0	4	4	454
W BARBOURS CUT BLVD	0.5	2	0	0	2	0	2	2	674
W BAY AREA BLVD	0.5	3	0	0	3	0	4	4	393
W BAY AREA BLVD	0.5	3	0	0	3	0	4	4	431

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
W BAY AREA BLVD	0.5	5	0	0	5	0	6	6	313
W CANINO RD	0.3	1	0	0	1	0	2	2	650
W CEDAR BAYOU LYNCHBURG RD	0.5	2	0	0	2	0	2	2	609
W EL DORADO BLVD	0.5	2	0	1	1	0	4	4	432
W FAIRMONT PKWY	0.5	2	0	0	2	0	2	2	675
W FAIRMONT PKWY	0.5	2	0	0	2	0	2	2	676
W FERNHURST DR	0.5	2	0	0	2	0	2	2	720
W GULF BANK RD	0.5	2	2	0	0	0	6	6	303
W GULF BANK RD	0.5	3	1	0	2	5	4	9	79
W LAKE HOUSTON PKWY	0.5	2	0	0	2	0	2	2	589
W LAKE HOUSTON PKWY	0.5	3	0	0	3	5	2	7	173
W LAKE HOUSTON PKWY	0.5	3	0	0	3	8	2	10	46
W LAKE HOUSTON PKWY	0.5	2	0	0	2	0	2	2	677
W LAKE HOUSTON PKWY	0.5	2	0	0	2	0	2	2	678
W LITTLE YORK RD	0.5	2	0	0	2	0	2	2	805
W LITTLE YORK RD	0.5	3	0	1	2	0	4	4	408
W LITTLE YORK RD	0.5	2	1	0	1	5	2	7	191
W LITTLE YORK RD	0.5	4	0	0	4	0	4	4	409
W LITTLE YORK RD	0.5	2	0	0	2	0	2	2	625
W LITTLE YORK RD	0.5	6	1	1	4	0	6	6	318
W LITTLE YORK RD	0.5	2	1	0	1	8	0	8	140
W LITTLE YORK RD	0.5	2	1	0	1	0	4	4	569
W LITTLE YORK RD	0.5	2	1	0	1	0	4	4	570
W LITTLE YORK RD	0.5	2	0	0	2	8	0	8	164
W LITTLE YORK RD	0.5	4	1	0	3	5	4	9	134
W LITTLE YORK RD	0.5	3	0	0	3	0	4	4	571
W LITTLE YORK RD	0.5	4	0	0	4	8	2	10	56
W LITTLE YORK RD	0.5	2	0	0	2	5	2	7	301
W LITTLE YORK RD	0.5	2	0	0	2	0	2	2	806
W MAGLITTO CIR	0.3	1	0	0	1	0	2	2	807
W MAIN ST	0.5	2	1	0	1	0	4	4	394
W MONTGOMERY RD	0.5	2	1	0	1	0	4	4	572
W MONTGOMERY RD	0.5	5	1	0	4	8	4	12	16
W MONTGOMERY RD	0.5	3	2	0	1	5	4	9	62
W MOUNT HOUSTON RD	0.5	3	1	0	2	5	4	9	63
W MOUNT HOUSTON RD	0.5	4	0	1	3	8	4	12	20
W RICHEY RD	0.5	3	0	1	2	0	4	4	573
W RICHEY RD	0.5	5	2	0	3	0	6	6	304
W SAM HOUSTON PKWY N	0.5	2	0	0	2	5	2	7	302
W TIDWELL RD	0.5	4	0	0	4	0	4	4	574

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
WADE RD	0.5	3	0	0	3	0	4	4	455
WALLISVILLE RD	0.5	3	0	0	3	5	2	7	242
WALLISVILLE RD	0.5	2	1	0	1	5	2	7	182
WALLISVILLE RD	0.5	2	0	0	2	0	2	2	679
WALLISVILLE RD	0.5	5	0	0	5	8	4	12	18
WALTERS RD	0.5	2	1	0	1	0	4	4	575
WALTERS RD	0.5	4	1	0	3	5	4	9	80
WALTERS RD	0.5	2	0	0	2	0	2	2	651
WALTERS RD	0.5	2	0	0	2	0	2	2	808
WEST RD	0.5	2	0	1	1	0	4	4	404
WEST RD	0.5	2	0	0	2	0	2	2	721
WEST RD	0.5	3	0	0	3	0	4	4	491
WEST RD	0.5	3	1	0	2	5	2	7	192
WEST RD	0.5	2	1	0	1	0	4	4	576
WEST RD	0.5	2	0	0	2	0	2	2	809
WEST RD	0.5	2	0	1	1	0	4	4	577
WEST RD	0.5	2	0	0	2	0	2	2	810
WEST RD	0.5	3	1	0	2	8	2	10	57
WEST RD	0.4	4	1	0	3	8	2	10	43
WEST RD	0.5	8	2	0	6	5	6	11	32
WESTFIELD VILLAGE DR	0.5	4	0	1	3	5	4	9	97
WESTGARD BLVD	0.3	1	1	0	0	5	0	5	346
WESTHEIMER PKWY	0.5	3	0	0	3	0	4	4	492
WESTHEIMER PKWY	0.5	2	0	0	2	8	0	8	151
WESTPARK DR	0.5	4	0	1	3	8	2	10	49
WESTPARK DR	0.5	2	1	0	1	0	4	4	493
WESTWAY	0.3	2	0	0	2	0	2	2	680
WHEELER ST	0.5	2	0	0	2	0	2	2	652
WHITWELL DR	0.3	1	0	0	1	0	2	2	722
WILDCROFT DR	0.5	2	2	0	0	8	0	8	152
WILL CLAYTON PKWY	0.5	2	0	0	2	0	2	2	811
WILL CLAYTON PKWY	0.5	7	1	0	6	0	6	6	344
WILL CLAYTON PKWY	0.5	2	0	0	2	0	2	2	812
WILL CLAYTON PKWY	0.5	2	0	0	2	0	2	2	813
WILL CLAYTON PKWY	0.5	2	0	0	2	0	2	2	681
WILL CLAYTON PKWY	0.5	2	0	1	1	5	4	9	90
WILL CLAYTON PKWY	0.5	2	0	0	2	0	2	2	653
WILLOW RIVER DR	0.4	2	1	0	1	0	4	4	494
WILSON RD	0.5	2	0	0	2	0	2	2	814
WILSON RD	0.5	2	0	0	2	0	2	2	815

Regional Road	Length	Total KSI Crashes	Ped. KSI Crashes	Bicycle KSI Crashes	Vehicular KSI Crashes	K Score	SI Score	KSI Score	KSI Rank
WILSON RD	0.5	6	0	0	6	5	6	11	36
WIMBERLEY HOLLOW LN	0.3	1	1	0	0	0	4	4	433
WINDFERN RD	0.5	3	1	0	2	5	4	9	135
WINDFERN RD	0.5	2	0	1	1	0	4	4	578
WINFIELD RD	0.5	2	1	0	1	0	4	4	456
WINFIELD RD	0.5	2	1	0	1	0	4	4	358
WOOD RIVER DR	0.3	3	1	0	2	0	4	4	579
WOODFOREST BLVD	0.5	2	1	0	1	5	2	7	183
WOODFOREST BLVD	0.5	3	0	0	3	0	4	4	395
WOODLAND HILLS DR	0.5	2	0	0	2	0	2	2	816
WORTHAM BLVD	0.3	1	0	0	1	0	2	2	723
WUNDERLICH DR	0.5	2	0	0	2	0	2	2	817
YORKTOWN CROSSING PKWY	0.5	5	0	0	5	8	4	12	25

Table 5. KSI Scores for High Risk Corridors

No.	Roadway	Corridor Limits	Length (mi)	No. Fatal & Serious Injury (KSI) Crashes (2014-2018) on Highest Ranked HIN Segment on High Risk Corridors				KSI Score for Highest Ranked HIN Segment on Corridor (Range 0-20)
				Pedestrian	Bicyclist	Vehicle	Total	
1	Rankin Road	East of IH 45 NBFR to Imperial Valley Drive	1.0	4	0	3	7	18
2	Veterans Memorial Dr	FM 1960 to N Sam Houston Parkway W	4.2	4	1	6	11	18
3	Aldine Mail Road	Aldine Westfield Road to Easthampton Drive	2.6	4	0	4	8	16
4	Antoine Drive	Veterans Memorial Drive to N Sam Houston Parkway W	1.7	2	1	6	9	16
5	Stuebner Airline Road	North of Spring Cypress Road to FM 1960	5.2	5	0	1	6	16
6	Veterans Memorial Dr	N Sam Houston Parkway W to SH 249	3.4	3	0	2	5	14
7	W Montgomery Road	SH 249 to Wavell Street	2.0	1	0	4	5	12
8	Spencer Highway	Galveston Road to Somerton Drive	8.0	0	0	6	6	12
9	Dominion Park Drive	Kuykendahl Road to IH 45 Southbound Frontage Road	0.5	2	0	1	3	12
10	W Mount Houston Rd	IH 45 Northbound Frontage Road to Airline Drive	0.9	0	1	3	4	12
11	Barbers Hill Road	Garth Road to Crosby Barbers Hill Road	0.5	0	0	5	5	12
12	Hollow Tree Lane	Cali Drive to IH 45 Northbound Frontage Road	1.0	0	0	4	4	12
13	Ella Boulevard	At Barren Springs Drive	n/a	1	1	6	8	11

No.	Roadway	Corridor Limits	Length (mi)	No. Fatal & Serious Injury (KSI) Crashes (2014-2018) on Highest Ranked HIN Segment on High Risk Corridors				KSI Score for Highest Ranked HIN Segment on Corridor (Range 0-20)
				Pedestrian	Bicyclist	Vehicle	Total	
14	Jones Road	Grant Road to Ranchstone Drive	4.0	1	0	5	6	11
15	West Road	Veterans Memorial Drive to IH 45	1.75	2	0	6	8	11
16	Atascocita Road	Kings Parkway to FM 1960	0.9	0	0	6	6	11
17	Grant Road	Perry Road to SH 249	0.5	1	1	2	4	11
18	Louetta Road	SH 249 to Cannaberry Way	8.4	0	0	6	6	11
19	Airline Drive	N of West Road to Canino Road	3.5	1	0	2	3	10
20	Homestead Road	N of Tidwell Road to S of Miley Street	2.5	1	0	2	3	10
21	Homestead Road	S of Old Humble Road to Winfield Road	0.6	1	0	3	4	10
22	Huffman Cleveland Rd	Hickory Ridge Drive to Commons Vista Drive	1.7	0	0	3	3	10
23	W Lake Houston Pkwy	Pine Cup Drive to Atascocita Middle School	1.0	0	0	3	3	10
24	Bissonnet Street	Sugar Land Howell Road to Synott Road	1.3	1	0	2	3	10
25	Fry Road	N of Keith Harrow Boulevard to Franz Road	3.5	0	0	4	4	10
26	Fallbrook Drive	W of NW Park Drive to Veterans Memorial Drive	2.3	1	0	2	3	10
27	Spears Road	Veterans Memorial Drive to W of TC Jester	1.0	2	0	1	3	10
28	Spring Cypress Road	Memorial Spring Drive to W of Valka Road	2.2	0	0	4	4	10

No.	Roadway	Corridor Limits	Length (mi)	No. Fatal & Serious Injury (KSI) Crashes (2014-2018) on Highest Ranked HIN Segment on High Risk Corridors				KSI Score for Highest Ranked HIN Segment on Corridor (Range 0-20)
				Pedestrian	Bicyclist	Vehicle	Total	
29	W Little York Road	E of Hempstead Road to W of Fairbanks N Houston Rd	1.2	0	0	4	4	10
30	Alice Road	Green Meadow Road to SH 249	0.5	0	0	5	5	9
31	Barker Cypress Road	N of West Little York Road at Gummert Rd	0.7	0	1	4	5	9
32	Greenhouse Road	Clay Road to Golden Wave Drive	1.3	0	1	3	4	9
33	Greenhouse Road	IH-10 to Misty Cove Drive	2.5	0	0	3	3	7

Note: Corridors are listed in order based on the KSI score for the highest ranked ½-mile High Injury Network segment on the corridor, and not for the corridor as a whole.

6. Supplemental Details on Crash Categorization

FHWA's Proven Safety Countermeasures website provides a filter tool to identify countermeasures based on focus area, problem identified, and crash type. Tables 6 through 8 show the TxDOT Crash Records Information System (CRIS) data codes used to categorize various crash characteristics for fatality and serious injury crashes.

Table 6. Criteria Used to Determine Proven Safety Countermeasure Focus Areas

Focus Area	Definition	CRIS Data Codes
Roadway Departure	A single vehicle crash where the impact of the first harmful event occurred on the shoulder, beyond the shoulder or in the median of the roadway.	ROAD_RELAT_ID Values = 2 – Off Roadway, or 3 – Shoulder, or 4 – Median, AND COLLSN_ID = 1 – One Motor Vehicle (OMV) Vehicle Going Straight, or 2 – OMV Vehicle Turning Right, or 3 – OMV Vehicle Turning Left, or 4 – OMV Vehicle Backing, or 5 – OMV Other, AND
Intersection	A crash that occurs within the boundaries of an intersection or in which the first harmful event occurred on an approach to or exit from an intersection and resulted from an activity, behavior- or control-related to the movement of traffic units through the intersection.	INTRST_RELAT_ID Values = 1 – Intersection, or 2 – Intersection Related
Pedestrian	A crash involving at least one pedestrian and one motor vehicle. Casualties related to pedestrian crashes are reported for pedestrians only.	HARM_EVNT_ID = 1 – Pedestrian, or PERSN_TYPE_ID = 4 - Pedestrian
Bicyclist	A crash involving at least one bicycle and one motor vehicle. Casualties related to bicyclist crashes are reported for bicyclist only.	HARM_EVNT_ID = 5 – Pedalcyclist, or PERSN_TYPE_ID = 3 - Pedalcyclist
Speed Management	A crash in which at least one driver was speeding above the limit or driving at an unsafe speed below the limit.	CONTRIB_FACTR_ID Values = 60 – Speeding – Unsafe (Under Limit), or 61 – Speeding – (Over Limit)

Table 7. Criteria Used to Determine Problem Areas/Contributing Factors

Problem Areas/ Contributing Factors	Definition	CRIS Data Codes
Inadequate Visibility, Conspicuity, or Sight Distance	A crash in which at least one driver's vision was obstructed or impaired.	OTHR_FACTR_ID Values = 16 – Vision obstructed by standing or parked vehicle 17 - Vision obstructed by moving vehicle 18 - Vision obstructed by embankment or ledge 19 - Vision obstructed by commercial sign 20 - Vision obstructed by highway sign 21 - Vision obstructed by headlight or sun glare 22 - Vision obstructed by hillcrest 23 - Vision obstructed by trees, shrubs, weeds, etc. 24 - Vision obstructed by other visual obstructions CONTRIB_FACTR_ID Values = 48 – Impaired Visibility
Excessive Speeds	A crash in which at least one driver was speeding above the limit or driving at an unsafe speed below the limit.	CONTRIB_FACTR_ID Values = 60 – Speeding – Unsafe (Under Limit), or 61 – Speeding – (Over Limit)
Failure to Control Speed	A crash in which at least one driver failed to control their speed as necessary to avoid colliding with another person or vehicle that is on or entering the roadway in compliance with law and the duty of each person to use due care.	CONTRIB_FACTR_ID Values = 22 – Failed to control speed
Non-Compliance (yielding right-of-way)	A crash in which at least one driver failed to yield right of way.	CONTRIB_FACTR_ID Values = 24 – Failed to give half of roadway 25 – Failed to heed warning sign 26 – Failed to pass to left safely 27 – Failed to pass to right safely 28 – Failed to signal or gave wrong signal 29 – Failed to stop at proper place 30 – Failed to stop for school bus 31 – Failed to stop for train 32 – Failed to yield ROW – emergency vehicle 33 – Failed to yield ROW – open intersection 34 – Failed to yield ROW – private drive 35 – Failed to yield ROW – stop sign 36 – Failed to yield ROW – to pedestrian 37 – Failed to yield ROW – turning left 38 – Failed to yield ROW – turn on red 39 – Failed to yield ROW – yield sign

Problem Areas/ Contributing Factors	Definition	CRIS Data Codes
Pedestrian Failed to Yield ROW	A crash involving at least one pedestrian who failed to yield right of way to a vehicle.	CONTRIB_FACTR_ID Values = 59 – Pedestrian failed to yield ROW to vehicle
No Separation of Users, or Vulnerable Users are Not Considered	A roadway segment where there are no bicycle lanes located within or directly adjacent to the roadway, or where there are no sidewalks that are physically separated from the roadway by a curb or unpaved buffer space. Also, a signalized intersection where there are no ADA ramps, crosswalks, or pedestrian signals.	Visual inspection of roadway segment to identify locations where there are no bicycle lanes located within or directly adjacent to the roadway, or where there are no sidewalks that are physically separated from the roadway by a curb or unpaved buffer space. Also, visual inspection of signalized intersection to identify locations where there are no pedestrian accommodations. This was used to categorize pedestrian & bicycle crashes in which there were no identifiable contributing factors.
Driver Inattention (distracted/drowsy)	A crash in which at least one driver was distracted, drowsy, inattentive, or using a cell phone.	CONTRIB_FACTR_ID = 19 – Distraction in Vehicle, or 20 – Driver Inattention, or 40 – Fatigued or Asleep, or 47 – Ill, or 72 – Cell/Mobile Phone Use, or 75 – Cell/Mobile Device Use, or 76 – Cell/Mobile Device Use-Texting, or 77 – Cell/Mobile Device Use-Other, or 78 – Cell/Mobile Device Use-Unknown
Driver Impairment (alcohol/drugs)	A crash involving at least one driver under the influence of alcohol or other drug.	CONTRIB_FACTR_ID = 45 – Had Been Drinking, or 62 – Taking Medication, or 67 – Under Influence – Alcohol, or 68 – Under Influence – Drug, or Driver Alcohol Result ID = 1, or Driver Drug Result ID = 1

Table 8. Criteria Used to Determine Crash Types

Crash Type	Definition	CRIS Data Codes
Angle Crash	A crash that occurs when vehicles driving on perpendicular roads collide.	COLLSN_ID = 10 – Angle – Both Going Straight 11 – Angle – One Straight – One Backing 12 – Angle – One Straight – One Stopped 13 – Angle – One Straight – One Right Turn 14 – Angle – One Straight – One Left Turn 15 – Angle – Both Right Turn 16 – Angle – One Right Turn – One Left Turn 17 – Angle – One Right Turn – One Stopped 18 – Angle – Both Left Turn 19 – Angle – One Left Turn – One Stopped
Left-Turn Crash	A crash that occurs when a left turning vehicle collides with an oncoming vehicle from the opposite direction.	COLLSN_ID = 34 – Opposite Direction – One Straight – One Left Turn 38 – Opposite Direction – Both Left Turns
Right-Turn Crash	A crash that occurs when a right turning vehicle collides with an oncoming vehicle from the opposite direction.	COLLSN_ID = 33 – Opposite Direction – One Straight – One Right Turn
Rear End Crash	A crash that occurs when a vehicle is rear ended by another vehicle while traveling in the same direction.	COLLSN_ID = 20 – Same Direction – Both Going Straight – Rear End 22 – Same Direction – One Straight – One Stopped 23 – Same Direction – One Straight – One Right Turn 24 – Same Direction – One Straight – One Left Turn
Pedestrian Crash	A crash involving at least one pedestrian and one motor vehicle. Casualties related to pedestrian crashes are reported for pedestrians only.	HARM_EVNT_ID = 1 – Pedestrian, or PERSN_TYPE_ID = 4 - Pedestrian
Bicyclist Crash	A crash involving at least one bicycle and one motor vehicle. Casualties related to bicyclist crashes are reported for bicyclist only.	HARM_EVNT_ID = 5 – Pedalcyclist, or PERSN_TYPE_ID = 3 - Pedalcyclist
Head On Crash	A crash involving two vehicles going straight, that were traveling in opposite directions prior to impact.	COLLSN_ID = 30 – Opposite Direction – Both Going Straight

Crash Type	Definition	CRIS Data Codes
Run off the Road / Single Vehicle Crash	A single vehicle crash where the impact of the first harmful event occurred on the shoulder, beyond the shoulder or in the median of the roadway and which resulted in hitting a fixed object.	ROAD_RELAT_ID Values = 2 – Off Roadway, or 3 – Shoulder, or 4 – Median, AND COLLSN_ID = 1 – One Motor Vehicle (OMV) Vehicle Going Straight, or 2 – OMV Vehicle Turning Right, or 3 – OMV Vehicle Turning Left, or 4 – OMV Vehicle Backing, or 5 – OMV Other, AND
Sideswipe, Same Direction Crash	A crash that occurs when a vehicle is side swiped by another vehicle while traveling in the same direction.	COLLSN_ID = 21 – Same Direction – Both Going Straight – Sideswipe
Wet	A crash in which the roadway surface condition was reported as wet, standing water, slush, ice, or snow.	SURF_COND_ID = 2 – Wet 3 – Standing Water 5 – Slush 6 – Ice 9 – Snow
Nighttime	A crash in which the lighting condition was reported as dawn, dark not lighted, dusk, or dark unknown lighting.	LIGHT_COND_ID = 3 – Dark, Not Lighted 4 – Dark, Lighted 5 – Dusk 6 – Dark, Unknown Lighting
Speed-related	A crash in which at least one driver was speeding above the limit, driving at an unsafe speed, or failed to control their speed.	CONTRIB_FACTR_ID = 60 – Speeding - Unsafe (Under Limit), or 61 – Speeding - (Over Limit)
Rollover	A crash in which the first harmful event resulted from the vehicle overturning.	HARM_EVNT_ID = 10 – Overturned
Fixed-Object	A crash in which the first harmful event involved a vehicle hitting a fixed or other object.	HARM_EVNT_ID = 7 – Fixed Object, or 8 – Other Object

7. Supplemental Details on Cost Estimates

A simplified cost estimating method was used to estimate the investment needed to implement potential safety improvements on each High Risk Corridor. The estimates are based on average unit costs shown in Table 9 below.

Table 9. Estimate Assumptions

Segment Improvements	Cost Low: <$500K Medium: $500K-$2M High: >$2M
Boulevard section with raised median and curb & gutter drainage	High
Raised median w/turn bays (w/undivided road)	Medium
Continuous two-way left turn lane (w/undivided road)	Medium
Raised median w/turn bays (w/exist CTWLTL)	Medium
Continuous street lighting	Low
Bike lane - add shoulders	Low
Restripe 4-lane undivided w/shoulders to 5-lane w/continuous two-way left turn lane (CTWLTL)	Low
Road diet (roadway reconfiguration)	Low
Wider center lines	Low
Wider edge lines	Low
Bike lane - Restriping existing shoulder	Low
Edge line rumble strips	Low
Enhanced signage (curve delineation, stop controlled intersections)	Low
Sidewalk improvements	Low
Intersection Improvements	
Install traffic signal	Low
Modify traffic signals (protected left turn, pedestrian signal upgrades, additional signal heads)	Low
Mid-block crossing	Low
Pedestrian refuge	Low
Crosswalk visibility enhancements	Low
ADA ramps/short sidewalk improvements	Low
Improve signal timing & synchronization (yellow change interval, leading ped interval)	Low