

VISION ZERO Annual Report 2021

City of Houston



July 2022

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Houston Vision Zero: 2021 Benchmarks

“Evaluation and regular reporting are necessary to track progress and benchmark success of Vision Zero and the commitment to end traffic deaths and serious injuries.”

-Houston Vision Zero Action Plan

This report presents 2021 Vision Zero-related data for the City of Houston based on Benchmarks identified in the Vision Zero Action Plan.

1. TRAFFIC DEATHS AND SERIOUS INJURIES BY MODE, DEMOGRAPHICS, AND CONTRIBUTING FACTORS

In 2021, there were 331 total fatalities and 1,620 serious injuries on Houston’s streets. This means nearly every day someone lost their life and close to five people every day suffered a serious injury in a traffic crash on Houston streets.

During the last four years, the number of traffic deaths and serious injuries increased by an average of 18% each year. Over this four-year period, traffic deaths increased by 61% and serious injuries increased by 34%. Pedestrians and driver/occupant deaths increased by nearly the same rate since 2018, 66% and 67%, respectively. See Table 1 for totals by year.

Table 1. Traffic deaths and serious injuries of people involved in crashes in the City of Houston from 2018-2021. (Source: TxDOT Crash Record Information System (CRIS))

Type of Crash	People Type	2018	2019	2020	2021
Traffic Deaths	Driver & Occupant	107	128	137	179
	Pedestrian	64	90	88	106
	Motorcyclist & Other	26	32	38	34
	Pedalcyclist	9	16	12	12
	Total	206	266	275	331
Type of Crash	People Type	2018	2019	2020	2021
Serious Injuries	Driver & Occupant	820	1,061	1,028	1,203
	Pedestrian	209	233	210	221
	Motorcyclist & Other	135	111	141	149
	Pedalcyclist	46	45	27	47
	Total	1,210	1,450	1,406	1,620

Traffic Deaths and Serious Injuries by Mode

Pedestrians represented 32% of fatalities in 2021, yet they account for less than 2% of people who commute to work walking (Figures 1 and 2). This means pedestrians are disproportionately impacted by traffic deaths. While drivers represent 86% of commute to work patterns, they account for 54% of traffic deaths.

Figure 1. Houston traffic deaths and serious injuries, by mode, 2021. (Source: TxDOT CRIS)

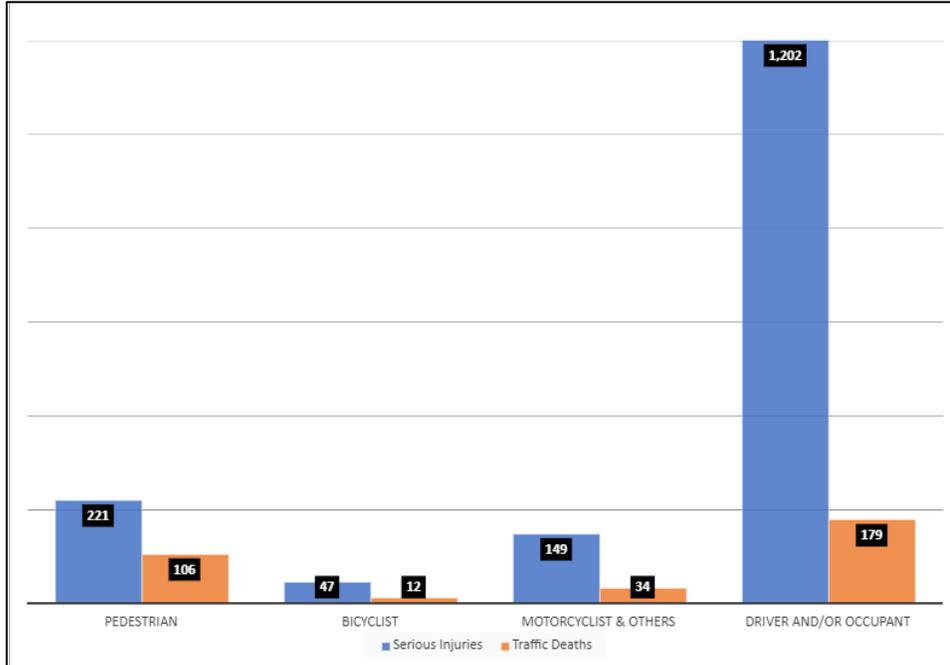
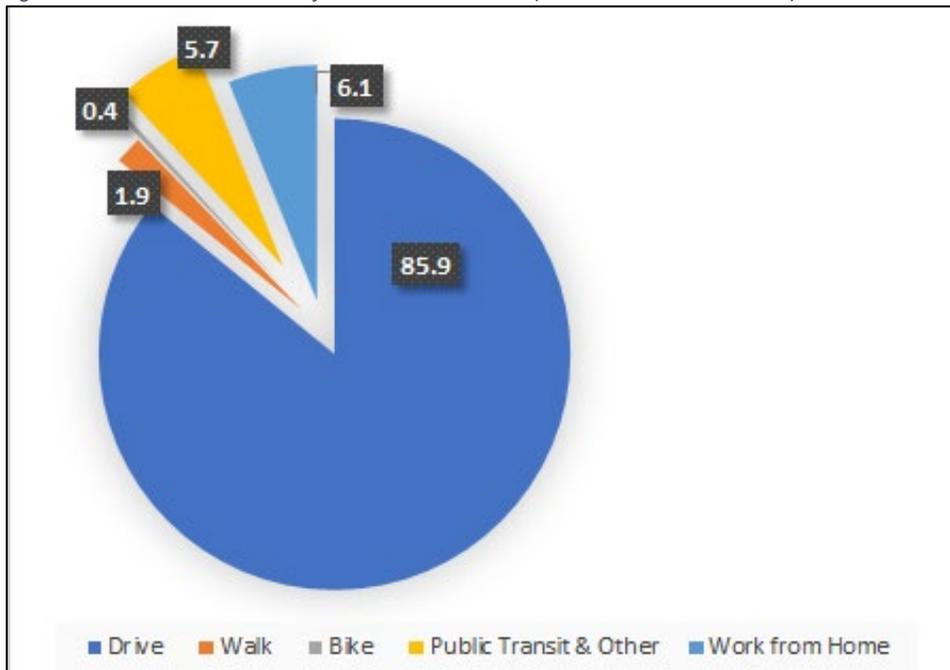


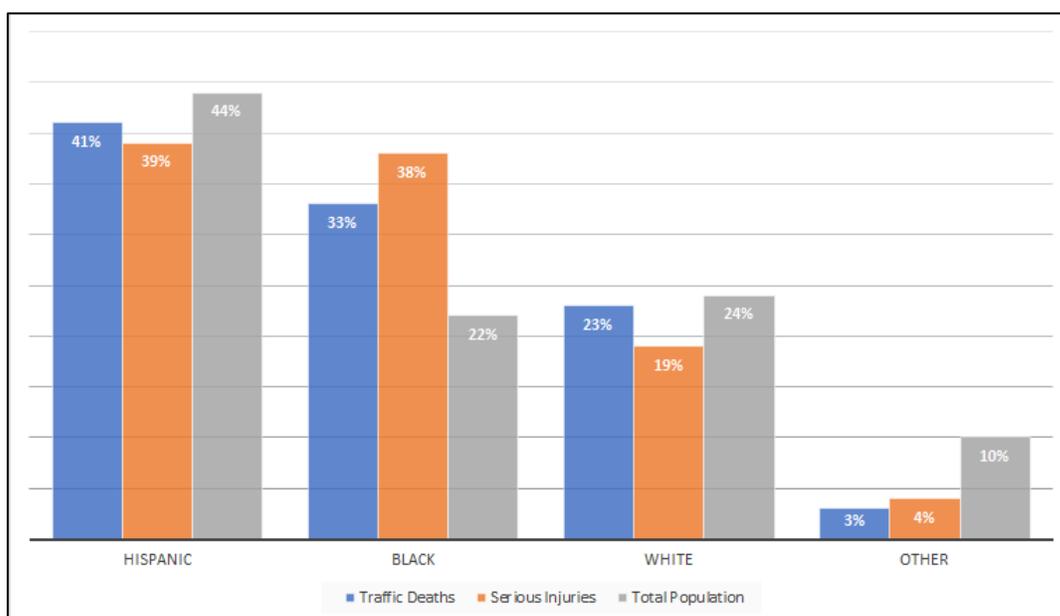
Figure 2. Commute Mode Share for Houston residents. (Source: US Census Bureau)



Traffic Deaths and Serious Injuries by Demographics

While people who identify as Black represent 22% of Houston residents, they account for 33% of traffic deaths and 38% of serious injuries (Figure 3). This means traffic crash fatalities and life-altering injuries disproportionately affect Black people in Houston. This disproportionately has increased as indicated by historical data from the Vision Zero Action Plan (2014-2018) when 30% of traffic deaths and 33% of serious injuries were black people while 22% of the Houston population identified as Black.

Figure 3. Traffic deaths and serious injuries by demographics. Other includes American Indian, Asian, Native Hawaiian, Some Other Race, or Two or More Races. (Source: US Census Bureau)



Traffic Deaths and Serious Injuries by Contributing Factor

The top contributing factors of traffic deaths and serious injuries in Houston in 2021 were speed, impairment, distracted driving, disobeying traffic signs and signals, failing to yield right-of-way, and unsafe driving maneuvers (see Table 2). This is consistent with data from the Vision Zero Action Plan (2014-2018).

Of these top six contributing factors, speed is indicated in over 30% of both serious injury and fatal crashes.

Table 2. Top contributing factors of traffic deaths and serious injuries in 2021. (Source: TxDOT CRIS)

Contributing Factors	Serious Injuries	Fatal Crashes
Speed	32.5%	33.5%
Impairment	13.9%	28.2%
Distracted Driving	9.5%	2.5%
Disregarding Traffic Signs and Signals	19.0%	15.5%
Failing to Yield Right-of-Way	13.7%	6.0%
Unsafe Driving Maneuvers	27.7%	39.9%

2. PERCENTAGE OF HIGH INJURY NETWORK (HIN) WITH NEW STREET SAFETY IMPROVEMENTS. LIST IMPROVEMENTS MADE, INCLUDING THE NUMBER OF INTERSECTIONS AND TREATMENT TYPE, AND MILES OF FOUR, SIX, AND EIGHT-LANE STREETS CONVERTED TO A SAFER CONFIGURATION

Of City of Houston projects, 1.3 miles of the High Injury Network had safety improvements in 2021. This makes up less than 1% of the HIN.

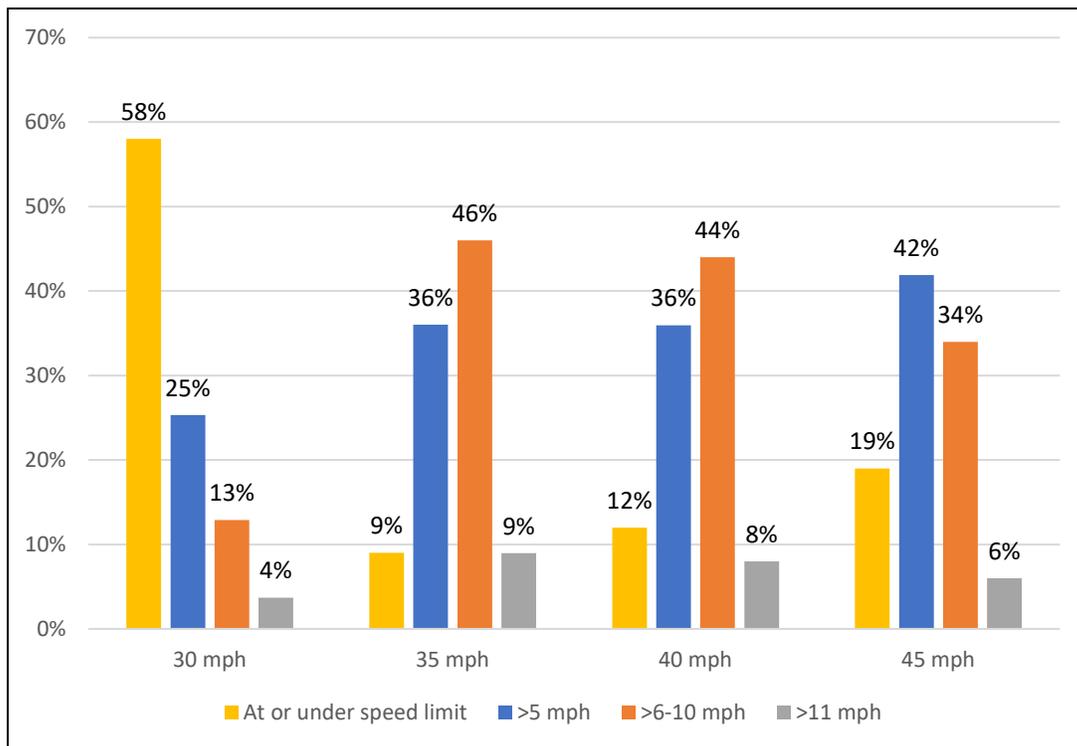
The following 10 locations on the High Injury Network are currently in planning, design, or construction for improvements that align with Vision Zero. These improvements may include street design elements that enhance the safety and accessibility for people walking, using a mobility aid, biking, and taking transit (project sponsors identified in parenthesis):

- Martin Luther King Blvd/Griggs Road/Calhoun Road Bikeway (Harris County Precinct 1)
- Shepherd Drive/Durham Drive Reconstruction (TIRZ 5)
- Fondren Road Paving and Drainage (City of Houston)
- Hillcroft Avenue Safety Improvements Project (City of Houston, Together for Safer Roads)
- Airline Drive BOOST 56 (METRO)
- Freeport Blvd Sidewalk Improvements (Harris County Engineering Department)
- Cavalcade Street/Homestead Road Bikeway (Harris County Precinct 1)
- Quitman Street Safety Improvements (METRO, City of Houston, Greater Northside Management District)
- North Main Street Bikeway (City of Houston)
- Rankin Road Curb Repair and Ditch Regrading (Harris County Engineering Department)

3. PERCENTAGE OF DRIVERS EXCEEDING THE SPEED LIMIT AND MEDIAN SPEEDS ON SELECT STREETS

On streets with a 30-mph speed limit, most drivers are adhering to or driving under the speed limit.¹ However, 17% of drivers are going at least 6 mph or more over the 30-mph speed limit. On streets with speed limits above 30 mph, fewer drivers are adhering to the speed limit. For example, on streets signed at 35 mph, 46% of drivers are going 6-10 mph over and 9% of drivers are going at 11 mph over the speed limit.

Figure 4. Percentage of motorists driving over the speed limit and by how much they were going over the speed limit.



4. PERCENTAGE OF STREET SAFETY IMPROVEMENTS IN COMMUNITIES DISPROPORTIONATELY IMPACTED BY TRAFFIC DEATHS AND SERIOUS INJURIES

17 out of 132 COH projects completed in 2021 were in Complete Communities or communities with a Social Vulnerability Index greater than .75. Those communities are disproportionately impacted by traffic deaths and serious injuries. This equates to 13% of projects, while these communities represent 33% of the City's streets.

¹ Where data is available. Data analyzed using Houston Public Works traffic count and speed data, which are limited to select streets.

5. COMMUTE MODE SHARE

In 2018, 88% of people in Houston reported driving to work. In 2020, this dropped to 86%, while more people reported walking to work and working from home. See Table 3 for detailed comparisons.

Table 3. Commute Mode Share for Houston residents, 2018 and 2020. (Source: US Census Bureau)

Transportation Mode	2018	2020
Drive	88.0%	85.9%
Walk	1.5%	1.9%
Bike	0.4%	0.4%
Public Transit	3.9%	3.7%
Work from Home	3.9%	6.2%

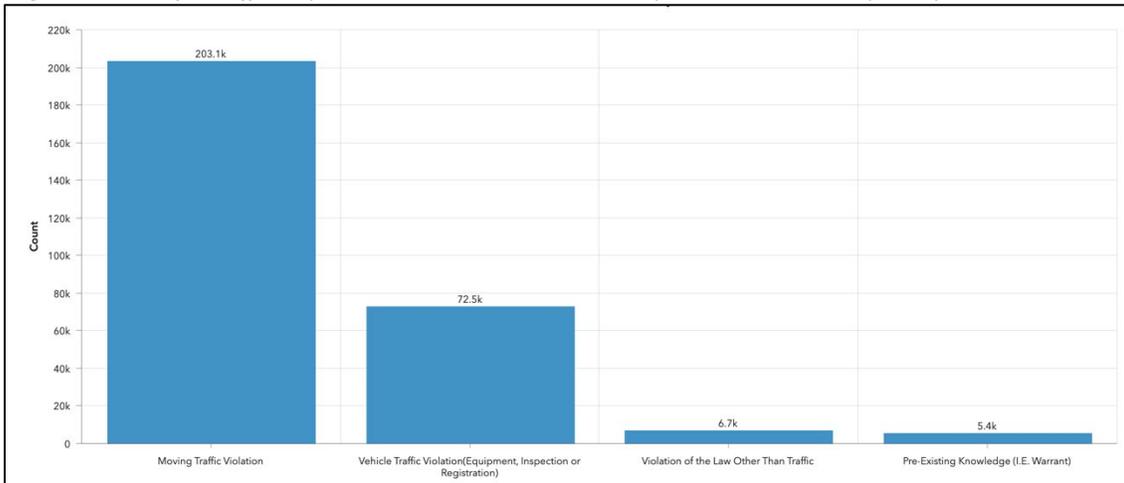
6. TOTAL NUMBER AND PERCENTAGE OF STREET RECONSTRUCTION PROJECTS WITH MULTIMODAL SAFETY NEEDS AND IMPROVEMENTS MADE TO ADDRESS NEEDS

Of the City of Houston’s 11 Capital Improvement Program (CIP) Projects that were substantially completed in 2021, seven included multimodal safety improvements. This means 64% of projects addressed Vision Zero elements. These improvements included sidewalks, accessible curb ramps, and median refuge islands.

7. PERCENTAGE OF TRAFFIC STOPS BASED ON TOP CONTRIBUTING CRASH FACTORS ON HOUSTON STREETS. INCLUDE DRIVERS’ CHARACTERISTICS.

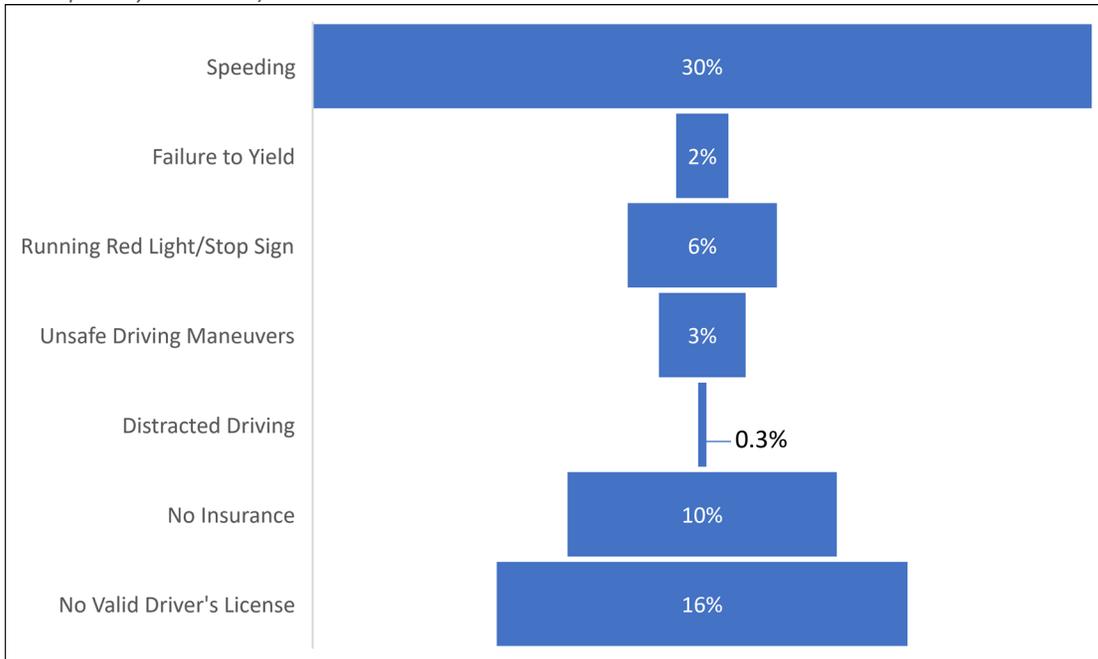
The Houston Police Department maintains a public-facing database (<https://policetransparency-mycity.hub.arcgis.com/>) with traffic stop information. The traffic stop dataset assigns stops into four categories: moving traffic violation, vehicle traffic violation (equipment, inspection, or registration), violation of the law other than traffic, and pre-existing knowledge (i.e., warrant). Moving Traffic Violations are a majority of the reason that police officers proceed with traffic stops. See Figure 5.

Figure 5. Reason for Traffic Stops, 2021 (Source: Houston Police Department Police Transparency Dashboard)



The Reason for Stop data is different from traffic citation data, i.e., whether a ticket was issued during a traffic stop. Citation data can be categorized based on the top contributing crash factors. In partnership with the Houston Police Department, data were obtained on total citations issued during 2021 and categorized based on frequency and relevancy to top contributing crash factors: speed, impairment, distraction, disregarding traffic signs and signals, failing to yield right-of-way, and unsafe driving maneuvers.² Figure 6 illustrates these categories and resulting citations.

Figure 6. Percentage of citations related to moving/vehicle violations (Source: Houston Police Department Police Transparency Dashboard)



² While impairment is available on the crash report, it is not available as citation data because a person who is legally intoxicated while driving is immediately confined.

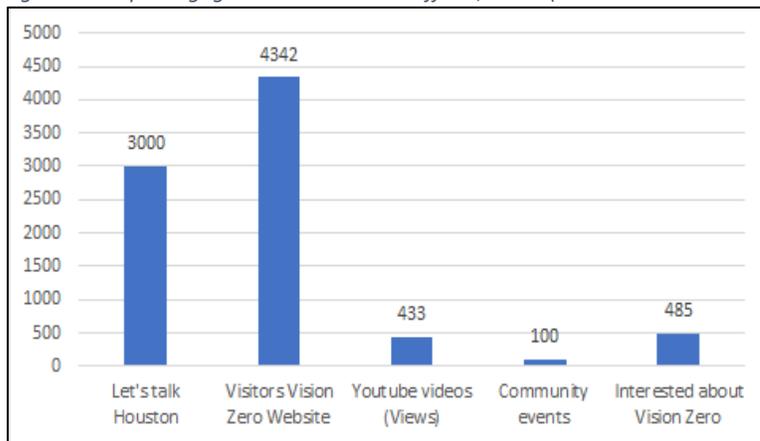
8. MILES OF SIDEWALK AND BIKEWAYS CONSTRUCTED AND MAINTAINED, INCLUDING HIGH INJURY NETWORK STREETS

In 2021, the City of Houston constructed 819 new accessible curb ramps and 29 miles of sidewalk. There were 42 total miles of bikeways constructed by the City and its partners including 5 miles of on-street bike facilities.

9. NUMBER OF COMMUNITY MEMBERS REACHED BY VISION ZERO ENGAGEMENT ACTIVITIES

The City of Houston provided diverse ways to communicate and engage with community members about making our roadways safer for all. During 2021, Houstonians preferred to engage with Vision Zero efforts through our website showing 4,342 visits on www.visionzerohouston.com.

Figure 7. People engaged with Vision Zero efforts, 2021. (Source: Vision Zero website)



10. NUMBER AND TYPE OF AGENCIES AND COMMUNITY MEMBERS REPRESENTED IN VISION ZERO WORKING GROUPS

During 2021, the Vision Zero Implementation Group met 10 times. The Implementation Group includes five agencies, 10 City of Houston departments, and a representative of the community.

- City of Houston
 - Mayor's Office of Complete Communities
 - Mayor's Office for People with Disabilities
 - Mayor's Office of Communications
 - Houston Public Works
 - Houston Health Department
 - Houston Human Resources Department
 - Houston Fire Department
 - Houston Legal Department
 - Houston Planning & Development Department
 - Houston Police Department
- Federal Highway Administration
- Harris County
- Houston-Galveston Area Council
- METRO
- Texas Department of Transportation
- Community representative

Vision Zero: 2021 Nationally

Across the country, unsafe driving, such as speeding and impairment, increased in 2021. According to the National Highway Traffic Safety Administration, “For the whole of 2021, a statistical projection of traffic fatalities shows an increase of about 10.5 percent as compared to reported fatalities in 2020. Some categories showed large shifts in fatalities and fatality rates in a given month, compared to the corresponding month in 2020. For instance, the share of fatalities on urban roads went from 57 percent in March 2020 to 62 percent in March 2021, a 5-percentage-point increase. Correspondingly, the total fatalities (fatality counts) on urban roads increased from 21,940 in 2020 to 25,411 in 2021, a 16-percent increase.” Some of the traffic fatalities in these categories showed relatively large increases in 2021 as compared to 2020: alcohol involvement crashes (up 5%), pedestrian fatalities (up 13%); and pedalcyclists fatalities (up 5%).³

In Texas, 4,480 people died in fatal traffic crashes in 2021, compared to 3,932 people who died in fatal crashes in 2020. The change represents a 14% increase.

In Houston, traffic deaths increased from 275 in 2020 to 331 in 2021. This change represents a 20% increase, higher than the nationwide and Texas percentage increases (10.5% and 14% respectively). These data are not just statistics, they remind of the human lives at stake. With fatalities and serious injuries on Houston’s roads outpacing nationwide trends, Houston Vision Zero is more important than ever to achieve our goal to end traffic fatalities and serious injuries by 2030.

³ <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813298>

Houston Vision Zero Action Plan: 2021 Achievements

The Vision Zero Action Plan contains 50 recommended actions, and 13 have been prioritized for implementation. Implementation began in 2021 with progress on all 13 priority action items as well as starting 18 additional strategic actions.

Communication

1.1 *	Report Vision Zero efforts and effectiveness with a public-facing dashboard and an annual report card.	Publication of the first Vision Zero Annual Report to: - Inform the community about data and trends related to traffic deaths and serious injuries around the City of Houston; and - Present the progress of implementing actions of the Vision Zero Action Plan
1.2	Provide publicly accessible ways for residents to contribute qualitative data regarding street safety and risks, including expansion of 311 system.	Action not yet started.
1.3*	Implement a citywide communication campaign on street safety to celebrate the reality that people use different modes of transportation to get around Houston.	Initiated the Humans of Houston communication campaign (https://www.houstontx.gov/visionzero/humansofhouston.html) to promote Houstonian’s use of different modes of transportation Houstonians and their experiences around them.
1.4*	Train city employees on how to speak to the public and media about crashes.	Employee training module drafted, incorporating concepts and best practices on how to talk about crashes not “accidents”.
1.5	Create more opportunities for general stakeholder collaboration in City of Houston planning and implementation of mobility projects, overcoming issues of disenfranchisement.	Action not yet started.
1.6	Include grassroots organizations and community leaders in Vision Zero committees to provide guidance on equity and equitable outcomes in Vision Zero work.	Vision Zero Implementation Group includes “Voice of Houston” community representation. 2022 goal is to expand the outreach and present Vision Zero efforts across the City through Complete Communities meetings.

1.7	Develop and disseminate new educational resources to equip new drivers with information on how to be safe on Houston streets, emphasizing unsafe behaviors identified in the High Injury Network.	Action not yet started.
1.8	Develop and disseminate new education resources for walk, bike, and bus safety for K-12 students.	Action not yet started. Planned as a new start for 2022.
1.9	Coordinate with TxDOT and H-GAC on a Houston-focused education campaign to target impaired driving.	Action not yet started. Planned as a new start for 2022
1.10	Work with the State to include Vision Zero language and resources on reducing traffic fatalities in Defensive Driving course.	Action not yet started.

(*) Priority Action started

Safe Systems

2.1 *	Reframe the City's transportation planning tools: shift citywide standards to Multimodal Level of Service (MMLOS). Prioritize Vision Zero goals in the Infrastructure Design Manual (IDM).	Revisions are underway to Chapters 15 and 17 of the IDM. Chapter 15 – Traffic Signal & Design, including MMLOS. Chapter 17 – Pedestrian, Bicycle, and Transit.
2.2 *	Evaluate every city roadway reconstruction project for multimodal safety needs and opportunities at project inception.	City staff, in partnership with TIRZ and MD, evaluating projects through Design Concept Review process, using the High Injury Network (HIN) as one data point to ensure safety improvements meet Vision Zero goals.
2.3 *	Identify high-risk roadway features and develop templates to simplify consistent safety redesigns.	Analysis of high-risk features is underway. Identification of Priority Streets in the High Injury Network completed. (See Appendix A)

2.4	<p>Expand fatal crash review board to multidisciplinary group of City departments:</p> <ul style="list-style-type: none"> -Intentionally recruit and review representation by departments to ensure members routinely use modes other than driving and therefore have a genuine perspective and respect for people walking, biking, and riding transit day-to-day across Houston. -Understand the most severe crashes occurring in the city by reviewing crash reports of High Injury Network fatalities and publicly-submitted reports. Evaluate crash reporting procedures to improve data collection methods (linked to 1.1). 	Action not yet started.
2.5	Coordinate ongoing Intelligent Transportation Systems (ITS) efforts with Vision Zero to safely accommodate traffic demands without requiring roadway widening while increasing driver awareness and improving incident response.	Action not yet started.
2.6	Utilize Connected Vehicle/Internet of Things data sources to inform near misses and other unreported conditions (linked to 1.2).	Action not yet started.
2.7	Give higher consideration to planning, design, and engineering firms bidding for city roadway projects who attend training programs/webinars on safety and mobility.	Action not yet started.
2.8	Enable the public and City to collect uniform, useful sidewalk condition data by creating a user-friendly Pedestrian Access Route audit tool (linked to 1.2).	Working with Harris County Health Dept. on audit tool.
2.9	Require construction sites to provide safe and convenient pedestrian, bicycle, wheelchair, and transit access.	Drafted language to incorporate into Infrastructure and Design Manual for approval in 2022, effective 2023.
2.10	Perform systematic review of all trail/street crossings, recommend safety improvements, and implement all trail crossing improvements.	Action not yet started.
2.11	Coordinate with METRO on design criteria (METRO Transit Design Guidelines) for waiting space, signage, and wayfinding for transit centers, bus and rail stops, and park and rides. (Find My Stop etc.)	Coordinating with METRO on transit design standards.
2.12	Coordinate all bike network and transit network extensions with bikeshare services.	Action not yet started.

2.13	<p>Make Houston-area vehicle fleets the safest in the nation.</p> <ul style="list-style-type: none"> -Use technology to track speed in City fleet vehicles and other interested fleets. -Inventory fleet management practices of City departments to determine vehicle coordinators, GPS, and number of vehicles. -Amend administrative policy 2.2 to address crashes, speeding, and employee Motor Vehicle Records. 	Coordinating with Fleet Services on speed tracking and fleet management practices.
2.14	Establish and enroll Houston-area businesses in Safe Fleet Management Program.	Underway with Together for Safer Roads.
2.15	Designate citywide freight network.	Initial research complete.
2.16	Collaborate with Vision Zero Texas cities about traditional police enforcement of traffic violations and alternative enforcement options. Generate next steps for working with communities on their vision for enforcement.	Quarterly meetings with Vision Zero Texas Cities to discuss all street safety topics, including rethinking police enforcement.
2.17	Join with law enforcement and legal system, including prosecutors and defense attorneys, to analyze traffic citations and court convictions. Use findings to inform enhanced penalties for serious driving offenses, such as killing another road user, driving under the influence, running red lights, and repeat offenders.	Action not yet started.
2.18	Incorporate Vision Zero goals into Mayor's Police Reform Task Force recommendations.	Action is not yet started.

(*) Priority Action started

Safe Speeds

3.1	Re-evaluate the Neighborhood Traffic Management Program and expand to a shared street implementation program which prioritizes people walking and biking and includes countermeasures to slow vehicle speeds. Target program availability to socially vulnerable communities.	Action not yet started.
3.2	Revise crosswalk and sidewalk policies: -Establish criteria for regularly spaced safe crossings on major streets. -Establish enforcement mechanisms for residential sidewalk maintenance, including providing means for residents to report hazardous conditions (linked to action 1.2). -Revisit striping maintenance.	Proposed revisions to Chapter 17 Infrastructure and Design Manual to include regularly spaced crosswalks at major streets.
3.3 *	Design streets to support and enforce pedestrian right-of-way at intersections and crosswalks. Include automatic pedestrian phases as default at signalized intersections with guidelines for where push buttons are appropriate.	Implementing new state law requiring drivers to Stop for Pedestrians at Crosswalks (SB 1055).
3.4 *	Determine safest vehicle speeds for all people using the street and then design the street to support that speed.	Research is underway on best practice examples of Texas cities that have undertaken a speed management program. Incorporation of additional pedestrian space at intersections (bulb-outs), sidewalk standards (WP; TOD), and midblock crossings (Studewood).
3.5 *	Use signal timing to maximize safety and comfort of all modes over vehicle throughput.	Proposed revisions to IDM Chapter 15 (Traffic and Signal Design Requirements) to increase the signal time for pedestrian crossings.
3.6	Lobby for state authority to establish a 25mph default speed limit on city residential streets and 30mph speed limit on all other city streets.	Action not yet started. Planned as a new start for 2022.

(*) Priority Action started

Programming

4.1 *	<p>Redesign 10 locations on the High Injury Network every two years and implement reconstruction within the following fiscal year (linked to 2.3).</p> <ul style="list-style-type: none"> -Prioritize socially vulnerable communities and locations identified by the Special Task Force on Intersection and Sidewalk Safety for Persons with Disabilities. -Meet the community where they are to inform redesign. -Publish list of locations and progress on public-facing dashboard (linked to 1.1). 	See Benchmark #2 for list of locations
4.2	<p>Set aside capital projects funding to include multimodal safety projects. Establish mechanism to ensure funds go to safety and maintenance of safety infrastructure (either stand-alone projects or to be included as portions of projects meeting additional City goals).</p>	Incorporated HIN in CIP development.
4.3	<p>Leverage outside funds (including METRO, TIRZ, and Management Districts) for pedestrian and bicycle improvements for every roadway project along transit routes and in TIRZs and Management Districts.</p>	Participated in annual calls with all TIRZ's to prioritize HIN locations.
4.4	<p>Establish a pipeline of projects to be funded with federal Highway Safety Improvement Program (HSIP) money through Texas Department of Transportation (TxDOT) and other funding opportunities.</p>	Successful applications in 2020; 2021 applications submitted.
4.5 *	<p>Construct at least 50 miles of new sidewalks each year. Start by prioritizing corridors along the High Injury Network, in the City's existing sidewalk programs, and in socially vulnerable communities.</p>	29 miles of sidewalks constructed.
4.6	<p>Create a "quick planning" program to assess all council districts every two years for low-cost pedestrian safety improvement projects.</p>	Completed: Montrose-Midtown Connectivity Study.
4.7	<p>Develop a pedestrian/sidewalk plan to target investment in walkability infrastructure. Start by focusing efforts on the pedestrian High Injury Network and high-density pedestrian areas.</p>	<p>Action not yet started.</p> <p>Other relevant efforts include initiation of sidewalk in lieu fee with prioritization matrix including HIN. Initiation of Resilient Sidewalk Pilot Project. Update of sidewalk standards in IDM.</p>

4.8 *	Install at least 25 miles of high-comfort bicycle facilities every year in street right-of-way or on City-owned public land. Year 1 Projects start with 11th and Patterson.	5 miles of high comfort bikeways built in street right-of-way in 2021. 125 miles of bikeways currently in design or construction.
4.9	Develop a two-year implementation plan for elements of the Houston Bike Plan, including bikeway maintenance, recommendations from Road Safety Audits, and public feedback on Vision Zero to any future bike plan updates.	Bike Plan 2-year prioritization and maintenance plan completed.
4.10	Implement a citywide Safe Routes to School (SR2S) program which proactively improves walking and biking access to school. Find priority partners in socially vulnerable communities and where students are already walking or biking frequently.	Pilot project underway in Acres Home in partnership with Harris County Health Dept; funded by MD Anderson.
4.11 *	Inventory sidewalks and street crossings within ½-mile of transit centers and light rail stops. Use crash and transit ridership data, and other available information, to prioritize safety improvements and access for persons with a disability.	Collaborating with METRO to track and inventory transit locations with improvements for safety and accessibility.
4.12	Support implementation of METRONext by fast tracking complementary projects that improve access to and from transit stops.	Ongoing.
4.13	Design City of Houston Street reconstruction projects so that every bus stop is built to METRO specifications.	Ongoing.
4.14	Update requirements for developers: -Upgrade bus stops when development projects touch bus stops. -Integrate opportunities for public transit and bikeshare into every new development, regardless of whether a stop exists, to accommodate potential future transit expansion. (Linked to action 2.1)	Action not yet started.
4.15	Evaluate feasibility of road diets/reassignment of lanes on streets targeted for repaving in the City's Street Rehabilitation Program, including but not limited to corridors identified in the High Injury Network and Houston Bike Plan.	Action not yet started.
4.16	Adopt Hands Free ordinance which prohibits the use of all electronic hand-held devices while operating a vehicle.	Action not yet started. Planned as a new start for 2022.

(*) Priority Action started

