

# PROJECT 5

## Webster Street Total Reconstruction Project

### Project Scope

The Webster Street Total Reconstruction Project (the Webster Project) centers on the complete reconstruction of the roadway, from Matthews Street to Hamilton Street, that includes pavement improvement, stormwater, sanitary sewer, and water supply lines (Figure 22). Emphasizing pedestrian safety and accessibility, the project includes upgrading sidewalks to 8 feet wide where applicable, alongside improvement to curb and gutter and inlets for effective stormwater management. ADA ramps will be improved to ensure accessibility compliance, and the installation of pavement markings and high-visibility crosswalks will create a safer environment for pedestrians, cyclists, and motorists. With the aim of creating a modern, vibrant, and pedestrian-friendly corridor, the project addresses critical infrastructure needs while enhancing safety and connectivity for all road users. The existing and proposed cross sections and proposed layout can be found in Figure 23 and Figure 24.

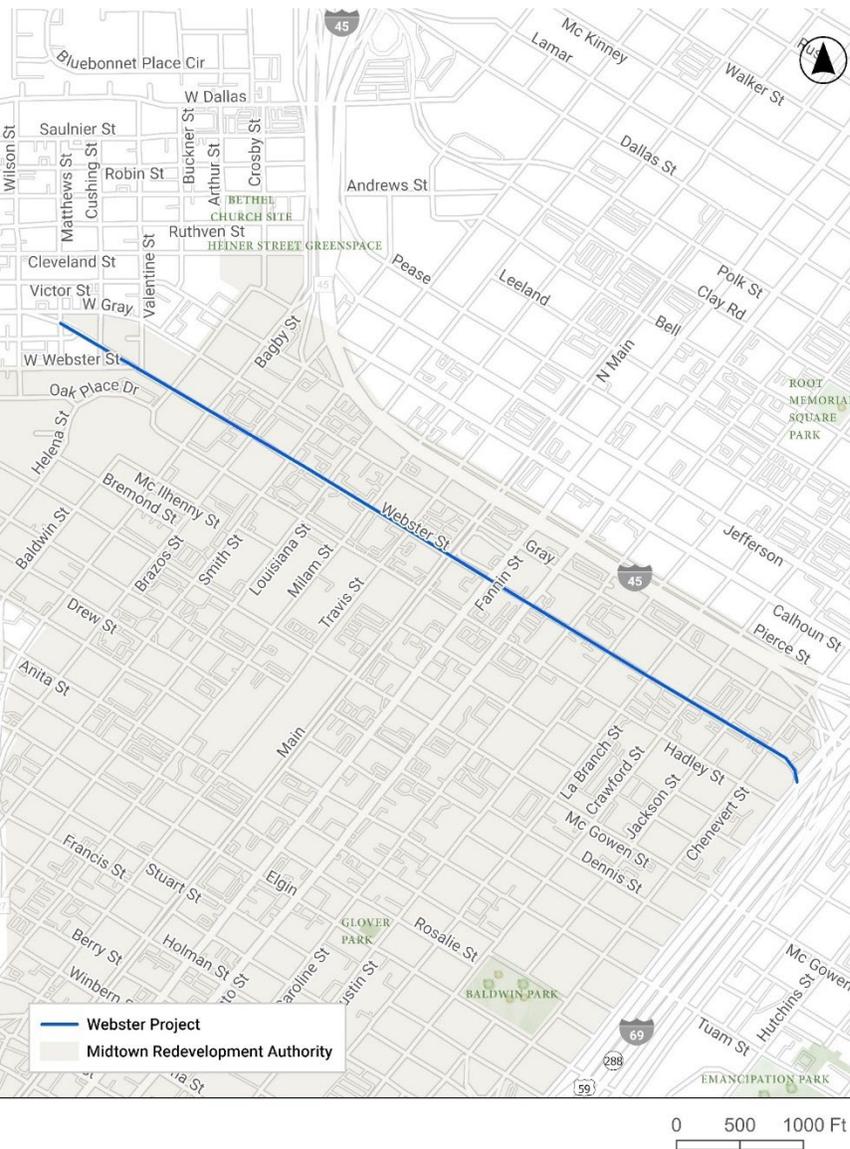


Figure 22. Webster Street Safety Improvements Project Limit

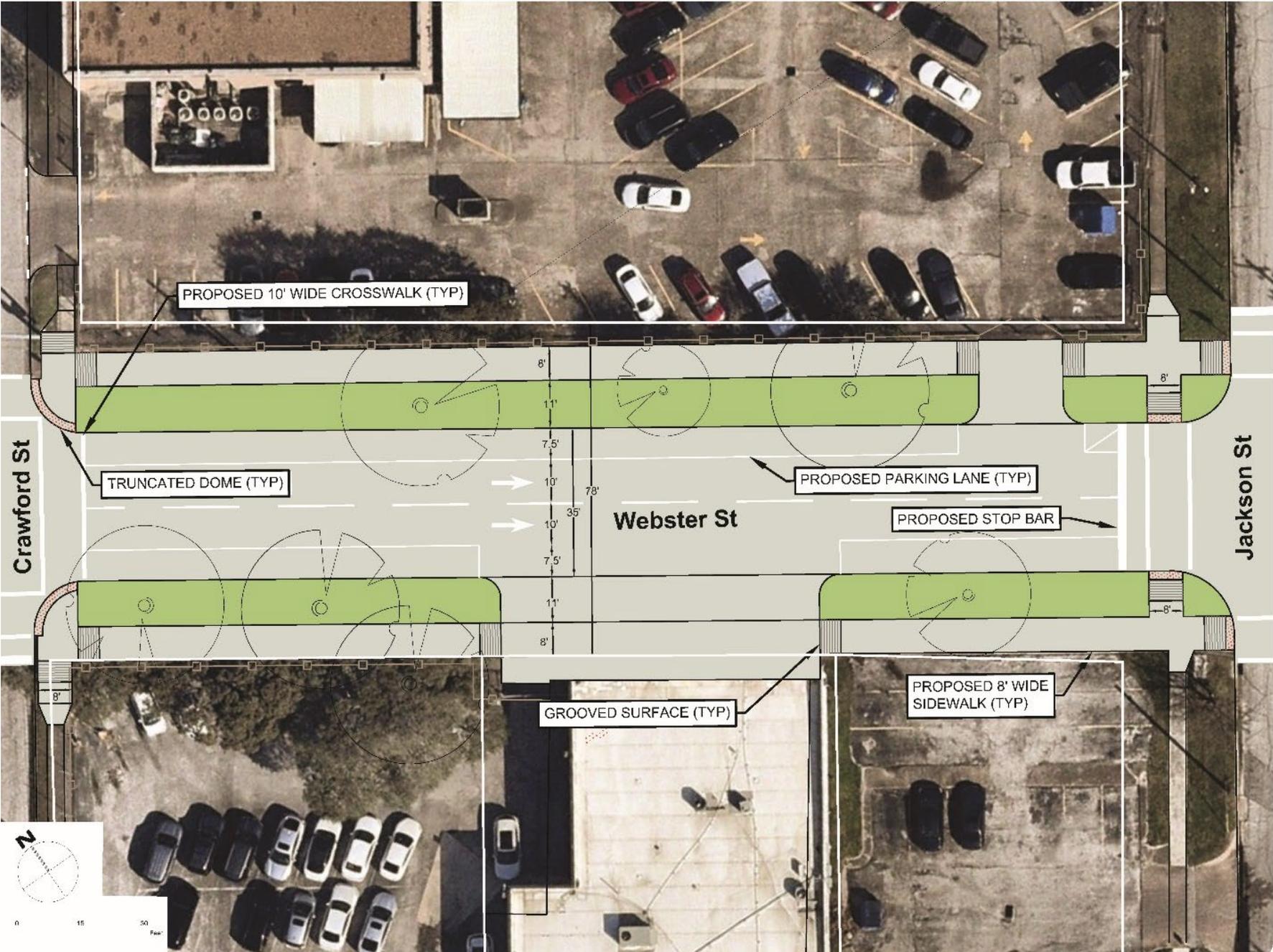
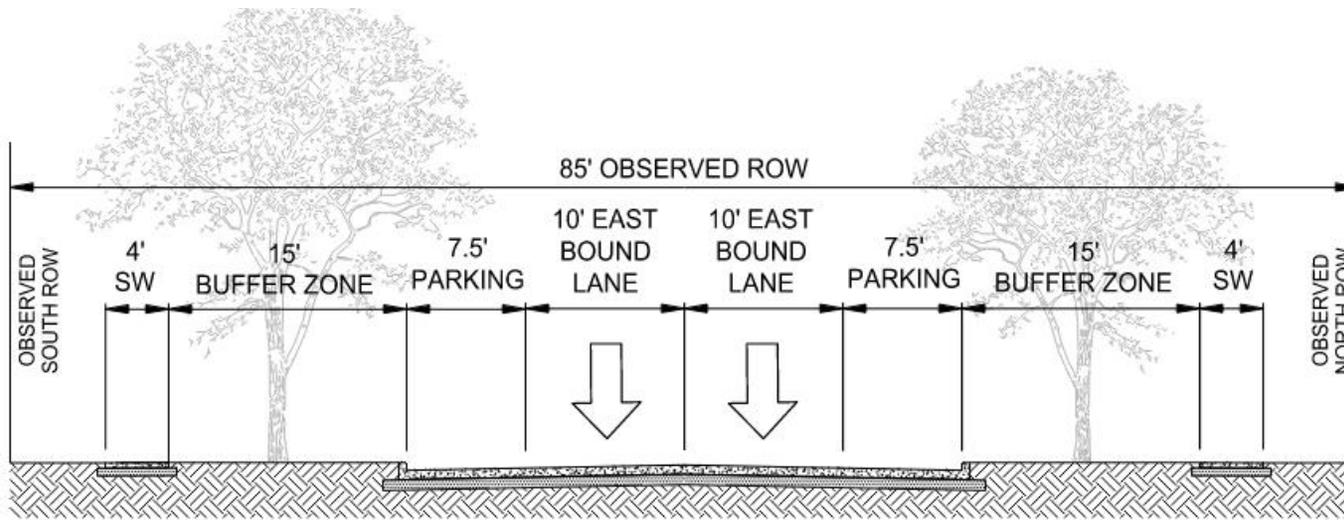
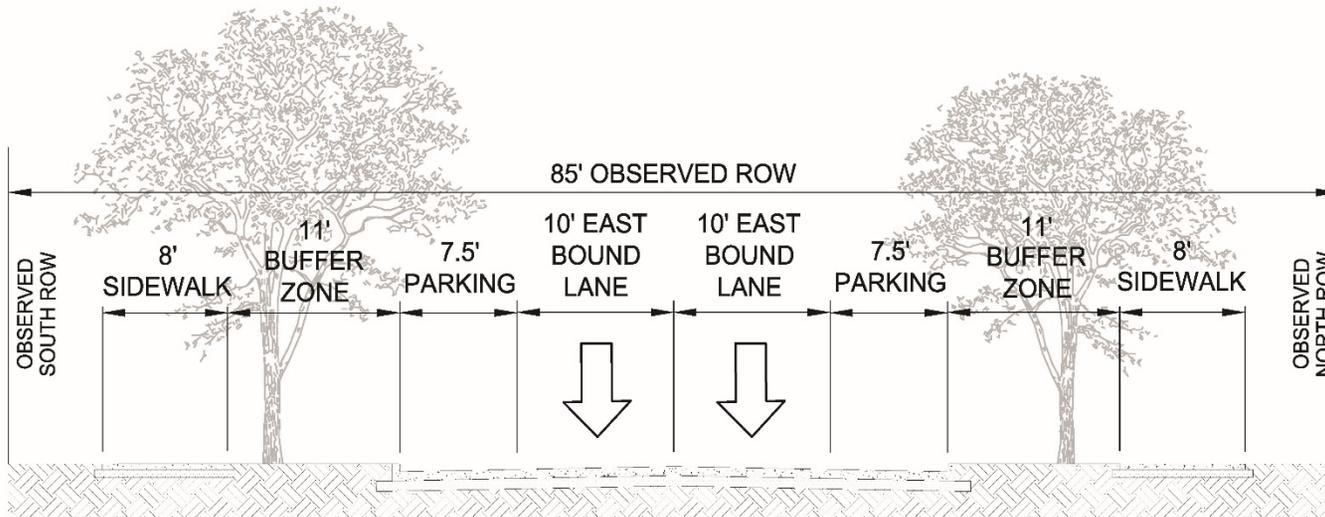


Figure 23. Proposed Layout for Webster Street Safety Improvements Project



WEBSTER ST EXISTING CROSS-SECTION: CRAWFORD ST TO JACKSON ST



WEBSTER ST PROPOSED CROSS-SECTION: CRAWFORD ST TO JACKSON ST

**Figure 24.** Existing and Proposed Cross Sections for Webster Street Safety Improvements Project

## Project Cost

The total cost for the Webster Project is approximately \$31,463,140, of which \$4,279,000 is allocated for design and engineering costs. The construction cost includes speed cushions, slotted curbs, sidewalk replacement, pavement marking upgrade, inlet replacement, and solar powered LED roadside sign installation.

A table of summarized costs are listed in **Table 22**. Line-item costs are listed in the Appendix.

**Table 22.** Webster Street Total Reconstruction Summarized Cost Estimates

Cost Type	Cost
Construction Costs	\$25,170,540
Construction Soft Costs	\$2,013,600
Design and Engineering Costs	\$4,279,000
<b>Total Cost</b>	<b>\$31,463,140</b>

## Project Purpose

The purpose of the Webster Project is to prioritize the safety for all roadway users. This project emphasizes pedestrian safety and accessibility and creates a more inclusive and pedestrian-friendly environment. This aligns with the overarching goals of the City of Houston (COH) Vision Zero Plan, which is focused on enhancing overall roadway safety and catering to the diverse needs of all road users. The Webster Project seeks to create a modern and vibrant corridor, fostering a safer, more accessible, and connected community for all road users while encouraging multimodal transportation within the community.

## Project Needs

### 1. Advance Policy Goals

#### 1.1. City of Houston Vision Zero Action Plan

City of Houston (COH) adopted a Vision Zero Action Plan in 2020, which serves as a guiding document for creating safer streets for vulnerable roadway users. The Vision Zero Action Plan recognizes that “every other day someone loses their life in a traffic crash on Houston streets, and we can prevent people from dying” and emphasizes the preventability of these tragedies. It outlines a range of action plans that aim at achieving the vision of eliminating traffic-related fatalities and severe injuries. This Project will advance the vision and strategies outlined in the Vision Zero Action Plan and align with the following actions identified in the COH Vision Zero Action Plan.

**Table 23.** Summary of Vision Zero Action Plan Strategies for the Webster Street Total Reconstruction Project

Summary of Action Plans		Action Met?
1.2*	Provide publicly accessible ways for residents to contribute qualitative data regarding street safety and risks, including expansion of 311 system.	
1.5*	Create more opportunities for general stakeholder collaboration in City of Houston planning and implementation of mobility projects, overcoming issues of disenfranchisement.	
1.6*	Include grassroots organizations and community leaders in Vision Zero committees to provide guidance on equity and equitable outcomes in Vision Zero work.	
2.3	Identify high-risk roadway features correlated with specific, recurring severe crash types for each mode. Develop templates to address scales of safety redesigns (low-cost/ quick wins; heavy lifts/big impact). Address multiple corridors and intersections with similar characteristics of streets identified in the High Injury Network and incorporate redesign with every city project.	
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.	
4.3	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.	
4.4*	Establish a pipeline of projects to be funded with federal Highway Safety Improvement Program (HSIP) money through TxDOT and other funding opportunities.	

\*Throughout the course of this report, 1.2, 1.5, 1.6, and 4.4 have appeared repeatedly in all proposed projects. Please refer to Project 1 for more details.

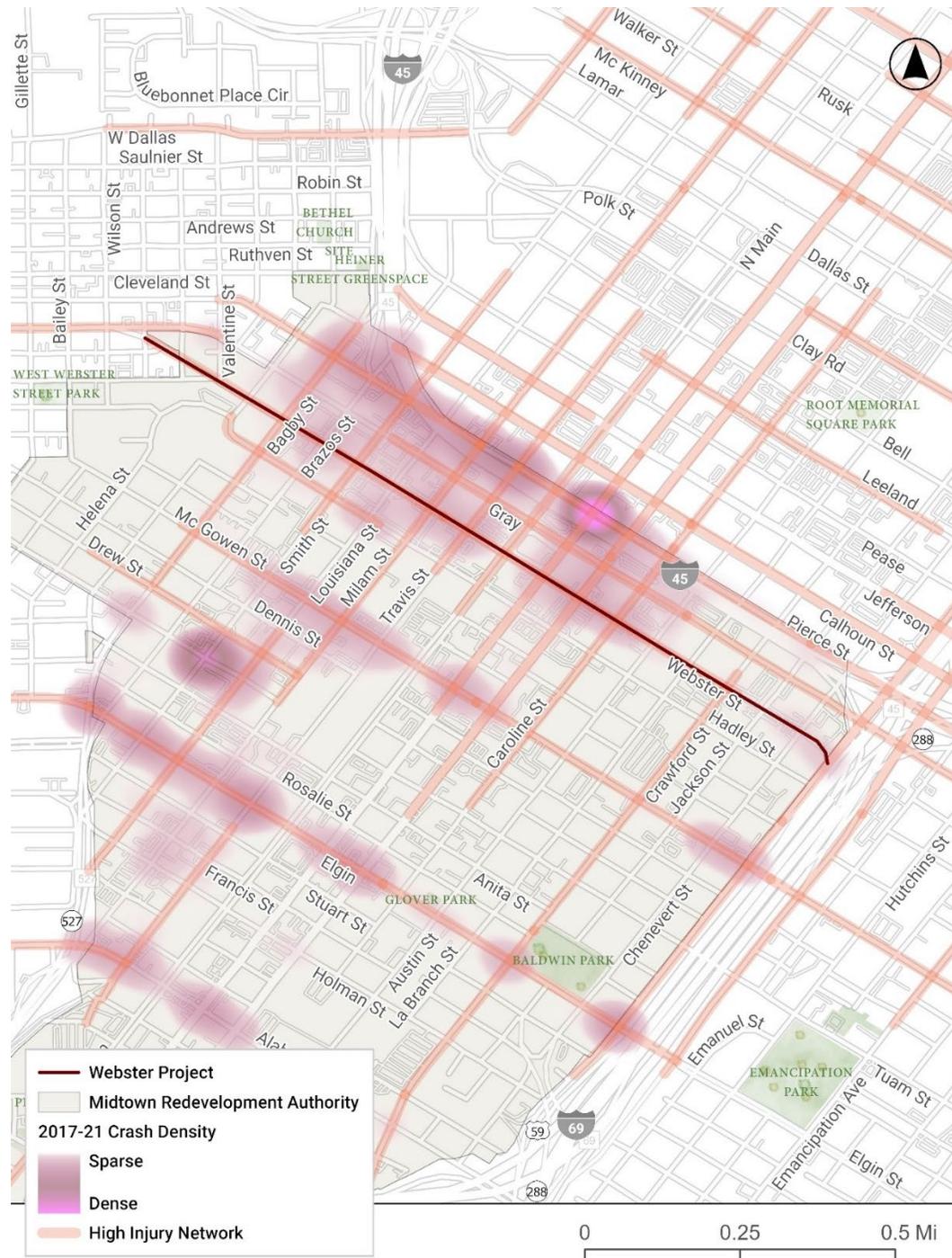
**Action 2.3.** Identify high-risk roadway features correlated with specific, recurring severe crash types for each mode. Develop templates to address scales of safety redesigns (low-cost/ quick wins; heavy lifts/big impact). Address multiple corridors and intersections with similar characteristics of streets identified in the High Injury Network and incorporate redesign with every city project.

One of the primary goals of this Study is to identify specific high-risk roadway projects that are correlated with recurring severe crash types for each mode of transportation through a comprehensive safety analysis. This Study seeks to determine the factors contributing to these severe crashes and develop projects for addressing safety concerns at various levels of redesign.

Webster Street is identified as a high-risk roadway through this Study. It is on the City of Houston High Injury Network. By examining crash data (2017-2021), bike crashes accounted for only 2.1% of the total crashes. However, 11.1% of these bike crashes resulted in severe outcomes, in comparison to only 1.0% of vehicle crashes. Further analysis along the corridor revealed that 56% of the crashes occurred due to drivers disregarding stop and go signals or stop signs, followed by Turned improperly (10%), and failing to control speed (8%). **Figure 25** shows a visual representation of crash densities for the Webster Project and its surrounding area.

Implementing the Webster Project will effectively address the identified safety issues mentioned above, and the proposed improvements can also be applied to other corridors and intersections with similar characteristics as those identified in the High Injury Network.

# Midtown Redevelopment Authority Safe Streets and Roads for All Program Development



**Figure 25.** Webster Project Crash Density

**Action 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.

As part of the Webster Project, proposed improvements designed to uphold pedestrian right-of-way at intersections and crosswalks. These improvements are strategically planned to highlight pedestrian safety and accessibility along the Webster Street corridor.

At all intersections along Webster Street, crosswalks will be improved to ensure safe and efficient pedestrian crossings. Furthermore, to provide pedestrians with secure spaces during crossings, the pedestrian refuge at the intersection of Tuam and Genesee Street will be widened, and a new pedestrian refuge island will be installed at a midblock location between Baldwin Street and Bagby Street. Raised intersections are also proposed for the same midblock location to further prioritize pedestrian safety.

**Action 4.3.** 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.

To enhance pedestrian and bicycle improvements within the Midtown area, external funding sources such as METRO, TIRZ, and Management Districts will be leveraged. Notably, the Pierce Project and McGowen Project both successfully secured an award through the 2022 Highway Safety Improvement Program (HSIP) via TxDOT. The HSIP program usually requests 10% local share, however, it is pertinent to share that both projects' construction cost will be covered by federal funding, as confirmed by COH. This strategic utilization of outside funds presents a significant opportunity to improve pedestrian and bicycle infrastructure, will ultimately increase safety and accessibility throughout the Midtown area.

## 1.2. City of Houston Walkable Place Plan

As stated above, Midtown was selected as one of the three pilot areas for the City of Houston's Walkable Places.<sup>13</sup> Along the Webster Project corridor, there are a mix of uses, including pharmacies, clinics, grocery store, BCycle Station, restaurants, offices, and apartments. The land use mix encourages multimodal activity. This project aligns with the city's objective of establishing a walkable and bikeable environment in the Midtown area.

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<sup>13</sup> Walkable Places Pilot Areas – Midtown <https://houstontx.gov/planning/walkable-places-midtown.html>

### 1.3. Midtown Strategic Plan

As stated above, the Midtown Strategic Plan was developed in 2018 aiming to establish a comprehensive and dynamic framework for the development and enhancement of the Midtown Houston area. The Webster Project prioritizes the comfort and safety of pedestrians and bicyclists by implementing various measures, including roadway total reconstruction, upgrade sidewalk to 8’ wide shared use path, new crosswalks, repair of ADA ramps, and installing new pavement markings. These improvements aim to create a better walkable and bikeable street, promoting multimodal transportation and easier access to essential services, leading to a more sustainable and vibrant urban environment.

## 2. Update Outdated Design

Webster Street is on the City of Houston’s Walkable Places, and it is categorized as a primary street. The majority of the segments of the Webster Project corridor do not meet current design standards and need to be brought up to current design standards. Much of the existing infrastructure is in poor condition with outdated design elements. **Table 24** compares the existing conditions to the 2022 COH IDM design standard.<sup>14</sup>

**Figure 26, Figure 27** and **Figure 28** show examples of typical sidewalks and pavement conditions found throughout the Project area.

**Table 24.** Webster Project Sidewalk Conditions vs. Design Standards

Roadway	Sidewalk	
	Existing Condition	COH Design Standard
Webster Street	~ 6 ft	8 ft

<sup>14</sup> 2022 COH IDM <https://www.houstonpermittingcenter.org/media/6371/download?inline>



Figure 26. Existing Undersized Sidewalks on Webster Street



Figure 27. Existing pavement and sidewalks on Webster Street



**Figure 28.** Existing pavement on Webster Street is in poor condition

### 3. Provide Safe Streets for All

The Webster Project aims to enhance safety along the corridor, particularly for vulnerable roadway users. As part of the city's High Injury Network, Webster Street faces significant safety concerns due to inadequate infrastructure for pedestrians and cyclists, resulting in unsafe conditions. To address these challenges, the project entails a comprehensive reconstruction of the roadway, accompanied by upgrading all sidewalks to an 8 ft wide sidewalk, providing a safer environment for all vulnerable roadway users.

A comprehensive analysis of crash data spanning from 2017 to 2021 provides valuable insights into the severity of the safety situation along the corridor. During this period, a total of 430 crashes occurred, involving two pedestrian crashes and nine bicycle crashes. Among these crashes, one bike crash involved serious injuries.

The top three contributing factors are drivers disregarding stop and go signals or stop signs (56%), followed by Turned improperly (10%), and failing to control speed (8%). The Webster Project aims to mitigate these risks by implementing improvements such as roadway total reconstruction, upgrading sidewalk to 8' wide shared use path, new crosswalks, repair of ADA ramps, and installing new pavement markings.

By implementing these safety enhancements and targeting the identified contributing factors, the Webster Project aims to reduce the frequency and severity of crashes along the corridor. The overarching goal is to create a safer and more harmonious urban environment, where

pedestrians, cyclists, and motorists can navigate the corridor with confidence, ensuring the well-being and safety of all roadway users.

#### 4. Enhance Multimodal Mobility

Webster Street is a multimodal corridor that is used by vehicles, pedestrians, bicyclists, and served by four METRO Bus Route that include Route 11, 32, 54, 82. It is classified as a Major Collector road by COH and a minor arterial by TxDOT. The section between Matthews Street and Hamilton Street is an undivided roadway with three to four lanes with a typical lane width of approximately 10 feet. There are around 19 blocks on Webster Street from Matthews Street to Hamilton Street, 11 of them are in Poor to Very Poor conditions according to the Houston Public Works Mapping Application.<sup>15</sup> Four of them are in Fair condition, and only four blocks are in Satisfactory condition. According to TxDOT, the 2021 AADT is 6,175 with 2.7 percent trucks.

The Webster Project aims to create a safer and well-connected corridor for pedestrians and bicyclists to access local destinations and METRO transit lines. The project seeks to establish pedestrian and bike connectivity to key locations such as pharmacies, clinics, grocery store, BCycle Station, restaurants, offices, and apartments. Moreover, Webster Street serves as a connection to multiple METRO bus routes, including Routes 11 (Almeda / Lyons), 32 (Renwick / San Felipe), 54 (Scott), 82 (Westheimer). These routes facilitate access to medical centers, schools, parks, shopping centers and more. The following is a summary of the major destinations accessible through these bus routes.

**Table 25.** Summary of All Major Destinations on Transit Routes on Webster Street

Destination Name	Destination Type
Houston Food Bank	Community
Tuttle Neighborhood Library	Community
Martin Luther King Jr. Health Center	Community
Jungman Neighborhood Library	Community
River Oaks Community Center	Community
Baldwin Park	Park
Peggy Park	Park
Cloverland Park	Park
Midtown Park	Park
Downtown Transit Center	Transit
Fannin South Transit Center	Transit
HCC - Central Campus	School
Texas Southern University	School
University of Houston	School
Carnegie Vanguard High School	School
T. H. Rogers School	School
Wharton Dual Language Academy	School

<sup>15</sup> Houston Public Works Mapping Application  
<https://geogimsprod.houstontx.gov/Html5Viewer/index.html?viewer=geolink-public>

Lamar High School	School
River Oaks Shopping Center	Grocery/Shopping
Highland Village	Grocery/Shopping

## Benefit Cost Analysis Summary

A BCA was conducted on this project, which quantifies the net difference between the No-Build and Build Scenarios. The No-Build Scenario assumes that the sidewalk will be minimally maintained throughout the planning horizon, and the Build Scenario assumes the improvements in the scope will be implemented.

Each benefit’s baseline (No-Build) and Build methodology and calculations are contained within this technical memorandum, supported by the BCA Excel Workbook. The benefits are quantified and monetized for the BCA. The benefit-cost ratio is **3.0** in **2020** real dollars and when discounted at a 7% discount rate, the benefit-cost ratio is **1.7**. The **2020** real dollar NPV is \$59,218,000 and when discounted at 7%, \$11,694,000.

**Table 26.** BCA Summary

Scenario	\$2020 Real Dollars No Discount	\$2020 Real Dollars 7% Discount
Benefits	\$89,431,000	\$29,148,000
Costs	\$30,213,000	\$17,454,000
<b>BCA</b>	3.0	1.7
<b>NPV</b>	\$59,218,000	\$11,694,000

A technical memorandum explaining the methodology is attached in the Appendix. A summary of the benefits is provided in the following table.

## Next Steps, Funding and Implementation

The next step for this project involves the Midtown Redevelopment Authority taking the lead in its implementation. Some of the potential funding sources considered for this project include Transportation Improvement Program (TIP), SS4A (Safe Streets for All), and Community Project Funding. The utilization of diverse funding sources will ensure that the project can be effectively executed and that the safety improvements can be applied strategically throughout the neighborhood.