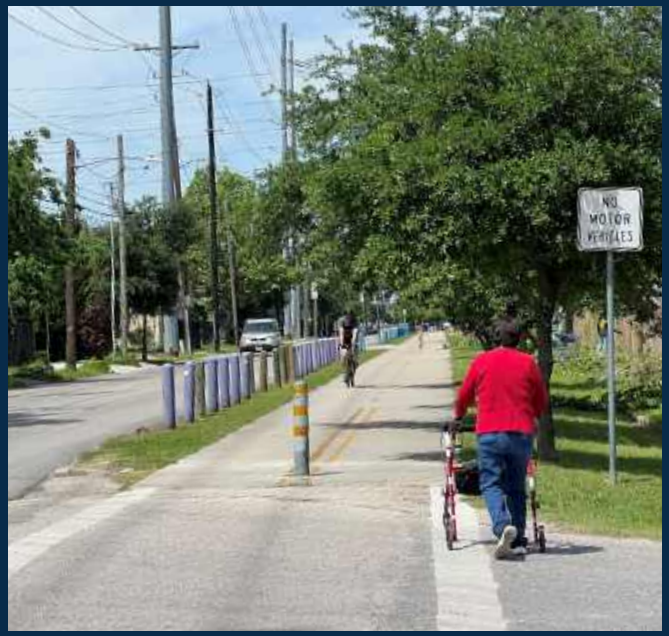
Phase II

Old Sixth Ward/TIRZ 13 Mobility Plan



Houston-Galveston Area Council

tei Planning + Design

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Prepared for the Houston-Galveston Area Council

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Executive Summary

Old Sixth Ward/TIRZ 13 Phase II Mobility Plan

2024

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Introduction

The Old Sixth Ward/TIRZ 13 Phase II Mobility Plan builds upon the "TIRZ 13 Mobility Plan" completed in 2021 by the Old Sixth Ward/TIRZ 13. The Phase II Mobility Plan extends into the historic First Ward neighborhood and identifies strategic key recommendations that will make getting around on foot, using a mobility device, on bike, by bus, or by car, safer, more accessible, and more inviting. All recommendations were identified through an understanding of baseline conditions analysis and through community engagement efforts that aim to achieve three key goals:

1. Safety: Create safe and accessible streets and places

2. Connectivity: Strengthen neighborhood connectivity to key corridors and destinations

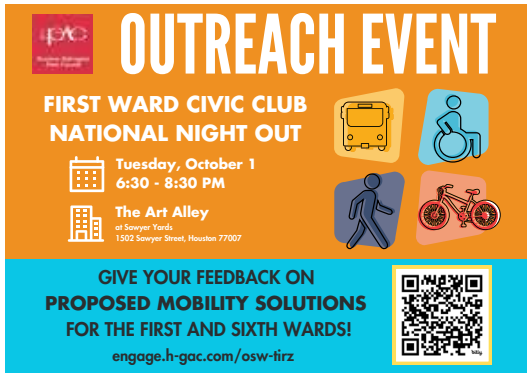
3. Livability: Improve the mobility experience

Public Engagement

Throughout the plan process, the project team worked extensively with Houston-Galveston Area Council and TIRZ 13 staff to identify key stakeholders and audiences, develop engagement activities and outreach materials, and facilitate information exchange at community events. The following table summarizes the series of public engagement events that provided forums for feedback for this plan. Discussion forums and interactive activities were also posted on the project website for both phases of public engagement. Appendix D summarizes all engagement for this effort.

Engagement Activity	Date	Location
Steering Committee Meeting 1	February 27, 2024	Houston Permitting Center
Community Pop-Up Tabling and Outreach (event to pass out fliers in advance of the April 20th Pop-up)	April 13, 2024	The Deck at Silver Street Studios
Community Pop-Up	April 20, 2024	The Deck at Silver Street Studios
Steering Committee Meeting 2	May 16, 2024	Virtual - Microsoft Teams
Steering Committee Meeting 3	August 22, 2024	Houston-Galveston Area Council
Public Engagement at National Night Out	October 1, 2024	The Art Alley at Sawyer Yards

"I would like a safe way to cross Houston [Avenue] with my daughter."



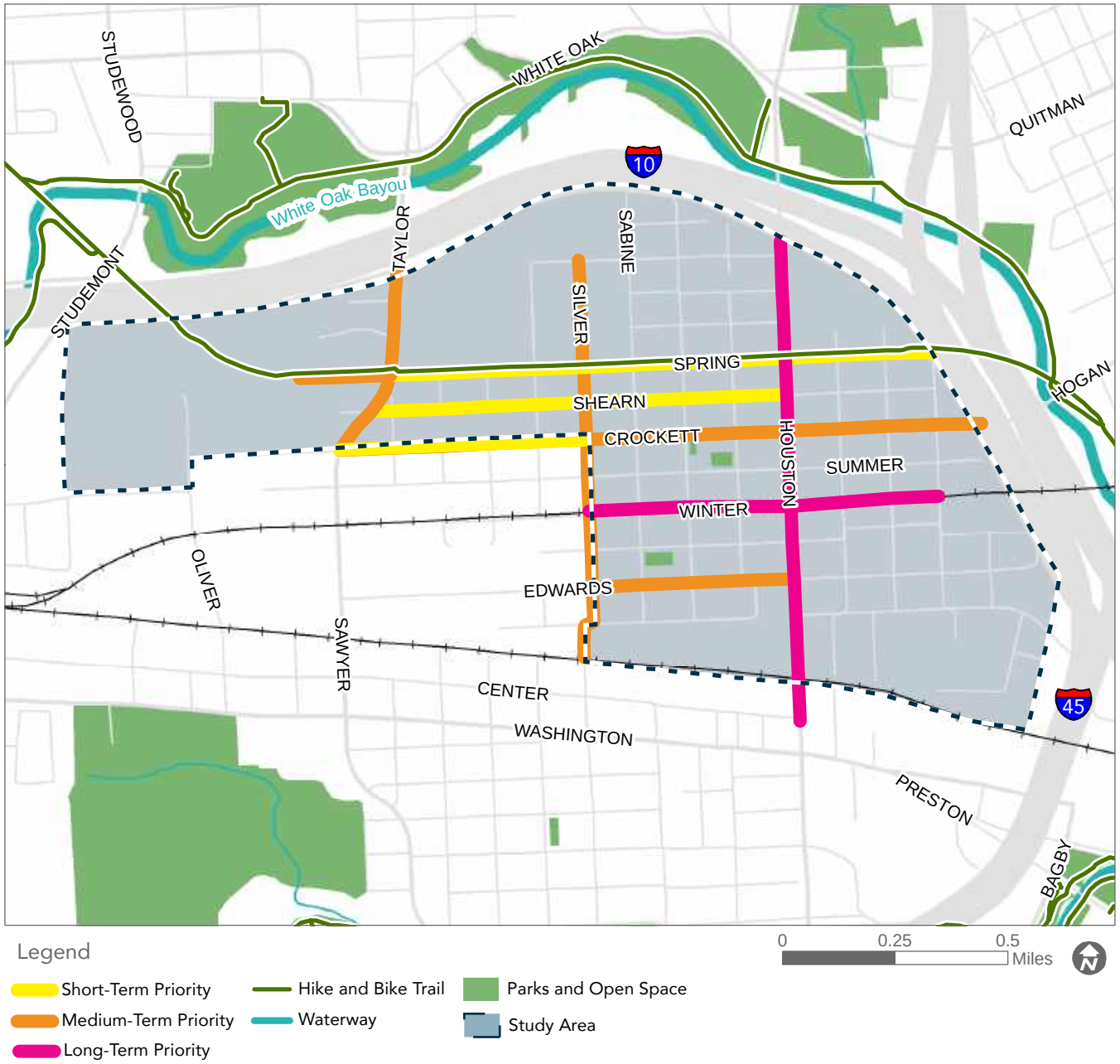


Figure 0.1. Study Area Boundary with Priority Corridors

Priority Corridors

The map in Figure 0.1 illustrates the Old Sixth Ward/TIRZ 13 Phase II Mobility Plan priority corridors where key recommendations are made to support overall mobility in the area. These corridors facilitate most north-south, east-west movements and support access to key destinations.

Houston Avenue is a key north-south corridor connecting the Heights into downtown and a key economic corridor. Today, the street acts as a barrier creating a dividing line between neighborhoods on the east and west sides of Houston Avenue with few safe opportunities to cross east-west. Creating a safe, multimodal vision for Houston Avenue was one of the key recommendations to come out of this mobility planning effort and can be seen on the following page and in Chapter 2.

Through three Steering Committee meetings and ongoing public engagement, the following mobility needs and community priority projects were identified:

Mobility Needs

- Traffic calming and safety
- Accessibility
- Placemaking and landscaping

Community Priorities

- Crockett Street traffic calming
- Silver/Crockett Street traffic circle
- Crockett Street/Houston Avenue signal
- Pedestrian improvements: sidewalks, trail connections, improved crossings
- Houston Avenue railroad underpass, landscaping, mid-block crossing, and sidepath

Note: For vision and concept planning only. Designs subject to change.

Houston Avenue Vision

Railroad Ramp and Underpass

There are currently two pedestrian railroad underpasses between Center Street and Dart Street with poor lighting and driveway approaches, as well as stairs that prevent bikes, wheelchairs or other mobility devices, and strollers from safely and conveniently using the underpasses. Improving the lighting, landscaping, drainage, and visibility of these underpasses and converting the stairs to ramps could improve access and safety.

Access Management

In areas with high traffic volumes and poor sight lines, turning movements and crossing lanes can be especially dangerous. Adding mountable medians that restrict left-turn movements can help reduce these conflicts and direct turning traffic to a safer location while maintaining business access. For example, possible improvements to Dart Street would direct users to a new traffic signal at Edwards Street to travel south on Houston Avenue.

Signal Improvements

Improving traffic signals at intersections, including adding phases for traffic movements such as protected left turns, can help improve safety and performance along the corridor. A new signal is proposed at Edwards Street, and adding a protected left-turn signal at Crockett Street is recommended.

Landscaping (Medians, Behind Curb)

Beyond improving the appearance of Houston Avenue, landscaping and street trees can provide additional shade and wildlife habitat. Landscaping can also be implemented and maintained through partnerships with community groups.

Railroad Safety Crossing at Winter Street

The existing at-grade railroad crossing at Winter Street includes medians and crossing arms for vehicular traffic, but not tor pedestrians. Adding safety features for pedestrians and cyclists will help reduce potential conflicts with train traffic.

Houston Avenue Vision

Parallel Parking

Businesses along Houston Avenue rely on on-street parking for convenient access for customers. Formalizing parallel parking and reducing head-in parking spaces can make these parking areas safer.

Spring Street Trail Intersection

This important intersection has already been improved with medians that reduce the risk of collisions between drivers making left turns and pedestrians and cyclists. Additional improvements would include safer crossings for cyclists and pedestrians traveling along Houston Avenue, improved landscaping, and rectangular rapid flashing beacons (RRFBs) that signal to drivers that bicycle and pedestrian traffic is crossing Houston Avenue.

Mid-Block Crossings

Mid-block crossing treatments are added along Bingham Street, Summer Street, and Alamo Street. These crossings are not located at a signalized roadway intersection and can create additional safe and direct crossings for pedestrians.

Sidepaths / Back-of-Curb Bike Facility

Where an on-street bike lane might not be desirable, sidepaths or bike facilities located behind the curb can provide a high-comfort route separated from vehicular traffic that also provides enough space to separate bicycle and pedestrian traffic.

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Key Corridor Recommendations and Implementation

The recommendations focus on eight key corridors identified as vital to the mobility network for the neighborhood and important locations for addressing the three key goals for this plan. The following table summarizes the key corridor recommendations, potential timeframe for implementation, cost estimate (high-level), and elements to be implemented. [Note: Crockett Street is split into short-term and medium-term based on length and level of improvements.]

Corridor	Time Frame	Cost Estimate*	Recommendation Elements
Spring Street	Short-term	$$	New sidewalks and ramps, consistent trail/crossing treatments, trail lighting, all-way stops at both White Street and Sabine Street, trail markings across driveways, trail landscaping, and daylighting at intersections
Shearn Street	Short-term	$	New sidewalks and curb ramps, high visibility crosswalks, dedicated school bus parking, enhanced connectivity between Spring Street Trail and Shearn Street via Henderson Street, and a dedicated "School Street" in front of Crockett Elementary
Crockett Street at Crockett Elementary	Short-term	$	New sidewalks and curb ramps, raised intersections at Taylor Street and Henderson Street to create a "gateway" for the school zone, raised crosswalk at Hemphill Street, well-defined and longer school pick-up/drop-off zone, striped 10' lane line from the curb to allow parking
Silver Street	Medium-term	$$	New sidewalks and ramps, new traffic circle (or all-way stop) at Crockett Street, daylighting at Dart Street intersection, designated on-street neighborhood bike facility with signage, pavement markings, and road humps
Taylor/Sawyer Street	Medium-term	$$$	New sidewalks and curb ramps, access management at Shearn Street, prohibited U-turns and right-turn-on-red at Spring Street, and wayfinding signage along the corridor
Crockett Street	Medium-term	$$	New sidewalks and ramps, traffic circle or all-way stop at Silver Street, marked crosswalks at all intersections, painted bulb-outs at all intersections, striped 10' lane line from the curb to showcase parking, raised intersection at Holly Street, and updated signals at Houston Avenue
Edwards Street	Medium-term	$$$	New sidewalks and curb ramps, new traffic signal at Houston Avenue, and crosswalks at major intersections
Houston Avenue	Long-term	$$$$	Entire corridor reconstruction: 10' sidewalks, back of curb bike facility, safe crossings at Summer Street, Spring Street, and Bingham Street, updated signal at Crockett Street, new signal at Edwards Street, and modernized railroad pedestrian tunnels
Winter Street	Long-term	$$	New paved permeable path to replace the existing poor quality asphalt with signs and features to allow shared space between cars, bikes, and pedestrians

*Cost Estimate refers to a very high-level estimate of the scale and cost of the improvements for each corridor. Further feasibility analysis will need to be performed with detailed cost estimates to provide a more accurate design, engineering, and construction level of effort. Assumptions:

- $ assumes $500,000 to $1,000,000
- $$ assumes $1,000,000 to $3,000,000
- $$$ assumes $3,000,000 to $5,000,000
- $$$$ assumes greater than $5,000,000

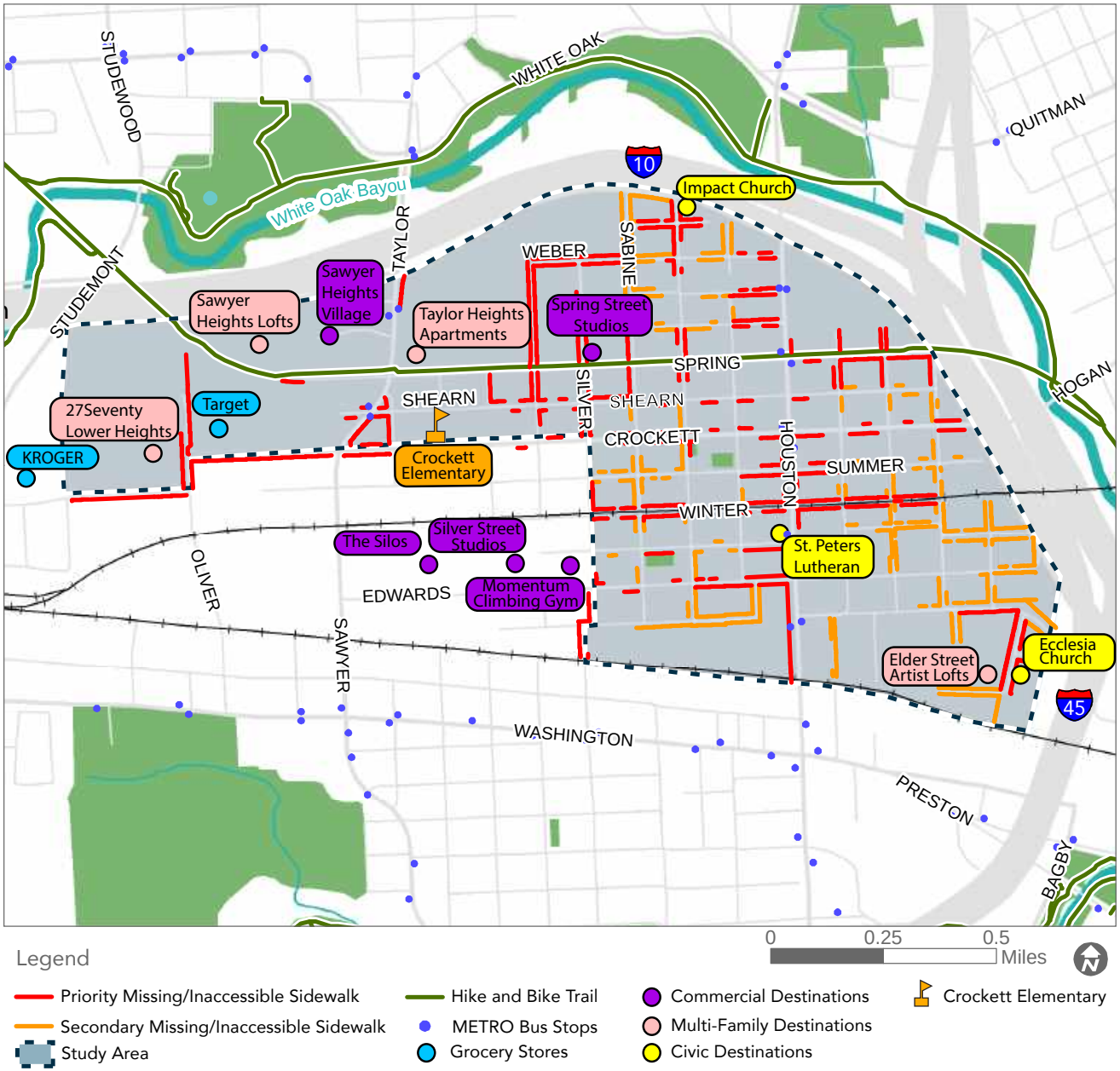

Figure 0.2. Sidewalk Prioritization Locations and Nearby Destinations

Sidewalk Prioritization Plan

The Sidewalk Prioritization Plan is a comprehensive sidewalk program to support an interconnected sidewalk network along each corridor. Every sidewalk block parcel in the study area was assessed to understand the current conditions of each sidewalk segment along each corridor. The assessment found that over half of all sidewalks in the study area, around 54%, were deemed inaccessible (see Appendix A for the detailed sidewalk assessment and accessibility definitions). Sidewalk recommendations include the following locations bulleted below. More details can be found in Chapter 3.

Sidewalk Priority Locations

- Along Priority Corridors
- Adjacent to Crockett Elementary School
- Adjacent to Spring Street Trail and parks
- Adjacent to community destinations
- Adjacent to Houston METRO bus stops
- Along truck routes (Weber Street and White Street)

Sidewalk prioritization locations along key corridors and key neighborhood destinations are shown in the map, with cost estimates provided on the following page.

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Sidewalk Prioritization Cost Estimates

The sidewalk recommendations can be implemented comprehensively as a program to support safe, interconnected sidewalk access to/from key destinations in the neighborhood. The sidewalk recommendations are included in the Key Corridor Recommendations.

Drainage will need to be considered with any sidewalk improvements in this neighborhood, as much of the drainage infrastructure is open ditch that has not seen improvements in decades.

Below are a few examples of the current or missing sidewalks to illustrate a variety of needs along the Study Area corridors.

Corridor Name	Sidewalks + Curb Ramps Cost Estimate	Percent of Corridor that is Inaccessible
Winter Street	$755,000	Sidewalks: 77% Ramps: 80%
Edwards Street	$478,000	Sidewalks: 18% Ramps: 78%
Crockett Street	$834,000	Sidewalks: 27% Ramps: 63%
Shearn Street	$499,000	Sidewalks: 21% Ramps: 75%
Taylor/SawyerStreet	$225,000	Sidewalks: 39% Ramps: 82%
Spring Street	$324,000	Sidewalks: 16% Ramps: 76%
Silver Street	$581,000	Sidewalks: 25% Ramps: 81%
Houston Avenue	$2,022,000	Sidewalks: 7% Ramps: 68%
All other residential corridors	$6,628,000	Sidewalks: 54% Ramps: 90%

Partnerships and Funding

The Study Area is not located within a TIRZ or management district, and therefore project implementation will not necessarily have a clear project lead to take on funding, design, and construction of the projects. As TIRZ 5 and TIRZ 13 are directly adjacent to the Study Area and this effort is the Phase II Mobility Plan building upon the Old Sixth Ward/TIRZ 13 Mobility Plan completed in 2021, there are opportunities to leverage both TIRZ 13 and TIRZ 5. Coordinated project implementation can support the goals of these two TIRZs while supporting safety and mobility for people in the First Ward.

Each project recommendation provides benefits to the local and regional communities. Chapter 4 presents project recommendations with identified potential partners as well as funding opportunities supporting the project benefits.

Strategic Partnerships

Strategic partnerships can support the implementation of the Mobility Plan recommendations and coordination of additional complementary projects, such as neighborhood park improvements, transit improvements, and trail connectivity improvements. Although there is not one definitive project implementation champion in this study area, there are ways to coordinate and leverage resources for improvements with strategic agency partners such as those listed in the table below.

Organization	Project Partnership Opportunity
Houston Parks Board	Brock Park and Summer Street Park: crosswalks, wayfinding, pedestrian-scale lighting
METRO	Crockett Street Route 39 Extension; Curb2Curb Service
TxDOT	White Oak Bayou Trail Connection: Taylor Street and Sabine Street
First Ward Civic Club	Neighborhood colorful crosswalks; Houston Avenue median landscaping
First Ward Arts District	Neighborhood colorful crosswalks; Houston Avenue underpass art

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Chapter 1

About the Plan

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Study Area

The Houston-Galveston Area Council, in partnership with the City of Houston's Old Sixth Ward Redevelopment Authority (or Tax Increment Reinvestment Zone 13), identified the Study Area outlined in blue in Figure 1.1 for Phase II of the area's Mobility Plan. In 2021, the Old Sixth Ward Redevelopment Authority completed the TIRZ 13 Mobility Plan, a Phase I mobility effort encompassing the area displayed in light pink on the map in Figure 1.1. This set the stage for a Phase II effort, which expands upon the original TIRZ 13 boundaries into the City of Houston's First Ward community.

Figure 1.1. Phase I and Phase II Study Area boundaries

A Historic Community

The historic nature of the First Ward and Old Sixth Ward communities created the foundation for a walkable street network grid with short blocks that make getting around without a car very feasible. Today, shopping centers, parks, restaurants, trails, transit, and other amenities build upon the street grid to create an area that combines residential use with a variety of other uses suitable to fulfilling daily needs in a multimodal environment. Strengthening these mobility options throughout the community provides an opportunity to create a safe, attractive, and accessible neighborhood encompassing a plethora of transportation options.

In addition to proximity to destinations, the First Ward's identity as an arts district shapes the neighborhood's sense of place and further strengthens its place as its own destination within the city. Warehouses throughout the Study Area repurposed into studios for artists are mixed with historic bungalows and cottages. Cultural arts events and open studio weekends draw residents from around the neighborhood and the city. The neighborhood's identity as a cultural arts district offers a strong argument for strengthening connections to neighborhoods beyond the Study Area to encourage visitors to support the community of local artists.

A restored historic First Ward home in characteristic bungalow style

Strengthening the Neighborhood's Walkability

Though walkable in its historic street foundation as a grid network, the area is not consistent in terms of its quality of walking infrastructure, like sidewalks and sidewalk ramps. Sidewalks in the neighborhood may vary from block by block and parcel by parcel. Given the mixture of old and historic residential and industrial uses next to new, more modern developments, sidewalks can range from nonexistent or crumbling narrow parcels, to smooth and wide pathways.

The sidewalk and ramp audit conducted during this study (results shown in Figure 1.2) can be used to call attention to gaps in the sidewalk network and inform project priorities. For people walking and rolling, a block is only as good as its worst segment. The sidewalk and ramp audit findings should be considered alongside key corridor recommendations for a comprehensive improvement to the mobility network. The full results and methodology can be found in Appendix A.

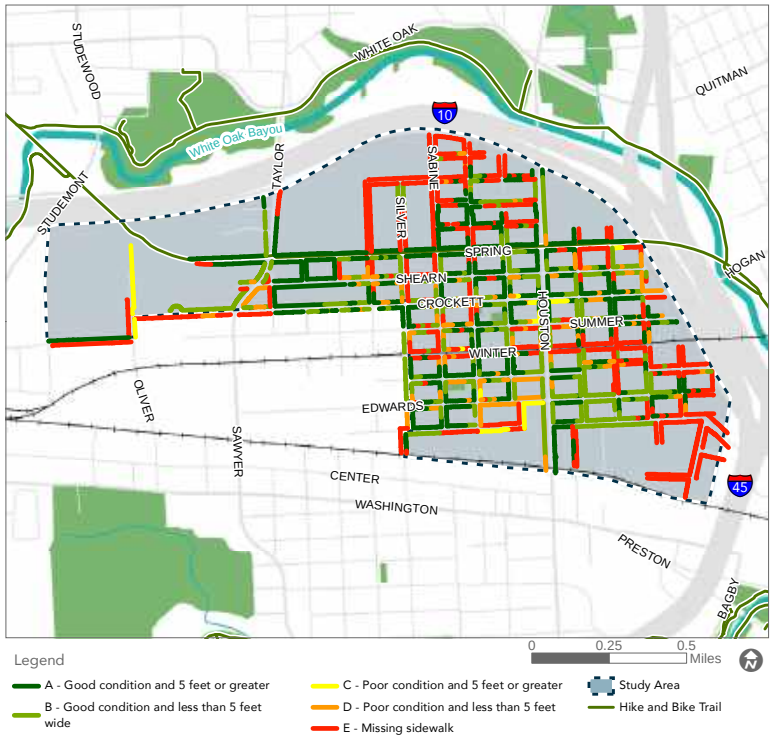

Figure 1.2. Study Area sidewalk conditions

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Future Plans & Projects

There are many planned projects in and around the Study Area that will impact the mobility development of the neighborhood. Freeway projects planned for IH-10 and IH-45, shown in yellow in Figure 1.3, will affect the northern and eastern ends of the Study Area. On the southern end, several multimodal projects on streets like Edwards, Washington, Sawyer, Silver, and south of Houston Avenue, complement the proposals recommended in this plan. This plan also takes into account future bikeways outlined by the Houston Bike Plan, displayed in light green in Figure 1.3.

Each existing project shown in Figure 1.3 has been considered as part of the outlined proposals in this plan. Proposals on key corridors consider how recommended projects might complement or support plans already in place.

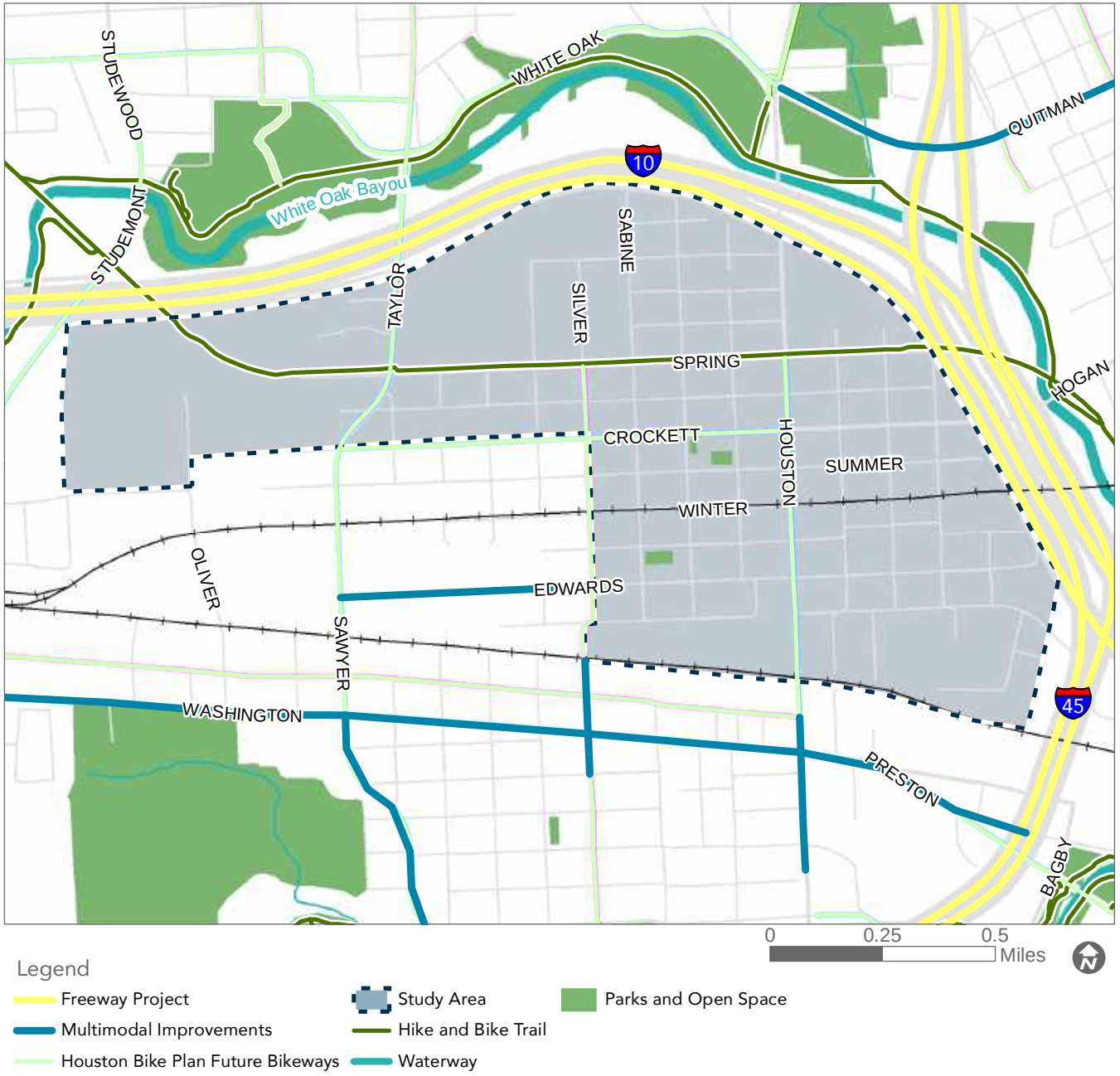

Figure 1.3. Existing and Future Area Projects

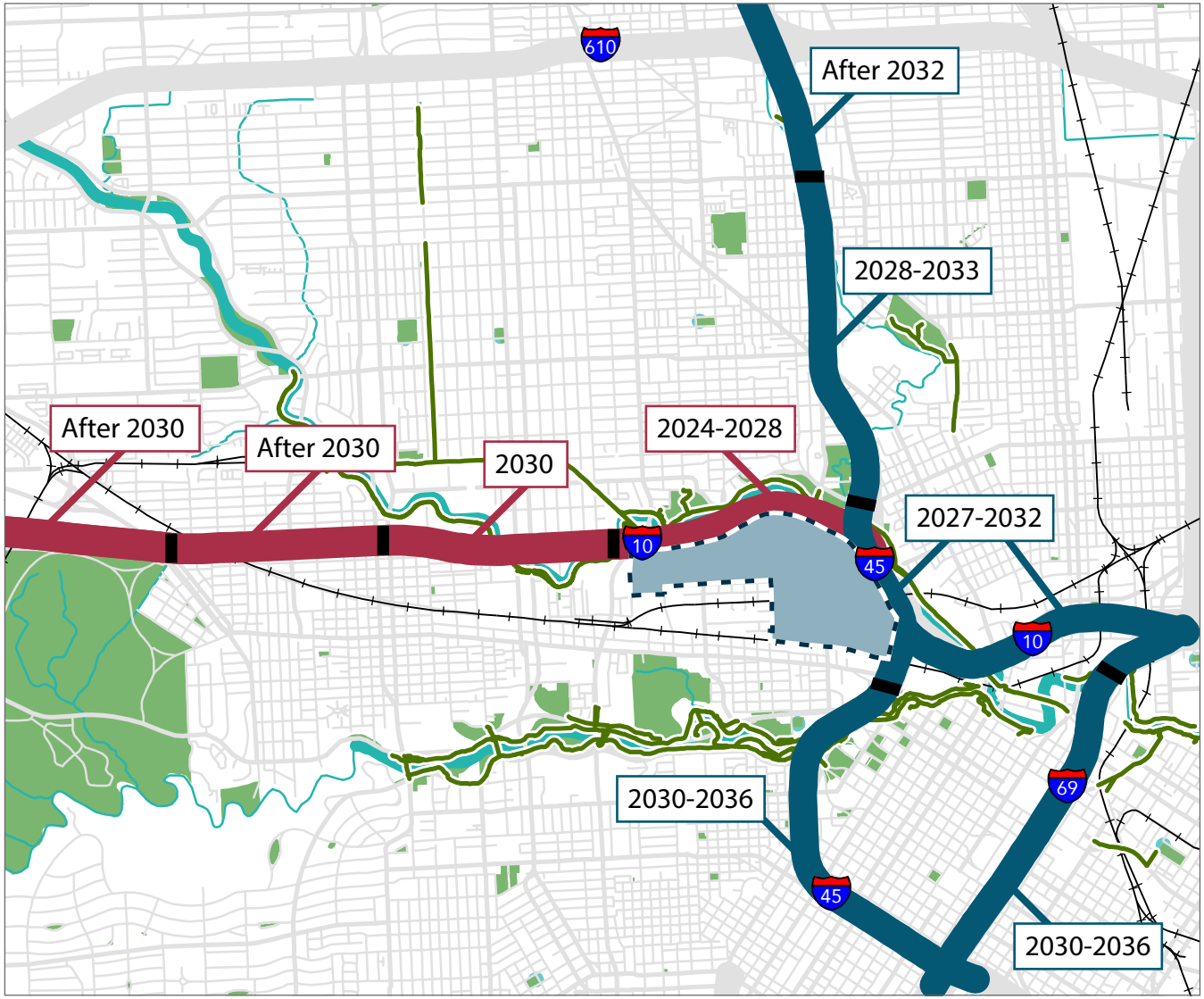

Figure 1.4. Timeline of TxDOT Projects

TxDOT Projects

Figure 1.4 shows planned TxDOT projects in and around the Study Area with a timeline of project construction start times and completion estimates for the various project portions. The Study Area will be impacted by two major TxDOT projects:

Inner Katy Project

The Inner Katy Project, highlighted in red in Figure 1.4, includes:

- A new METRORapid line with exclusive lanes and stations at Studemont Street and IH-10, Franklin Street, and Bagby Street.
- Elevating flood-prone main lanes of IH-10 from Studemont Street to IH-45.

Construction on the portion touching the Study Area to the north is set to begin in 2024 and is estimated to be completed by 2028.

North Houston Highway Improvement Project

Highlighted in blue in Figure 1.4, this project includes:

- Reconstruction of IH-45 North, between downtown Houston and Beltway 8.

Construction on the portion touching the Study Area to the east is set to begin in 2027 and is estimated to be completed by 2032.

This plan considers these projects in relation to the area's key corridors and how existing streets will be impacted during construction. Ongoing coordination with TxDOT will be needed as projects are implemented.

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Case for Action

The Phase II Mobility Plan Study Area contains the First Ward and portions of the Old Sixth Ward, two historic neighborhoods with charming architecture and a strong creative and artistic identity. Located just south of the Heights, southwest of Near Northside, and directly northwest of Downtown, the Study Area is in a prime location for activity, development, and connectivity to several bustling surrounding neighborhoods.

Today, the neighborhood is a mixture of historic Queen Anne cottages and bungalows that hearken back to old times, adjacent to dense, single-family modern townhouses. Warehouses in the neighborhood have been converted to popular activity centers, historic single-family homes sit adjacent to new townhouses, and dense multi-family apartments are mixed with shopping and grocery stores. Two major corridors, Houston and Washington Avenues, provide connections to commercial activity and major city destinations and thoroughfares. The Spring Street Trail, a treasured recreational and transportation trailway for neighborhood residents and visitors, provides additional east/west connections to neighborhoods and trail systems like Buffalo Bayou and White Oak Bayou.

The Study Area's historic street grid paired with the plethora of destinations throughout the neighborhood provides the foundation for a neighborhood that is easy to get around without a car. However, there are physical barriers to mobility that hinder comprehensive, safe, and interconnected access between local and regional destinations. The Case for Action, or reason for this Phase II Mobility Plan, is to realize the opportunities presented in the existing fabric of the community and provide recommendations that can address barriers and challenges while enhancing the safety, connectivity, and livability of the community. The following themes and statements will guide and support thoughtful project recommendations in the Plan:

Safety:

Key corridors and local streets that are barriers to mobility often have characteristics that make driving, taking transit, walking, rolling, and biking unsafe, such as: high-speed traffic, low-visibility along the corridors, and a lack of accessible, defined space dedicated to people walking and rolling. Traffic calming measures, high visibility crosswalks, and accessible sidewalks and ramps are interventions that can make streets safer and more accessible for all road users.

Connectivity:

Barriers to connectivity throughout the Study Area include railroads, highways, unsafe street crossings, and gaps in the sidewalk network. A lack of connectivity makes it difficult to access destinations and mobility options like transit. Furthermore, the Study Area would benefit from improved north/south connections – closing gaps in the sidewalk network, improving intersection crossings, and making safe connections to key corridors and destinations.

Livability:

Many things factor into the experience or choice of how someone gets around a neighborhood or place. For example, shade and landscaping might improve one's walking, rolling, biking, and transit experience, while wayfinding might help one find their way around, familiarize themselves with the neighborhood, or direct them to the best walking or biking path. Additionally, the mere presence of a sidewalk or trail can impact if someone chooses to walk, roll, or bike. These things contribute to a neighborhood's livability and economic vitality, making transportation options like walking, rolling, biking, and taking transit more inviting and accessible.

These three factors, informed by ideas, thoughts, and feedback from the community, will be the central themes in guiding the Study Area recommendations for this Mobility Plan.

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Chapter 2

Key Corridors & Recommendations

Key Corridors

Figure 2.1 shows the proposed key corridors that are recommended for improvements within the Study Area. Key corridors include:

- Houston Avenue
- Silver Street
- Spring Street
- Taylor Street
- Shearn Street
- Crockett Street
- Edwards Street
- Winter Street

These corridors are important for creating a safe and connected street network that can improve the mobility of residents and visitors throughout the Study Area and to surrounding neighborhoods.

The information in this chapter provides details for recommended improvements to each of these corridors. Each recommendation considers the cohesive network of streets throughout the Study Area and how improvements to each key corridor can strengthen the larger network.

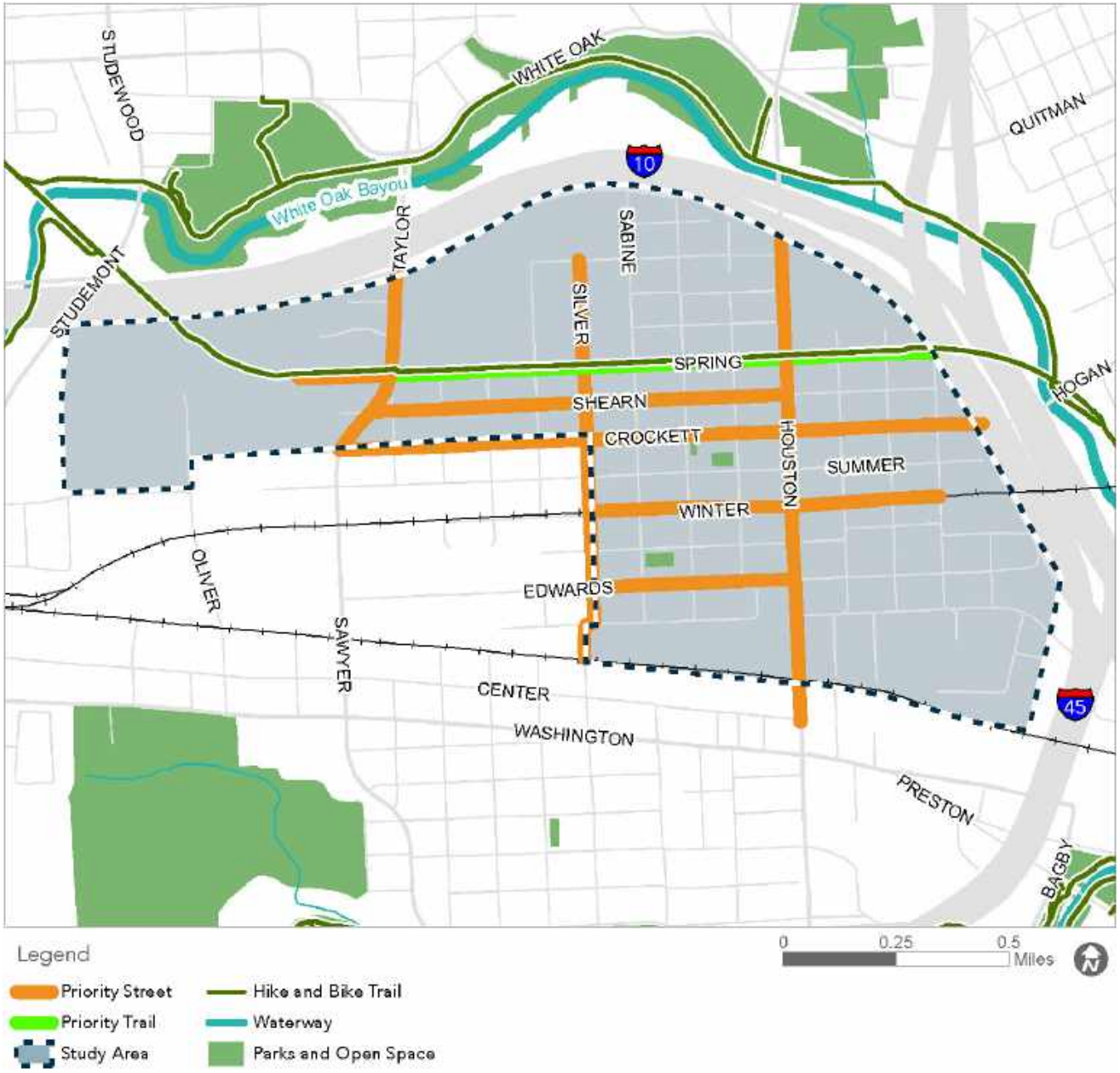

Figure 2.1. Key Corridors

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Houston Avenue	
Corridor Classification	Major Thoroughfare
Typical ROW	North of Spring St: 90’ South of Spring St: 100’
Average Daily Traffic Volume	12,441 (North of Crockett St) 14,602 (South of Crockett St)
Average Daily Volume/ Capacity	32% (North of Crockett St) 19% (South of Crockett St)
85th Percentile Speed	38 mph (North of Crockett St) 33 mph (South of Crockett St)
Posted Speed Limit	30 mph
Serious Injury Crash Locations	Houston Ave & Weber St Houston Ave & Spring St Houston Ave & Crockett St Houston Ave & Center St
Transit Route	44 Acres Homes
Sidewalks	Typically present at 4’
Bicycle Facilities	On-street bike lane north of Spring St
Street Parking	Allowed south of Spring St
Sidewalk & Ramp Condition	6.7% of sidewalks, 68% of ramps assessed are inaccessible

Figure 2.2. Houston Avenue Key Characteristics

Houston Avenue

Houston Avenue is a major north/south corridor that runs through the Study Area and provides access to neighborhoods to the north, like the Heights, and a major job center to the south, Downtown Houston. Home to popular local restaurants and retail and commercial activity, Houston Avenue is also an economic generator that attracts businesses and customers from all over the city. METRO Route 44 traverses the corridor, passing the Spring Street Hike & Bike Trail at the intersection of Spring Street and Houston Avenue, where pedestrians, cyclists, dog-walkers, and families with strollers frequently cross the busy corridor to continue onto the popular shared-use path.

Houston Avenue north of Spring Street

Houston Avenue south of Spring Street

Houston Avenue Corridor Proposals

Figure 2.3 shows a summary of proposals for Houston Avenue, which include the expansion of the sidewalk width on both the east and west sides of the street from 4 feet to 10 feet, along with updated ADA ramps. South of Spring Street, an upgraded traffic signal at Crockett Street and the installation of a traffic signal at Edwards Street with access management strategies are proposed to encourage smoother traffic flow and increase safety for all road users along the corridor and throughout the Study Area. To support existing and future pedestrian activity, shade strategies like trees and pedestrian scale lighting are recommended.

Corridor Proposals	
Houston Avenue North of Spring Street	10' sidewalks
	ADA ramps
	RRFBs at Spring Street Trail crossing, and new mid-block crossing at Alamo Street
	Back-of-curb bike facility
Houston Avenue South of Spring Street	10' sidewalks
	ADA ramps
	New/improved mid-block crossings at Summer Street and Bingham Street
	Upgraded traffic signal at Crockett St
	Traffic signal at Edwards St
	Landscaping
	ADA accessible bridge underpass ramps
	Underpass bridge placemaking and lighting
	Parallel parking
	Dart Street median

Figure 2.3. Houston Avenue Summary of Proposals

Existing Houston Avenue and Spring Street Trail intersection facing east

Note: For vision and concept planning only. Designs subject to change.

Houston Avenue at Spring Street

The intersection of Houston Avenue with the Spring Street Trail has undergone improvements in recent years with the addition of a pedestrian refuge island that reduces the risk of collisions between drivers making left turns and pedestrians and people on bikes. The median also gives people a safe space to wait for passing vehicles before crossing to the other side of the trail. Additional improvements at this location would include landscaping and rectangular rapid flashing beacons (RRFBs) that signal to drivers that people are crossing Houston Avenue. Modifications for first responders could include a mountable median with flex posts that would allow a first responder vehicle to maneuver through the intersection.

Houston Avenue at Spring Street concept includes landscaping and pedestrian crossing signals

Houston Avenue Corridor

A The railroad ramp and underpass entrances will provide improved lighting, landscaping opportunities, drainage, visibility, and accessibility for people walking and rolling down the corridor.

B Intersection safety at locations with obstructed sight lines will include options such as limiting left-turn vehicle movements, which will help reduce turning movement conflicts and direct turning traffic to a safer location while maintaining business access. Other options include signage and mountable medians for emergency vehicle use.

C A traffic signal on Edwards Street will help improve safety along the corridor by adding phases for traffic movements such as protected left turns.

D Landscaping in medians and behind the curb can provide shade and beautification. Adopt-a-median programs should be explored with local community groups.

E Updating the existing at-grade railroad crossing at Winter Street to add safety features for people walking and rolling will help reduce potential conflicts with train traffic and create a safer crossing environment.

Figure 2.4. Houston Avenue Proposals South of Winter Street

Note: For vision and concept planning only. Designs subject to change.

F Parallel parking along Houston Avenue will allow customers easy access to businesses. Formalizing parallel parking spaces and reducing head-in parking will make the street and parking areas safer.

G Improvements at the Spring/Houston intersection would include landscaping and rectangular rapid flashing beacons (RRFBs) that signal to drivers that people are crossing Houston Avenue.

H Pedestrian crossings at Bingham Street, Summer Street, and Alamo Street create additional safe and direct crossings for people walking and rolling along the corridor to transit stops, residences, and businesses along the corridor.

I New side paths or bike facilities located behind the curb provide a high-comfort route separated from vehicular traffic that also provides enough space to separate cycling and pedestrian traffic. These facilities will connect to TxDOT's planned back-of-curb bike facilities on north Houston Avenue.

Figure 2.5. Houston Avenue Proposals North of Winter Street

Houston Avenue Underpass

The Houston Avenue train bridge underpass between Dart and Center Streets provides the area with a placemaking opportunity that can add vibrancy, color, and safety elements for pedestrians walking or rolling toward the Washington Avenue Corridor or Downtown. Currently only accessible by stairs, the existing underpass pedestrian tunnels are dark, uninviting, and often filled with trash and debris. In its current state, the bridge is a large detriment and barrier for people walking and rolling along the Houston Avenue corridor.

The images shown below provide inspiration for the development of the underpass tunnels into colorful, inviting spaces. In addition to the transformation of the current stairways into ADA accessible ramps, tunnel walls should provide cutouts and windows to increase visibility and enhance safety. This project provides an opportunity to work with local artists on designs that integrate light and color into the tunnels. The existing mosaic motifs along the walls of the bridge should be integrated into any future artistic designs to maintain the sense of place the mosaics have helped establish along the avenue. These artistic interventions will help transform the tunnel walls from blank, underutilized spaces into pleasing gateways into the creative First Ward Arts District.

Above: The "Judge Alfred Hernandez Tunnel" mural in Houston's Near Northside neighborhood on Main Street provides historical context, bright colors, and a sense of identity and place to those walking and driving through the tunnel.

Below: Three artistic light mural installations in Sydney, Australia show how light and art can be combined to provide an inviting and bright tunnel space.

Note: For vision and concept planning only. Designs subject to change.

Houston Avenue Underpass

Improvements to the underpass could include the addition of murals, artistic lighting installations, landscaping, and increased accessibility by removing the stairs and putting ramps in their place.

Silver Street

Silver Street is a north/south two-lane corridor that connects to the Spring Street Trail to the north and the Washington Avenue Corridor to the south. Silver Street is one of the only streets in the Study Area that is continuous across its two railroad crossings and is therefore a frequently traveled corridor for drivers, pedestrians, and people on bikes. The street is a prime connector to the Old Sixth Ward neighborhood, where people often cross over Washington Avenue to access the First Ward. Silver Street contains a mixture of housing types and is home to a popular destination for both local residents and visitors from around the city - Momentum Climbing Gym.

Silver Street looking north

Silver Street looking south

Silver Street	
Corridor Classification	Local
Typical ROW	North of Dart: 60' South of Dart: 55'
Average Daily Traffic Volume	No data available
24-Hour Capacity	38,400
85th Percentile Speed	No data available
Posted Speed Limit	30 mph
Serious Injury Crash Locations	Silver & Crockett
Transit Route	None
Sidewalks	Varies by block; typically 4' where present
Bicycle Facilities	None
Street Parking	Allowed on most blocks
Sidewalk & Ramp Condition	25% of sidewalks, 81% of ramps assessed are inaccessible

Figure 2.6. Silver Street Key Characteristics

Note: For vision and concept planning only. Designs subject to change.

Silver Street Corridor Proposals

To support Silver Street's multimodal transportation characteristics, proposals for Silver Street focus on creating opportunities for safe connections to the Spring Street Trail to the north and the Old Sixth Ward neighborhood to the south. An all-way stop or neighborhood traffic circle at Silver Street and Crockett Street, shown in Figure 2.8, can promote traffic calming at an intersection that is a crash hot spot and challenging to cross in its current condition. The traffic circle option provides the additional benefit of slowing down vehicles while maintaining traffic flow. The mountable center would allow for emergency vehicles, like fire trucks, to efficiently maneuver through the intersection if needed. As Figure 2.9 shows, all-way stops at Dart Street and at Spring Street can better support pedestrian and cyclist activity throughout the corridor and encourage drivers to be more aware of those walking, rolling, and biking. Lastly, this plan supports the City of Houston's Bike Plan designation of Silver Street as a neighborhood bikeway and proposes signage, speed humps, and pavement markings along the corridor that support this designation. Figure 2.9 provides a visual of what some of the neighborhood bikeway improvements would look like.

Corridor Proposals	
Silver Street North of Washington Avenue	ADA sidewalks
	ADA ramps
	All-way stop or traffic circle at Crockett St
	All-way stop at Dart St
	All-way stop at Spring St
	High visibility crosswalks at Crockett St
	Designated neighborhood bikeway

Figure 2.7. Silver Street Summary of Proposals

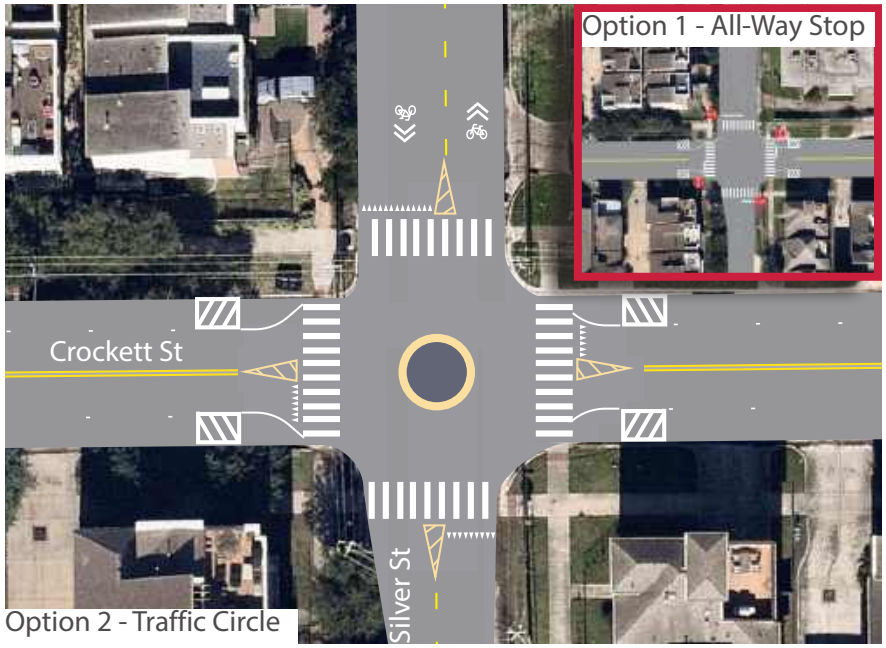


Figure 2.8. Silver Street at Crockett Safety Improvement Options

Figure 2.9. Silver Street at Dart Street All-Way Stop

Silver Street at Crockett Street Traffic Circle

Crockett Street is a major east-west corridor in the Study Area, and its intersection with Silver Street includes an important connection for those walking or rolling toward the Old Sixth Ward neighborhood and/or the Spring Street Trail. There are two options to improve safety at Crockett Street and Silver Street: an all-way stop treatment; or a traffic circle. An all-way stop could also be a solution that will require vehicle counts for each approach, whereas a traffic circle does not have the requirement. A second alternative is a neighborhood traffic circle that could achieve all of the goals stated by the community. The traffic circle would have a mountable shelf around the circle to allow larger vehicles, like school buses and firetrucks to still travel through the intersection. A traffic circle would help reduce speeds and improve safety at this intersection, while also creating an opportunity for vehicles to slow down as they get closer to Crockett Elementary School on the west side of Crockett Street. Throughout public engagement, community members reported that the Silver Street and Crockett Street intersection is unsafe and would like a solution to slow down traffic and allow for safe crossings for drivers, cyclists, and pedestrians. This traffic circle recommendation was ranked number two out of the nine concepts presented for mid-to-long term recommendations by the community at the October 1, 2024 pop-up event. Traffic circles are also part of the City of Houston's Neighborhood Traffic Management Program, which is shown in Appendix E.

- A Accessible sidewalks and curb ramps at all approaches
- B Marked crosswalks
- C Marked bike sharrows
- D Curbed traffic circle to allow truck and school bus movements
- E Landscaping

Note: For vision and concept planning only. Designs subject to change.

Spring Street

Spring Street is a two-lane street running east/west through the Study Area. The Spring Street Trail runs along the northern side of the street and is a major recreational and transportation trailway for pedestrians and cyclists connecting to the Bayou Trails to the east and the MKT Trail to the west. On the eastern side of the corridor, the street contains a mixture of single-family, multi-family, and townhome housing. A crash hot spot, the intersection of Houston Avenue and the Spring Street Trail is a challenging crossing for pedestrians, cyclists, and young families as trail users and residents try to cross the busy Houston Avenue corridor from the east to access parks, recreation, shopping, and Crockett Elementary School to the west.

Popular destinations along the street also include the Spring Street Studios, an adapted reuse warehouse development housing art studios and local businesses. There still are active warehouses to the north of Spring Street, which results in moderate freight traffic along the corridor.

Across Taylor Street to the west, the Sawyer Heights Village shopping center draws errand runners and visitors to the many shops, grocery stores, and restaurants located along this portion of the corridor.

Spring Street	
Corridor Classification	Local
Typical ROW	70’
Average Daily Traffic Volume	No data available
24-Hour Capacity	38,400
85th Percentile Speed	No data available
Posted Speed Limit	30 mph
Serious Injury Crash Locations	Spring & Taylor Spring & Houston
Transit Route	None
Sidewalks	North Side: Spring Street Trail South Side: Typically Present at 4’
Bicycle Facilities	Spring Street Trail
Street Parking	Allowed on most blocks, except from 4-6pm
Sidewalk & Ramp Condition	16% of sidewalks, 76% of ramps assessed are inaccessible

Figure 2.10. Spring Street Key Characteristics

Spring Street Corridor Proposals

Due to the high population of people walking and biking on the Spring Street Trail, proposals for the street focus on increasing the safety of trail users. Recommendations include the installation of a Rectangular Rapid Flashing Beacon (RRFB) at the trail crossing on Houston Avenue; consistent, high visibility markings at intersections where the trail meets neighborhood streets and crosses driveway entrances and exits, including driveway markings and stop bars; enhanced landscaping, shade, and trail lighting; and marked crosswalks at busy intersections.

To further improve the safety of intersections and provide safe crossings for those trying to reach the trail from other areas of the neighborhood, all-way stops at White Street and at Sabine Street are recommended, along with daylighting at intersections to improve intersection crossing visibility from cars parked on-street. Lastly, a four-way stop at Sawyer Heights Street around the busy shopping center area is recommended as a traffic calming method to increase driver awareness of trail users and to provide pedestrians with additional safe crossing options from the trail to the shopping center. Additional lane markings and turn lane designations are also recommended for Sawyer Heights Street, which is shown in Figure 2.13.

Corridor Proposals	
Spring Street	ADA sidewalks
	ADA ramps
	Consistent trail/street intersection treatments
	Trail lighting
	Marked crosswalks
	All-way stops at White St and Sabine St
	Driveway markings and stop bars along trail intersections
	All-way stop at Sawyer Heights St and Sawyer Heights Loft Apartments driveway
	RRFB at Spring St and Houston Ave
	Daylighting at intersections
	Trail landscaping and shade

Figure 2.11. Spring Street Summary of Proposals

Spring Street Trail

Sawyer Heights Village shopping center

Note: For vision and concept planning only. Designs subject to change.

Spring Street

Figure 2.12. Spring Street: Silver, Sabine, and Colorado Street Intersections

Figure 2.13. Spring Street: Taylor Street and Sawyer Heights Shopping Center

Spring Street Trail

The Spring Street Trail is a valued neighborhood amenity in the Study Area that provides both recreational and transportation opportunities for people walking and rolling. The trail provides connections to the bayou trails to the east and to the MKT trail on the west. Recommendations along the trail include the addition of landscaping and trees to provide shade and beautification, wayfinding signage to highlight trail and neighborhood connections, improved lighting, and crosswalk and intersection enhancements.

An all-way stop and crosswalk enhancements at Spring and Sabine

Improved landscaping and trees along the trail

Note: For vision and concept planning only. Designs subject to change.

Taylor/Sawyer Street

Taylor Street is a north/south street in the Study Area that meets Spring Street at a busy crossroads for vehicles and Spring Street Trail users. South of Spring Street, the street turns into Sawyer Street, a busy corridor commonly used to travel to the Washington Avenue corridor and Old Sixth Ward neighborhood. North of Spring, where the corridor turns into Taylor Street, vehicles use the major collector to access IH-10.

The intersection of Spring Street and Taylor/Sawyer Street

Taylor/Sawyer Street	
Corridor Classification	Major Collector
Typical ROW	North of Spring St: 90' South of Spring St: 110'
Average Daily Traffic Volume	14,027
Average Daily Volume/Capacity	37%
85th Percentile Speed	28 mph
Posted Speed Limit	30 mph
Serious Injury Crash Locations	Taylor St & Spring St Taylor St & Shearn St
Transit Route	30 Clinton/Ella
Sidewalks	Typically present at 4'
Bicycle Facilities	None
Street Parking	None
Sidewalk & Ramp Condition	39% of sidewalks, 82% of ramps assessed are inaccessible

Figure 2.14. Taylor/Sawyer Street Key Characteristics

Taylor and Spring Street Corridor Proposals

Project proposals for this key corridor center around the intersection of Taylor and Spring Street, a major crossing point for trail users on the Spring Street Trail crossing the street to the MKT Trail and Sawyer Heights Village shopping center to the west or vice versa. To provide safer crossing conditions, it is recommended that left turning southbound vehicles be prohibited from making a U-turn at the intersection, where pedestrians and bike riders are often waiting near the curb to cross the street.

Wayfinding signage may help guide drivers toward safer movements out of the Sawyer Heights Village shopping center to avoid the need for U-turn maneuvers. Additionally, prohibiting a right-turn-on-red for northbound vehicles turning onto Taylor from Spring Street can help further eliminate the potential for crashes.

Corridor Proposals	
Taylor Street & Spring Street	ADA sidewalks
	ADA ramps
	Prohibit U-turn for southbound left-turning vehicles at Spring St intersection
	Wayfinding signage
	Prohibit right-turn-on-red at Spring St intersection
Sawyer Street & Shearn Street	Median extension on Sawyer at the intersection of Shearn Street

Figure 2.15. Taylor Street Summary of Proposals

Note: For vision and concept planning only. Designs subject to change.

Taylor Street, Sawyer Street, and Shearn Street Intersection Access Management

The southern portion of Sawyer Street is shaped like a curve that creates blind spots for vehicles traveling north on Sawyer Street and vehicles attempting to turn left onto Sawyer Street from Shearn Street. This area is a crash hot spot location that causes safety issues for all users. An extended median on Sawyer Street could help prevent crashes and manage access at this intersection. Drivers would be able to make their lefts safely at the signal one block down at Crockett Street.

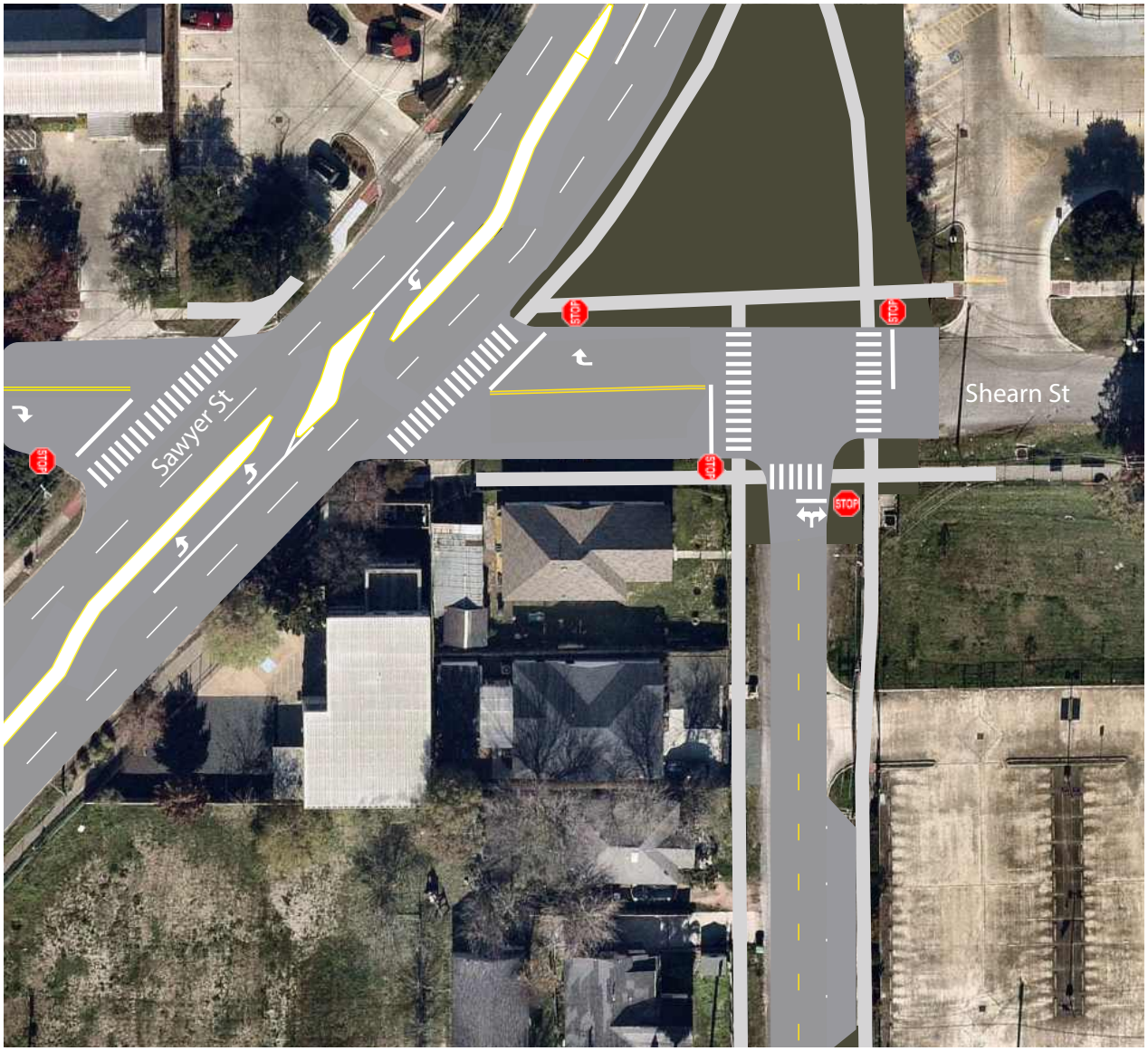


Figure 2.16. Sawyer Street Median Extension

Shearn Street

Shearn Street is a primarily residential two-lane street with open ditches on most portions of the street. An east/west corridor, Shearn Street's western end is home to a primary entrance and exit belonging to Crockett Elementary. The street's eastern end terminates at IH-45.

The west side of Shearn Street is home to a busy crossroad of intersections, containing Taylor, Shearn, and Sawyer Streets. Along this intersection, Crockett Elementary on the south side of the street and Chick-fil-a on the north side of the street draw both vehicular and pedestrian traffic, particularly during peak morning drop-off and breakfast times. This flurry of activity, mixing the rush of morning commutes with the drop-off of elementary-aged children, can create unsafe conditions, evident by the high number of crashes present at this location.

Shearn Street	
Corridor Classification	Local
Typical ROW	West of Houston Ave: 80' East of Houston Ave: 70'
Average Daily Traffic Volume	No data available
24-Hour Capacity	38,400
85th Percentile Speed	No data available
Posted Speed Limit	30 mph
Serious Injury Crash Locations	Shearn St & Taylor St
Transit Route	None
Sidewalks	Typically present at 4'
Bicycle Facilities	None
Street Parking	Allowed on most blocks
Sidewalk & Ramp Condition	21% of sidewalks, 75% of ramps assessed are inaccessible

Figure 2.17. Shearn Street Key Characteristics

Note: For vision and concept planning only. Designs subject to change.

Shearn/Taylor/Sawyer Intersection Proposals

Recommendations for the Shearn/Taylor/Sawyer intersection are summarized in Figure 2.18. Proposals include an all-way stop at Taylor and Shearn, along with marked intersection crosswalks. Additionally, the following page shows project scenario options for the Taylor Street entrance onto Sawyer Street and the adjacent grassy area.

Shearn Street looking east from Sawyer

Shearn Street looking west toward Sawyer

Corridor Proposals	
Shearn/Taylor/Sawyer Street Intersection	ADA sidewalks
	ADA ramps
	All-way stop at Taylor & Shearn St
	Marked crosswalks
	Lane markings on Shearn Street

Figure 2.18. Shearn/Taylor/Sawyer Intersection Summary of Proposals

Existing Intersection Characteristics

In its existing state, the intersection of Taylor Street with Shearn and Sawyer streets is a crash hot spot. Between 2018 and 2022, there were 23 crashes at this intersection, two of these serious injury crashes. This section of both Shearn Street and Taylor Street are part of the City of Houston's High Injury Network. A wide and unmarked intersection and vehicle travel lanes, combined with a lack of pedestrian infrastructure like sidewalks and crosswalks, contribute to the unsafe nature of the intersection.

Although this area of the neighborhood has potential to be walkable and bikeable, and is adjacent to METRO route 30, the existing intersection may discourage this activity and make it unfriendly to those who do rely on these forms of transportation. Sitting adjacent to Crockett Elementary, this intersection has potential to provide a safe route to school for residents living on the west side of the Study Area.

Existing Shearn/Taylor/Sawyer intersection

Scenario One: Angled Parking and Safer Crossing

This scenario considers the need for additional parking for Crockett Elementary and overflow parking for Chick-fil-A in addition to pedestrian infrastructure improvements to improve intersection safety. The addition of angled parking can help slow traffic navigating through Taylor Street. Scenario One includes the following:

- 6-foot sidewalk and curb ramp on the northwest section of Taylor and Shearn
- Crosswalks on each leg of the intersection
- Angled parking on the north section of Taylor Street
- All-way stop
- Lane markings on Shearn Street

Scenario One: Angled Parking and Safer Crossings

Note: For vision and concept planning only. Designs subject to change.

Scenario Two: Public Space and Pocket Park

Scenario Two considers the possibility of closing the north side of Taylor Street to through traffic and transforming the grassy area into a pocket park and the street into a walkable public space. This scenario provides outdoor eating opportunities for surrounding businesses. Crockett Elementary students would benefit from additional public space and a safe and pleasant walk to school. Potential elements include:

- Shade and landscaping
- Picnic tables and benches
- Pedestrian-scale lighting
- Asphalt art

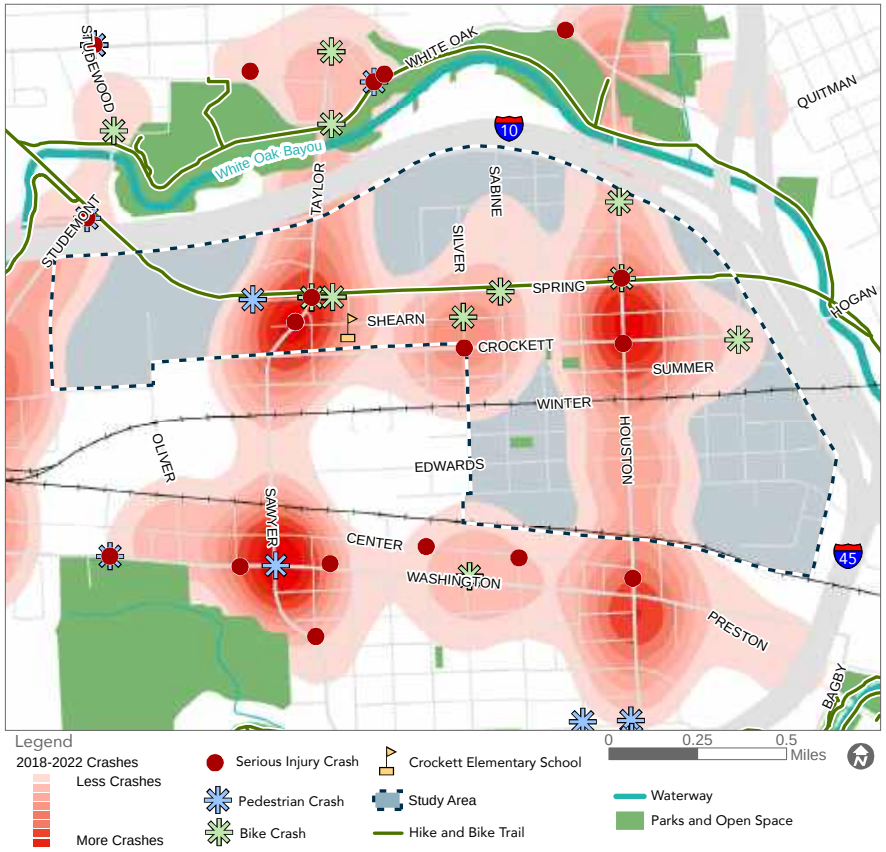
Scenario Two: Public Space and Pocket Park

Crockett Elementary School

Crockett Elementary sits between Shearn Street on the north and Crockett Street on the south. On Crockett Street, the school often contends with speeding vehicles that use the street to drive between the busy corridors of Houston Avenue to the east and Sawyer Street to the west. Anecdotally, school staff members report witnessing near misses between drivers and students and their parents, who navigate speeding cars on the street daily during pick-up and drop-off.

To the north and west, the school is surrounded by two streets in the city's High Injury Network - Shearn Street and Sawyer Street. Busy vehicle traffic on Shearn Street around the Chick-fil-A often occurs during peak commute times, when parents and students are navigating busy drop-off periods, resulting in potentially dangerous crashes and vehicle collisions. Figure 2.19 shows the crash hot spot locations directly west of the school. The Crockett Elementary enrollment boundary covers a large area, and students are traveling to school from every part of the Study Area and beyond. Safe travel options to school, whether by car, bus, bike, or by foot or mobility device, are important considerations for project proposals around Crockett Elementary, particularly around areas where frequent serious injury crashes are occurring.

Crockett Elementary student pick-up on Shearn Street



CRIS Crash Data 2018-2022

Figure 2.19. Serious Injury, Bike, and Pedestrian Crashes

Note: For vision and concept planning only. Designs subject to change.

Crockett Elementary School Proposals

Proposals for Crockett and Shearn Streets focus on slowing down speeding drivers, creating safe and pleasant routes to school for all transportation modes, and cultivating a sense of place around the Elementary School. This will help extend the school's identity to the streets surrounding the school to signify its presence to drivers and to the community. Figure 2.20 shows a summary of project proposals for Crockett and Shearn Streets.

Many student drop-off and pick-up locations are located on Shearn Street, including for the school bus

Crockett Elementary School Proposals	
Crockett Street	ADA sidewalks
	ADA ramps
	Raised intersections at Taylor St and Henderson St
	Raised crosswalk at Hemphill St
	High visibility crosswalks
	All-way stop or traffic circle at Silver St
	Well-defined and longer school pick up/ drop off zone
	Striped 10' edge line from the curb
Shearn Street	ADA sidewalks
	ADA ramps
	High visibility crosswalks
	Dedicated school bus parking
	Dedicated 'School Street' between Hemphill St and White St
	Enhanced connectivity between Spring Street Trail and Shearn St

Figure 2.20. Crockett Elementary School Summary of Proposals

Crockett Street at Crockett Elementary

Traffic calming elements like raised crosswalks can call greater attention to pedestrians crossing the street by creating a raised surface similar to a speed bump. Freshly painted, highly visible crosswalks can further create safer crossing conditions. Bulb-outs, also known as curb extensions or bump-outs, at designated intersections can also contribute to traffic calming, increased safety, and additional space for pedestrians.

- A Accessible sidewalks and curb ramps at all approaches
- B Marked crosswalks at all intersections
- C Striped bulb-outs
- D Extended drop off/pick up lane
- E Painted parallel parking spots
- F Raised intersections

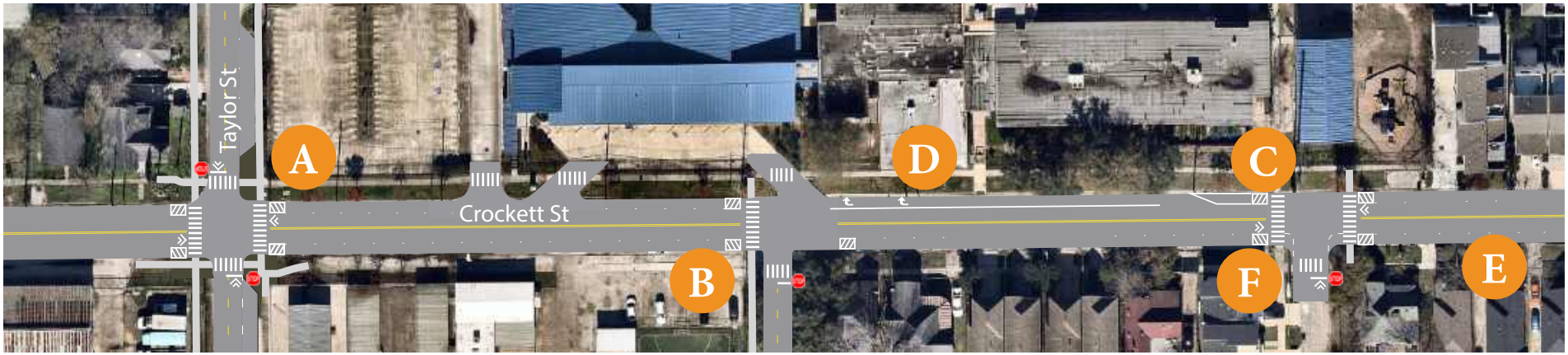


Figure 2.21. Crockett Elementary School - Intersection Curb Extensions and Crosswalks

Crosswalks to Classrooms

In 2023, the Crosswalks to Classrooms project in Tallahassee, FL created asphalt art projects at intersections and crosswalks to improve safety for students and drivers as they travel to and from school. Local artists were paired with students to create visually appealing art to bring attention to drivers to slow down. More than 14 artistic crosswalks were implemented near seven schools, benefiting more than 3,500 school children within 12 months. The corresponding project toolkit for this initiative is a wonderful resource for communities like the First Ward and Crockett Elementary, where a similar project could be successful.

The Crosswalk to Classrooms toolkit can be found online

Note: For vision and concept planning only. Designs subject to change.

Crockett Elementary Artistic Crosswalk

On both Crockett Street and Shearn Street, there are opportunities to add color to the street through asphalt art, whether as part of a decorative crosswalk or to brighten up a bulb-out. Using Crockett Elementary school colors can help signify to drivers that this space is unique and therefore encourage them to slow down in the area. Furthermore, adding artistic colors and imagery to these street changes can strengthen the neighborhood's identity as the First Ward Arts District and be an opportunity for local artists to get involved with these projects.

Colorful crosswalk in front of Crockett Elementary School

Shearn Street School Street

Given its place on the city's High Injury Network and its adjacency to Crockett Elementary School, Shearn Street is a priority corridor for creating a safer mobility network, especially for parents and children during school drop-off and pick-up. Shearn Street, between Hemphill Street and White Street, may be the ideal placement for a neighborhood "School Street" that will prioritize street safety for the children walking and biking to school.

A School Street is a street near a school that is closed to car traffic for certain hours during the school day, particularly during drop-off and pick-up times. School Streets offer many benefits, including: prioritizing street safety for children and encouraging safe and comfortable biking and walking routes; improving the air quality around the school; and creating additional, flexible space for recess or other recreational activities. While a School Street is closed to vehicles during designated hours, it still allows emergency vehicles and residents on the streets the ability to exit and enter. Simple barricades and signage at the start and end of a School Street can be easily adjusted by school staff or volunteers.

There are examples of School Streets from around the nation and world, as schools continue to make efforts to create safe streets and safe routes to school for children. Barricades and signage designating the School Street are some of the only physical tools needed to implement a School Street in a neighborhood.

Note: For vision and concept planning only. Designs subject to change.

Shearn Street School Street

The Shearn Street School Street proposal works in conjunction with other recommended projects for the street and the surrounding area. Students using the School Street need a safe way to arrive and depart. Safe connections to the Spring Street Trail and to neighborhood streets through improved pedestrian and bike infrastructure such as highly visible, raised crosswalks and updated ADA-compliant sidewalks and ramps can strengthen the transportation network around the school. Other improvements, like wayfinding signage and a designated school bus zone, enhance the pedestrian and bike rider experience and contribute to safe infrastructure enhancements.

A safe connection for walkers and bikers between the School Street and the Spring Street Trail includes: high visibility crosswalks on Henderson and Spring and ADA sidewalks and ramps on Henderson Street and both intersecting streets.

Proposed boundaries for the Shearn Street School Street are Hemphill Street on the west to White Street on the east.

Wayfinding signage along Shearn Street can direct students and parents to use Henderson Street to reach the Spring Street Trail.

A designated school bus pick-up and drop-off zone with a curb inset can improve safety and provide additional School Street space by taking the bus off of the street.

Raised intersection crossings on White Street to the east and Taylor Street to the west can signify to drivers to slow down as they approach the school.

Crockett Street

Crockett Street is a Minor Collector street composed of two lanes on its western end and four lanes to the east across Houston Avenue. Though primarily residential, with single-family and townhome housing on its western end and commercial and residential uses on its eastern end, the street is also home to Crockett Elementary School, which sits between Crockett and Shearn Street directly to the east of Sawyer Street. Crockett Street is often used as a through-way for vehicles to get to Sawyer Street and the Sawyer Heights Village Shops. Consequently, traffic can be heavy for a primarily residential area, especially during peak commute hours. As Figure 2.22 shows, this traffic often exceeds the posted speed limit of 30 miles per hour, which can produce dangerous walking, rolling, and biking conditions, particularly for the elementary-aged students frequenting the area.

Crockett Street looking east

Crockett Street looking west

Crockett Street	
Corridor Classification	Minor Collector
Typical ROW	West of Houston Ave: 80' East of Houston Ave: 70'
Average Daily Traffic Volume	5,804 (West of Houston Ave) 8,132 (East of Houston Ave)
Average Daily Volume/ Capacity	15% (West of Houston Ave) 11% (East of Houston Ave)
85th Percentile Speed	35 mph (West of Houston Ave) 37 mph (East of Houston Ave)
Posted Speed Limit	30 mph
Serious Injury Crash Locations	Crockett St & Silver St Crockett St & Houston Ave
Transit Route	None
Sidewalks	Typically present at 4'
Bicycle Facilities	None
Street Parking	Allowed on most blocks
Sidewalk & Ramp Condition	27% of sidewalks, 63% of ramps assessed are inaccessible

Figure 2.22. Crockett Street Key Characteristics

Note: For vision and concept planning only. Designs subject to change.

Crockett Street Corridor Proposals

Proposals for Crockett Street consider two parts of the corridor - the area around Crockett Elementary and to the west of Houston Avenue, as seen in the following pages, and the portion to the east of Houston Avenue, detailed later in this report. Figure 2.23 shows recommendations for the portion of the street west of Houston Avenue, which includes the traffic circle or all-way stop at Silver Street and crosswalks and painted curb extensions at all intersection corners.

- A Accessible sidewalks and curb ramps at all approaches
- B Marked crosswalks at all intersections
- C Striped bulb-outs
- D Traffic circle or all-way stop at Silver Street
- E Painted parallel parking spots

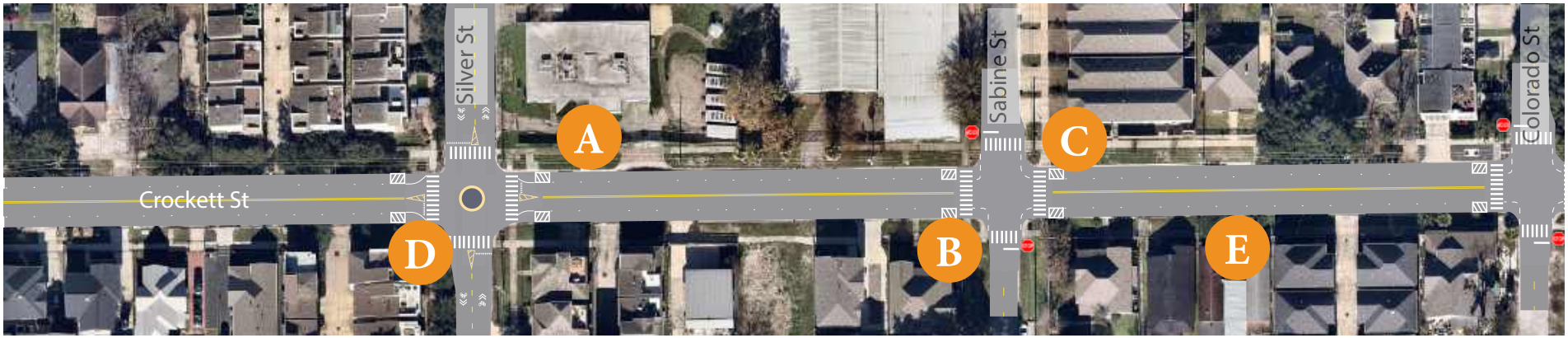


Figure 2.23. Crockett Street Proposed Intersections West of Houston Avenue

Crockett Street (East of Houston Avenue)

Across Houston Avenue to the east, Crockett Street changes from two lanes to four lanes. Although still a primarily residential street to the east of Houston Avenue, the eastern section of Crockett Street is home to several commercial uses, particularly on the corners shared with Houston Avenue. However, this section of the street contains similar challenges as the western section - vehicles traveling above the speed limit - especially as drivers traveling toward Houston Avenue down the Crockett/Hogan bridge over the interstate increase travel speeds. This makes it difficult for those traveling by foot to cross safely over the street from the north to south sections of the neighborhood. Recommendations for the eastern section of Crockett Street include projects that focus on traffic calming and increasing safe crossing opportunities. Figure 2.24 summarizes these proposals.

Crockett Street looking east

Corridor Proposals	
Crockett Street East of Houston Avenue	ADA sidewalks
	ADA ramps
	Bulb-outs at Hickory, Holly and Goliad streets
	Crosswalks at intersections
	Raised intersection at Holly Street
	Marked parallel parking spots

Figure 2.24. Crockett Street East Summary of Proposals

Note: For vision and concept planning only. Designs subject to change.

Crockett Street East of Houston Avenue

East of Houston Avenue, recommendations include crosswalks and striped curb extensions at intersection corners, marked parallel parking spaces, a hashed painted lane east of Holly Street, and a raised intersection at Holly Street and Crockett Street to slow traffic along the corridor and increase safety and mobility for all road users.

A Accessible sidewalks and curb ramps at all approaches

B Marked crosswalks at all intersections

C Striped bulb-outs

D Make on-street parking all day

E Painted parallel parking spots

F Raised intersections

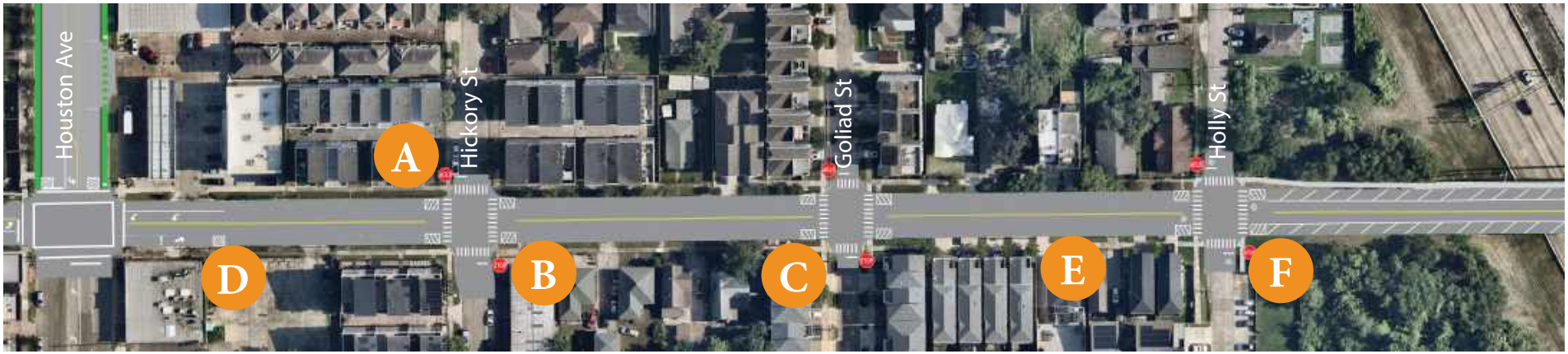


Figure 2.25. Crockett Street East of Houston Avenue

Edwards Street

Edwards Street is a two-lane east/west street containing single-family, multi-family, and townhome housing along with commercial and industrial uses on its western end. Edwards Street is home to popular neighborhood destinations like Momentum Climbing Gym, Sawyer Yards, and a variety of restaurants and retail.

Edwards Street Corridor Proposals

Recommendations for Edwards Street include the installation of a traffic light at the intersection of Edwards Street and Houston Avenue. This addition will provide a signalized crossing for pedestrians across Houston Avenue, where there are currently limited safe crossing options. This will also improve vehicular flow throughout the area by potentially easing the traffic build-up that occurs at Crockett Street during peak hours and re-directing some of that traffic onto Edwards Street.

Corridor Proposals	
Edwards Street	ADA sidewalks
	ADA ramps
	Traffic light at Houston Avenue
	Crosswalks at intersections

Figure 2.26. Edwards Street Summary of Proposals

Edwards Street looking east

Edwards Street	
Corridor Classification	Local
Typical ROW	70’
Average Daily Traffic Volume	No data available
24-Hour Capacity	38,400
85th Percentile Speed	No data available
Posted Speed Limit	30 mph
Serious Injury Crash Locations	N/A
Transit Route	None
Sidewalks	Typically Present at 4’
Bicycle Facilities	None
Street Parking	Allowed on most blocks
Sidewalk and Ramp Condition	18% of sidewalks, 78% of ramps assessed are inaccessible

Figure 2.27. Edwards Street Key Characteristics

Note: For vision and concept planning only. Designs subject to change.

Winter Street

Winter Street is a two-lane east/west street divided by railroad tracks. Along Winter Street, single-family and townhome housing face the railroad with driveways abutting the street. The street provides a connection to Houston Avenue along the railroad.

Winter Street	
Corridor Classification	Local
Typical ROW	70' (includes railroad easement)
Average Daily Traffic Volume	No data available
24-Hour Capacity	N/A
85th Percentile Speed	No data available
Posted Speed Limit	N/A
Serious Injury Crash Locations	None
Transit Route	None
Sidewalks	Varies by block
Bicycle Facilities	None
Street Parking	None
Sidewalk and Ramp Condition	77% of sidewalks, 80% of ramps assessed are inaccessible

Figure 2.28. Winter Street Key Characteristics

Winter Street looking east

Corridor Proposals	
Winter Street	Paved permeable paths along railroad

Figure 2.29. Winter Street Summary of Proposals

Winter Street Permeable Pavement

Proposals for Winter Street focus on creating a more accessible walking, rolling, and biking path alongside the railroad. As it exists today, there are minimal to no sidewalks along Winter Street and anyone walking or rolling down the street is forced into a narrow patch of roadway along the tracks. Space is also limited with the railroad tracks running down the center. It is recommended to install permeable pavement along the entire corridor that can serve residents trying to access their driveways and pedestrians and cyclists wanting a smooth, calm neighborhood street to use. It will look more like an alleyway than a street because there will not be any curbs or sidewalks. The street will be shared among users. There will be signage indicating Winter Street as a shared street and reminding drivers to drive slow and share the road. Adding a smooth paved surface will also provide greater accessibility to vehicles accessing their residential driveways along the street.

The paved surface seen here was installed on the eastern portion of Winter Street, from Houston Avenue to Hickory Street, by Houston Public Works in 2023. This project was installed as part of the city's Green Street Pilot Projects and is a porous, permeable pavement that allows water to seep into the surface, reducing flooding and runoff. It is recommended that this surface treatment be extended to the western section of Winter Street.

Note: For vision and concept planning only. Designs subject to change.


TRAIL
X-ING

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Chapter 3

Strategic Partnership Opportunities

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Strategic Partnership Opportunities

As a Tax Increment Reinvestment Zone, TIRZ 13 cannot solely be responsible for completing recommendations outlined in this report as the Study Area is outside its legal boundaries. However, there are a variety of local, county, and state agencies that can help address mobility related projects and improvements. The following list showcases potential partnership opportunities TIRZ 13 and H-GAC can work with to create long-lasting and impactful recommendations for the community. The following section covers recommendations that would require strategic partnerships to complete.

- City of Houston (Planning & Development and Public Works & Engineering)
- METRO
- Harris County Precinct 1
- Texas Department of Transportation
- Houston Parks Board
- Private Developers

Houston Parks Board

The community has two parks that are important destinations for neighborhood residents: Brock Park and Summer Street Park. Currently, both parks lack safety enhancements for visitors. There are no crosswalks at the park's nearby intersections, no pedestrian-scale lighting, and no wayfinding signage. TIRZ 13 could potentially work together with the Houston Parks Board to help build out the following recommendations supporting local parks.

Crosswalks and Signage

The streets surrounding Brock Park and Summer Street Park can be improved for safer park access. Currently, reaching the parks by foot or by bike is challenging and unsafe. For Summer Street Park, a new all-way stop with crosswalks at Summer Street and Johnson Street would enhance safety for park visitors. Additional yellow pedestrian signage should be placed at Crockett Street before Johnson Street to warn drivers of the increased pedestrian activity walking across the corridor to reach the park. Brock Park is located along Bingham Street, which is a very wide corridor with a few speed humps to help slow drivers down some. Additional yellow pedestrian signs should be installed to inform drivers of upcoming pedestrian activity. Bingham Street at Sabine Street, northwest of the park, should have bulb-outs installed to help narrow turning traffic's turning radius and speed as well as making it safer for pedestrians to cross to the reach the park.

Lighting

Both parks lack adequate pedestrian-scale lighting. TIRZ 13 and Houston Parks Board should identify the best lighting to help make these parks and the sidewalks around the parks brighter. Not only will lighting the parks and the sidewalks make the parks feels safer, it will also bring greater visibility overall.

Wayfinding Signage

The two parks could also serve as destinations beyond just the neighborhood, but the parks can be difficult to discover or find for those who do not reside in the neighborhood. Houston Parks Board and TIRZ 13 should install wayfinding signage between the parks and the Spring Street Trail, which is a main east/west trail in the neighborhood.

Houston METRO

Crockett Street Route 39 Extension

A potential partnership recommendation is to serve Crockett Street with an east/west bus route. The Study Area currently has two north/south bus routes: the 30 Clinton/Ella operating along Taylor Street and Sawyer Street, and 44 Acres Homes operating along Houston Avenue.

This study proposes extending the 39 Katy Freeway route, which currently terminates at Northwest Transit Center (located at IH-10 and IH-610) further east along IH-10 Frontage Road, Summer Street, and Crockett Street into the Near Northside neighborhood terminating at Burnett Transit Center, which is a Red Line Station as well.

This new route would connect residents and workers to the METRORail Red Line, Crockett Elementary School, Target, Kroger, METRO Route 56 Airline/Montrose, Walmart, Northwest TC, and Memorial City.

Memorial City is a large employment center for residents living in the Study Area and the proposed extension of the 39 would provide a one-seat ride to Memorial City. Additionally, it would provide connections to multiple other bus routes at both Northwest TC and Burnett TC increasing the connectivity of the Study Area to METRO's bus route network.

Figure 3.1. METRO Route 39 Proposal

Note: For vision and concept planning only. Designs subject to change.

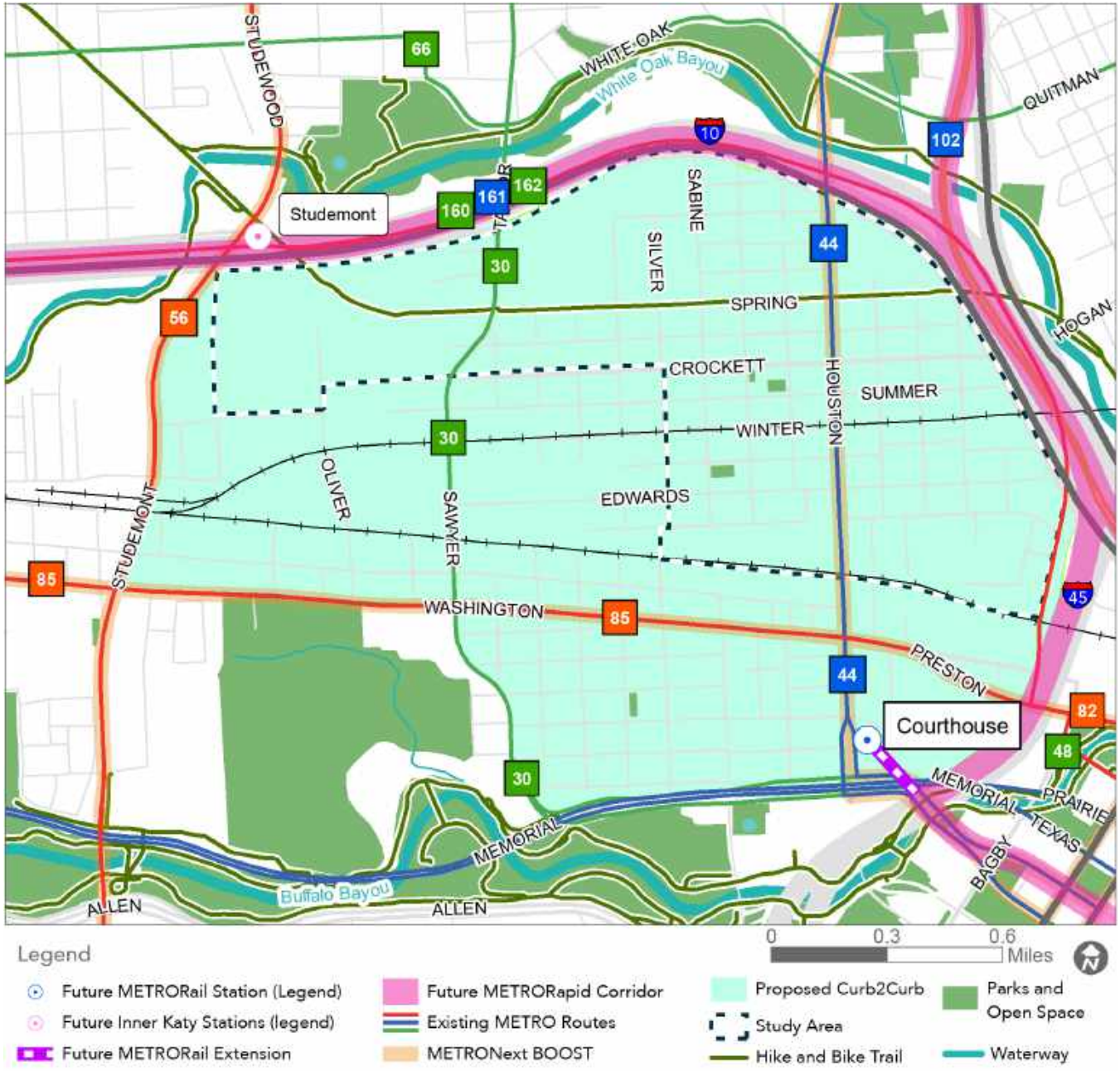

Figure 3.2. METRO Curb2Curb Microtransit Recommendation

Old Sixth Ward Curb2Curb

Another transit recommendation is to partner with METRO to bring a Curb2Curb route to the Study Area. Curb2Curb is Houston METRO's version of microtransit. This form of transit is not a fixed-route bus line, but a zone where riders can request to be picked up at their doorstop and dropped off at their final destination within the zone. The zone is shown in light green on the map.

This proposed zone would connect the community with the proposed Inner Katy BRT Station* at Studemont Street, Buffalo Bayou Hike and Bike Trail, METRO Route 85 Washington, Amtrak Station, and all of the commercial shops and businesses in the Study Area.

Support METRO's Existing Service

The TIRZ and METRO can work together to continue to increase service, especially peak service on both the 30 Clinton/ Ella and 44 Acres Homes, which have not been fully restored to pre-pandemic peak frequency. Additionally, TIRZ 13 can help support METRO with their BOOST enhancements along the 56 Airline/ Montrose and 85 Antoine/Washington routes. BOOST provides a better ride for riders by building new bus stops with shelters and lighting, new sidewalks to the bus stops, and traffic signal improvements to improve bus reliability.

*Although Inner Katy BRT station locations have been determined, recent updates from METRO (FY 2025 Budget) point to possible project changes which might impact station locations. Proposed Curb2Curb anchor point could be changed if station location is changed or elliminated.

TxDOT Trail Connections

As part of the IH-10 Elevation Project, TxDOT is constructing a new hike and bike trail on the south side of White Oak Bayou. This proposed trail currently has two connection points planned at Sabine Street and at Taylor Street. These new connections can provide great access to the new trail from the Study Area. At the moment, there are no plans from TxDOT to build anything off-system, like on Taylor Street or Sabine Street. This can pose a connectivity issue as Taylor Street just has sidewalks and Sabine Street lacks sidewalks. This means that pedestrians and cyclists who want to reach the new trail would have to do so on low-comfort sidewalks or in the road.

This report recommends TxDOT and TIRZ 13 to work together on building out two trail connections on Taylor and Sabine Streets, which are shown in yellow on the map below. This would allow trail users along Spring Street Trail and residents and workers in the Study Area to have a high-comfort safe connection to the new TxDOT trail. Taylor Street does have enough room for an 8-10' shared-use trail, while Sabine Street would be able to accommodate new sidewalks and bikeway wayfinding signage.

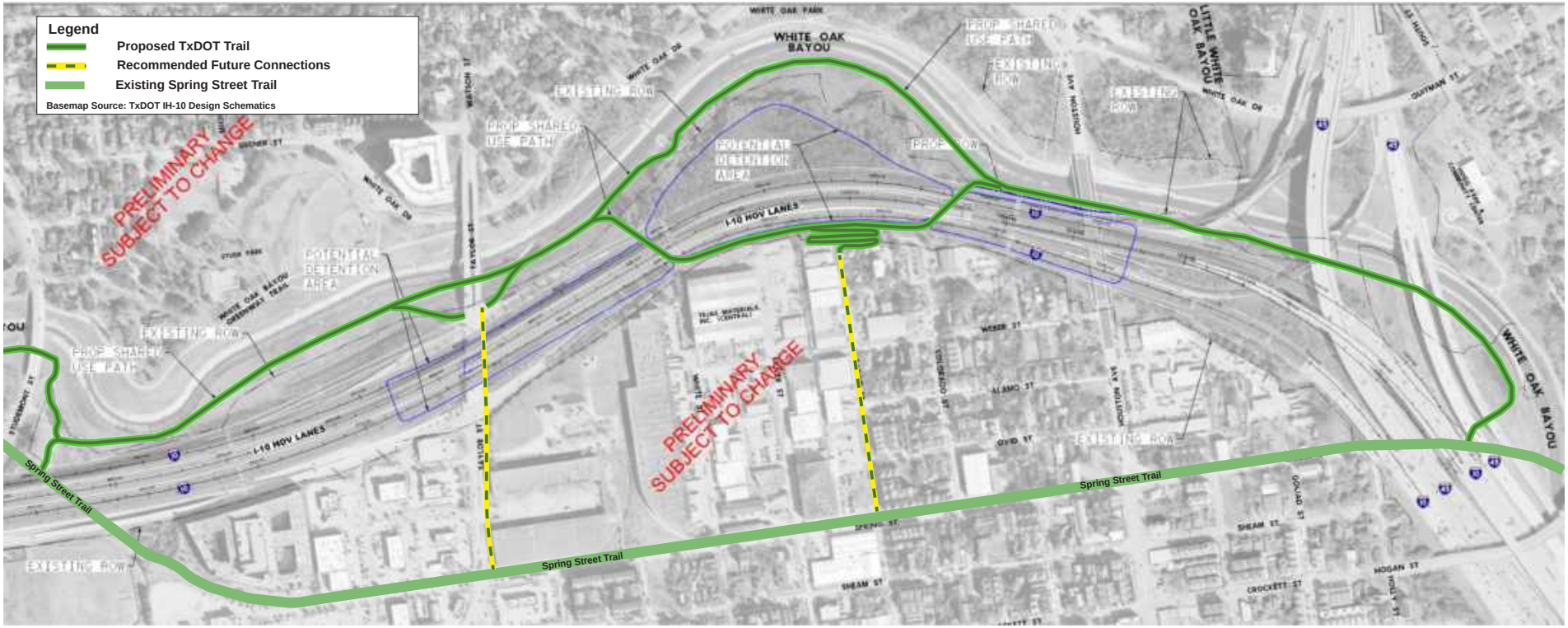

Figure 3.3. TxDOT Trail Connections

Note: For vision and concept planning only. Designs subject to change.

Sidewalk Prioritization Program

Much of the Study Area has a walkable street grid that, paired with recent investments, has created a fairly high level of walkability, primarily around Crockett Street and Spring Street. Unfortunately, reaching these popular pedestrian corridors can be a challenge. The Project Team conducted a sidewalk assessment of every property's sidewalk in the entire Study Area. The assessment results are shown in Figure 3.4. Through this assessment, it was determined that over half of all sidewalks (54%) are inaccessible or completely missing. Sidewalks are also top of mind for residents and business owners as sidewalk connectivity were popular comments during public engagement. The following prioritization is recommended for improving sidewalks in the Study Area.

Priority Corridors - Inaccessible sidewalks along the eight priority corridors should be improved first. Through the assessment, there are around 15,400 feet of sidewalk that needs to be built/rebuilt along these corridors.

Adjacent to Crockett Elementary - Inaccessible sidewalks should also be high on the sidewalk prioritization program. These corridors include Taylor Street, Hemphill Street, and Henderson Street.

Adjacent to Spring Street Trail and Parks - Inaccessible sidewalks on adjacent streets leading to the trail should also be prioritized. This includes corridors like Sabine Street, Johnson Street, Hickory Street, and Goliad Street. Additionally, streets like Summer Street and Bingham Street, which surround the two neighborhood parks, Summer Street Park and Brock Park, should also be prioritized.

Adjacent to Community Destinations - Inaccessible sidewalks along corridors near community destinations pinned on the map should also be prioritized. This includes Summer Street to the Target, streets around Impact Church, and streets around the artist lofts and Ecclesia Church.

Adjacent to Houston METRO Bus Routes - Inaccessible sidewalks on adjacent streets that connect to corridors with METRO bus routes: Taylor Street/Sawyer Street for the 30 Clinton/Ella, and Houston Avenue for the 44 Acres Homes. Sidewalks along corridors like Ovid Street and Alamo Street would ensure METRO riders have a safe walking route to their stop.

Along Truck Routes - Inaccessible sidewalks along truck routes in the northern section of the Study Area should also be prioritized. Accessible sidewalks along White Street, Silver Street, and Weber Street would help separate pedestrians and heavy truck traffic enhancing safety and mobility in the area.

Inaccessible Sidewalk

Missing Sidewalk

Inaccessible Ramp

Missing Ramp

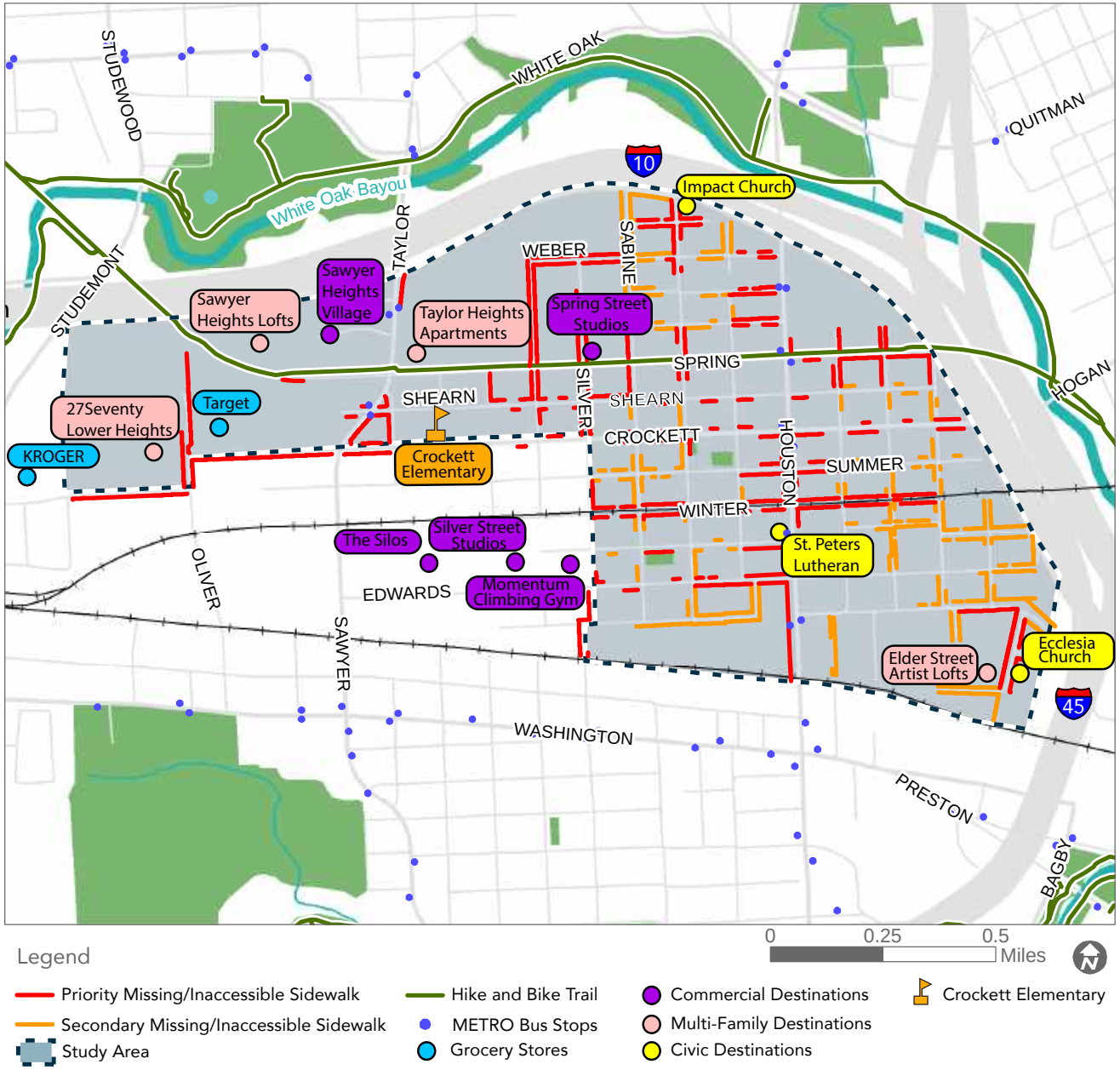

Figure 3.4. Sidewalk Prioritization Program

Note: For vision and concept planning only. Designs subject to change.

Chapter 4

Implementation & Funding Action Plan

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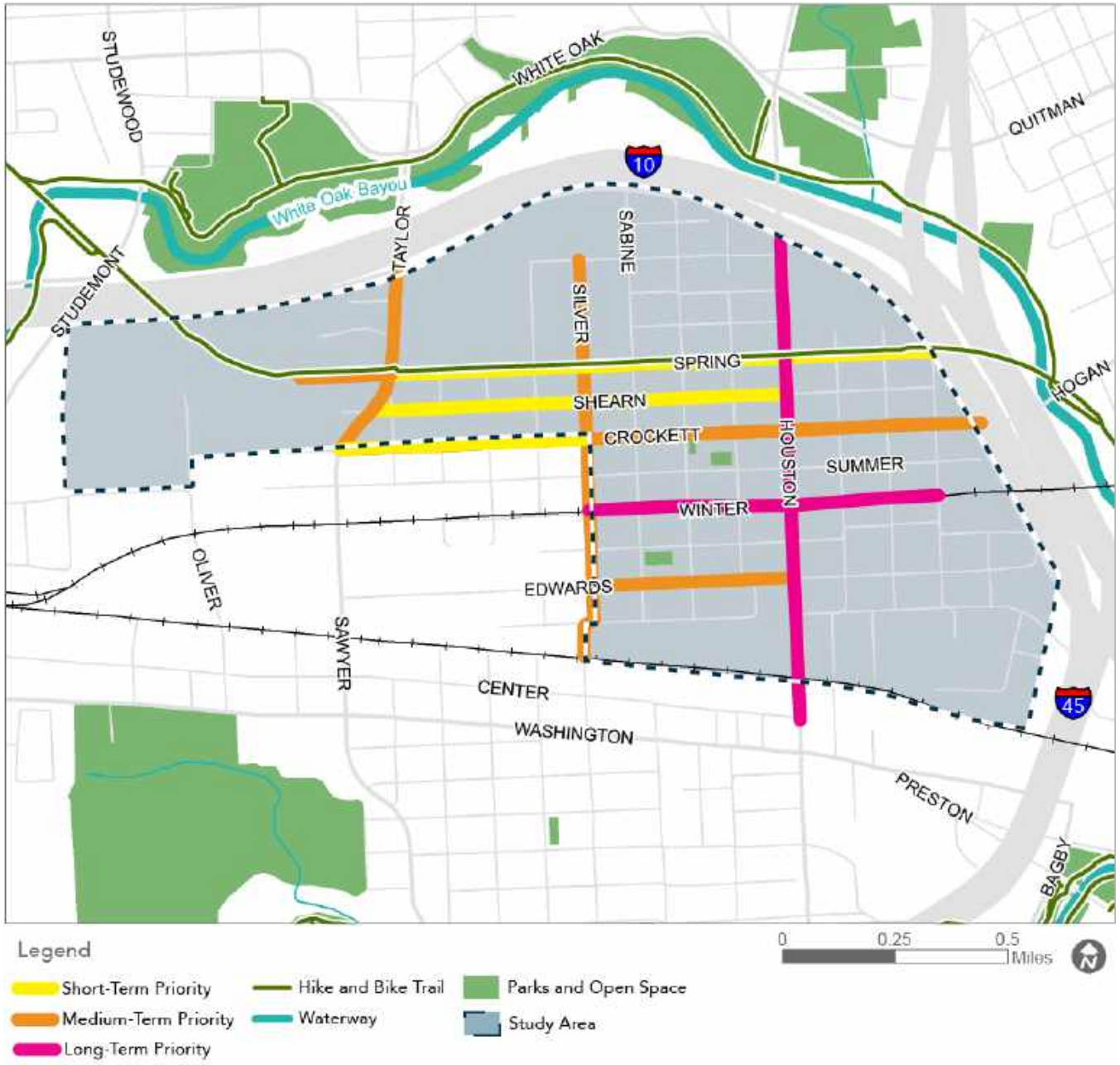

Figure 4.1. Tiered Implementation of Priority Corridors

Introduction

The Study Area is located within Houston's First Ward just outside the Old Sixth Ward/ TIRZ 13 boundaries. As such, the First Ward does not have a special district such as a TIRZ or management district that can lead and implement capital improvement projects. Any project recommendation from this planning effort must be led in coordination with the City of Houston, at minimum, with opportunities for multiple implementation partners. The First Ward Civic Club, Arts District Houston (the local arts district), and people within the Study Area neighborhood are civically engaged with a deep interest in making the neighborhood safer and more walkable, supporting healthy active lifestyles and quality of life.

Through three steering committee meetings and two public meetings with online engagement opportunities, the recommendations from this plan have been presented and vetted by agency professionals and the locals who live, work, and play in the Study Area. Any projects that move forward with implementation must have a lead agency with the understanding that the project has local support and potential community champions.

Approach to Implementation

The implementation approach includes corridor-based project recommendations and some overarching programmatic capital improvements such as sidewalk improvements throughout the Study Area. Implementation will be dependent upon feasibility as it relates to the level of effort and a clear lead implementation entity. The priority corridors in Figure 4.1 on the previous page illustrate the tiered implementation approach with yellow (short-term), orange (medium-term), and pink (long-term). The timing considerations are based on ease of implementation from corridor enhancements like paint, signage, lighting, and sidewalks (short and medium-term) to full corridor reconstruction projects (more long-term).

The tiered projects are presented on the following pages in a table with a reference to the project recommendations in Chapter 2. The implementation tables also include the level of effort, potential implementation partners, community champions, potential funding sources, and project benefits. Project benefits can support validation for a potential funding source (likely leverage local dollars with grant opportunities). Benefits may include, but are not limited to:

- Safety enhancements for all transportation modes
- Safe routes to schools
- Transit safety and transit access improvements
- Landscaping to help reduce urban heat island effect and provide shade
- Access management
- Park/open space activation
- Drainage
- Regional trail access
- Support for healthy, active communities
- ADA compliance
- Reconnecting communities across barriers
- Health
- Economic development

Figure 4.2. First Ward National Night Out Pop-Up Participants October 1, 2024

Note: For vision and concept planning only. Designs subject to change.

Short-Term Implementation

The short-term projects presented below address school and trail safety enhancements including crosswalks (paint), sidewalks (where none exist or will upgrade to current ADA/city standards), lighting, landscaping, and improvements to support safer speeds near the school and trail. Detailed cost estimates were not created for all project recommendations at this planning stage, but an estimate illustrating relative cost is provided with one, two, three, and four dollar signs with one "$" representing the lowest cost efforts and four "$$$$" representing the most costly recommendations (see page 75).

Project	Report Page Reference	Cost Estimate*	Potential Implementation Partners	Potential Community Champions	Potential Funding Sources	Project Benefits
Spring Street Corridor Improvements	pgs 27-30	$$	TIRZ 13, TIRZ 5, City of Houston, Harris County Precinct 1	First Ward Civic Club Arts District Houston Crockett Elementary School Bike Houston	Safe Routes to School; TxDOT Transportation Alternatives Set Aside; CIP (TIRZ, City of Houston, or Harris County); Council District Funds; Transportation Improvement Program (TIP); Trees for Houston	Regional trail access to destinations and walk/bike access across major barriers such as highways and bayous Safety enhancements for vulnerable roadway users Supports healthy, active communities Landscaping to lessen urban heat island effect and provide shade
Shearn Street Corridor and School Street	pgs 34-37	$	TIRZ 13, Harris County Precinct 1, City of Houston, HISD	First Ward Civic Club Arts District Houston Crockett Elementary School	Safe Routes to School; TxDOT Transportation Alternatives Set Aside; CIP (TIRZ or City of Houston); Council District Funds; Transportation Improvement Program (TIP)	Supports safe routes to school Safety enhancements for vulnerable roadway users ADA compliance
Crockett Street at Crockett Elementary	pgs 40-43	$	TIRZ 13, Harris County Precinct 1, City of Houston, HISD	First Ward Civic Club Arts District Houston Crockett Elementary School	Safe Routes to School; TxDOT Transportation Alternatives Set Aside; CIP (TIRZ or City of Houston); Council District Funds; TIP; Private funds or community art-related grants	Supports safe school routes to school Safety enhancements for vulnerable roadway users ADA compliance Dedicated school drop-off/ pick-up zone (lane)

Medium-Term Implementation

The medium-term projects presented below are more complex than the short-term projects with not only sidewalk upgrades, but access management treatments with curb work, signal updates (including a new signal at Edwards Street), parklet creation (Taylor/Sawyer Street), and landscaping.

Project	Report Page Reference	Cost Estimate*	Potential Implementation Partners	Potential Community Champions	Potential Funding Sources	Project Benefits
Silver Street Corridor	pgs 24-26	$$	TIRZ 13, TIRZ 5, City of Houston, Harris County Precinct 1	First Ward Civic Club Arts District Houston Old Sixth Ward Neighborhood Association	CIP, TxDOT Transportation Alternatives Set Aside, Transportation Improvement Program (TIP)	North-South regional active transportation spine connecting Buffalo Bayou and Spring Street Trails Safety enhancements at intersections ADA compliance
Taylor/Sawyer Street	pgs 31-33	$$$	TIRZ 13, TIRZ 5, METRO, TxDOT, City of Houston, Harris County Precinct 1	First Ward Civic Club Arts District Houston Crockett Elementary School	CIP (TIRZ or City of Houston); Texas Parks and Wildlife - Local Parks Grant; Harris County Precinct 1; Council District Funds; Transportation Improvement Program (TIP); Safe Routes to School	Access management Safety for all roadway users Parks and open space creation Landscaping to lessen urban heat island effect and provide shade ADA compliance
Crockett Street Corridor East of Silver Street through East Side of Houston Ave	pgs 38-39	$$	TIRZ 13, METRO, City of Houston, Harris County Precinct 1	First Ward Civic Club Arts District Houston Crockett Elementary School	CIP (TIRZ or City of Houston); Council District Funds; Safe Routes to School; Transportation Improvement Program (TIP)	Safety enhancements Signal updates Formalize parallel parking ADA compliance
Edwards Street Corridor	pg 48	$$$	TIRZ 13, City of Houston, Harris County Precinct 1	First Ward Civic Club Arts District Houston	TxDOT Highway Safety Improvement Program (HSIP) for intersection enhancements, Transportation Improvement Program (TIP)	Safety enhancements New traffic signal ADA compliance

Note: For vision and concept planning only. Designs subject to change.

Long-Term Implementation

The long-term projects include the entire Houston Avenue corridor reconstruction from IH-10 to Center Street, which would entail numerous multimodal enhancements including curb work, potential drainage, and coordination with businesses up and down the corridor. TxDOT will be improving the bridge across IH-10 along Houston Avenue in the next three years including bridge elevation and bikeway and sidewalk improvements. Initiating the Houston Avenue corridor reconstruction during and directly after the TxDOT project would provide an interconnected corridor that supports safe walking, biking, driving, and transit use, supporting the corridor's businesses and economic development. The biggest hurdles will be funding and an implementation agency lead to initiate design and construction. The Winter Street enhancements could be done at any point, but is not as much of a priority project as the other recommendations in the short-term and medium-term horizons.

Project	Report Page Reference	Cost Estimate*	Potential Implementation Partners	Potential Community Champions	Potential Funding Sources	Project Benefits
Houston Avenue Corridor Reconstruction	pgs 17-23	$$$$	TIRZ 13, METRO, City of Houston, Harris County Precinct 1	First Ward Civic Club Arts District Houston Local businesses Bike Houston LINK Houston	Federal grants (supporting major corridor reconstruction, safety enhancements for all roadway users); METRO BOOST corridor; TxDOT Transportation Alternatives Set Aside; CIP (TIRZ or City of Houston); Council District Funds; Transportation Improvement Program (TIP)	Safety for all roadway users Supports healthy, active communities Landscaping to lessen urban heat island effect and provide shade Transit access ADA compliance Key connection into downtown Houston for all modes Drainage
Winter Street Enhancements	pgs 49-50	$$	TIRZ 13, City of Houston, Harris County Precinct 1	First Ward Civic Club Arts District Houston	CIP (TIRZ or City of Houston); Council District Funds; Transportation Improvement Program (TIP)	Permeable path supporting drainage and walkability of shared use narrow corridor

*Cost Estimate refers to a very high-level estimate of the scale and cost of the improvements for each corridor. Further feasibility analysis will need to be performed with detailed cost estimates to provide a more accurate design, engineering, and construction level of effort. Assumptions:

- $ assumes $500,000 to $1,000,000
- $$ assumes $1,000,000 to $3,000,000
- $$$ assumes $3,000,000 to $5,000,000
- $$$$ assumes greater than $5,000,000

Sidewalk Program

Each Priority Corridor identified in the plan have sidewalk improvements plus other capital enhancements. Chapter 3, page 67 introduces the logic behind the sidewalk prioritization program.

The Sidewalk Program recommendation is an approach to improve sidewalks and curb ramps that could be implemented over time, focusing on walkability and completing the sidewalk network based on needs shown in the map in Figure 4.4. The table below presents high-level cost estimates for improvements to the Priority Corridor sidewalks and an estimate for all other residential corridors not defined as a Priority Corridor in the plan. The sidewalk network could be coordinated or led by TIRZ 13, TIRZ 5, or another entity.

Corridor Name	Sidewalks + Curb Ramps Cost Estimate
Winter Street	$755,000
Edwards Street	$478,000
Crockett Street	$834,000
Shearn Street	$499,000
Taylor/SawyerStreet	$225,000
Spring Street	$324,000
Silver Street	$581,000
Houston Avenue	$2,022,000
All other residential corridors	$6,628,000

Figure 4.3. Key Corridor Sidewalk and Curb Ramp Cost Estimates

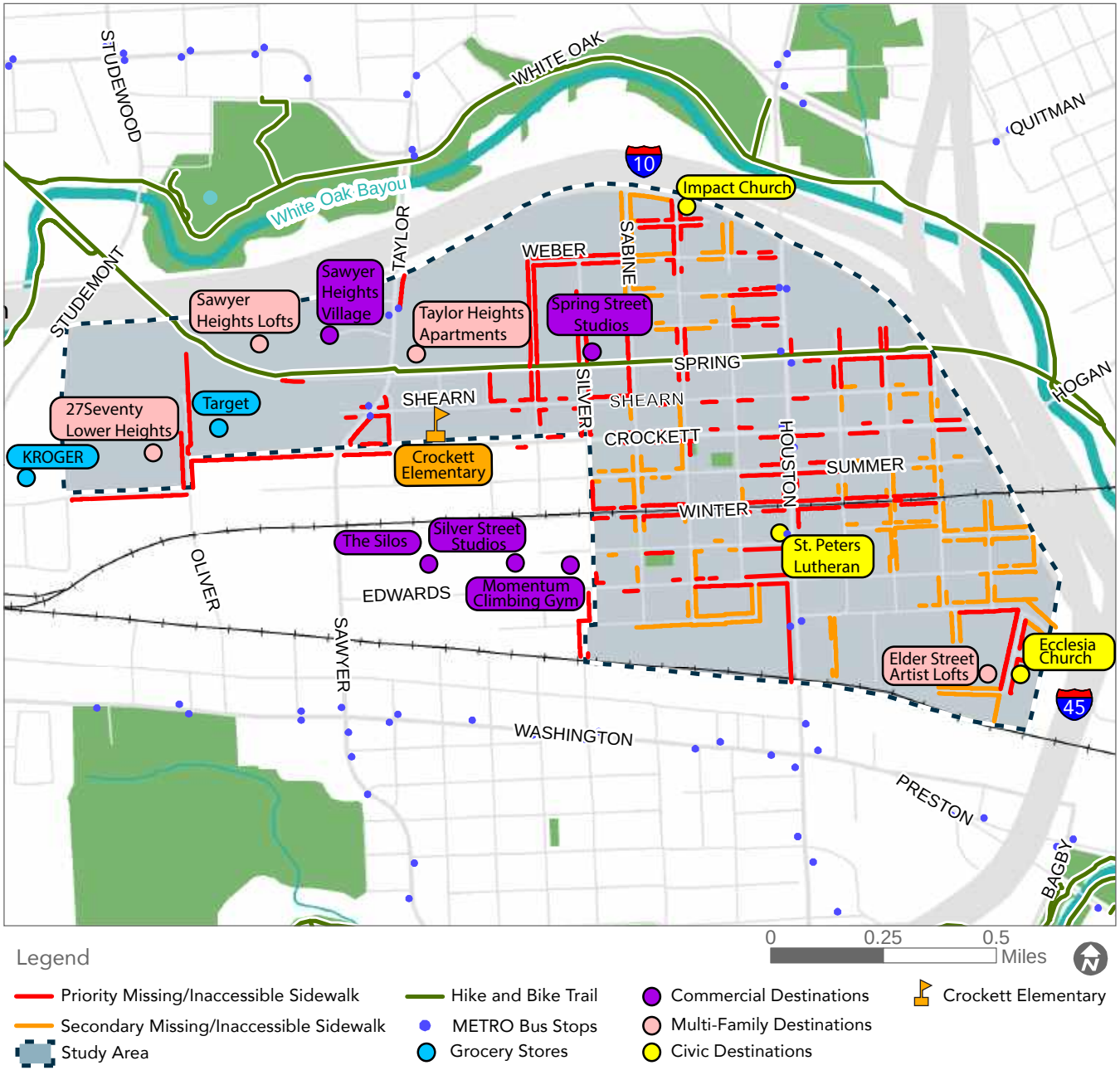

Figure 4.4. Sidewalk Prioritization Program

Note: For vision and concept planning only. Designs subject to change.

Conclusion

The First Ward community proactively participated at both public engagement opportunities during the mobility planning effort. Community members have expressed the desire for corridor improvements that provide safe places for people to walk, roll, bike, take transit, or drive to and from their homes to local destinations. The recommendations created were crafted with the community members front of mind, understanding each person or family have unique mobility challenges yet can all agree that improvements are necessary to support this community's safety and overall quality of life.

The Study Area is not located within a TIRZ or management district, and therefore project implementation will not necessarily have a clear project lead to take on funding, design, and construction of the projects. As TIRZ 13 is directly adjacent to the Study Area and this effort is the Phase II Mobility Plan building upon the Old Sixth Ward/TIRZ 13 Mobility Plan completed in 2021, there are opportunities to leverage the adjacent TIRZs 5 and 13. Coordinated project implementation can support the goals of these two TIRZs while supporting safety and mobility for people in the First Ward.

The Old Sixth Ward|TIRZ 13 Phase II Mobility Plan presents recommendations that can be considered for implementation over short, medium, and long-term planning horizons and will need project leads, community champions, funding, and cross-agency coordination.

Figure 4.5. Public Pop-Up Meeting at Sawyer Yards April 20, 2024

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Note: For vision and concept planning only. Designs subject to change.

Appendix

A

Old Sixth Ward/TIRZ 13 Phase II Mobility Plan

2024

Fact Book

Table of Contents

Overview

The Fact Book provides maps, data, and photos that detail the current demographics and transportation characteristics in and around the Study Area that will inform recommendations in the Phase II Mobility Plan. This document will be an Appendix included in the Final Report of the Old Sixth Ward/TIRZ 13 Phase II Mobility Plan.

In addition to the existing demographic and transportation-related characteristics, an existing sidewalk and ramp assessment was performed that illustrates general sidewalk and walkabililty conditions in the Study Area. This inventory of sidewalk conditions will help inform recommendations that support a network of safe, walkable corridors and neighborhoods.

Old Sixth Ward TIRZ 13 Phase II Study Area

The City of Houston's Old Sixth Ward Tax Increment Reinvestment Zone 13 (TIRZ 13) was established in 1998 and contains the boundaries of the City's Old Sixth Ward. TIRZ 13 works to improve the neighborhood through the financing of public improvement projects and helps ensure that community input guides investment decisions.

In 2021, TIRZ 13 completed a Phase I Mobility Plan that identified mobility and safety projects specifically within the TIRZ 13 boundary. Realizing the potential of extending the Study Area beyond the TIRZ boundaries, TIRZ 13 and the Houston-Galveston Area Council partnered to develop a "Phase II Mobility Plan". The Phase II effort expands upon the original boundaries into the City of Houston's First Ward community and will identify projects that support safe options for people to walk, roll, bike, take transit, and/or drive.

Figure A.1 shows the Phase II Study Area and the previous Study Area from Phase I. The Phase II Study Area includes:

- The area north of Phase I, bounded by IH-10 to the north, IH-45 to the east, the railroad north of Center Street to the south, and just east of Studemont Street to the west.
- The Spring Street/MKT Hike and Bike Trail between Studemont Street and IH-10.

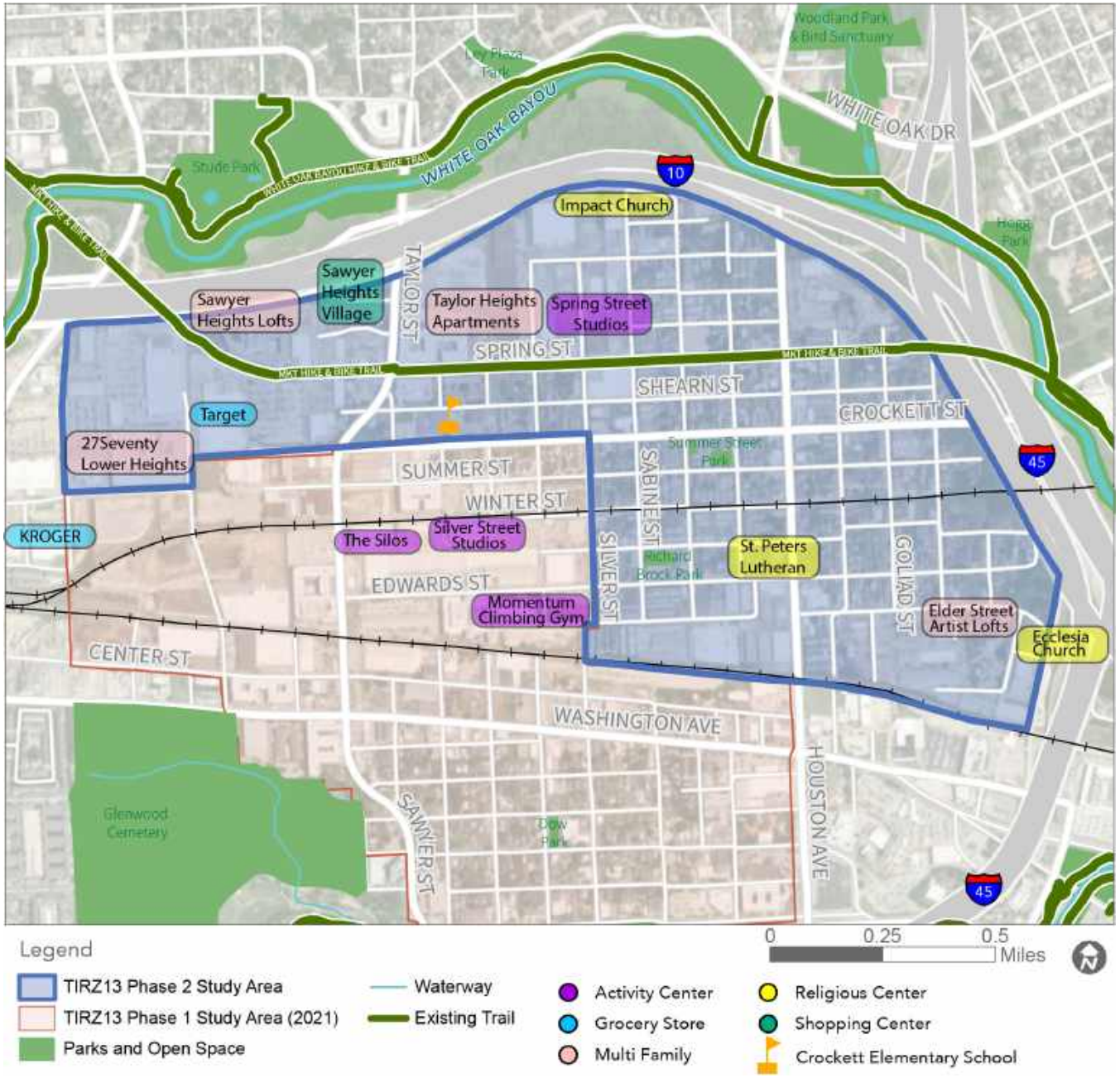


Figure A.1. Old Sixth Ward Mobility Plan Phase II Study Area
Source: City of Houston

Local Context

Nearby TIRZs

In addition to TIRZ 13, there are three adjacent TIRZs near the Phase II Study Area. The TIRZs shown in Figure A.2 fund capital and mobility improvements within their boundaries, which can complement capital investments by TIRZ 13, extending into this Study Area. The adjacent TIRZs are included on the map and listed with key geographic features below:

TIRZ 5 (Memorial Heights Redevelopment Authority):

- Washington Avenue west of Washington Cemetery
- Studemont Street
- Heights-MKT Hike & Bike Trail, a shared-use path connecting to the Heights and Downtown

TIRZ 21 (Hardy/Near Northside):

- Quitman Street east of IH-45
- MKT Trail and White Oak Bayou Greenway east of IH-45

TIRZ 3 (Market Square):

- Buffalo Bayou Park
- Memorial Drive
- Washington Avenue east of Houston Avenue
- Houston Avenue south of the Union Pacific passenger rail line

The Study Area is located within Harris County Precinct 1 and adjacent to Precinct 2. TIRZs and Harris County Precincts, along with other local government entities can partner to implement projects serving regional mobility needs.

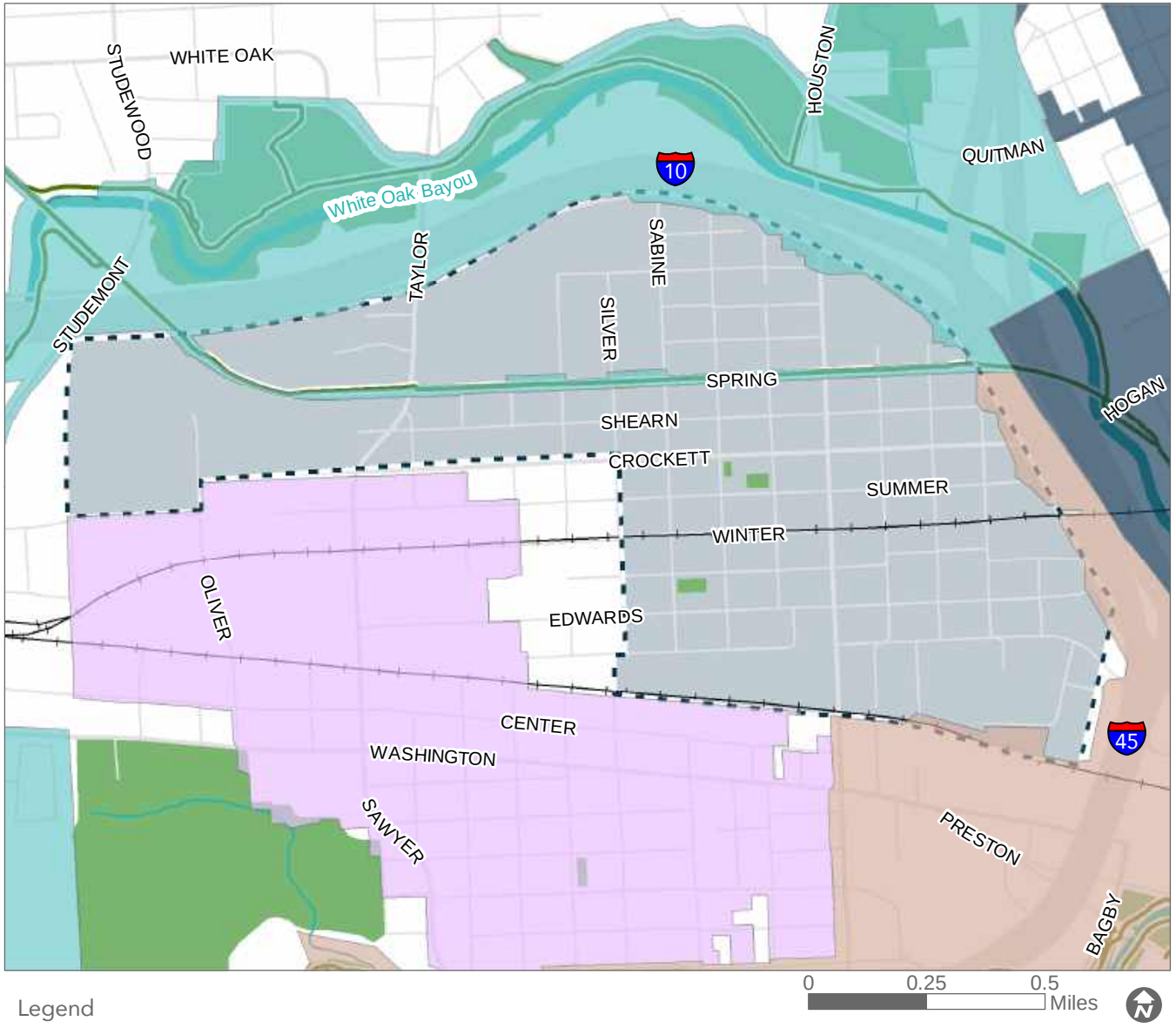


Figure A.2. Surrounding TIRZs
Source: City of Houston, Harris County

Local Agency Plans, Projects, and Future Projects

Figures A.3 and A.4 on the following pages illustrate existing and programmed mobility-related projects led by partnering organizations and entities both in and around the Study Area. These projects provide future multimodal connections that will enable safer, more efficient mobility connections to surrounding neighborhoods. Although this list of projects support and intersect the Study Area, there are still multimodal network gaps in the core of the Study Area, connecting the area west of Studemont Street, and connecting south of IH-10. This list of current and future projects provides opportunities to assess where gaps exist in the Study Area's mobility network and how this plan can address these.

The following list of projects was collected through a review of existing plans and studies completed by local agencies and capital project lists. The list was also created in coordination with a steering committee supporting this mobility effort, comprised of agency representatives from TxDOT, City of Houston, Harris County, H-GAC, TIRZ 13, and METRO. The timing of the projects listed is acknowledged as either a "future" project or an "existing project" based on knowledge of project timing at the time this report was written.

North Houston Highway Improvement Project (TxDOT) (Future)

- Letter A on Figure A.3: Reconstruction of IH-45 North, between downtown Houston and Beltway 8 (CSJ ID 0500-03-599)(MPOID 16328); (CSJ ID 0500-03-560)(MPOID 16332)

IH-10 White Oak Bayou Resiliency Project (TxDOT) - includes Sabine Street/White Oak Bayou Trail Connection (Future)

- Letter B on Figure A.3: Reconstruction of existing main lanes from IH-45 to Heights Boulevard and reconstruction of existing HOV lanes from IH-45 to Studemont Street to raise the roadway above the floodplain and construct a new shared-use path along White Oak Bayou (CSJ ID 0271-07-326)(MPOID 18709)
- Reconfiguration of the roadway to construct elevated managed lanes down the center of the freeway from Voss Road to Downtown (CSJ ID 0271-07-327)

Quitman Street (Greater Northside Management District) (Current)

- Number 1 on Figure A.3: Bicycle and pedestrian improvements from Houston Avenue to Elysian Street, including new six-foot sidewalks, pedestrian lighting, ramps and crosswalks, and landscaping

Silver Street (TIRZ 13) (Current)

- Number 2 on Figure A.3: Traffic signal installation and crosswalk and pedestrian ramp improvements at the intersection of Washington Avenue and Silver Street
- Crosswalk and pedestrian ramp improvements at Silver Street and Memorial Way

Sawyer Street (TIRZ 13) (Future)

- Number 3 on Figure A.3: Ten-foot wide multi-use concrete sidewalk with new signing and striping
- 14-inch bike lane curbs, raised crosswalks, and wheelchair ramp improvements

Edwards Street (TIRZ 13) (Future)

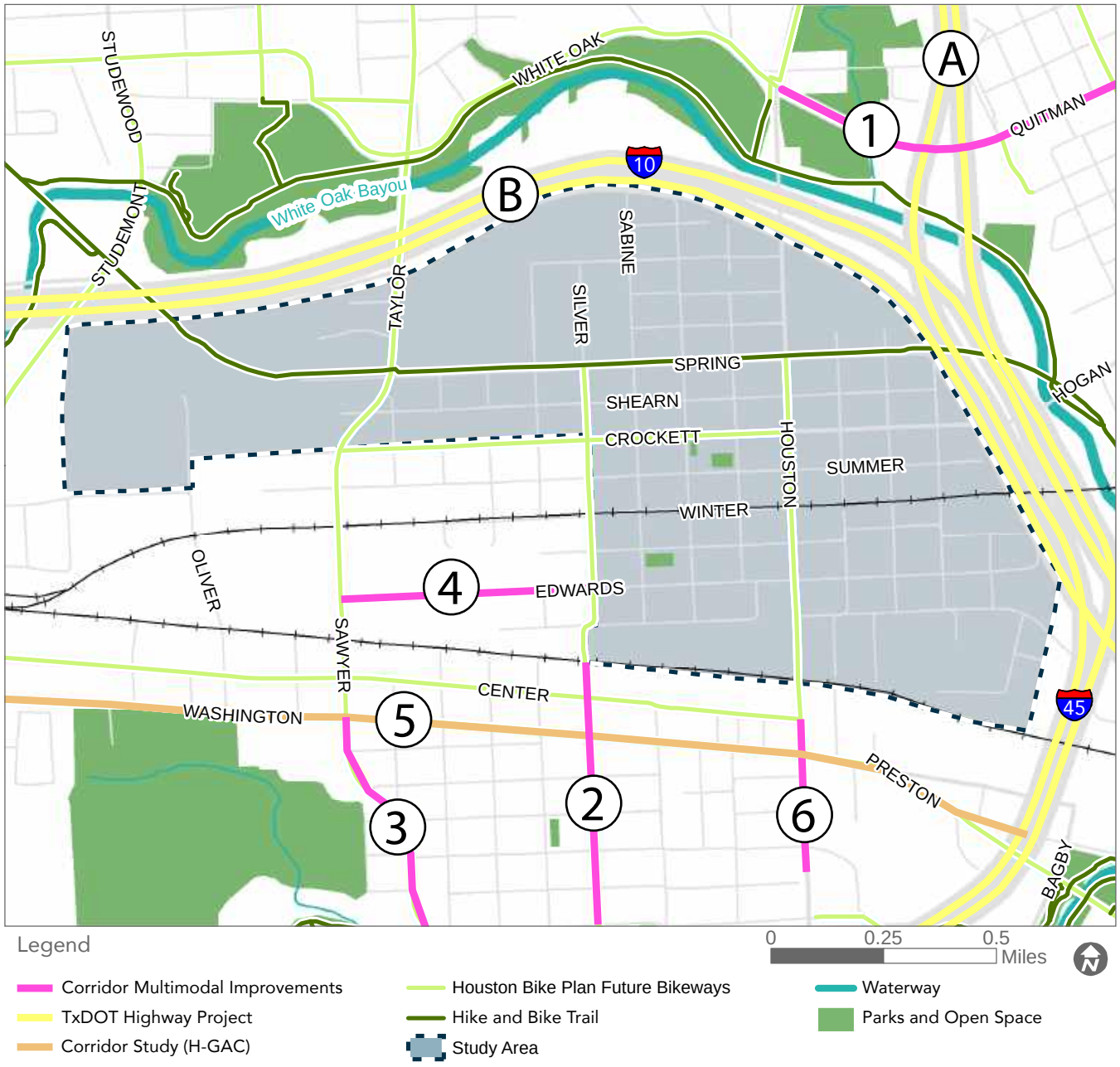
- Number 4 on Figure A.3: 14-inch bike lane curbs, raised crosswalks, and wheelchair ramp improvements with new signing and striping

Washington Avenue (H-GAC) (Current)

- Number 5 on Figure A.3: The Washington Avenue Corridor Study began in late Fall 2023 and will continue into and wrap up in 2025

Houston Avenue Multimodal Improvements (Current)

- Number 6 on Figure A.3: Ongoing construction project from Washington Avenue to Lubbock Street



A North Houston Highway Improvement Project

B TxDOT Sabine Street/White Oak Bayou Trail Connection

1 Quitman Street Multimodal Project

2 Silver Street Traffic Signal and Pedestrian Improvements

3 Sawyer Street Bike and Pedestrian Improvements (potential future)

4 Edwards Street Bike and Pedestrian Improvements (potential future)

5 Washington Avenue Corridor Study

6 Houston Avenue Multimodal Improvements

Figure A.3. Existing and Future Area Plans and Projects
Source: TxDOT, TIRZ 13, Greater Northside Management District, H-GAC, City of Houston

City of Houston Bike Plan (Current and Future)

- Multiple proposed and programmed dedicated on-street and shared on-street bike lanes on major streets in the Study Area

METRORapid Inner Katy Corridor Project (Future)

- A new METRORapid line with stations at Studemont Street and IH-10, Franklin Street and Bagby Street
- Exclusive lanes for Regional Express buses using IH-10 West and Hwy 290 NW

METRO BOOST (Future)

- Upgrades to two Study Area bus routes, including Route 44 Acres Homes and Route 85 Antoine/ Washington

METRORail (Future)

- Extensions of the Green and Purple lines to the City of Houston Municipal Courthouse, located just southeast of the Study Area

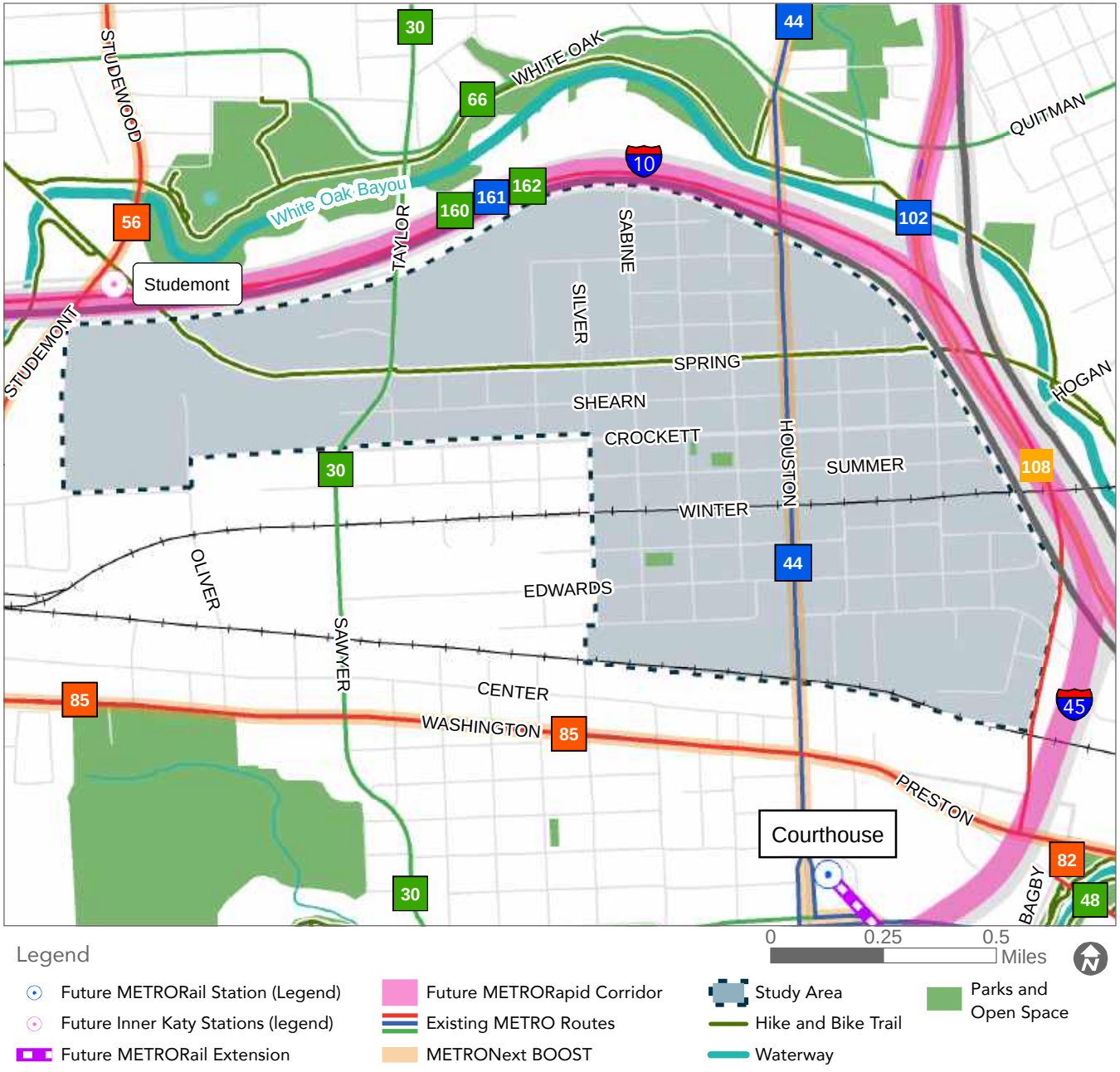


Figure A.4. Future METRO Projects
Source: METRO

Historic First Ward

Within the Phase II Mobility Plan boundaries is Houston's historic First Ward neighborhood. This neighborhood is bounded by Washington Avenue to the south, IH-10 to the north, IH-45 to the east and Sawyer Street to the west. The First Ward was founded in the 1800s and served as a major artery for the shipment of goods in the city. This fostered a warehouse district where goods were distributed for sale in mercantile establishments in town or for shipment down the bayou. The neighborhood soon became known as a typical working-man's community, where First Ward residences became a popular choice for those engaged in commerce or employed in service-oriented jobs.

The railroad lines that traverse across the neighborhood serve as a reminder of the neighborhood's history; many residents worked for the railroad industry in its prime. Rail lines like the Houston and Texas Central Line and the Southern Pacific gave rise to railroad shops and a grand railroad depot built on Washington Avenue in 1887.[1]

In addition to the railroads, the existing Queen Anne cottages and Craftsmen bungalows built between 1890 and 1930 serve as reminders of the First Ward's Historic District image.

Today, a blossoming arts scene gives the neighborhood an artistic and creative identity. Historic homes are mixed with newer developments like townhomes and many of the warehouses once part of the First Ward's warehouse district have been adaptively reused into studios and businesses for local artists. In 2014, the City of Houston designated a portion of the neighborhood referred to as the "High First Ward" as a Historic District, as seen in the images to the right.[2]

Restored Historic Home in High First Ward Designation

Source: Houston Public Media

High First Ward Historic District Map

1 First Ward Civic Council

2 City of Houston Historic Preservation Manual

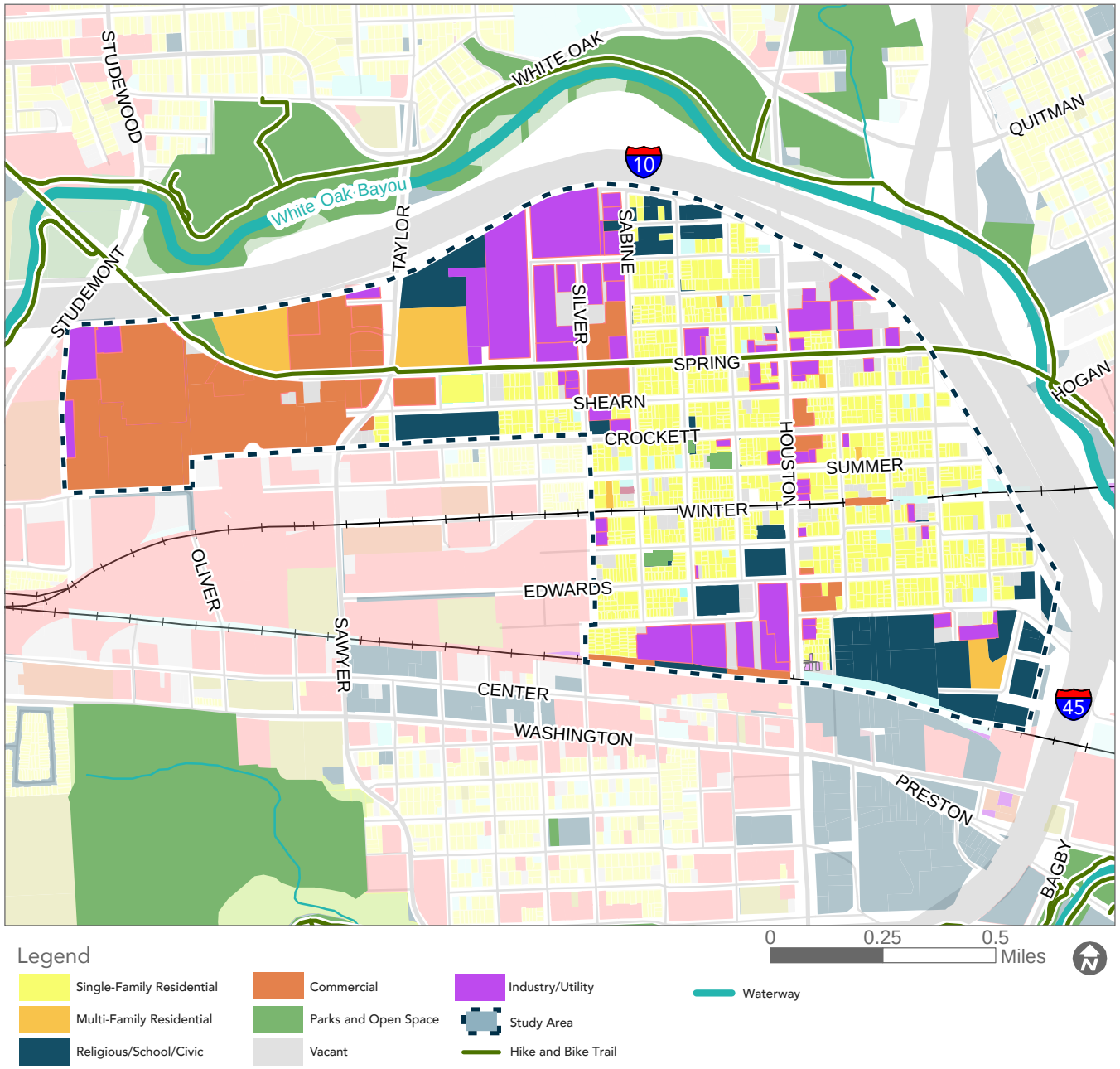


Figure A.5. Land Use
Source: Harris County Appraisal District 2022

Land Use

The Study Area contains a mixture of land uses and development types. Figure A.5 presents the Study Area and vicinity land uses predominately including:

- Single-family residential and multi-family residential, concentrated in the core of the Study Area and towards the northwest along the Spring Street Trail
- Commercial and retail along the east side of Taylor Street
- Light industrial and warehouses on the western and northern ends of the Study Area and along corridors like Houston Avenue
- Religious, school, and civic uses throughout the Study Area, including pockets on the north end and on the southeast section
- Vacant property sprinkled throughout the neighborhood, particularly parcels within areas of single family residential, though the percentage of vacant parcels is less than five percent

The mix of old and new structures can be seen throughout the Study Area. The photos on the following page illustrate the variety of housing types as well as historic buildings that have been converted from their original use to something different today.

New Townhome Residential

Historic Single-Family Residential

New Single-Family Residential

Repurposed Commercial: Spring Street Studios

Repurposed Historic Multi-Family: Elder Street Artist Lofts

Commercial

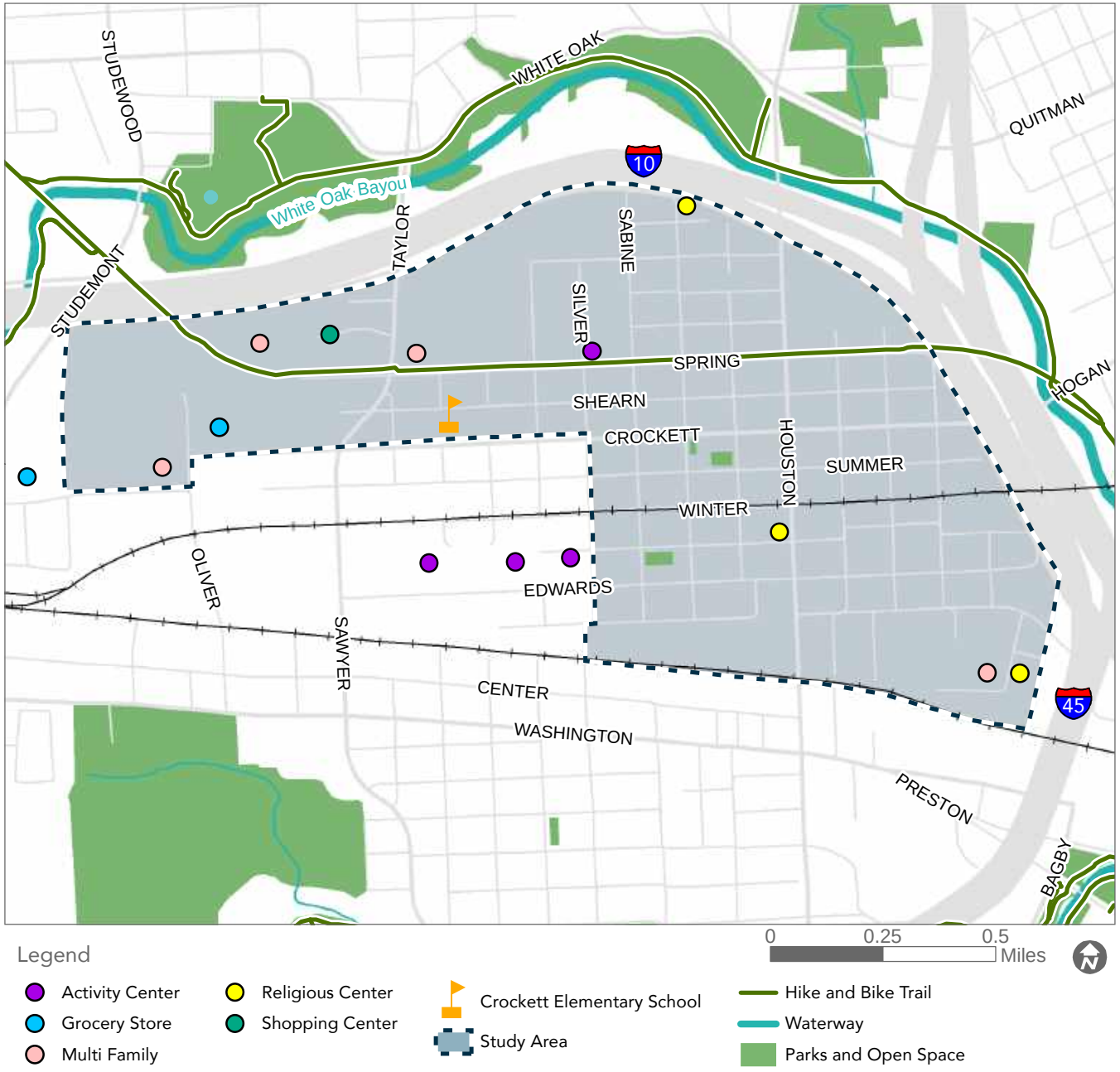


Figure A.6. Local Destinations

Local Destinations

As Figure A.6 illustrates, there are a diverse mix of destinations in and around the Study Area that are near the area's single-family and multi-family residences, providing locals and visitors alike with a wide range of options. The Study Area includes Crockett Elementary School, small pocket parks, shopping and grocery centers, a variety of restaurants and breweries, and community gathering places like Momentum Climbing Gym and Sawyer Yards.

The photos on the following page illustrate a few of these local destinations within the Study Area.

Crockett Elementary School

Randall P. Jones Park

Spring Street Trail

Momentum Climbing Gym

Sawyer Yards

Sawyer Heights Village Shopping Center

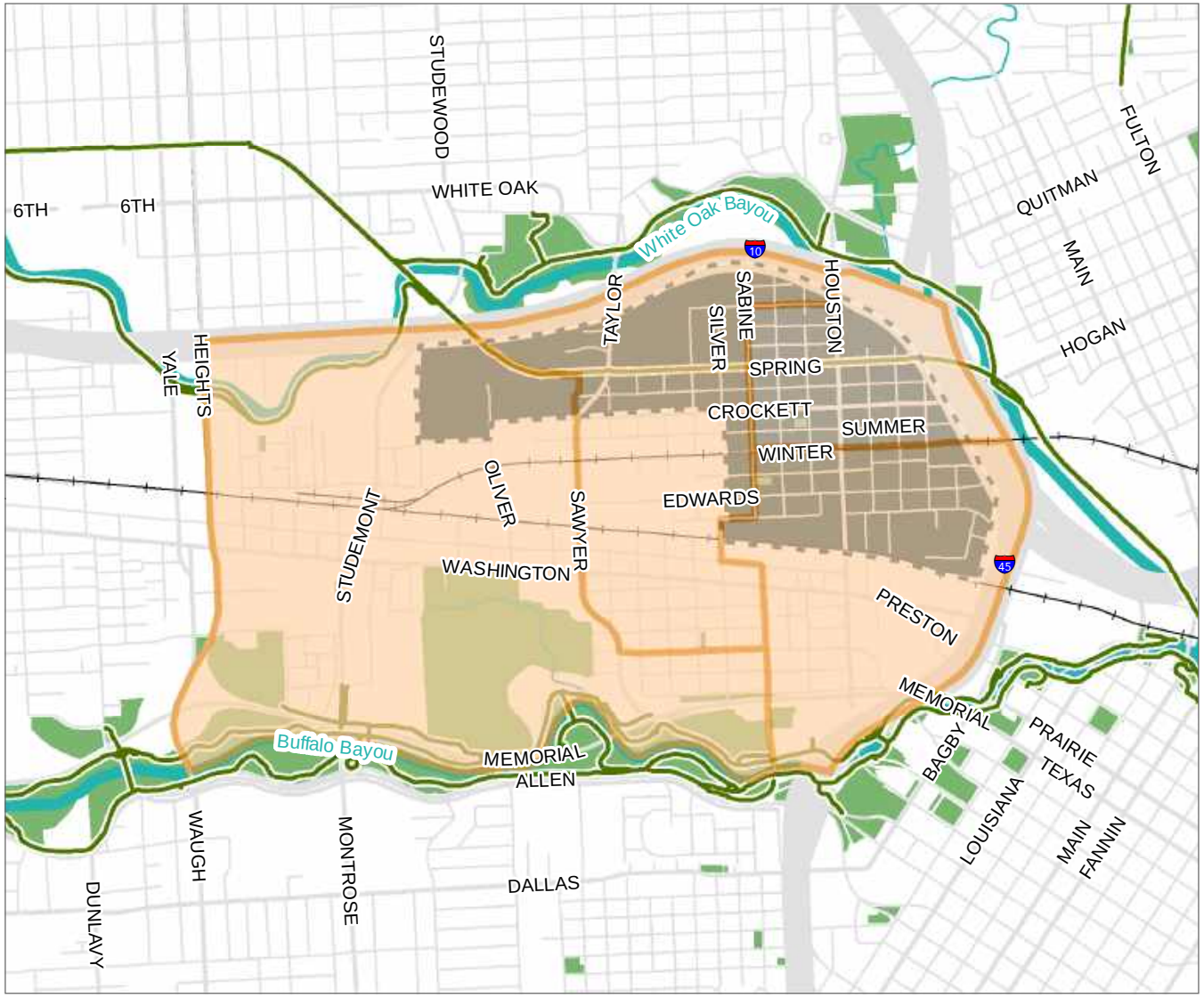


Figure A.7. Study Area Census Area
Source: US Census, City of Houston

Study Area Census Block Groups

The Study Area is made up of four census block groups shown in Figure A.7. These census block groups intersect or lie directly adjacent to the Study Area and comprise the area bound by IH-10, IH-45, Buffalo Bayou, and Heights Boulevard/ Waugh Drive. Unless otherwise indicated, demographic maps and figures include residents and workers within the Study Area Census area shown here.

Area Residents

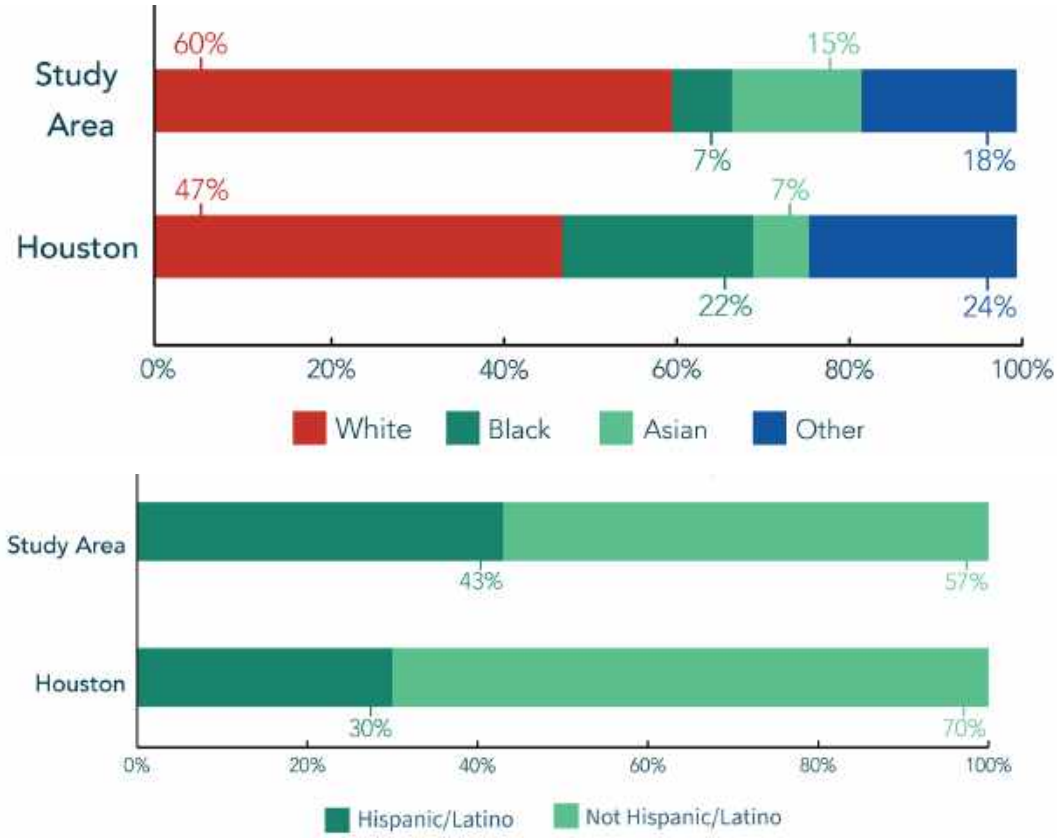
A snapshot of the residents and households that make up the Study Area is presented in Figure A.8 and Figure A.9 based on the Census Area shown in Figure A.7. The Study Area Census area is home to approximately 5,900 residents in 3,100 households. Over half (54 percent) of households are renters. The area has a smaller household size and lower poverty rate than the City or the County.

The neighborhood is racially and ethnically diverse, with a higher percentage of Hispanic/Latino residents compared to the City of Houston but significantly fewer Black residents. The majority of residents (60 percent) are white.

Figure A.8. Census Area Demographics

	Study Area Census Data	Houston	Harris County
Population	5,991	2,293,200	4,698,000
Households	3,140	878,900	1,658,500
Average Household Size	1.87	2.4	2.7
Renter-Occupied Households	54%	58%	45%
Unemployment Rate	5.4%	6.5%	6.5%
Households in Poverty	6%	17%	14%

Figure A.9. Race & Ethnicity of Residents



Source: US Census American Community Survey 2021

Figure A.10. Resident Population by Age

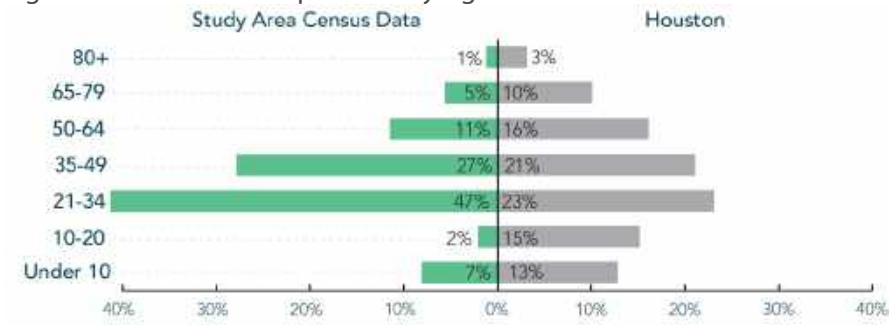


Figure A.11. Resident Educational Attainment

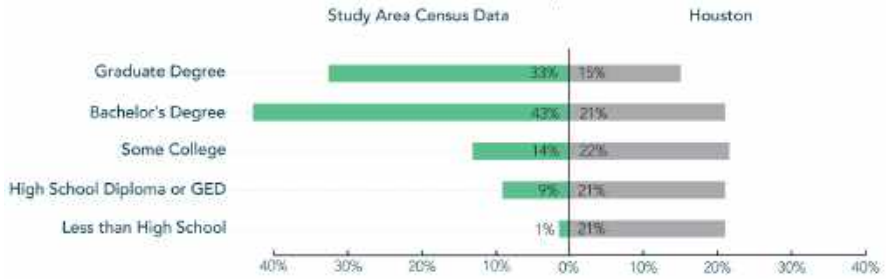
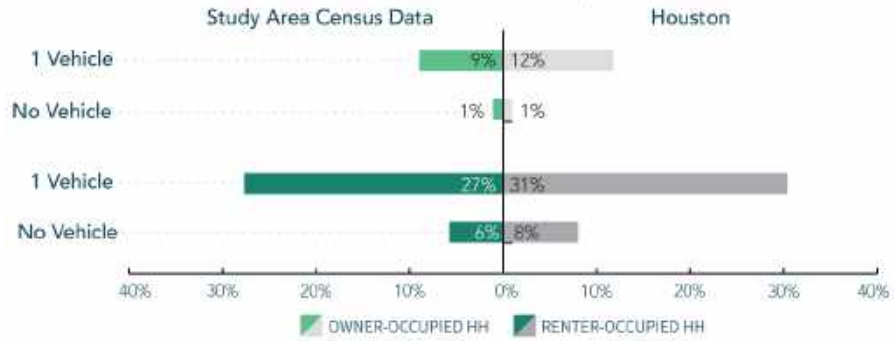


Figure A.12. Percent of Households by Income

Figure A.13. Resident Vehicle Availability



Source: US Census American Community Survey 2021

Area Residents

Young, Highly Educated, High Earning

Study Area residents are young, well-educated, and have high household incomes. Nearly half (47 percent) of the population are ages 21-34, compared to 23 percent of residents citywide. Data shows that young residents often choose to live close to areas with many destinations that are walkable, bikeable, and within reach of transit. This is a promising characteristic for Study Area residents as it shows a potential openness to try other modes of transportation other than driving alone.

Compared to the share of City of Houston's population, Study Area residents hold more than double the amount of Bachelor's and Graduate degrees. Over three fourths (76 percent) of Study Area residents over age 25 have a Bachelor's or Graduate degree. Over half (62 percent) of households make over $100,000 annually, once again, more than double the share (26 percent) of households that earn six figures citywide.

High Vehicle Availability

Although the Study Area houses many young residents who are renters, which nationally have lower rates of car ownership, Figure A.13 shows that the majority of households in the area own or have access to a car. Only one percent of owner-occupied households and only six percent of renter-occupied households in the Study Area live without a car. Ninety-nine percent of owner-occupied households and eighty-nine percent of renter households own or have access to one or more vehicles. This signifies that despite living close to a multitude of neighborhood destinations, residents may still hold perceptions that access to a car is essential or that they do not have accessible or safe alternative mobility options.

Area Workers

Retail Services, Professional & Technical Jobs

As shown in Figure A.14, the top employment sectors within the Study Area belong to retail and professional, scientific, and technical services. While Study Area residents earn higher incomes than the citywide population of Houston, over half (53 percent) of Study Area workers make less than $40,000 annually, compared to less than half (46 percent) citywide.

This fact highlights that Study Area workers may not have the resources that afford them easy access to a vehicle. Workers may depend even more on transportation like transit, walking, and biking to commute to and from their jobs.

Furthermore, service-oriented jobs often operate in the early morning hours and late at night. It is important that safe and convenient transportation options exist for these types of workers who may be traveling during off-peak hours or at nighttime.

Figure A.14. Worker Top Employment Sectors

Sector	Study Area		City of Houston	
	Jobs	Percent	Jobs	Percent
Retail Trade	651	26%	175,717	10%
Professional, Scientific, & Technical Services	493	20%	175,171	10%
Manufacturing	333	13%	101,709	6%
Construction	209	8%	100,332	6%
Other Services (excluding Public Administration)	196	8%	47,357	3%
Wholesale Trade	181	7%	105,008	6%
Accommodation & Food Services	185	7%	148,576	8%
Other	276	11%	942,189	51%
Total	2,524	100%	1,796,050	100%

Figure A.15. Worker Income

Sources: US Census LEHD Origin-Destination Employment Statistics (LODES) 2021; US Census American Community Survey 2021

Figure A.16. Population of Workers by Age

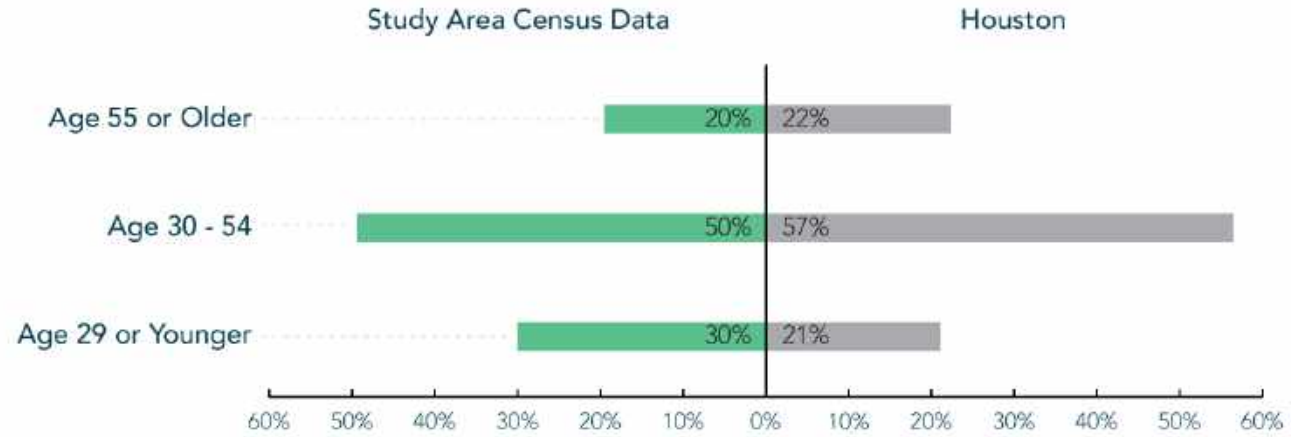
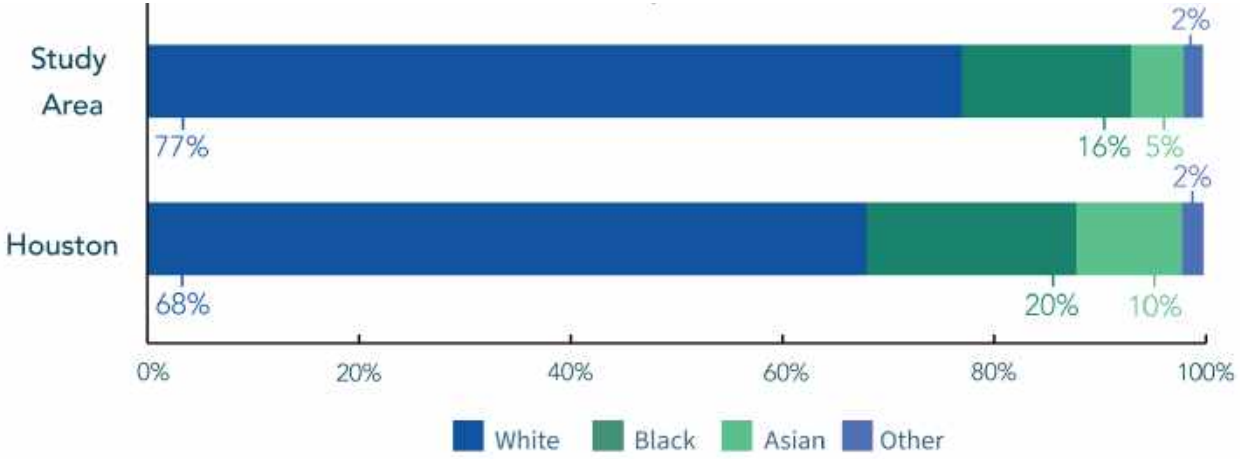


Figure A.17. Race & Ethnicity of Workers



Area Workers

Young Workforce

Compared to the citywide workforce population, workers in the Study Area are young, with 30 percent under 30 years of age, versus 21 percent citywide. The overwhelming majority of workers in the Study Area are White (77 percent) with less workers of color on average than the workforce citywide.

As the new generations of young people are increasingly choosing transportation options outside of a car, it is important that a strong network of multimodal options exists to get young people to and from jobs inside the Study Area and around the city.

Source: US Census LEHD Origin-Destination Employment Statistics (LODES) 2021; US Census American Community Survey 2021

Where Residents Work

Study Area residents primarily work in Houston's largest job centers – Downtown, Texas Medical Center, Uptown, and Greenway Plaza – all of which are located within six miles of the Study Area. Downtown has the highest concentration of Study Area residents that work in the area, followed by the Texas Medical Center, Uptown, and Greenway Plaza.

Smaller concentrations of residents also work in nearby areas such as the University of Houston and Bellaire and areas that are further reaching such as Memorial City/City Center and Westchase.

The Study Area's location, bounded by IH-10, IH-45, and major local corridors like Washington Avenue and Studemont Street, provides multiple commute mode options to many of these work areas. Downtown and the Heights are easily accessible on bikes via the MKT and Spring Street Trail. Those who wish to travel on transit have a one seat ride to Downtown on the 44 Acres Home and 85 Antoine/Washington. To reach the TMC, residents can ride the 56 Airline/ Montrose. Other major employment centers require a transfer, but reaching these destinations via transit is feasible, though not as efficient as areas closer to the Study Area.

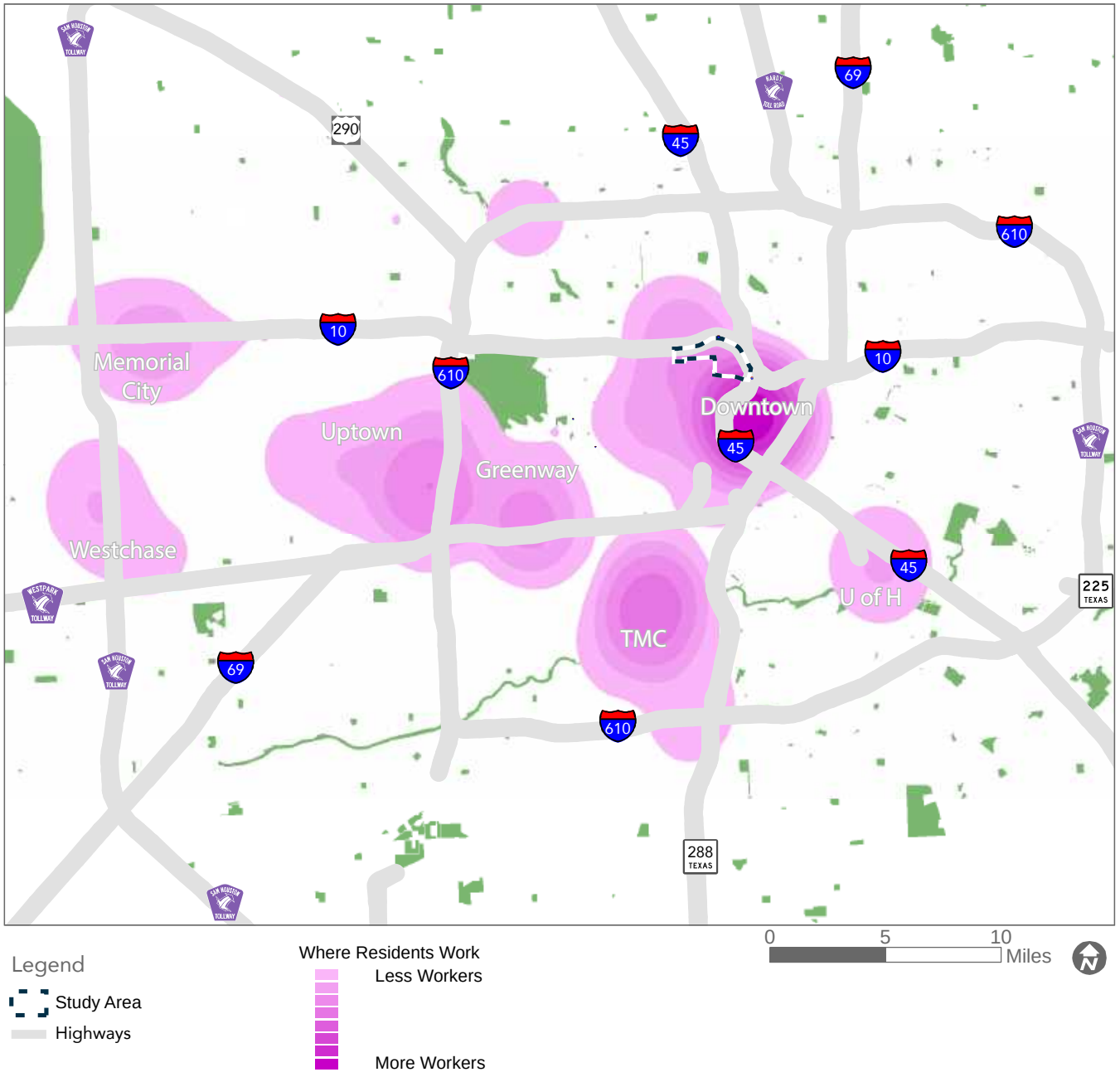


Figure A.18. Where Study Area Residents Work
Source: US Census LEHD Origin-Destination Employment Statistics (LODES) 2021

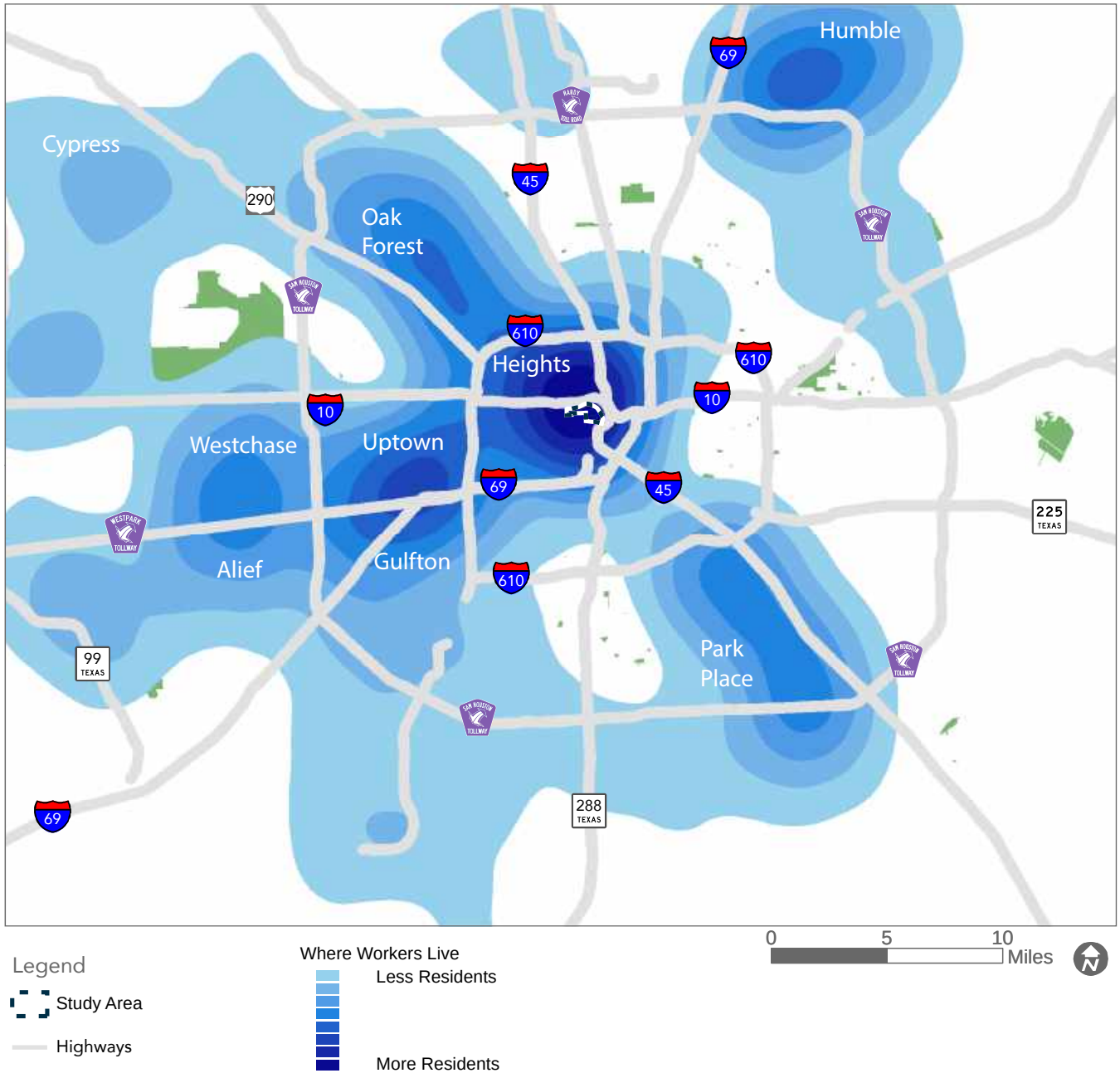


Figure A.19. Where Study Area Workers Live
Source: US Census LEHD Origin-Destination Employment Statistics (LODES) 2021

Where Workers Live

While there is a very heavy concentration of people working in the Study Area also living in or around the Study Area, workers are also coming from areas across Houston.

Workers coming from neighborhoods close to the Study Area include the Heights, Near Northside, Downtown, Uptown, Midtown, Montrose, Rice Military, and Bellaire. Workers with longer commutes include those residing in areas like Oak Forest, located northwest of IH-610 North and parts of Gulfton, located southwest of US-59 and IH-610 West. Some workers are living in areas even further from the Study Area, including Southeast Houston, near Gulfgate and Park Place and in areas around Alief, located west of Beltway 8 around the Westpark Tollway and Humble, located north of Beltway 8 and east of IH-69.

Commute Characteristics

As Figure A.20 illustrates, the majority of residents in the Study Area drive alone to work (64 percent), though less than the citywide share (74 percent). Almost one-third of residents in the Study Area (27 percent) work from home compared to eight percent citywide. This may explain the smaller percentage of people that carpool to work (five percent compared to 10 percent citywide). It is useful to note here that this data is from the year 2021 during the pandemic, which also may explain the higher work from home percentages, though the city's numbers still remain much lower in comparison during this time.

Of note in Figure A.20 is that zero percent of residents in the Study Area take transit to work despite the several transit routes that traverse through the Study Area. It's worth exploring the reasons behind this and how transit can become a more attractive option for area residents to get to work.

Study Area residents tend to live closer to work and have shorter commutes than Houstonians generally. Almost two thirds (64 percent) of area residents have a commute less than 30 minutes in each direction, and 12 percent have a commute of 10 minutes or less, pointing back to the higher percentage of residents that work from home.

Figure A.20. Work Commute by Mode

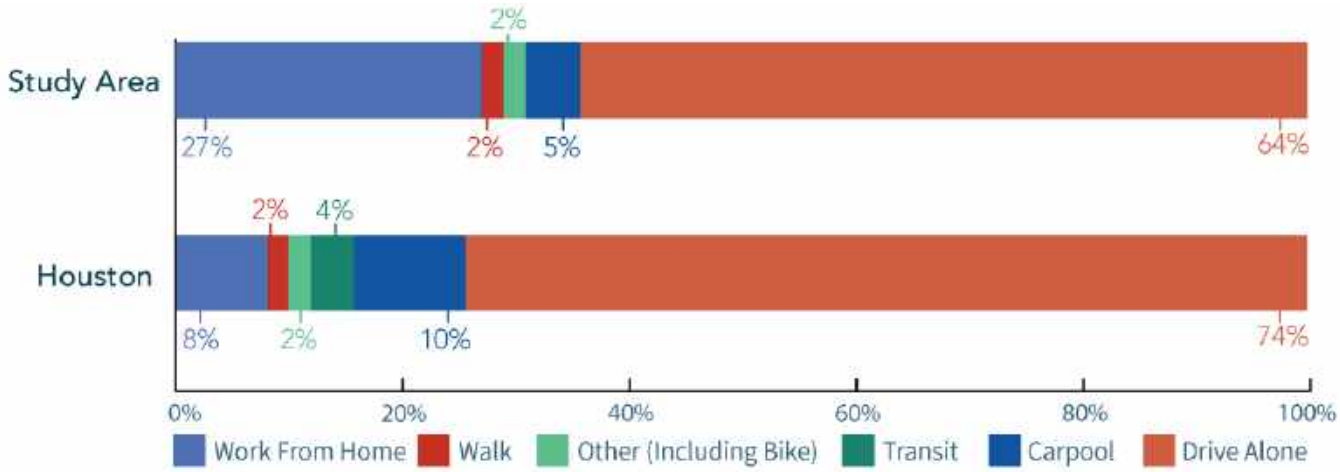
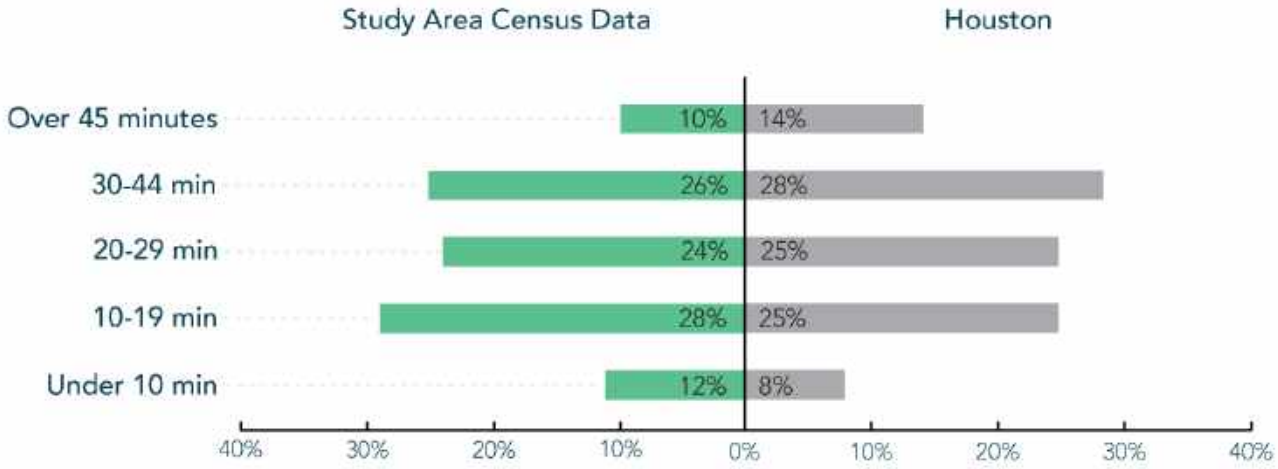


Figure A.21. Commute Time to Work



Source: US Census American Community Survey 2021

Figure A.22. Trip Types

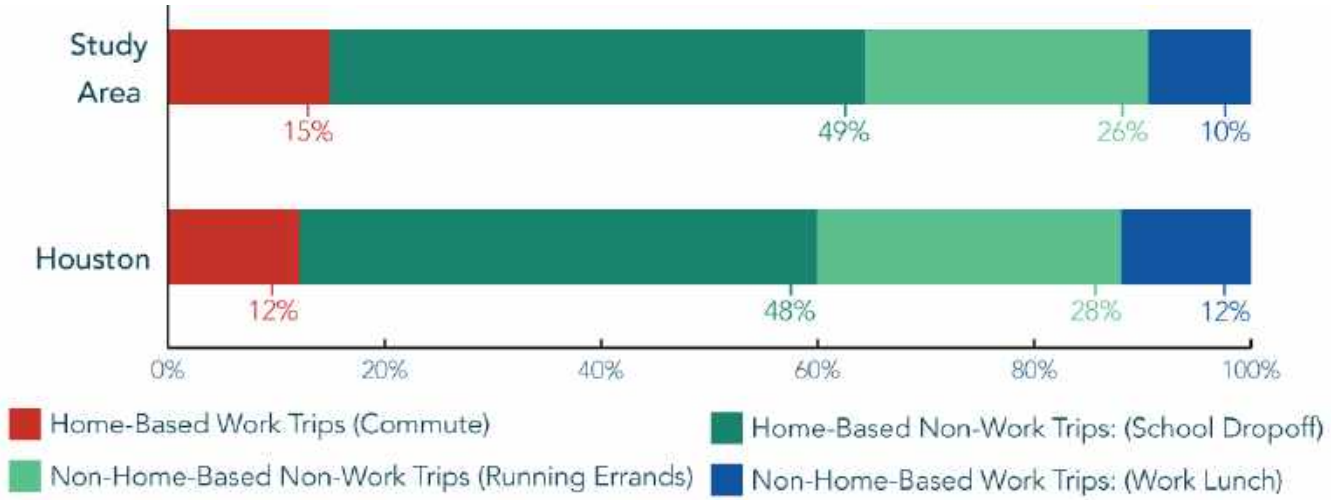
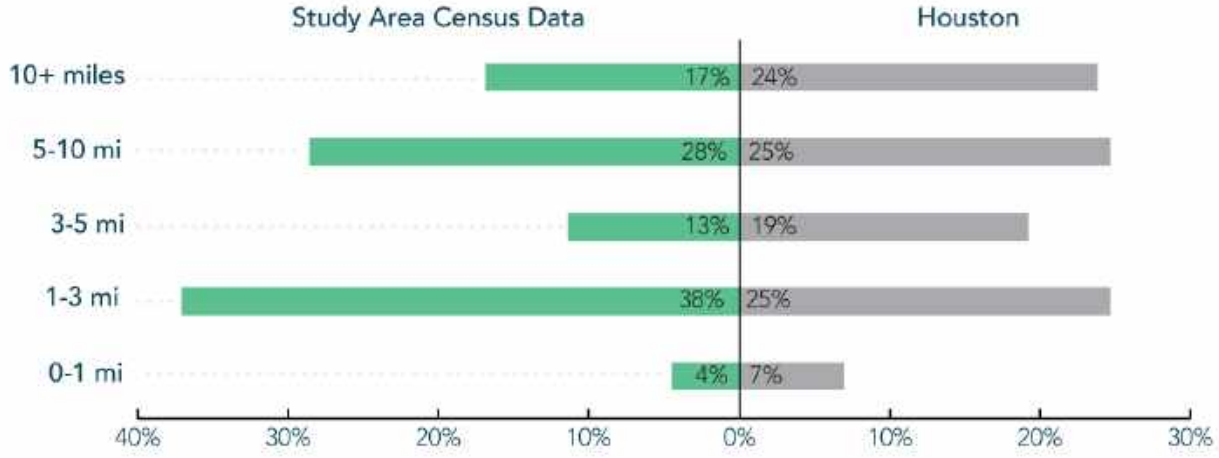


Figure A.23. Average Trip Distance for All Trip Types



Source: H-GAC Travel Demand Model Trip Distance Outputs, 2019

Trip Characteristics

While Figure A.20 describes work commute trips, it does not show the mode share of other trips, which may be better represented by walking, biking, and transit. As indicated in Figure A.22, commutes between home and work make up only a small share of trips (15 percent). Home-based non-work trips, like traveling between one's home and a school, a grocery store, or a park – make up about half (49 percent) of trips originating in and near the Study Area.

This plan will develop project recommendations for expanding access to safe, multimodal trip options, especially for short local trips. As Figure A.23 demonstrates, 42 percent of trips originating in the Study Area are under three miles, a distance many people are willing to walk or bike if safe travel options exist.

Access to Destinations

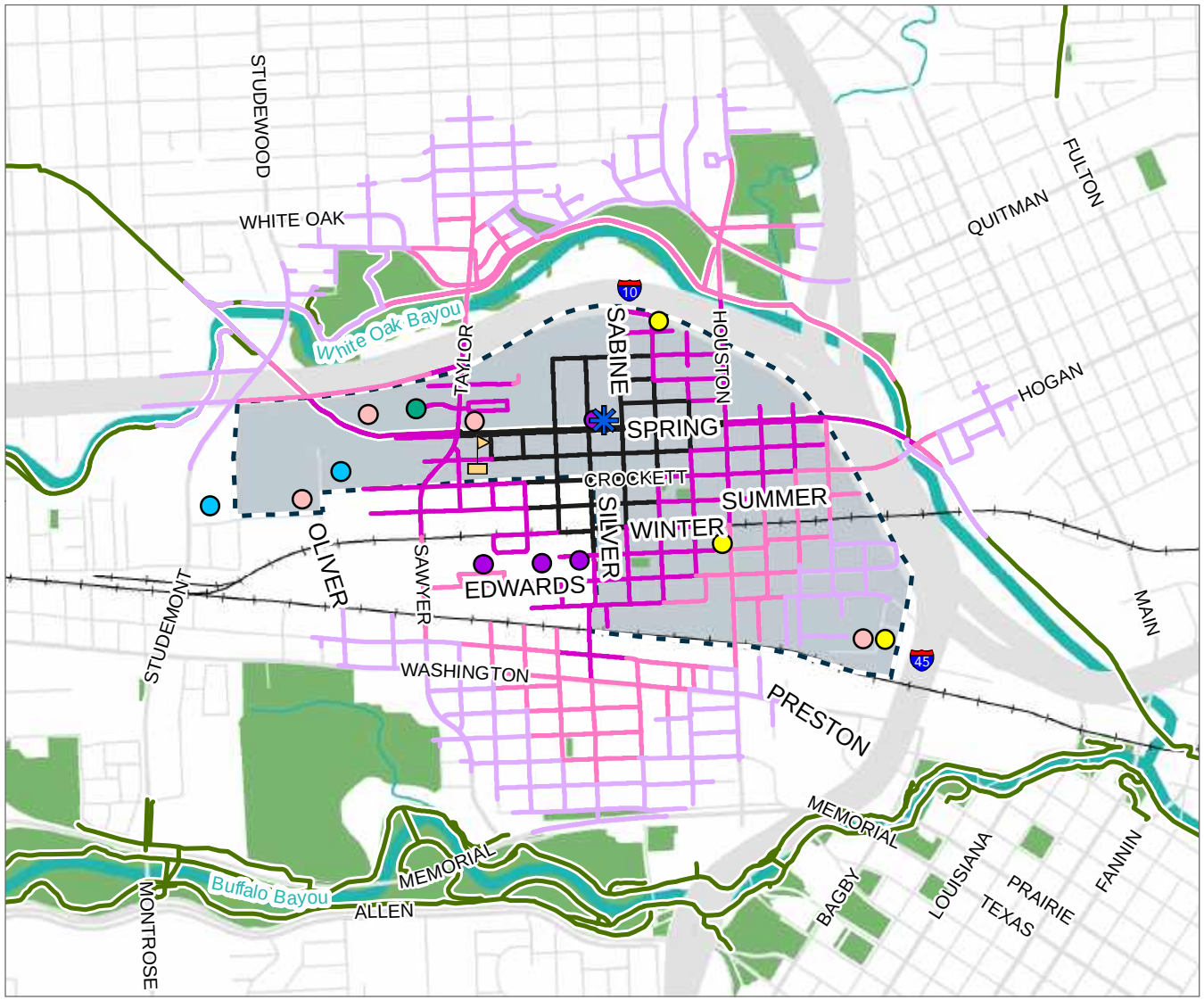
Figure A.25 shows the areas within a 20-minute walk from the core of the Study Area. Distances originate from the blue star on the map. As noted in Figure A.24, 20 minutes corresponds to about a mile walk or about a four-mile bike ride for a casual bike rider. The majority of destinations in the Study Area are located within a quarter or half-mile walking distance and all neighborhood destinations are located within a mile walking distance.

The cluster of diverse destinations within short distances encourages more trips to be taken by transit, walking, and biking, rather than driving alone. This highlights an opportunity to make streets and mobility options more accessible and safe for residents, workers, and visitors getting around the Study Area.

Figure A.24. Walking & Biking Travel Times

Travel Time	Walking Distance	Biking Distance
5 Minutes	0.25 Miles	1 Mile
10 Minutes	0.5 Miles	2 Miles
15 Minutes	0.75 Miles	3 Miles
20 Minutes	1 Mile	4 Miles

Figure A.25. Study Area Walking Distance



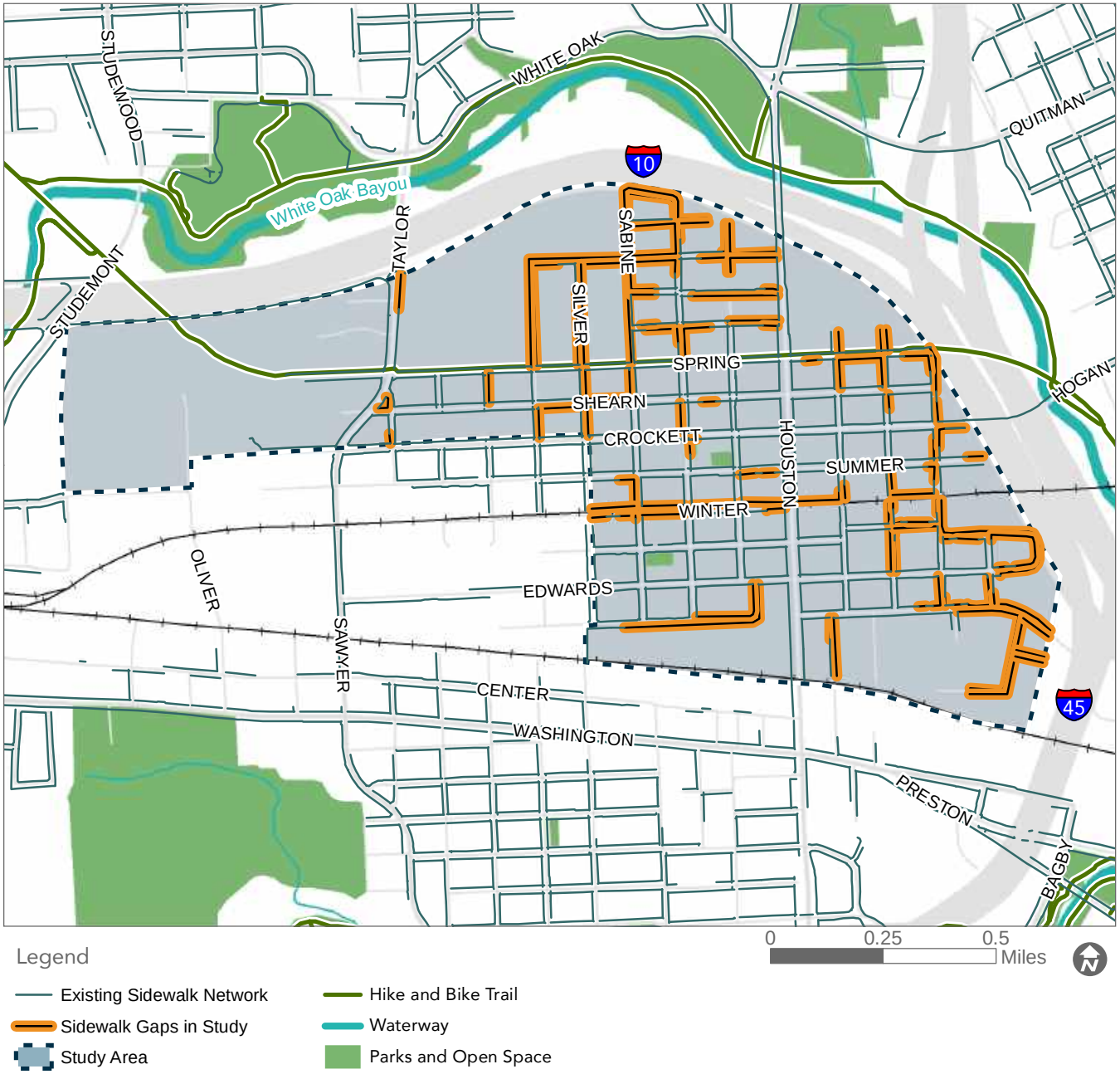


Figure A.26. Study Area Sidewalk Gaps
Source: H-GAC 2019

Walkability

Despite the relatively short walking distance to destinations within the Study Area, Figure A.26 shows the gaps in the sidewalk network highlighted in orange. Gaps are large toward the north of the Study Area and along the eastern border. These gaps contribute to a disconnected sidewalk network that can make walking unsafe and challenging.

Despite the gaps noted here, the Study Area's historic street grid provides the foundation for a walkable and connected network. Small blocks, designed to be easily navigable by foot, are beneficial for accessing neighborhood destinations when paired with safe and accessible sidewalks and curb ramps. The last pages of this Fact Book present a detailed assessment of gaps in the sidewalk and ramp network. These details will help determine a plan for addressing the barriers to walkability and connectivity.

Bikeways

In addition to the Study Area's sidewalk network, this Mobility Plan also considers the existing, proposed, and programmed bikeways throughout and adjacent to the Study Area as part of the effort to create a connected mobility network. Programmed Projects are those in the pipeline with dedicated funding. Vision Projects are more long-term, capital-intensive projects that would require street reconstruction to implement.

Existing:

- Houston Avenue north of Spring Street
- Spring Street Trail

Vision: North/South

- Studemont Street
- Taylor Street
- Silver Street
- Houston Avenue

Programmed: East/West

- Edwards Street
- Quitman Street
- Hogan Street Bridge

Vision: East/West

- Crockett Street
- Center Street
- Washington Avenue

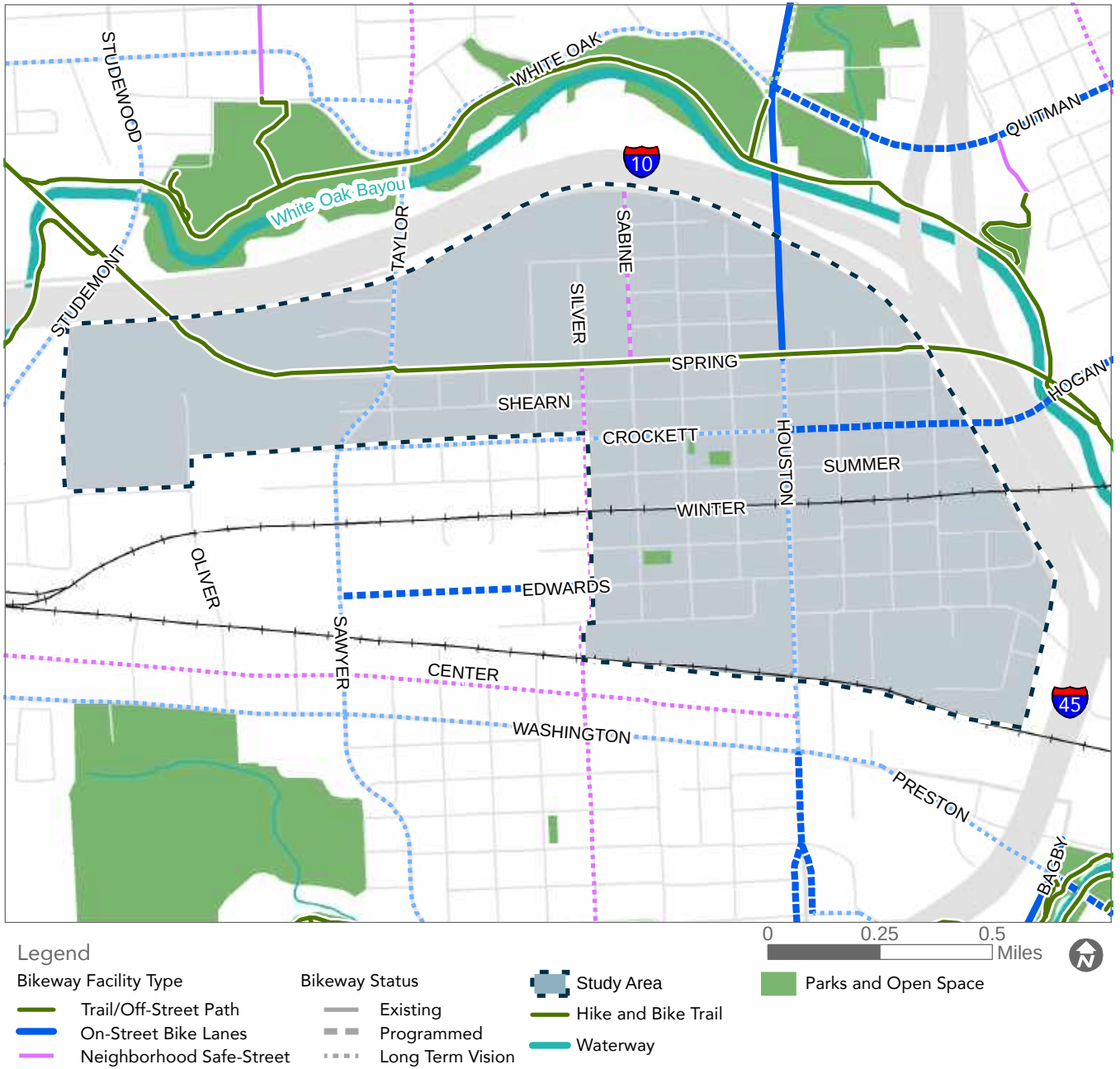


Figure A.27. Bikeways
Source: City of Houston Bike Plan

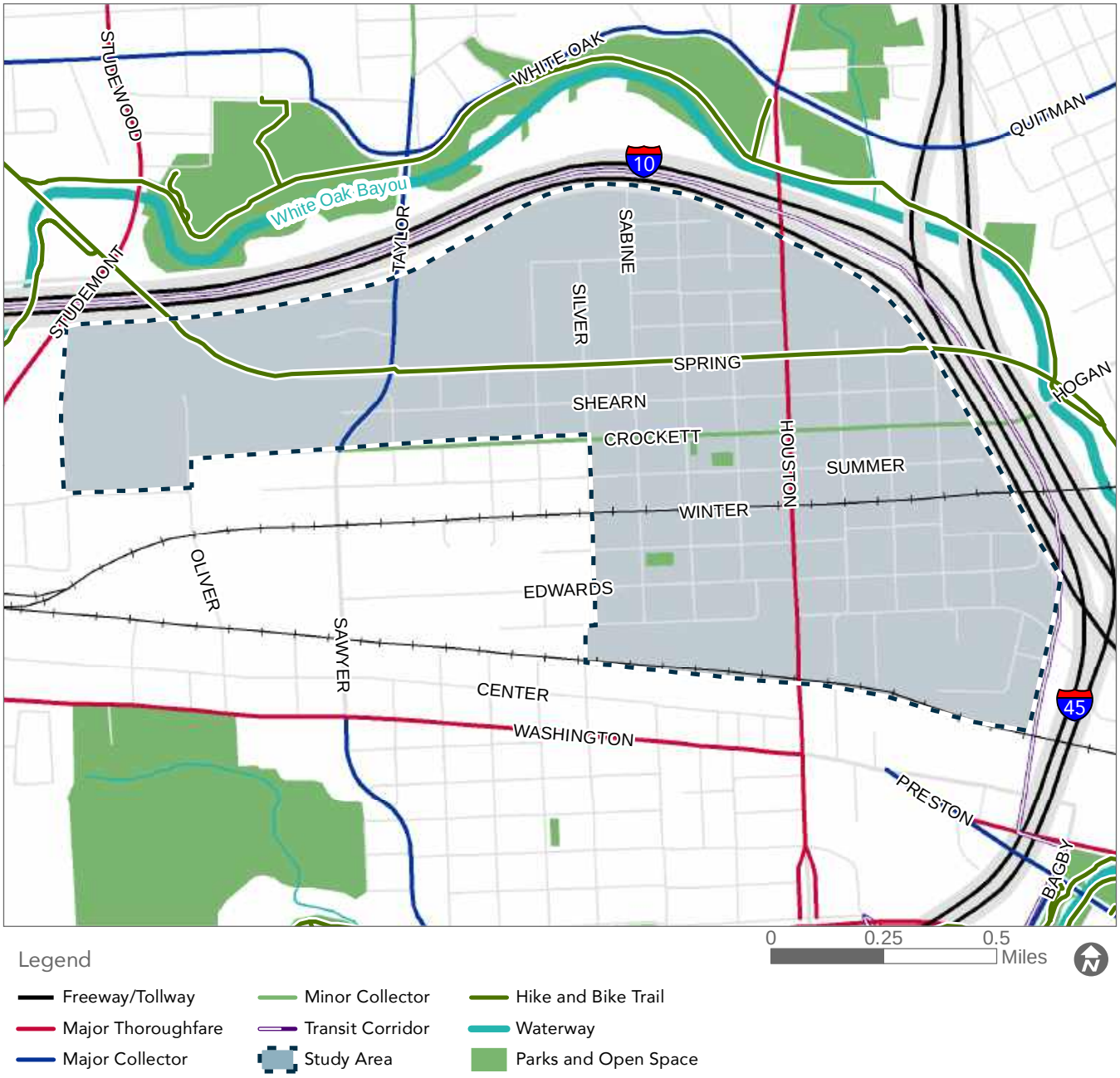


Figure A.28. Major Thoroughfare Plan Street Classification
Source: City of Houston Major Thoroughfare & Freeway Plan

Street Network

Figure A.28 shows the City of Houston's Major Thoroughfare Plan, which classifies corridors according to their role in the street network. Houston Avenue, Studemont Street, and Washington Avenue are major thoroughfares that connect the Study Area to the rest of the region. They are also streets with clusters of commercial activity, which draws people walking, biking, taking transit, and driving along these corridors to access various destinations. Collectors, like Sawyer Street and Crockett Street, make key local connections within the Study Area and to nearby neighborhoods. Transit Corridors represent where major transit projects, like the Inner Katy METRO Rapid line, will be.

Though local streets connect the Study Area to destinations and surrounding neighborhoods, some are cut off by barriers like the railroads and bayous. The section of the Study Area east of Houston Avenue presents connectivity challenges because of the railroad on Winter Street and the highways to the east. Local streets with obstacles in the grid network can result in mobility issues.

Connectivity & Barriers

The Study Area is situated among many popular neighborhoods, destinations, and activity centers. However, multiple barriers within the Study Area present mobility challenges for those traveling in, around, or through the neighborhood. As seen in Figure A.29, the area contains two sets of railroad tracks with multiple at-grade crossings, and is bounded by the White Oak Bayou and two highways (IH-10W and IH-45N). The arrows show locations of the best routes to help cross these barriers. There is no clear direct access to the west of the Study Area for vehicles. The next page provides photos of some of these challenging barriers that lead to mobility and connectivity issues.

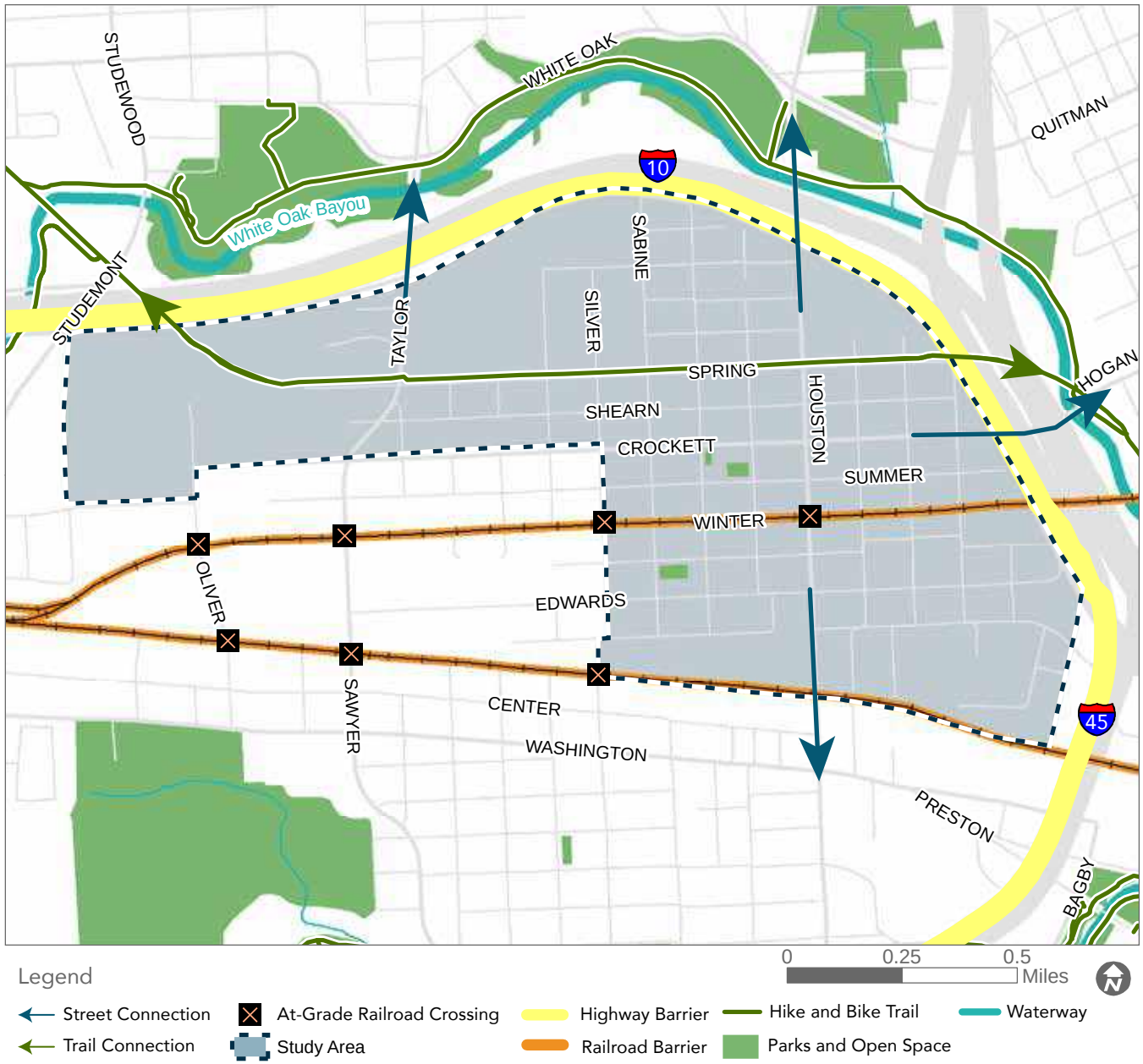


Figure A.29. Connectivity & Barriers

IH-45 Bordering Eastern Edge

No Through-Way - Amtrak Station on the Southeast

Winter & Bingham Street Railroad

Trails Must Cross Over or Under the Freeways

Winter & Johnson Street Railroad

Winter & Silver Street Railroad

Traffic Volumes & Speeds

Figure A.30 illustrates the average daily traffic volumes on major streets and corridors within the Study Area and their corresponding 85th percentile speeds. The 85th percentile speed is generally considered the speed at which most drivers feel safe and comfortable during normal conditions. While 85 percent of drivers travel at or below this speed, the remaining 15 percent travel faster.

The highest traffic volumes occur on Washington Avenue, west of downtown, where 85th percentile speeds also reach over 40 miles per hour, despite posted speed limits of 30 miles per hour. Other streets within or adjacent to the Study Area with higher traffic volumes are Houston Avenue and Sawyer Avenue, particularly south of Crockett Street. Although these streets do have higher traffic counts, they still are operating with excess capacity. Meanwhile, while Crockett Street has relatively low traffic volumes, speeds reach close to 40 mph, despite the presence of an elementary school and a posted speed limit of 30 miles per hour.

Speed and traffic volume both affect how people experience and perceive the street and spaces around them. Higher vehicle travel speeds on neighborhood streets can make walking or biking feel uncomfortable or unsafe. This data is important to inform corridor recommendations and improvements throughout the Study Area.

Figure A.30. Average Daily Traffic Volumes & 85th Percentile Speeds
Source: City of Houston, 2022

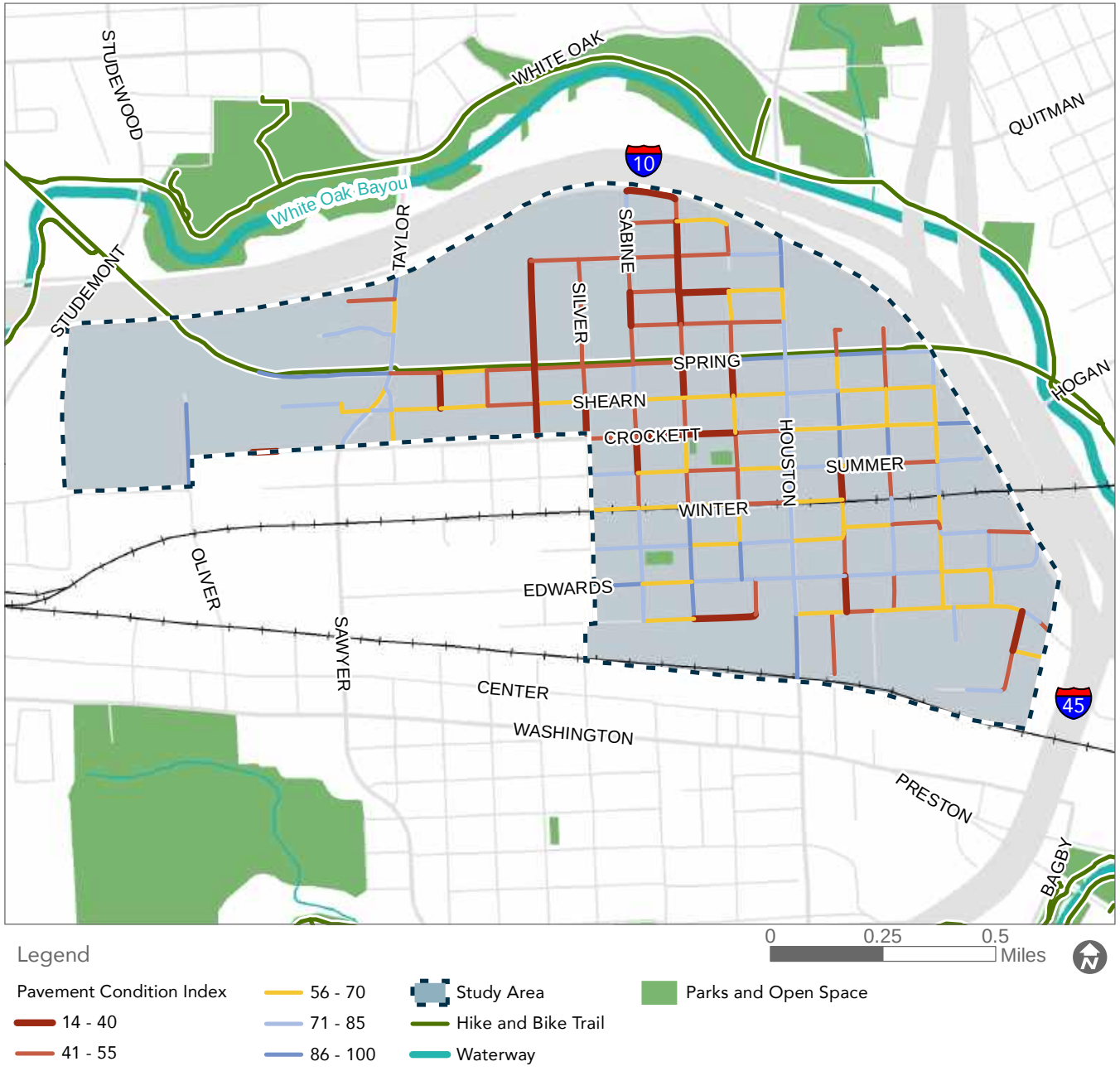


Figure A.31. Pavement Condition Index
Source: City of Houston, 2019

Roadway Pavement Condition

Figure A.31 shows the pavement condition of streets within the Study Area. Pavement condition is defined by the City of Houston GIMS through a pavement condition index (PCI) ranging from 0 (very poor) to 100 (good). Higher quality pavement is shown in shades of blue and worse quality in shades of orange and red. Many of the streets within the Study Area are in poor pavement condition, particularly in the northern section, including White, Silver, Sabine, and Colorado streets.

The condition of a roadway can create hazardous and uncomfortable conditions for those trying to access homes, businesses, and other destinations within the Study Area. This information is particularly important for developing plan recommendations and priorities as areas that are in particularly poor condition may require roadway reconstructions, which can allow for increased multimodal accommodations. Areas with relatively good pavement condition may be more appropriate for retrofit solutions.

Transit Network

There are several local bus routes located in or around the Study Area. Figure A.32 shows these local routes along with the frequency of each route and ridership for each stop. These routes include:

- The 85 Antoine/Washington – frequent service on Washington Avenue, connecting Downtown to Northwest Transit Center, the METRORapid Silver Line in Uptown, and then continues north to Greenspoint Transit Center
- The 44 Acres Homes – connects Houston Avenue to Downtown to the south and travels north through the Heights
- The 30 Clinton/Ella – runs along Sawyer Street and Memorial Drive, connecting to both the Heights and Downtown
- The 56 Airline/Montrose – frequent north/south service on Studemont Street

Much of the Study Area is within half a mile of frequent transit on Washington Avenue and Studemont Street, where ridership at major intersections like Washington Avenue and Sawyer Street is high. Other areas in the core of the Study Area, such as Houston Avenue and Taylor Street are within a quarter mile of less frequent transit.

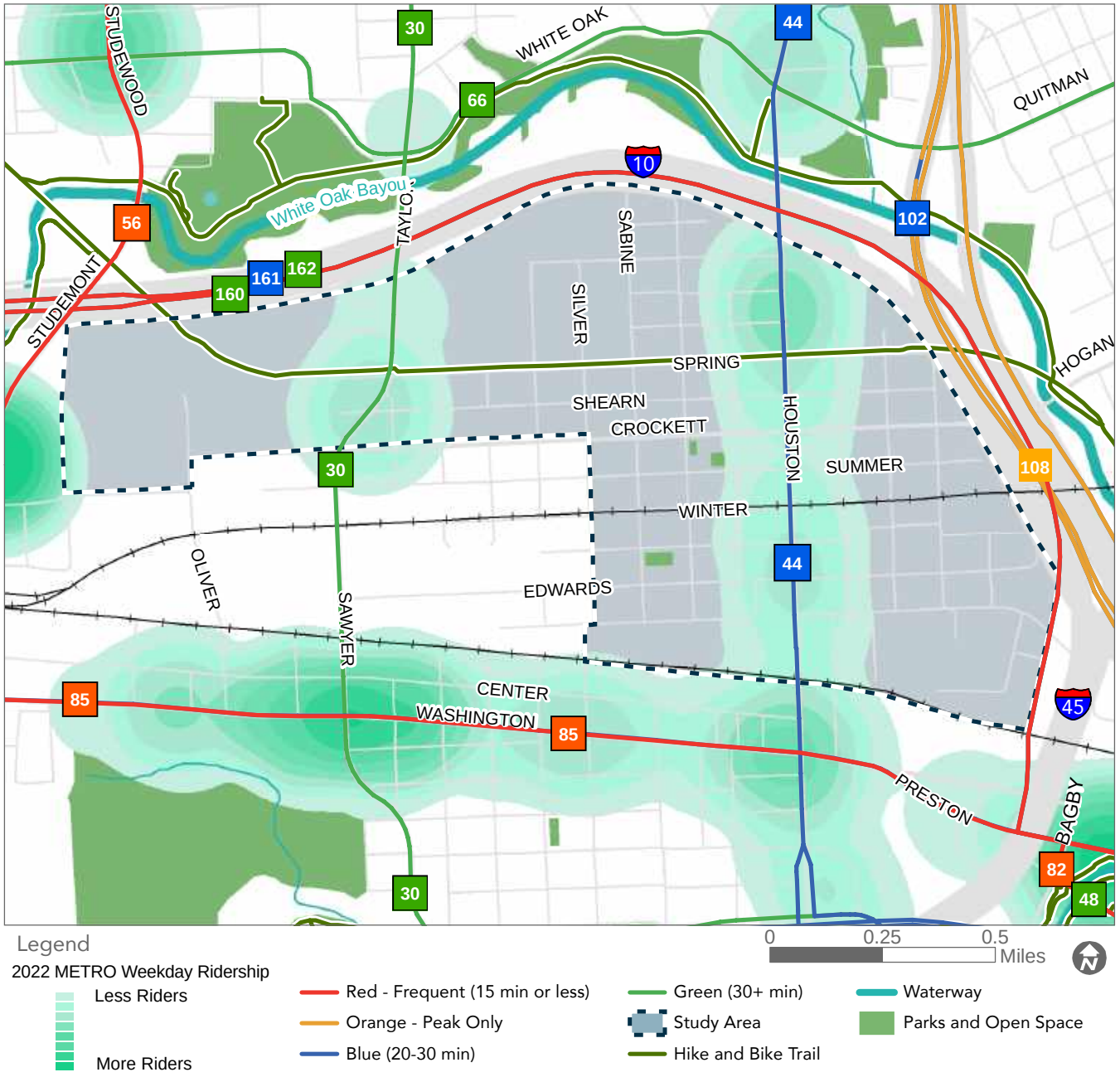


Figure A.32. Transit Service & Ridership
Source: METRO

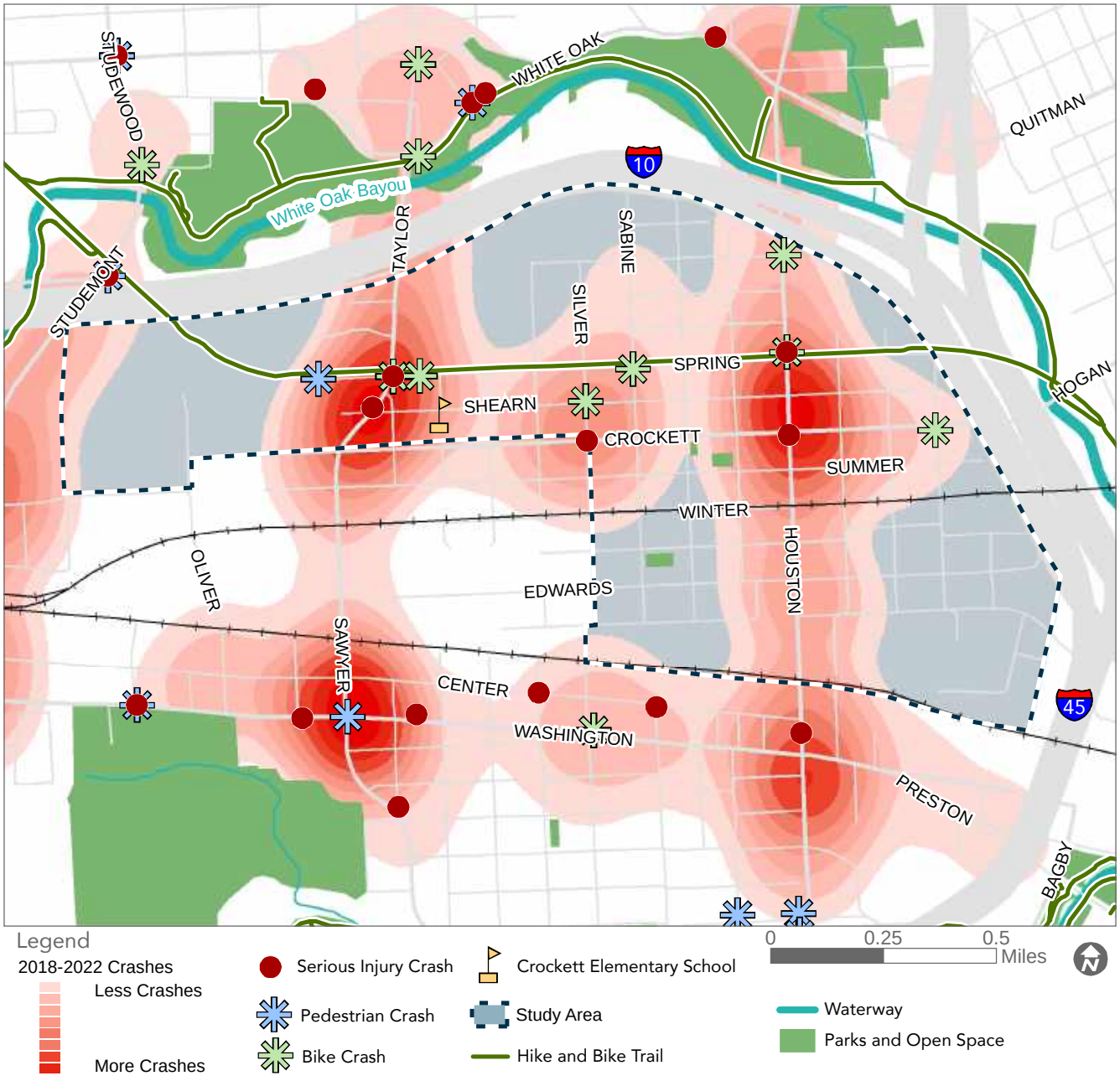


Figure A.33. Crash Density
Source: TxDOT CRIS

Crash Density

Figure A.33 visualizes the areas with high crash rates within the Study Area between 2018 and 2022. Corridors and streets with higher average daily traffic volumes and higher observed speeds also have more crashes compared to the rest of the Study Area, such as Crockett Street, Houston Avenue, Sawyer Street, and Washington Avenue.

Many pedestrian and bike-related crashes are clustered around parts of the Spring Street Trail, where the trail intersects with the street. Within the 5-year period, there were seven crashes involving bike riders and one crash involving a pedestrian within the Study Area. The areas within or around the Study Area with the heaviest crash densities are:

- Taylor Street & Shearn Street
- Taylor Street & Spring Street
- Crockett Street & Silver Street
- Crockett Street & Houston Avenue
- Houston Avenue & Washington Avenue
- Washington Avenue & Sawyer Street

High Injury Network

The High Injury Network shows where the majority of traffic deaths and serious injuries are occurring on Houston's streets. Figure A.34 highlights the streets designated as part of the High Injury Network in the Study Area. Of particular note is the area surrounding Crockett Elementary, where young children and their parents frequently traverse during school pick-up and drop-off. An additional area of concern is the red star located at Houston Avenue and Winter Street, where a bike rider was hit and killed by a driver resulting in a fatal bike crash December of 2023.

The High Injury Network in the Study Area includes:

- Shearn Street adjacent to Crockett Elementary
- Sawyer Street
- Houston Avenue
- Center Street
- Washington Avenue

The crash density and high injury network data pinpoints intersections and streets of concern within the Study Area. This data can also be leveraged to prioritize project recommendations for streets that need safety interventions to address and prevent serious injuries and fatalities.

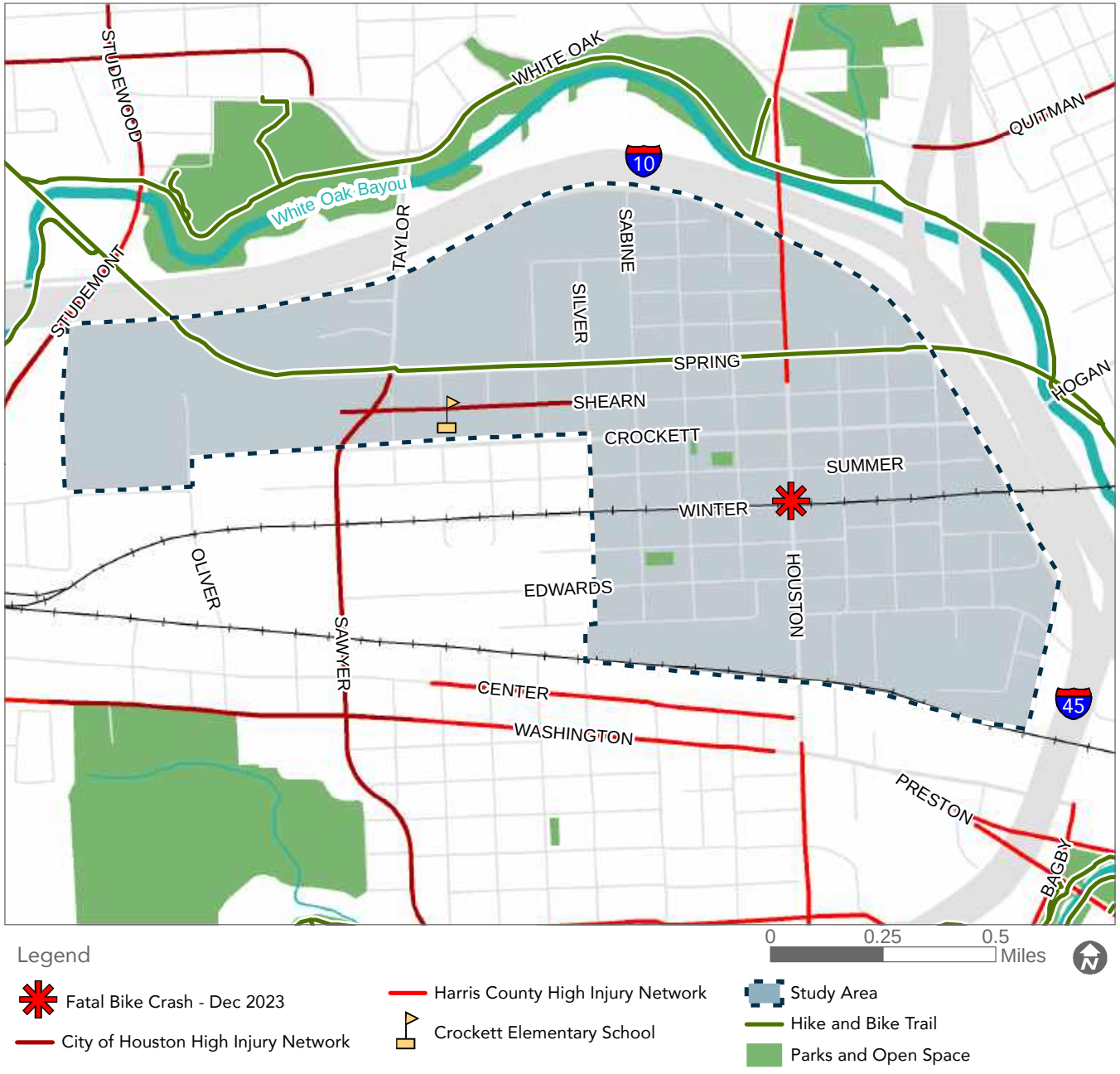


Figure A.34. High Injury Network
Source: City of Houston

Key Corridors

Figure A.35 details the characteristics of key Study Area corridors.

These corridors are important destinations for those moving around the area as well as accessing the major freeways nearby.

This Mobility Plan will take these corridors and their characteristics into account when proposing corridor improvement projects and recommendations.

Figure A.35. Key Corridor Characteristics

	Houston Avenue	Crockett Street	Sawyer/ Taylor Street	Shearn Street	Spring Street
Corridor Classification	Major Thoroughfare	Minor Collector	Major Collector	Local	Local
Average Daily Traffic Volume	15,000 (South of Crockett St) 12,000 (North of Crockett St)	6,000 - 8,000	14,000	TBD	TBD
85th Percentile Speed	30-34 mph (South of Crockett St) 35-39 mph (North of Crockett St)	35-39 mph	25-34 mph	TBD	TBD
Posted Speed Limit	30 mph	30 mph	30 mph	30 mph	30 mph
Crash Locations	Houston & Weber Houston & Spring Houston & Crockett Houston & Center	Crockett & Silver Crockett & Houston	Sawyer & Shearn Sawyer & Spring	Shearn & Sawyer Shearn & Silver	Spring & Taylor Spring & Sabine Spring & Houston
Street Width	70 ft	35 ft	60 ft	20 ft	25 ft
ROW Width	100 ft	80 ft	90 ft	70 ft	70 ft
Number of Lanes	5	2	5	2	2
Transit Route	44 Acres Homes	N/A	30 Clinton/ Ella	N/A	N/A

Source: City of Houston, 2022; TxDOT CRIS; HCAD 2022; METRO

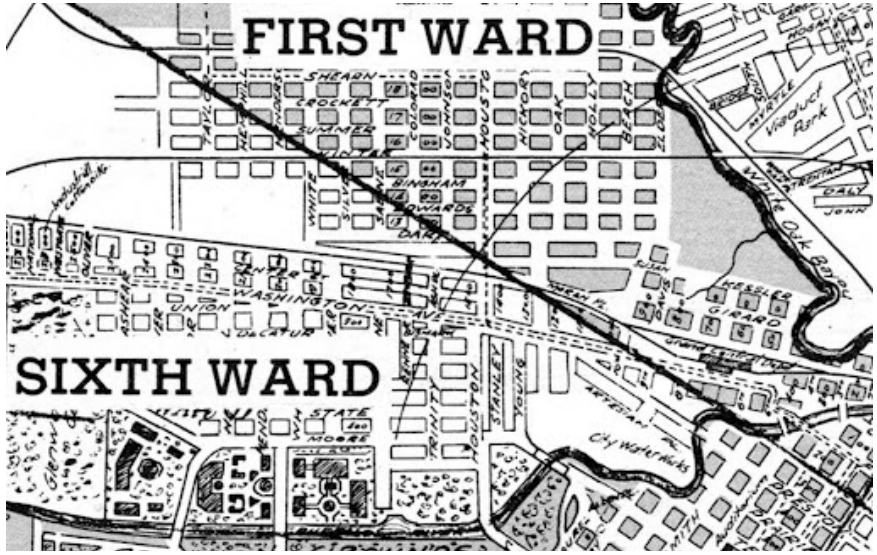
Sidewalk & Ramp Assessment

The grid-like pattern of streets in the Study Area alludes to the historic nature of the neighborhood. Built in the 1800s pre-automobile, neighborhood streets have small blocks that were easily traversable by foot.

Today, the neighborhood is a mixture of historic Queen Anne cottages and bungalows that hearken back to old times, adjacent to dense, single-family modern townhomes. This mixture of old and new is perhaps most evident in the area's walking infrastructure such as sidewalks. A treasure of history and charm, the older homes in the neighborhood are often paired with older or nonexistent sidewalks that are narrow and wrinkled by time. However, the new development next door might boast fresh new sidewalks that are wide and smooth. This inconsistency creates a sidewalk network that is not dependable and that creates many challenges and mobility issues for pedestrians.

Furthermore, a sidewalk in good condition also requires a curb ramp in good condition to accommodate the most vulnerable sidewalk users and those with mobility challenges. Curb ramps provide access between the sidewalk and roadway, often at intersections, for people using wheelchairs, strollers, walkers, crutches, or those who have mobility restrictions that make it difficult to step up and down high curbs. Curb ramps should be paired with tactile warnings to alert pedestrians to the sidewalk and street edge, providing orientation for the visually impaired.

Sidewalks are essential to completing the mobility network of a community. They connect people to a myriad of destinations, like community gathering spots and destinations like the Spring Street Trail within the Study Area, promote healthy habits, and help facilitate social interactions with neighbors and friends. Sidewalks can also provide safe connections to work or local businesses, enhancing the economic vitality of the area. Improving sidewalks throughout the Study Area will make walking a more safe, accessible, and attractive transportation option for residents, workers, and visitors alike.



Grid-like Pattern to Neighborhood Streets

Source: Houston Past Map Archive

Mixture of Old and New Development

Data Collection Process

The project team remotely walked every block within the Study Area via Google Maps Street View and Google Earth to assess condition, comfort, perceived safety, and feasibility of future sidewalk improvements. All sidewalks were assessed and categorized, giving the project team a robust data set of both quantitative data and qualitative assessments. All data was recorded in GIS mapping software and was used to develop a sidewalk network tracker tool.

Using HCAD parcel data, the team walked each street and recorded sidewalk condition for each parcel in the Study Area. For corner or full block parcels, each side of the parcel was assessed independently of the other(s). Often one segment of a parcel is vastly different than another segment due to a variety of factors including trees, drainage conditions, maintenance, and redevelopment. If the condition varied along a parcel, the parcel was scored based on the segment in poorest condition. A sidewalk is only as functional as its worst segment, especially for someone with mobility challenges.

Sidewalk condition was based on both width and state of good repair, as shown on the following page. The five condition categories are based on City of Houston (COH) standards that require sidewalks to be 5 feet and without vertical deflections more than one inch. City standards were updated in 2009 with new sidewalk standards that changed the minimum width of sidewalks from 4 feet to 5 feet. Many existing sidewalks within the Study Area were built prior to 2009 and are therefore below current standard.

While a majority of sidewalks in the area are flat and accessible, it only takes one bad parcel to make an entire block inaccessible for people with strollers, wheelchairs, or other mobility devices. Thus, sidewalk conditions in the Study Area were also summarized by block level, with each block being assigned the condition of least accessible parcel on that block. This gives a more accurate picture of the full accessibility of the walkable network within the Study Area.

Condition A: Flat and 5 feet wide or greater

These sidewalks are flat (traversable) and allow people to walk side-by-side. This should be the minimum standard for new sidewalks, with wider than 5 feet where possible.

Condition B: Flat and less than 5 feet wide

These sidewalks are flat (traversable), but built to the prior 4-feet standard. These are too narrow for people to walk or use a wheelchair side-by-side.

Condition C: Poor condition and 5 feet wide or greater

Although these sidewalks meet minimum width standards, they are in poor condition (not traversable), making it difficult for people with mobility challenges.

Condition D: Poor condition and less than 5 feet wide

These sidewalks are both too narrow and in poor condition (not traversable). They present physical barriers, especially for those with mobility challenges.

Condition E: Missing, no sidewalk present

Segments with no sidewalk or only portions of a sidewalk create major barriers to connectivity.

Sidewalk Condition Assessment

The results of the parcel by parcel assessment of sidewalk condition is presented in Figure A.36 and accounts for 22 miles of sidewalks in the Study Area. A parcel refers to the portion of sidewalk between one property line and the next. Summary statistics of this data is displayed in the charts in Figure A.37 and Figure A.38.

As Figure A.37 shows, 55 percent of sidewalk parcels in the Study Area are traversable; however, 10 of the 22 miles of sidewalk in the area are not traversable. These areas, displayed in the yellow, orange, and red colors, are scattered throughout the entirety of the Study Area and represented in larger portions towards the north and southeast of the Study Area.

While the assessment shows that the majority of sidewalks within the Study Area are traversable, the map indicates sidewalk conditions can vary substantially from one parcel to the next, creating uncertain conditions for people moving about by foot throughout the area.

One's walking experience is only as comfortable as the worst segment on a given path. As the map demonstrates, most traversable block segments in green are broken up by non-traversable segments in yellow, orange, and red, indicating that there is room for improvement in creating a walkable, accessible sidewalk network.

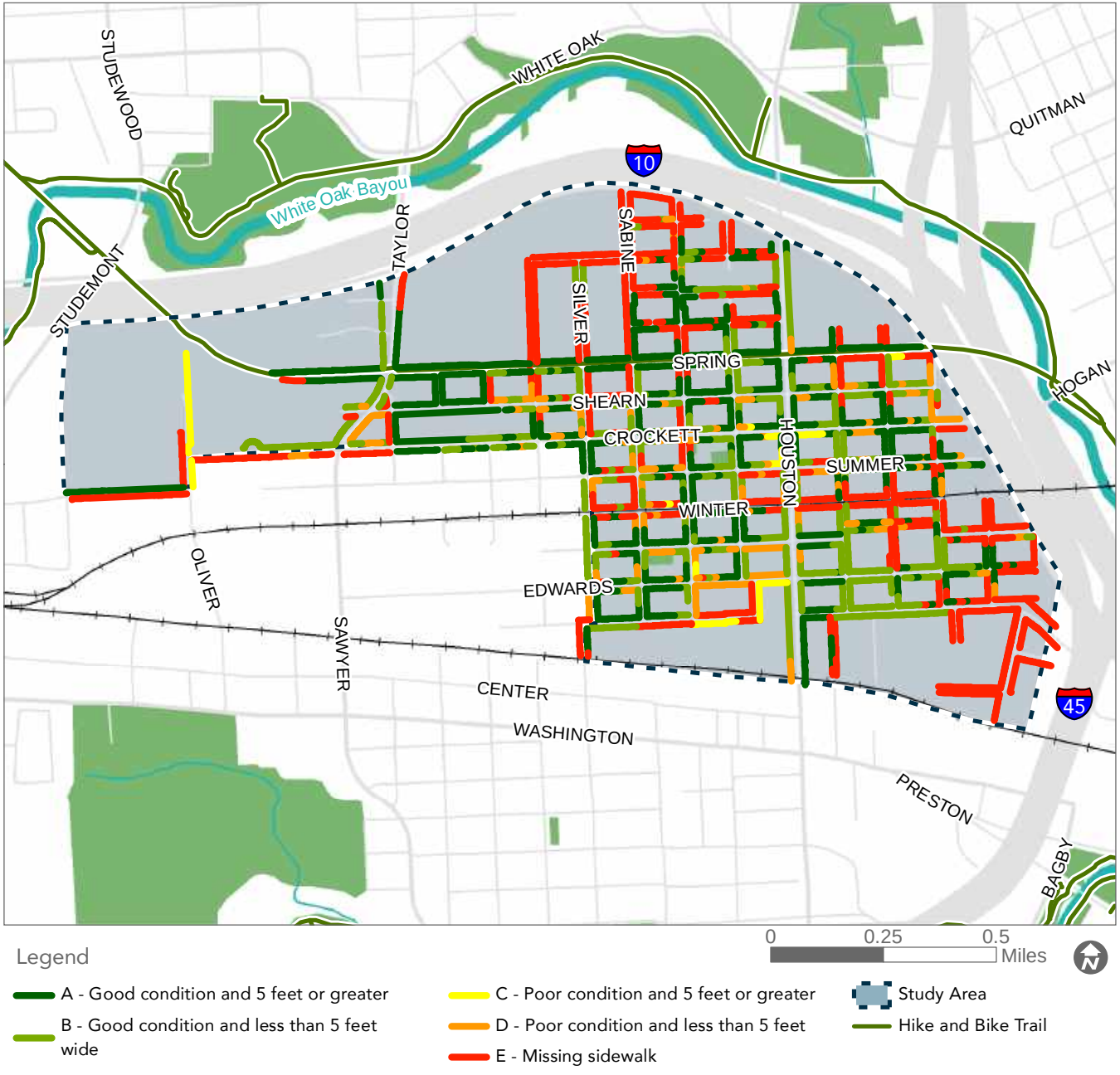
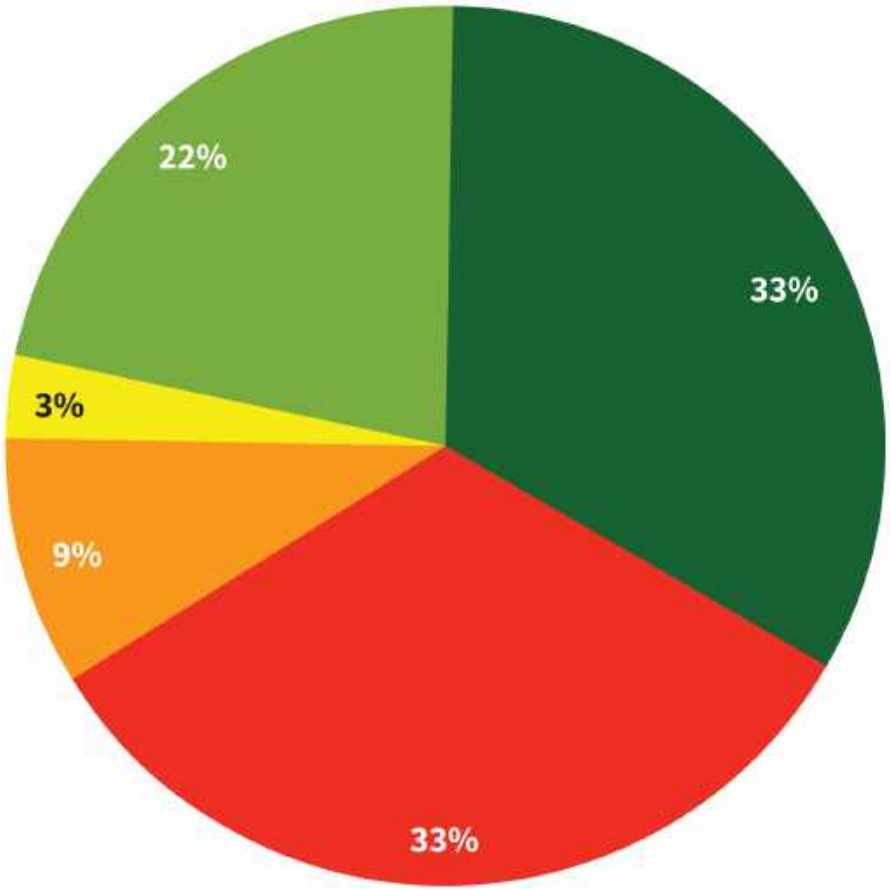


Figure A.36. Sidewalk Condition by Parcel
Source: Sidewalk Assessment March 2024, Harris County Appraisal District

Figure A.37. Sidewalk Condition by Parcel: Percent of Mileage



Source: Sidewalk Assessment March 2024, Harris County Appraisal District

Figure A.38. Sidewalk Condition by Parcel: Total Mileage

Intersection Curb Ramp Assessment Procedure

Data Collection Process: Intersections

The intersection assessment included an evaluation of curb ramp condition at all corners. Ramp type and condition were recorded and assessed based on City of Houston and Americans with Disabilities Act (ADA) curb ramp standards.

Directional vs. Diagonal Ramps

Directional ramps are ideal in most circumstances. Directional ramps direct the person walking to cross the intersection along the crosswalk, even if not marked, instead of directing them into the middle of the intersection. Directional ramps provide benefits to all people walking, but their benefit is even more impactful for people who are rolling or people who are visually impaired.

Diagonal ramps are shared by two converging sidewalks and typically require a change of direction to follow the crosswalk. At one point, these ramps were a standard. They are typically lower cost to construct than directional ramps. Ideally, diagonal ramps should only be used if constructed in areas where physical constraints make a directional ramp infeasible.

Ramp Condition

Ramps are defined by three condition categories: good, poor, and no ramp. While slopes were not calculated for each ramp, City of Houston slope standards for ramps were used as general guidelines. The focus of this assessment was determining if a ramp was traversable and its ease of use for a person walking or rolling.

To be ADA compliant, a ramp must meet slope guidelines, include a landing area of specific size, and truncated domes. For this assessment, only slope was considered for a ramp to be classified as good. Therefore, even some good ramps, as documented in this report, may not be fully compliant to ADA standards. The classifications are defined as follows.

Good Ramp: has a perceived slope that matched City of Houston standards, indicating it would be comfortable to traverse by a person rolling. City of Houston standards require truncated domes for all curb ramps.

Poor Ramp: has a slope that is not to City of Houston standard or is unsafe or inaccessible for people with mobility challenges.

No Ramp: includes corners where there is no ramp and there is no contiguous sidewalks to the curb indicating lack of connectivity from the edge of sidewalk to the curb.

Directional Good Ramp

Directional Poor Ramp

Directional Missing Ramp

Diagonal Good Ramp

Diagonal Poor Ramp

Newly Built to ADA Standards

Ramps Condition

The map in Figure A.40 shows the condition of ramps at each corner of Study Area intersections. Traversable crossings require accessible ramps in good condition at each end of a crosswalk, and few crossings within the Study Area meet that standard.

The assessment of intersections within the Study Area indicates that the vast majority of ramps (85 percent) are in poor condition or missing. Furthermore, as Figure A.41 shows, only eleven crossings at intersections within the Study Area out of the 98 total intersections are accessible, meaning only 11 intersections have a ramp in good condition for those with mobility challenges to cross safely.

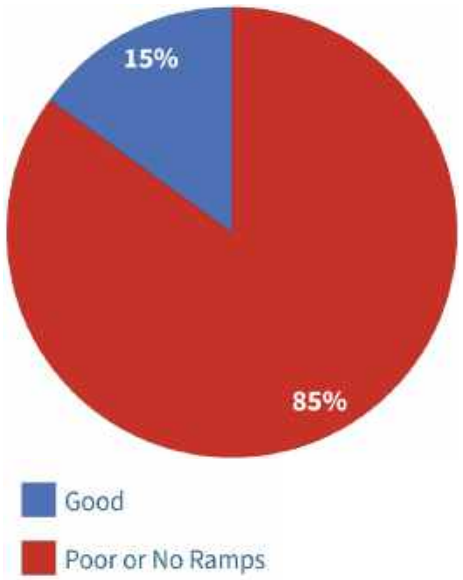


Figure A.39. Percent of Ramps in Good Condition Versus Poor or Missing

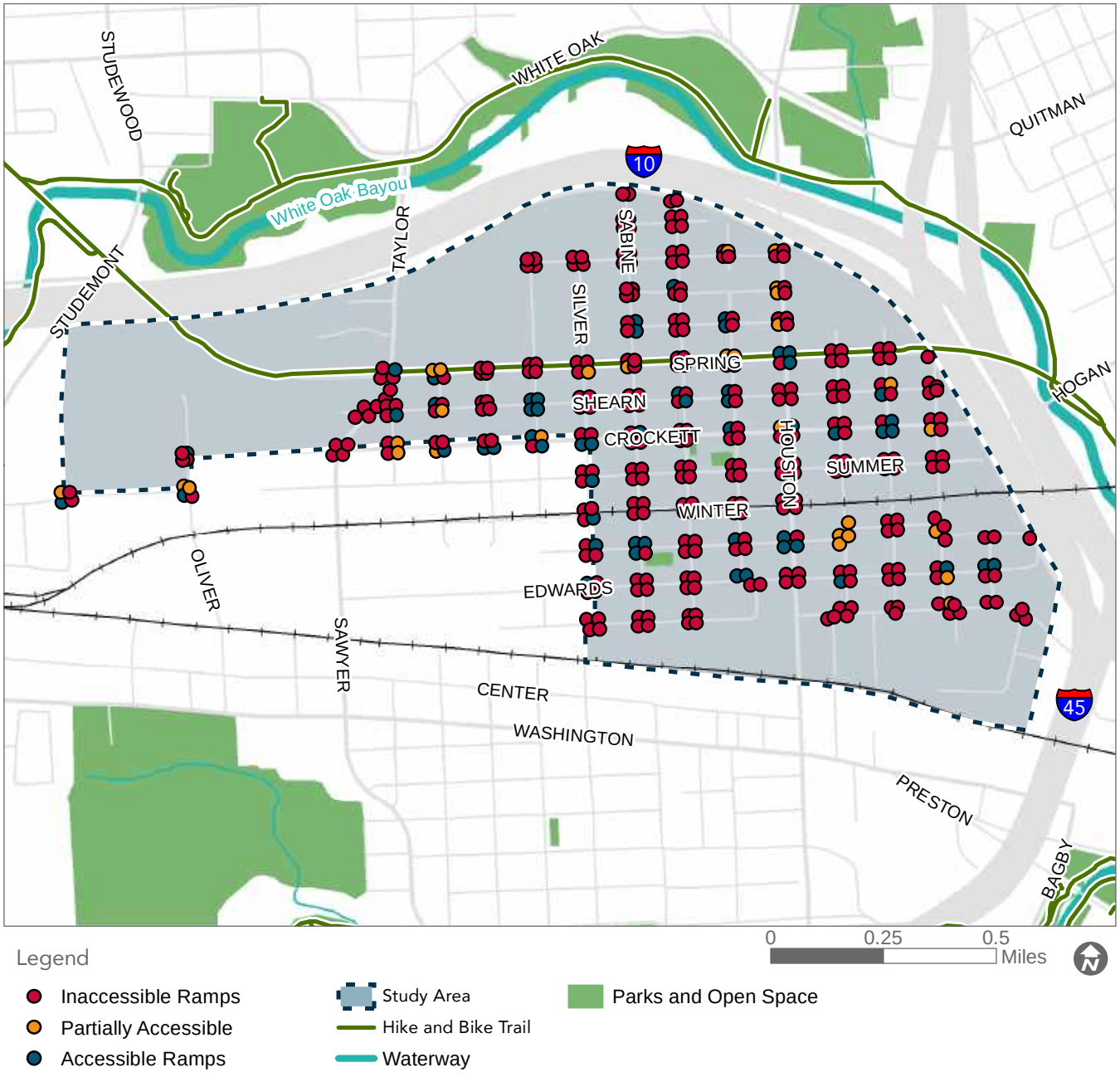


Figure A.40. Ramp Condition
Source: Sidewalk Assessment March 2024, Google Maps

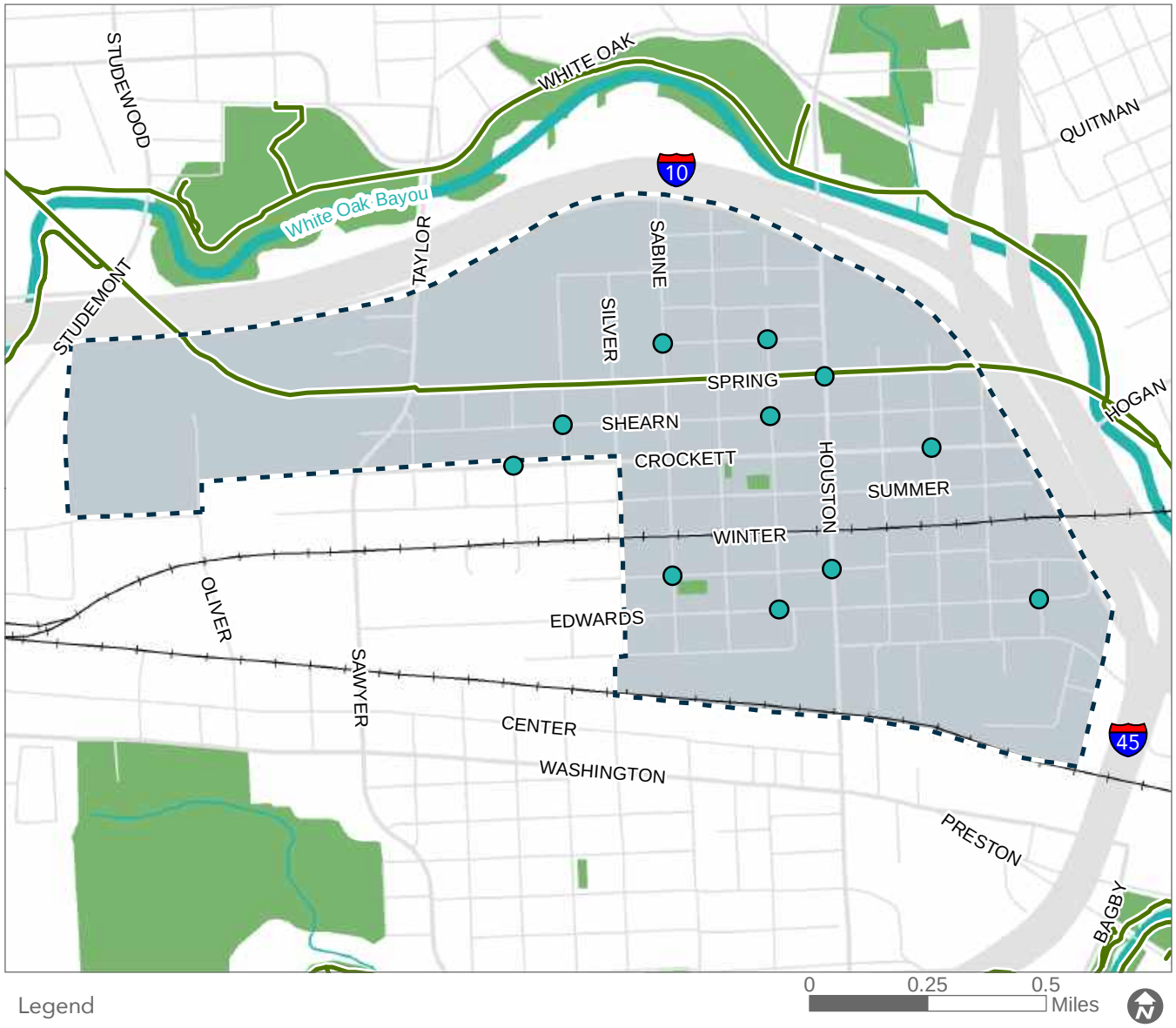


Figure A.41. Accessible Crossings
Source: Sidewalk Assessment March 2024

The Walkable Network

As noted previously, a block within a neighborhood is only as walkable as its worst sidewalk parcel. Even when a block of sidewalks is in good condition, if the parcel ends with a ramp that is in poor condition or missing, crossing an intersection becomes a dangerous and challenging feat. Identifying gaps in the sidewalk and ramp network is an important step in creating a walkable networkthatsupportswalkingasamobility option to neighborhood destinations. This information can be used to inform project recommendation and priorities throughout the Study Area going forward.

Factbook Sources

City of Houston, 2019

- Figure A. 31 Pavement Condition Index

City of Houston, 2022

- Figure A.1 Old Sixth Ward Mobility Plan Phase II Study Area
- Figure A.2 Surrounding TIRZs
- Figure A.3 Existing and Future Area Plans and Projects
- Figure A.30 Traffic Volumes & Speeds
- Figure A.34 High Injury Network
- Figure A.35 Key Corridor Characteristics

City of Houston Bike Plan

- Figure A.27 Bikeways

City of Houston Historic Preservation Manual

- City of Houston High First Ward Designation, page 9

City of Houston Major Thoroughfare & Freeway Plan

- Figure A.28 Major Thoroughfare Plan Street Classification

First Ward Civic Council

- Historic First Ward, page 9

Google Maps

- Figure A.40 Ramp Condition

Greater Northside Management District

- Figure A.4 Existing and Future Area Plans and Projects

Harris County

- Figure A.2 Surrounding TIRZs

Harris County Appraisal District (HCAD), 2022

- Figure A.5 Land Use
- Figure A.35 Key Corridor Characteristics
- Sidewalk Assessment March 2024, pages 38-39

Houston-Galveston Area Council (H-GAC)

- Figure A.4 Existing and Future Area Plans and Projects
- Figure A.26 Study Area Sidewalk Gaps

Houston-Galveston Area Council (H-GAC) Travel Demand Model Trip Distance Outputs, 2019

- Figure A.22 Trip Types
- Figure A.23 Average Trip Distance for All Trip Types

Houston Past Map Archive

- Sidewalk & Ramp Assessment, page 35

Houston Public Media

- Historic First Ward, page 9

METRO

- Figure A.4 Future METRO Projects
- Figure A.32 Transit Service & Ridership
- Figure A.35 Key Corridor Characteristics

TIRZ 13

- Figure A.4 Existing and Future Area Plans and Projects

TxDOT

- Figure A.4 Existing and Future Area Plans and Projects

TxDOT Crash Records Information System (CRIS)

- Figure A.33 Crash Density
- Figure A.35 Key Corridor Characteristics

US Census

- Figure A.7 Study Area Census Area

US Census American Community Survey, 2021

- Figure A.8 Census Area Demographics
- Figure A.9 Race & Ethnicity of Residents
- Figure A.10 Resident Population by Age
- Figure A.11 Resident Educational Attainment
- Figure A.12 Percent of Households by Income
- Figure A.13 Resident Vehicle Availability
- Figure A.15 Worker Income
- Figure A.17 Race & Ethnicity of Workers
- Figure A.20 Work Commute by Mode
- Figure A.21 Commute Time to Work

US Census LEHD Origin-Destination Employment Statistics (LODES), 2021

- Figure A.14 Worker Top Employment Sectors
- Figure A.16 Population of Workers by Age
- Figure A.18 Where Study Area Residents Work
- Figure A.19 Where Study Area Workers Live

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Appendix

B

Traffic Data Collection

1. Shearn Street at Sawyer Street - TMC

Wed May 15, 2024
Full Length (7 AM-9 AM, 3 PM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187644, Location: 29.774403, -95.381997

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg	Sawyer Street						Shearn Street						Sawyer Street						Shearn Street						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2024-05-15 7:00AM	18	385	121	4	**528**	0	15	3	39	0	**57**	1	14	183	7	0	**204**	0	2	2	4	0	**8**	2	**797**
8:00AM	14	508	74	2	**598**	0	2	11	32	0	**45**	3	23	162	16	0	**201**	3	6	6	6	0	**18**	2	**862**
3:00PM	32	522	104	5	**663**	5	8	18	34	0	**60**	3	29	307	22	0	**358**	0	32	11	19	1	**63**	2	**1144**
4:00PM	19	649	120	2	**790**	1	12	14	21	0	**47**	2	39	315	43	0	**397**	0	37	19	15	0	**71**	4	**1305**
5:00PM	29	638	98	4	**769**	3	9	18	37	0	**64**	5	41	375	22	2	**440**	2	50	12	16	0	**78**	4	**1351**
6:00PM	27	628	107	5	**767**	1	8	18	20	0	**46**	2	39	325	23	0	**387**	0	46	17	11	0	**74**	9	**1274**
Total	139	3330	624	22	**4115**	10	54	82	183	0	**319**	16	185	1667	133	2	**1987**	5	173	67	71	1	**312**	23	**6733**
% Approach	3.4%	80.9%	15.2%	0.5%	**-**	-	16.9%	25.7%	57.4%	0%	**-**	-	9.3%	83.9%	6.7%	0.1%	**-**	-	55.4%	21.5%	22.8%	0.3%	**-**	-	-
% Total	2.1%	49.5%	9.3%	0.3%	**61.1%**	-	0.8%	1.2%	2.7%	0%	**4.7%**	-	2.7%	24.8%	2.0%	0%	**29.5%**	-	2.6%	1.0%	1.1%	0%	**4.6%**	-	-
Lights	136	3272	613	22	**4043**	-	54	82	183	0	**319**	-	184	1628	133	2	**1947**	-	173	67	70	1	**311**	-	6620
% Lights	97.8%	98.3%	98.2%	100%	**98.3%**	-	100%	100%	100%	0%	**100%**	-	99.5%	97.7%	100%	100%	**98.0%**	-	100%	100%	98.6%	100%	**99.7%**	-	98.3%
Articulated Trucks	1	18	2	0	**21**	-	0	0	0	0	**0**	-	0	8	0	0	**8**	-	0	0	0	0	**0**	-	29
% Articulated Trucks	0.7%	0.5%	0.3%	0%	**0.5%**	-	0%	0%	0%	0%	**0%**	-	0%	0.5%	0%	0%	**0.4%**	-	0%	0%	0%	0%	**0%**	-	0.4%
Buses and Single-Unit Trucks	2	40	9	0	**51**	-	0	0	0	0	**0**	-	1	31	0	0	**32**	-	0	0	1	0	**1**	-	84
% Buses and Single-Unit Trucks	1.4%	1.2%	1.4%	0%	**1.2%**	-	0%	0%	0%	0%	**0%**	-	0.5%	1.9%	0%	0%	**1.6%**	-	0%	0%	1.4%	0%	**0.3%**	-	1.2%
Pedestrians	-	-	-	-	-	9	-	-	-	-	-	16	-	-	-	-	-	5	-	-	-	-	-	19	
% Pedestrians	-	-	-	-	-	90.0%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	82.6%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	4	
% Bicycles on Crosswalk	-	-	-	-	-	10.0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	17.4%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

1. Shearn Street at Sawyer Street - TMC
Wed May 15, 2024
Full Length (7 AM-9 AM, 3 PM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187644, Location: 29.774403, -95.381997

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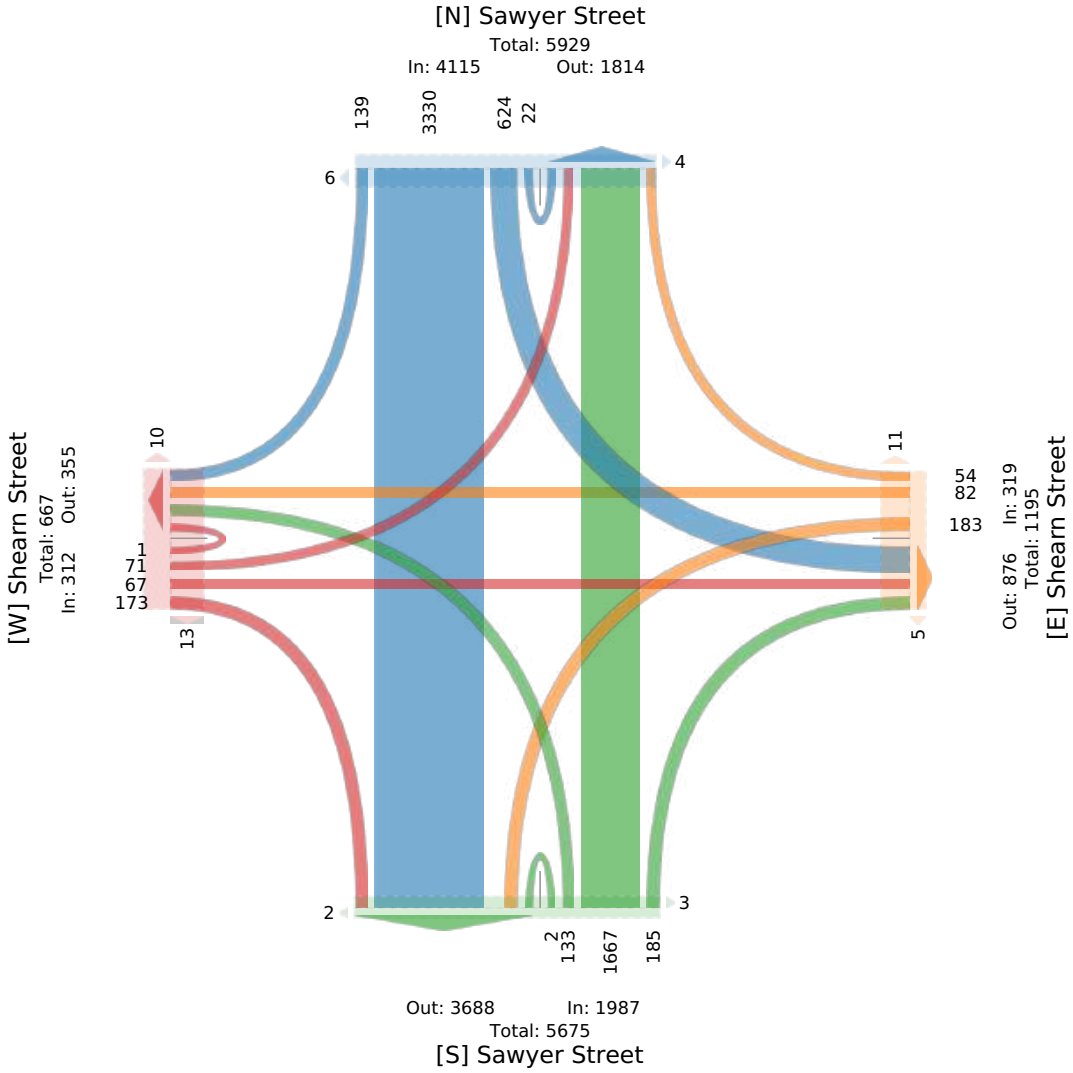


1. Shearn Street at Sawyer Street - TMC

Wed May 15, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187644, Location: 29.774403, -95.381997

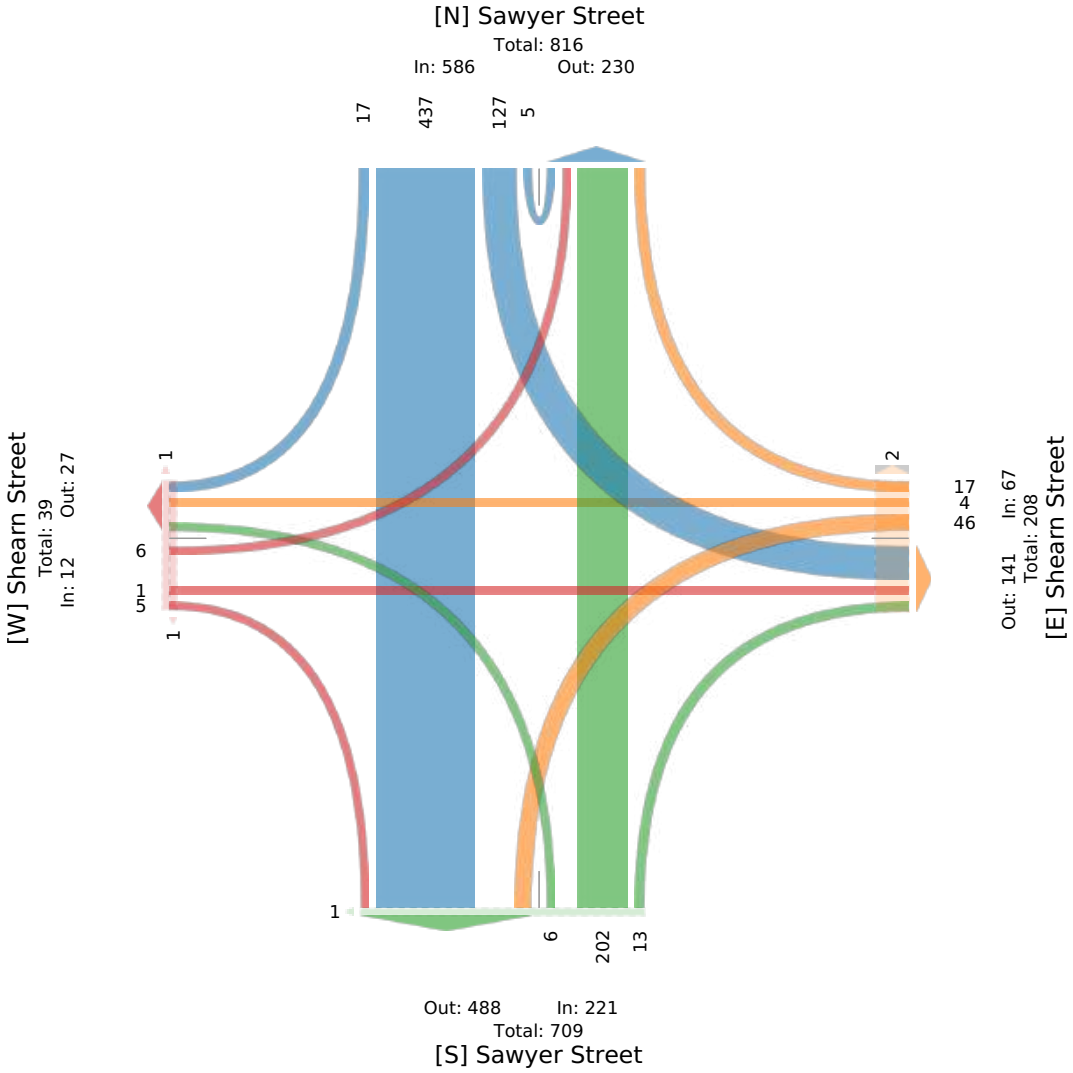
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg	Sawyer Street						Shearn Street						Sawyer Street						Shearn Street						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2024-05-15 7:15AM	5	80	35	0	**120**	0	7	1	10	0	**18**	0	3	56	0	0	**59**	0	0	0	1	0	**1**	1	**198**
7:30AM	0	114	31	0	**145**	0	6	0	14	0	**20**	1	1	49	0	0	**50**	0	1	1	2	0	**4**	0	**219**
7:45AM	11	111	37	4	**163**	0	2	0	10	0	**12**	0	6	44	5	0	**55**	0	1	0	1	0	**2**	1	**232**
8:00AM	1	132	24	1	**158**	0	2	3	12	0	**17**	1	3	53	1	0	**57**	1	3	0	2	0	**5**	0	**237**
Total	17	437	127	5	**586**	0	17	4	46	0	**67**	2	13	202	6	0	**221**	1	5	1	6	0	**12**	2	**886**
% Approach	2.9%	74.6%	21.7%	0.9%	**-**	-	25.4%	6.0%	68.7%	0%	**-**	-	5.9%	91.4%	2.7%	0%	**-**	-	41.7%	8.3%	50.0%	0%	**-**	-	-
% Total	1.9%	49.3%	14.3%	0.6%	**66.1%**	-	1.9%	0.5%	5.2%	0%	**7.6%**	-	1.5%	22.8%	0.7%	0%	**24.9%**	-	0.6%	0.1%	0.7%	0%	**1.4%**	-	-
PHF	0.386	0.828	0.858	0.313	**0.899**	-	0.607	0.333	0.821	-	**0.838**	-	0.542	0.902	0.300	-	**0.936**	-	0.417	0.250	0.750	-	**0.600**	-	0.935
Lights	16	429	126	5	**576**	-	17	4	46	0	**67**	-	13	196	6	0	**215**	-	5	1	6	0	**12**	-	870
% Lights	94.1%	98.2%	99.2%	100%	**98.3%**	-	100%	100%	100%	0%	**100%**	-	100%	97.0%	100%	0%	**97.3%**	-	100%	100%	100%	0%	**100%**	-	98.2%
Articulated Trucks	1	3	0	0	**4**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	5
% Articulated Trucks	5.9%	0.7%	0%	0%	**0.7%**	-	0%	0%	0%	0%	**0%**	-	0%	0.5%	0%	0%	**0.5%**	-	0%	0%	0%	0%	**0%**	-	0.6%
Buses and Single-Unit Trucks	0	5	1	0	**6**	-	0	0	0	0	**0**	-	0	5	0	0	**5**	-	0	0	0	0	**0**	-	11
% Buses and Single-Unit Trucks	0%	1.1%	0.8%	0%	**1.0%**	-	0%	0%	0%	0%	**0%**	-	0%	2.5%	0%	0%	**2.3%**	-	0%	0%	0%	0%	**0%**	-	1.2%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	50.0%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	50.0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

1. Shearn Street at Sawyer Street - TMC
Wed May 15, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187644, Location: 29.774403, -95.381997

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



1. Shearn Street at Sawyer Street - TMC

Wed May 15, 2024
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187644, Location: 29.774403, -95.381997

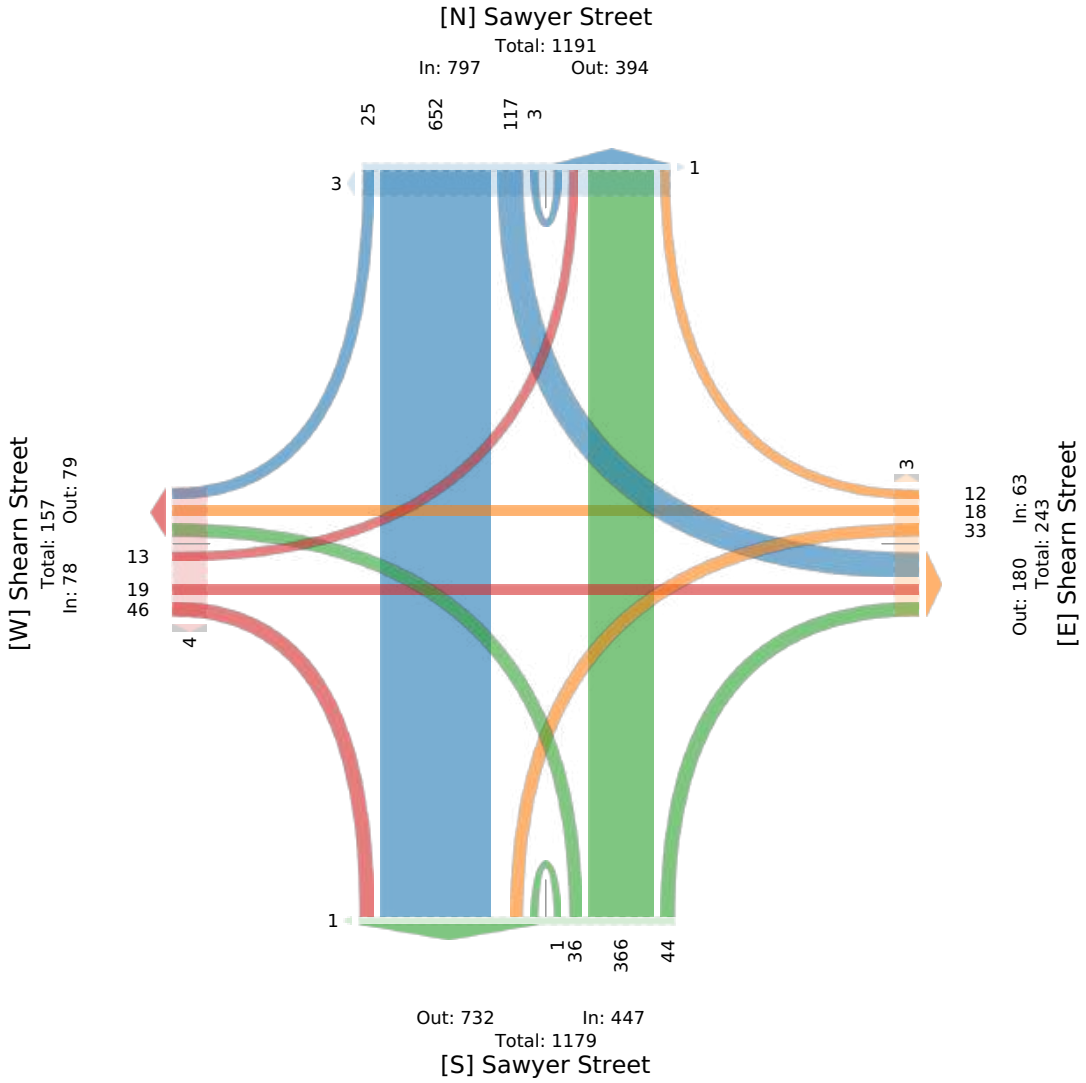
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg / Direction	Sawyer Street Southbound						Shearn Street Westbound						Sawyer Street Northbound						Shearn Street Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2024-05-15 4:30PM	1	176	39	0	**216**	1	3	5	8	0	**16**	0	9	80	16	0	**105**	0	16	5	2	0	**23**	1	**360**
4:45PM	9	159	35	1	**204**	0	3	2	7	0	**12**	0	10	81	10	0	**101**	0	5	5	4	0	**14**	2	**331**
5:00PM	8	166	23	0	**197**	1	2	6	11	0	**19**	1	12	82	7	0	**101**	0	15	3	3	0	**21**	1	**338**
5:15PM	7	151	20	2	**180**	2	4	5	7	0	**16**	2	13	123	3	1	**140**	1	10	6	4	0	**20**	0	**356**
Total	25	652	117	3	**797**	4	12	18	33	0	**63**	3	44	366	36	1	**447**	1	46	19	13	0	**78**	4	**1385**
% Approach	3.1%	81.8%	14.7%	0.4%	**-**	-	19.0%	28.6%	52.4%	0%	**-**	-	9.8%	81.9%	8.1%	0.2%	**-**	-	59.0%	24.4%	16.7%	0%	**-**	-	**-**
% Total	1.8%	47.1%	8.4%	0.2%	**57.5%**	-	0.9%	1.3%	2.4%	0%	**4.5%**	-	3.2%	26.4%	2.6%	0.1%	**32.3%**	-	3.3%	1.4%	0.9%	0%	**5.6%**	-	**-**
PHF	0.694	0.926	0.750	0.375	**0.922**	-	0.750	0.750	0.750	-	**0.829**	-	0.846	0.744	0.563	0.250	**0.798**	-	0.719	0.792	0.813	-	**0.848**	-	0.962
Lights	25	647	116	3	**791**	-	12	18	33	0	**63**	-	44	361	36	1	**442**	-	46	19	13	0	**78**	-	1374
% Lights	100%	99.2%	99.1%	100%	**99.2%**	-	100%	100%	100%	0%	**100%**	-	100%	98.6%	100%	100%	**98.9%**	-	100%	100%	100%	0%	**100%**	-	99.2%
Articulated Trucks	0	1	0	0	**1**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	2
% Articulated Trucks	0%	0.2%	0%	0%	**0.1%**	-	0%	0%	0%	0%	**0%**	-	0%	0.3%	0%	0%	**0.2%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	4	1	0	**5**	-	0	0	0	0	**0**	-	0	4	0	0	**4**	-	0	0	0	0	**0**	-	9
% Buses and Single-Unit Trucks	0%	0.6%	0.9%	0%	**0.6%**	-	0%	0%	0%	0%	**0%**	-	0%	1.1%	0%	0%	**0.9%**	-	0%	0%	0%	0%	**0%**	-	0.6%
Pedestrians	-	-	-	-	-	4	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	4	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

1. Shearn Street at Sawyer Street - TMC
Wed May 15, 2024
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187644, Location: 29.774403, -95.381997

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



2. Shearn Street at Taylor Street - TMC

Wed May 15, 2024
Full Length (7 AM-9 AM, 3 PM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187645, Location: 29.774412, -95.381472

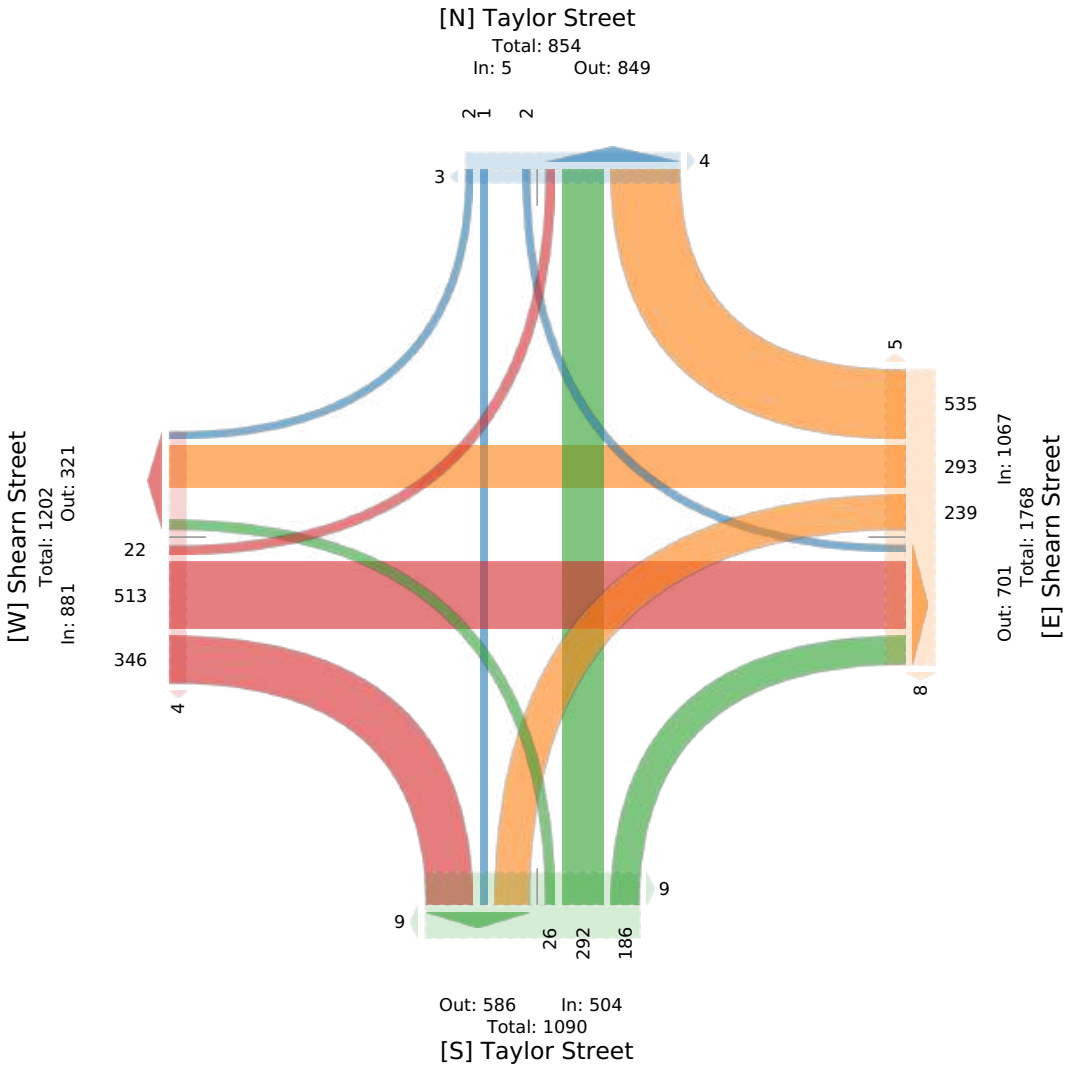
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg / Direction	Taylor Street Southbound						Shearn Street Westbound						Taylor Street Northbound						Shearn Street Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2024-05-15 7:00AM	1	1	0	0	**2**	0	125	56	59	0	**240**	5	48	51	6	0	**105**	11	48	83	6	0	**137**	2	**484**
8:00AM	0	0	0	0	**0**	4	88	42	37	0	**167**	1	20	50	2	0	**72**	0	47	57	0	0	**104**	1	**343**
3:00PM	0	0	0	0	**0**	2	102	55	41	0	**198**	3	31	52	3	0	**86**	6	50	91	6	0	**147**	0	**431**
4:00PM	0	0	1	0	**1**	0	83	44	36	0	**163**	1	24	39	9	0	**72**	1	80	96	3	0	**179**	1	**415**
5:00PM	1	0	0	0	**1**	0	65	55	45	0	**165**	2	37	62	3	0	**102**	0	62	86	4	0	**152**	0	**420**
6:00PM	0	0	1	0	**1**	1	72	41	21	0	**134**	1	26	38	3	0	**67**	0	59	100	3	0	**162**	0	**364**
Total	2	1	2	0	**5**	7	535	293	239	0	**1067**	13	186	292	26	0	**504**	18	346	513	22	0	**881**	4	**2457**
% Approach	40.0%	20.0%	40.0%	0%	**-**	-	50.1%	27.5%	22.4%	0%	**-**	-	36.9%	57.9%	5.2%	0%	**-**	-	39.3%	58.2%	2.5%	0%	**-**	-	**-**
% Total	0.1%	0%	0.1%	0%	**0.2%**	-	21.8%	11.9%	9.7%	0%	**43.4%**	-	7.6%	11.9%	1.1%	0%	**20.5%**	-	14.1%	20.9%	0.9%	0%	**35.9%**	-	**-**
Lights	2	1	2	0	**5**	-	535	293	239	0	**1067**	-	182	287	26	0	**495**	-	343	508	19	0	**870**	-	2437
% Lights	100%	100%	100%	0%	**100%**	-	100%	100%	100%	0%	**100%**	-	97.8%	98.3%	100%	0%	**98.2%**	-	99.1%	99.0%	86.4%	0%	**98.8%**	-	99.2%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	0	0	0	**1**	-	0	0	1	0	**1**	-	2
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.5%	0%	0%	0%	**0.2%**	-	0%	0%	4.5%	0%	**0.1%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	3	5	0	0	**8**	-	3	5	2	0	**10**	-	18
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	1.6%	1.7%	0%	0%	**1.6%**	-	0.9%	1.0%	9.1%	0%	**1.1%**	-	0.7%
Pedestrians	-	-	-	-	-	7	-	-	-	-	-	12	-	-	-	-	-	18	-	-	-	-	-	4	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	92.3%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	7.7%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2. Shearn Street at Taylor Street - TMC
Wed May 15, 2024
Full Length (7 AM-9 AM, 3 PM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187645, Location: 29.774412, -95.381472

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



2. Shearn Street at Taylor Street - TMC

Wed May 15, 2024
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187645, Location: 29.774412, -95.381472

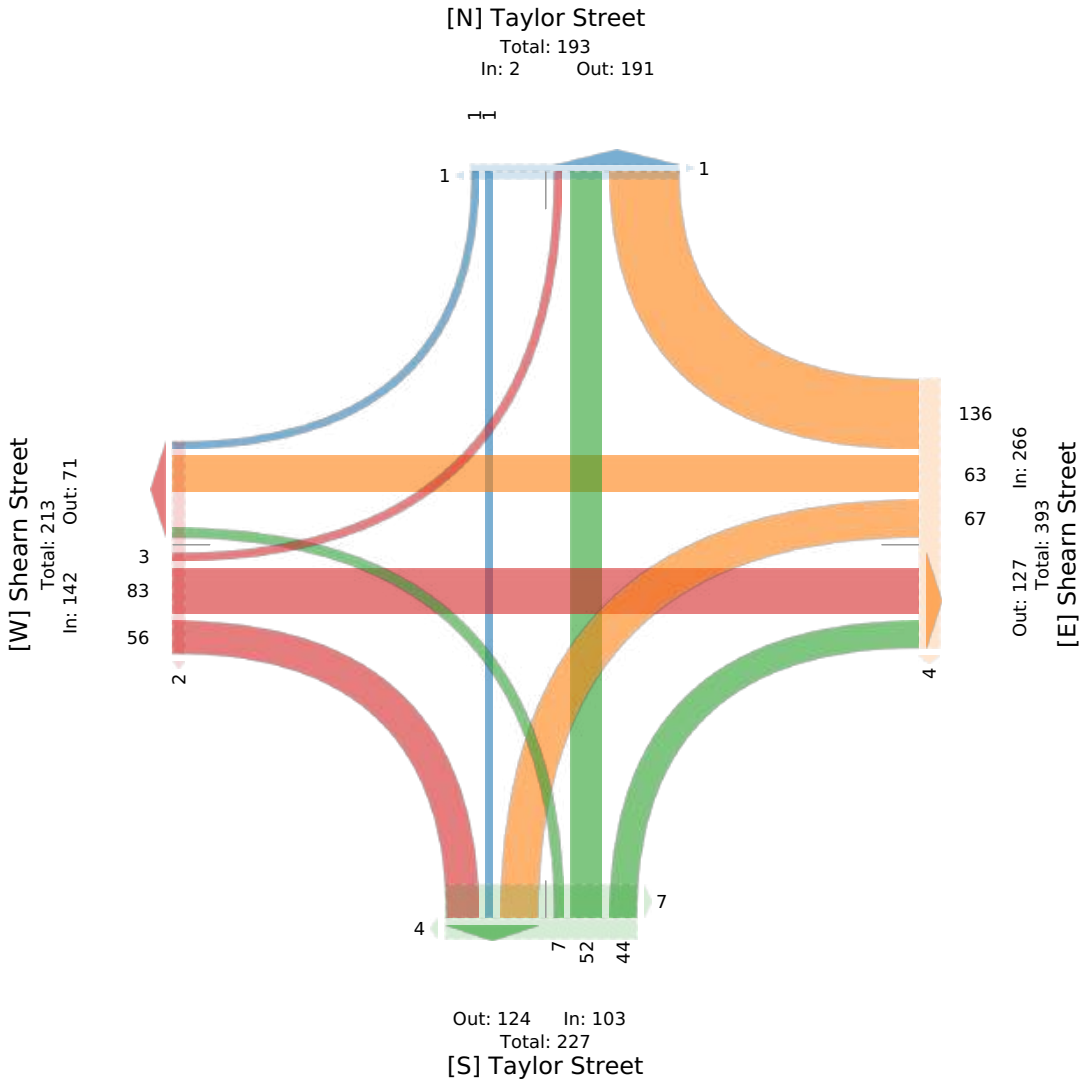
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg / Direction	Taylor Street Southbound						Shearn Street Westbound						Taylor Street Northbound						Shearn Street Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2024-05-15 7:15AM	0	1	0	0	**1**	0	40	18	20	0	**78**	2	25	5	2	0	**32**	6	10	24	1	0	**35**	2	**146**
7:30AM	1	0	0	0	**1**	0	38	17	16	0	**71**	1	12	11	2	0	**25**	4	17	17	2	0	**36**	0	**133**
7:45AM	0	0	0	0	**0**	0	33	14	17	0	**64**	1	5	21	2	0	**28**	1	15	27	0	0	**42**	0	**134**
8:00AM	0	0	0	0	**0**	2	25	14	14	0	**53**	0	2	15	1	0	**18**	0	14	15	0	0	**29**	0	**100**
Total	1	1	0	0	**2**	2	136	63	67	0	**266**	4	44	52	7	0	**103**	11	56	83	3	0	**142**	2	**513**
% Approach	50.0%	50.0%	0%	0%	**-**	-	51.1%	23.7%	25.2%	0%	**-**	-	42.7%	50.5%	6.8%	0%	**-**	-	39.4%	58.5%	2.1%	0%	**-**	-	-
% Total	0.2%	0.2%	0%	0%	**0.4%**	-	26.5%	12.3%	13.1%	0%	**51.9%**	-	8.6%	10.1%	1.4%	0%	**20.1%**	-	10.9%	16.2%	0.6%	0%	**27.7%**	-	-
PHF	0.250	0.250	-	-	**0.500**	-	0.850	0.875	0.838	-	**0.853**	-	0.440	0.619	0.875	-	**0.805**	-	0.824	0.769	0.375	-	**0.845**	-	0.878
Lights	1	1	0	0	**2**	-	136	63	67	0	**266**	-	43	50	7	0	**100**	-	55	82	3	0	**140**	-	508
% Lights	100%	100%	0%	0%	**100%**	-	100%	100%	100%	0%	**100%**	-	97.7%	96.2%	100%	0%	**97.1%**	-	98.2%	98.8%	100%	0%	**98.6%**	-	99.0%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	2	0	0	**3**	-	1	1	0	0	**2**	-	5
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	2.3%	3.8%	0%	0%	**2.9%**	-	1.8%	1.2%	0%	0%	**1.4%**	-	1.0%
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	4	-	-	-	-	-	11	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2. Shearn Street at Taylor Street - TMC
Wed May 15, 2024
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187645, Location: 29.774412, -95.381472

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



2. Shearn Street at Taylor Street - TMC

Wed May 15, 2024
PM Peak (4:30 PM - 5:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187645, Location: 29.774412, -95.381472

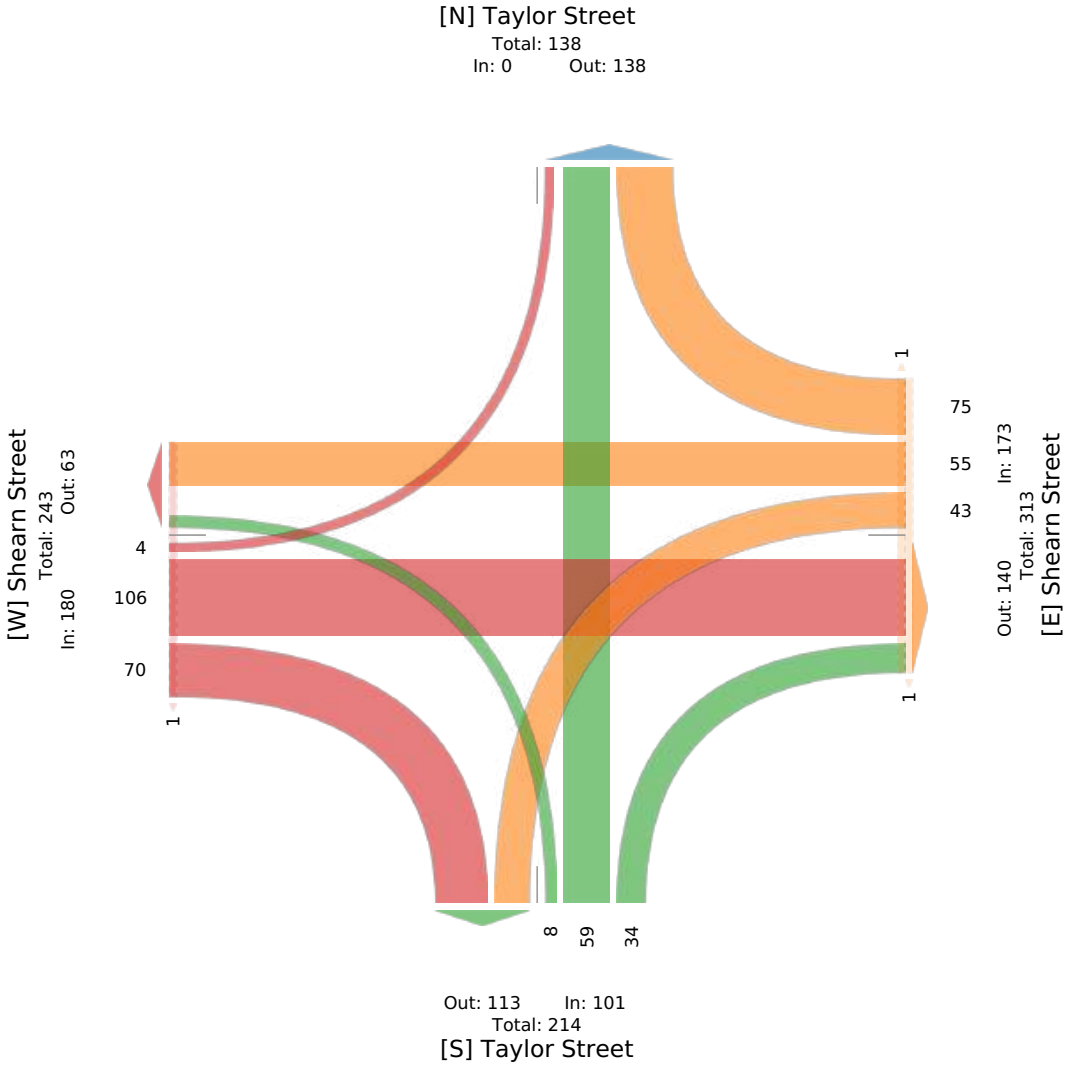
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg / Direction	Taylor Street Southbound						Shearn Street Westbound						Taylor Street Northbound						Shearn Street Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2024-05-15 4:30PM	0	0	0	0	**0**	0	15	12	11	0	**38**	1	3	13	4	0	**20**	0	21	29	0	0	**50**	1	**108**
4:45PM	0	0	0	0	**0**	0	29	15	9	0	**53**	0	10	8	3	0	**21**	0	25	21	2	0	**48**	0	**122**
5:00PM	0	0	0	0	**0**	0	18	14	9	0	**41**	1	13	11	0	0	**24**	0	12	24	1	0	**37**	0	**102**
5:15PM	0	0	0	0	**0**	0	13	14	14	0	**41**	0	8	27	1	0	**36**	0	12	32	1	0	**45**	0	**122**
Total	0	0	0	0	**0**	0	75	55	43	0	**173**	2	34	59	8	0	**101**	0	70	106	4	0	**180**	1	**454**
% Approach	0%	0%	0%	0%	**-**	-	43.4%	31.8%	24.9%	0%	**-**	-	33.7%	58.4%	7.9%	0%	**-**	-	38.9%	58.9%	2.2%	0%	**-**	-	-
% Total	0%	0%	0%	0%	**0%**	-	16.5%	12.1%	9.5%	0%	**38.1%**	-	7.5%	13.0%	1.8%	0%	**22.2%**	-	15.4%	23.3%	0.9%	0%	**39.6%**	-	-
PHF	-	-	-	-	**-**	-	0.647	0.917	0.768	-	**0.816**	-	0.654	0.546	0.500	-	**0.701**	-	0.700	0.828	0.500	-	**0.900**	-	0.930
Lights	0	0	0	0	**0**	-	75	55	43	0	**173**	-	33	57	8	0	**98**	-	69	106	3	0	**178**	-	449
% Lights	0%	0%	0%	0%	**-**	-	100%	100%	100%	0%	**100%**	-	97.1%	96.6%	100%	0%	**97.0%**	-	98.6%	100%	75.0%	0%	**98.9%**	-	98.9%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	2	0	0	**3**	-	1	0	1	0	**2**	-	5
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**0%**	-	2.9%	3.4%	0%	0%	**3.0%**	-	1.4%	0%	25.0%	0%	**1.1%**	-	1.1%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2. Shearn Street at Taylor Street - TMC
Wed May 15, 2024
PM Peak (4:30 PM - 5:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187645, Location: 29.774412, -95.381472

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



3. Houston Avenue at Crockett Street - TMC

Wed May 15, 2024
Full Length (7 AM-9 AM, 3 PM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187646, Location: 29.773703, -95.372422

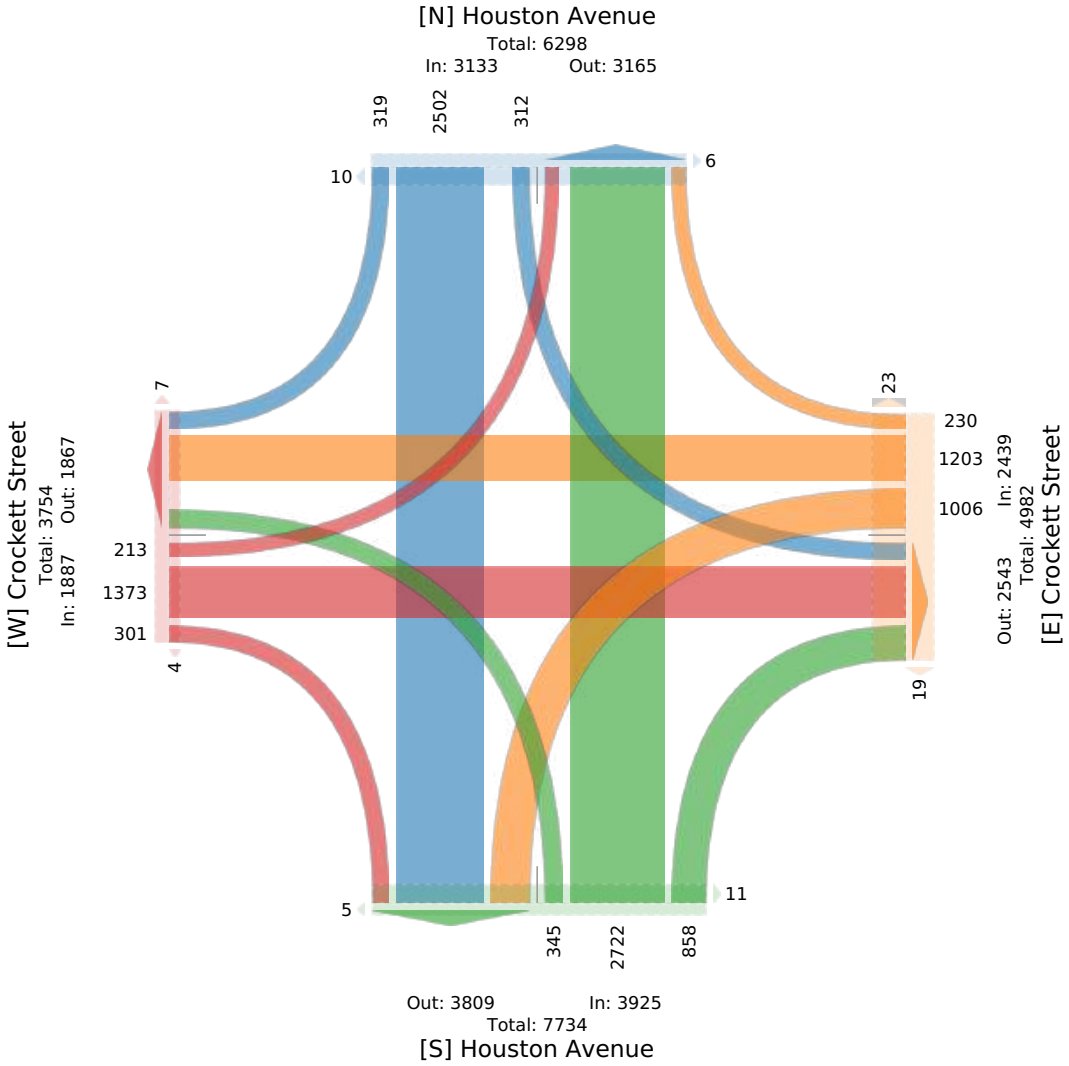
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg Direction	Houston Avenue Southbound						Crockett Street Westbound						Houston Avenue Northbound						Crockett Street Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2024-05-15 7:00AM	74	457	39	0	**570**	2	26	222	226	0	**474**	3	50	186	34	0	**270**	3	43	84	28	0	**155**	2	**1469**
8:00AM	37	587	29	0	**653**	2	27	196	339	0	**562**	15	70	222	29	0	**321**	2	41	96	19	0	**156**	0	**1692**
3:00PM	52	282	54	0	**388**	4	40	139	113	0	**292**	2	180	448	64	0	**692**	0	57	263	34	0	**354**	0	**1726**
4:00PM	47	390	55	0	**492**	1	41	253	127	0	**421**	5	188	625	74	0	**887**	3	51	293	44	0	**388**	2	**2188**
5:00PM	61	430	56	0	**547**	5	50	235	117	0	**402**	4	217	803	102	0	**1122**	2	48	356	40	0	**444**	2	**2515**
6:00PM	48	356	79	0	**483**	2	46	158	84	0	**288**	13	153	438	42	0	**633**	6	61	281	48	0	**390**	5	**1794**
Total	319	2502	312	0	**3133**	16	230	1203	1006	0	**2439**	42	858	2722	345	0	**3925**	16	301	1373	213	0	**1887**	11	**11384**
% Approach	10.2%	79.9%	10.0%	0%	**-**	-	9.4%	49.3%	41.2%	0%	**-**	-	21.9%	69.4%	8.8%	0%	**-**	-	16.0%	72.8%	11.3%	0%	**-**	-	-
% Total	2.8%	22.0%	2.7%	0%	**27.5%**	-	2.0%	10.6%	8.8%	0%	**21.4%**	-	7.5%	23.9%	3.0%	0%	**34.5%**	-	2.6%	12.1%	1.9%	0%	**16.6%**	-	-
Lights	313	2447	308	0	**3068**	-	225	1193	979	0	**2397**	-	837	2664	337	0	**3838**	-	300	1368	208	0	**1876**	-	11179
% Lights	98.1%	97.8%	98.7%	0%	**97.9%**	-	97.8%	99.2%	97.3%	0%	**98.3%**	-	97.6%	97.9%	97.7%	0%	**97.8%**	-	99.7%	99.6%	97.7%	0%	**99.4%**	-	98.2%
Articulated Trucks	1	1	0	0	**2**	-	1	1	1	0	**3**	-	2	5	0	0	**7**	-	0	0	0	0	**0**	-	12
% Articulated Trucks	0.3%	0%	0%	0%	**0.1%**	-	0.4%	0.1%	0.1%	0%	**0.1%**	-	0.2%	0.2%	0%	0%	**0.2%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	5	54	4	0	**63**	-	4	9	26	0	**39**	-	19	53	8	0	**80**	-	1	5	5	0	**11**	-	193
% Buses and Single-Unit Trucks	1.6%	2.2%	1.3%	0%	**2.0%**	-	1.7%	0.7%	2.6%	0%	**1.6%**	-	2.2%	1.9%	2.3%	0%	**2.0%**	-	0.3%	0.4%	2.3%	0%	**0.6%**	-	1.7%
Pedestrians	-	-	-	-	-	16	-	-	-	-	-	32	-	-	-	-	-	15	-	-	-	-	-	10	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	76.2%	-	-	-	-	-	93.8%	-	-	-	-	-	90.9%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	10	-	-	-	-	-	1	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	23.8%	-	-	-	-	-	6.3%	-	-	-	-	-	9.1%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3. Houston Avenue at Crockett Street - TMC
Wed May 15, 2024
Full Length (7 AM-9 AM, 3 PM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187646, Location: 29.773703, -95.372422

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



3. Houston Avenue at Crockett Street - TMC

Wed May 15, 2024
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187646, Location: 29.773703, -95.372422

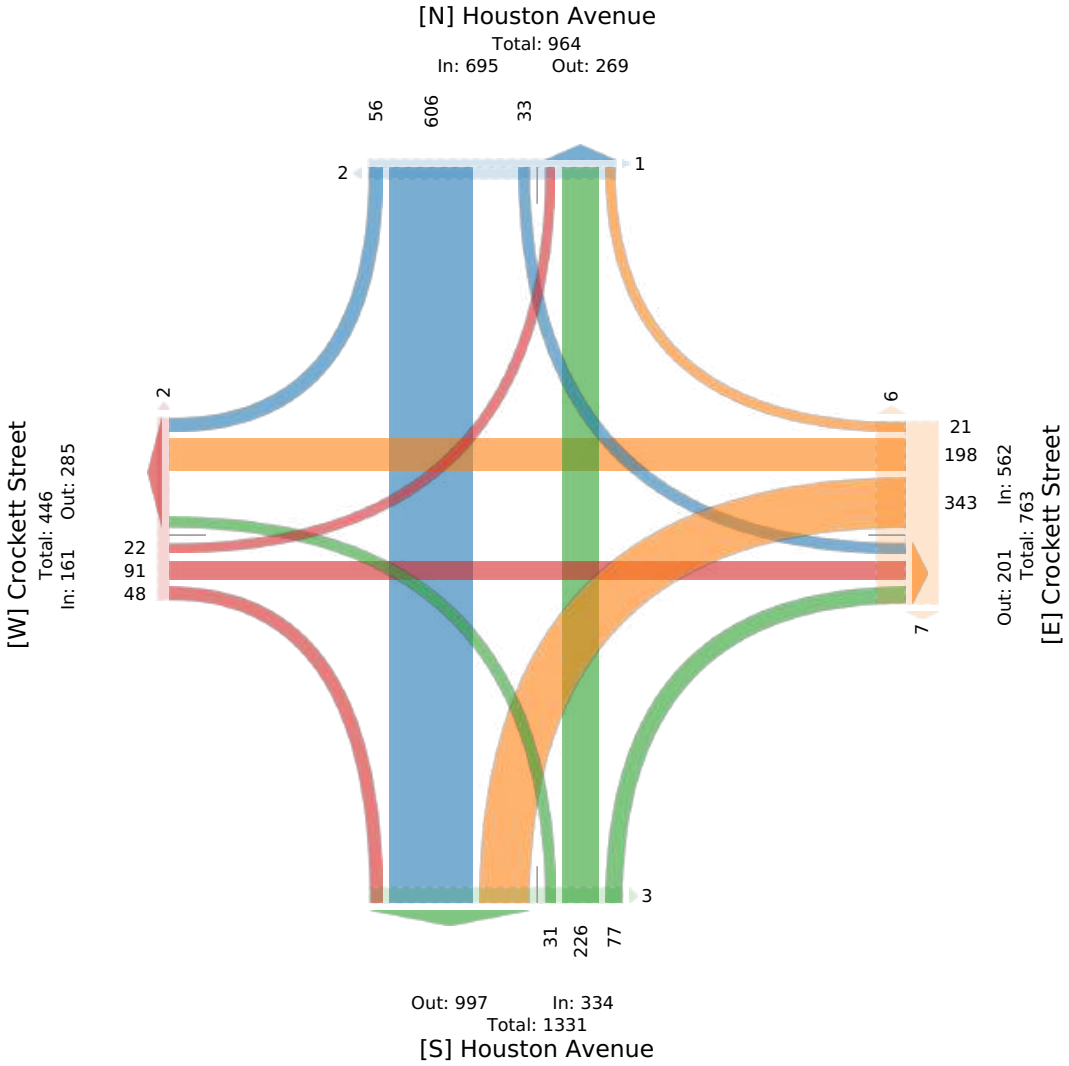
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg / Direction	Houston Avenue Southbound						Crockett Street Westbound						Houston Avenue Northbound						Crockett Street Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2024-05-15 7:45AM	28	154	13	0	**195**	2	3	49	82	0	**134**	1	23	65	12	0	**100**	1	19	25	7	0	**51**	2	**480**
8:00AM	15	139	7	0	**161**	0	10	47	85	0	**142**	0	16	62	3	0	**81**	0	4	28	1	0	**33**	0	**417**
8:15AM	4	155	8	0	**167**	0	5	56	77	0	**138**	8	20	38	4	0	**62**	2	13	25	6	0	**44**	0	**411**
8:30AM	9	158	5	0	**172**	1	3	46	99	0	**148**	4	18	61	12	0	**91**	0	12	13	8	0	**33**	0	**444**
Total	56	606	33	0	**695**	3	21	198	343	0	**562**	13	77	226	31	0	**334**	3	48	91	22	0	**161**	2	**1752**
% Approach	8.1%	87.2%	4.7%	0%	**-**	-	3.7%	35.2%	61.0%	0%	**-**	-	23.1%	67.7%	9.3%	0%	**-**	-	29.8%	56.5%	13.7%	0%	**-**	-	-
% Total	3.2%	34.6%	1.9%	0%	**39.7%**	-	1.2%	11.3%	19.6%	0%	**32.1%**	-	4.4%	12.9%	1.8%	0%	**19.1%**	-	2.7%	5.2%	1.3%	0%	**9.2%**	-	-
PHF	0.500	0.959	0.635	-	**0.891**	-	0.525	0.884	0.866	-	**0.949**	-	0.837	0.869	0.646	-	**0.835**	-	0.632	0.813	0.688	-	**0.789**	-	0.913
Lights	55	587	33	0	**675**	-	20	194	334	0	**548**	-	77	214	28	0	**319**	-	48	89	22	0	**159**	-	1701
% Lights	98.2%	96.9%	100%	0%	**97.1%**	-	95.2%	98.0%	97.4%	0%	**97.5%**	-	100%	94.7%	90.3%	0%	**95.5%**	-	100%	97.8%	100%	0%	**98.8%**	-	97.1%
Articulated Trucks	1	1	0	0	**2**	-	1	0	1	0	**2**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	5
% Articulated Trucks	1.8%	0.2%	0%	0%	**0.3%**	-	4.8%	0%	0.3%	0%	**0.4%**	-	0%	0.4%	0%	0%	**0.3%**	-	0%	0%	0%	0%	**0%**	-	0.3%
Buses and Single-Unit Trucks	0	18	0	0	**18**	-	0	4	8	0	**12**	-	0	11	3	0	**14**	-	0	2	0	0	**2**	-	46
% Buses and Single-Unit Trucks	0%	3.0%	0%	0%	**2.6%**	-	0%	2.0%	2.3%	0%	**2.1%**	-	0%	4.9%	9.7%	0%	**4.2%**	-	0%	2.2%	0%	0%	**1.2%**	-	2.6%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	12	-	-	-	-	-	3	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	92.3%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	7.7%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3. Houston Avenue at Crockett Street - TMC
Wed May 15, 2024
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187646, Location: 29.773703, -95.372422

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



3. Houston Avenue at Crockett Street - TMC

Wed May 15, 2024
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187646, Location: 29.773703, -95.372422

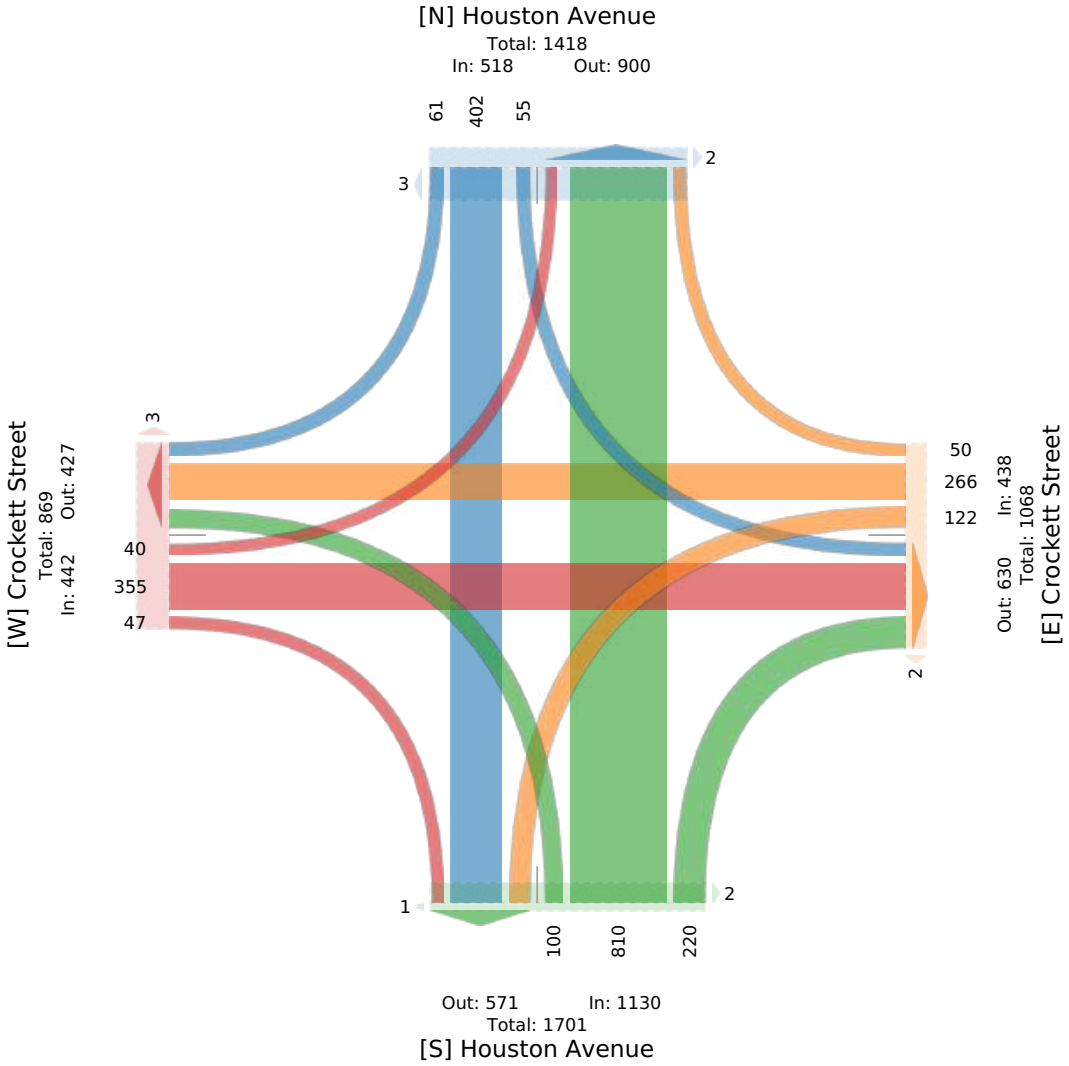
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg / Direction	Houston Avenue Southbound						Crockett Street Westbound						Houston Avenue Northbound						Crockett Street Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2024-05-15 4:45PM	18	68	13	0	**99**	0	8	87	32	0	**127**	1	56	171	16	0	**243**	1	11	82	8	0	**101**	1	**570**
5:00PM	15	99	11	0	**125**	0	16	65	26	0	**107**	0	54	235	19	0	**308**	0	9	93	13	0	**115**	0	**655**
5:15PM	16	125	18	0	**159**	3	15	58	36	0	**109**	1	64	192	33	0	**289**	1	12	84	12	0	**108**	0	**665**
5:30PM	12	110	13	0	**135**	2	11	56	28	0	**95**	0	46	212	32	0	**290**	1	15	96	7	0	**118**	2	**638**
Total	61	402	55	0	**518**	5	50	266	122	0	**438**	2	220	810	100	0	**1130**	3	47	355	40	0	**442**	3	**2528**
% Approach	11.8%	77.6%	10.6%	0%	**-**	-	11.4%	60.7%	27.9%	0%	**-**	-	19.5%	71.7%	8.8%	0%	**-**	-	10.6%	80.3%	9.0%	0%	**-**	-	-
% Total	2.4%	15.9%	2.2%	0%	**20.5%**	-	2.0%	10.5%	4.8%	0%	**17.3%**	-	8.7%	32.0%	4.0%	0%	**44.7%**	-	1.9%	14.0%	1.6%	0%	**17.5%**	-	-
PHF	0.847	0.804	0.764	-	**0.814**	-	0.781	0.764	0.847	-	**0.862**	-	0.859	0.862	0.758	-	**0.917**	-	0.783	0.924	0.769	-	**0.936**	-	0.950
Lights	57	393	54	0	**504**	-	49	266	121	0	**436**	-	219	798	98	0	**1115**	-	47	354	40	0	**441**	-	2496
% Lights	93.4%	97.8%	98.2%	0%	**97.3%**	-	98.0%	100%	99.2%	0%	**99.5%**	-	99.5%	98.5%	98.0%	0%	**98.7%**	-	100%	99.7%	100%	0%	**99.8%**	-	98.7%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	4	9	1	0	**14**	-	1	0	1	0	**2**	-	1	12	2	0	**15**	-	0	1	0	0	**1**	-	32
% Buses and Single-Unit Trucks	6.6%	2.2%	1.8%	0%	**2.7%**	-	2.0%	0%	0.8%	0%	**0.5%**	-	0.5%	1.5%	2.0%	0%	**1.3%**	-	0%	0.3%	0%	0%	**0.2%**	-	1.3%
Pedestrians	-	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	50.0%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	50.0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3. Houston Avenue at Crockett Street - TMC
Wed May 15, 2024
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187646, Location: 29.773703, -95.372422

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



4. Houston Avenue at Edwards Street - TMC

Wed May 15, 2024
Full Length (7 AM-9 AM, 3 PM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187647, Location: 29.770784, -95.372379

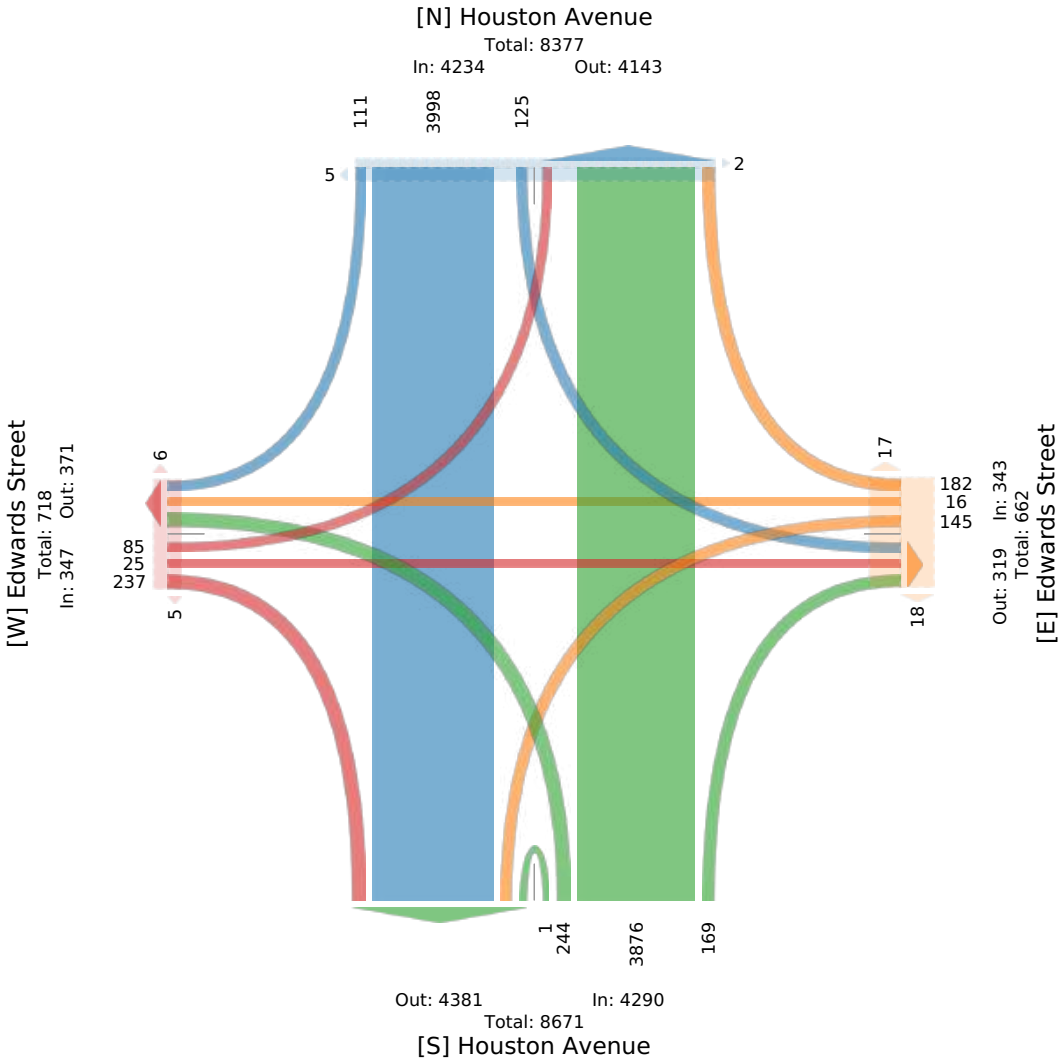
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg Direction	Houston Avenue Southbound						Edwards Street Westbound						Houston Avenue Northbound						Edwards Street Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2024-05-15 7:00AM	14	836	9	0	**859**	1	24	6	23	0	**53**	1	21	254	21	0	**296**	0	44	4	6	0	**54**	2	**1262**
8:00AM	36	1032	18	0	**1086**	0	35	2	26	0	**63**	3	18	298	30	0	**346**	0	48	3	8	0	**59**	1	**1554**
3:00PM	8	476	17	0	**501**	0	24	3	19	0	**46**	3	37	668	31	1	**737**	0	32	6	13	0	**51**	1	**1335**
4:00PM	12	577	32	0	**621**	1	33	2	26	0	**61**	11	27	1010	50	0	**1087**	0	39	4	19	0	**62**	0	**1831**
5:00PM	24	592	27	0	**643**	0	38	2	29	0	**69**	9	43	1052	53	0	**1148**	0	38	3	26	0	**67**	3	**1927**
6:00PM	17	485	22	0	**524**	5	28	1	22	0	**51**	8	23	594	59	0	**676**	0	36	5	13	0	**54**	4	**1305**
Total	111	3998	125	0	**4234**	7	182	16	145	0	**343**	35	169	3876	244	1	**4290**	0	237	25	85	0	**347**	11	**9214**
% Approach	2.6%	94.4%	3.0%	0%	**-**	-	53.1%	4.7%	42.3%	0%	**-**	-	3.9%	90.3%	5.7%	0%	**-**	-	68.3%	7.2%	24.5%	0%	**-**	-	-
% Total	1.2%	43.4%	1.4%	0%	**46.0%**	-	2.0%	0.2%	1.6%	0%	**3.7%**	-	1.8%	42.1%	2.6%	0%	**46.6%**	-	2.6%	0.3%	0.9%	0%	**3.8%**	-	-
Lights	106	3923	123	0	**4152**	-	177	15	143	0	**335**	-	168	3806	242	1	**4217**	-	234	25	82	0	**341**	-	9045
% Lights	95.5%	98.1%	98.4%	0%	**98.1%**	-	97.3%	93.8%	98.6%	0%	**97.7%**	-	99.4%	98.2%	99.2%	100%	**98.3%**	-	98.7%	100%	96.5%	0%	**98.3%**	-	98.2%
Articulated Trucks	2	4	0	0	**6**	-	0	0	0	0	**0**	-	0	6	0	0	**6**	-	0	0	1	0	**1**	-	13
% Articulated Trucks	1.8%	0.1%	0%	0%	**0.1%**	-	0%	0%	0%	0%	**0%**	-	0%	0.2%	0%	0%	**0.1%**	-	0%	0%	1.2%	0%	**0.3%**	-	0.1%
Buses and Single-Unit Trucks	3	71	2	0	**76**	-	5	1	2	0	**8**	-	1	64	2	0	**67**	-	3	0	2	0	**5**	-	156
% Buses and Single-Unit Trucks	2.7%	1.8%	1.6%	0%	**1.8%**	-	2.7%	6.3%	1.4%	0%	**2.3%**	-	0.6%	1.7%	0.8%	0%	**1.6%**	-	1.3%	0%	2.4%	0%	**1.4%**	-	1.7%
Pedestrians	-	-	-	-	-	7	-	-	-	-	-	31	-	-	-	-	-	0	-	-	-	-	-	11	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	88.6%	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	11.4%	-	-	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

4. Houston Avenue at Edwards Street - TMC
Wed May 15, 2024
Full Length (7 AM-9 AM, 3 PM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187647, Location: 29.770784, -95.372379

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



4. Houston Avenue at Edwards Street - TMC

Wed May 15, 2024
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187647, Location: 29.770784, -95.372379

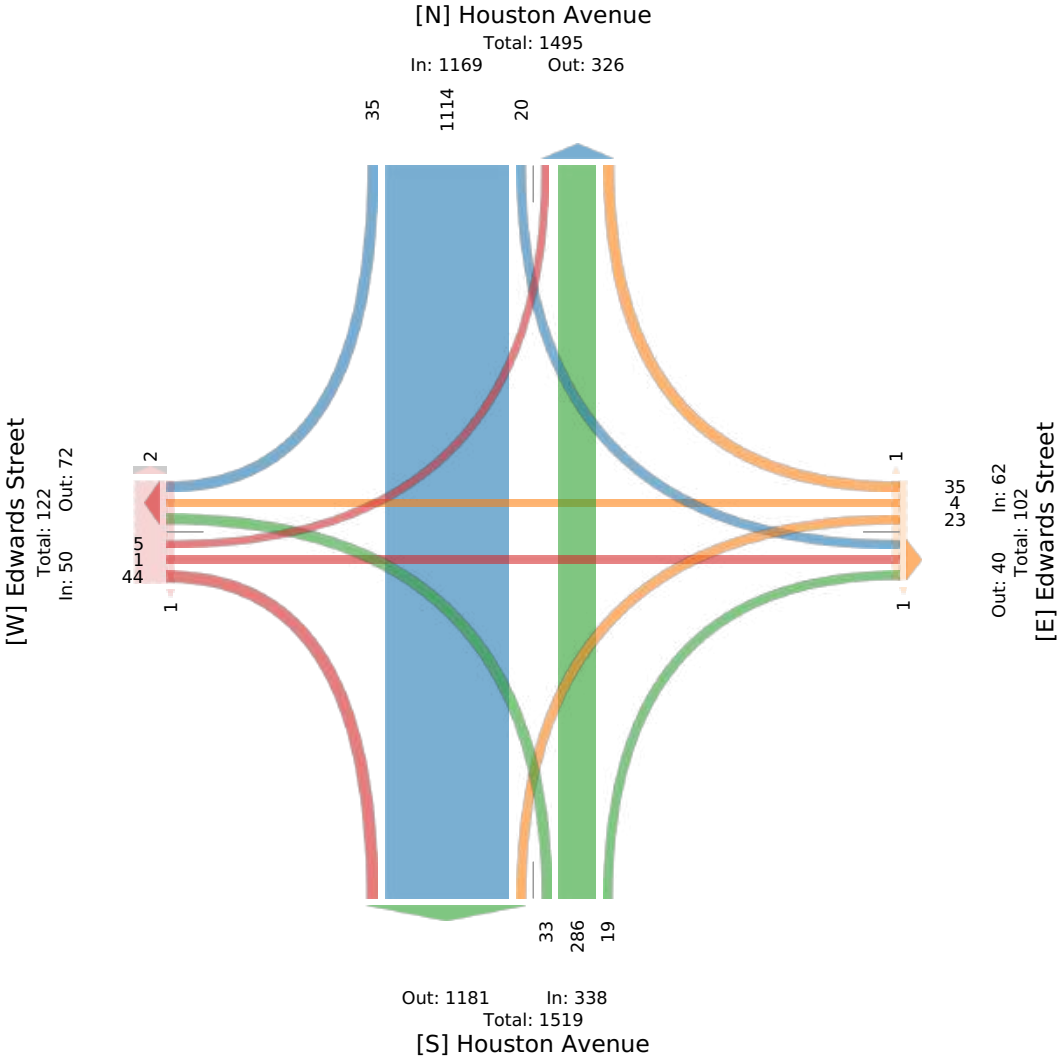
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg / Direction	Houston Avenue Southbound						Edwards Street Westbound						Houston Avenue Northbound						Edwards Street Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2024-05-15 7:45AM	6	319	3	0	**328**	0	6	2	3	0	**11**	0	6	77	8	0	**91**	0	7	0	0	0	**7**	2	**437**
8:00AM	9	260	3	0	**272**	0	12	1	11	0	**24**	0	7	65	11	0	**83**	0	13	1	2	0	**16**	0	**395**
8:15AM	7	245	5	0	**257**	0	11	1	3	0	**15**	0	5	65	5	0	**75**	0	13	0	0	0	**13**	1	**360**
8:30AM	13	290	9	0	**312**	0	6	0	6	0	**12**	2	1	79	9	0	**89**	0	11	0	3	0	**14**	0	**427**
Total	35	1114	20	0	**1169**	0	35	4	23	0	**62**	2	19	286	33	0	**338**	0	44	1	5	0	**50**	3	**1619**
% Approach	3.0%	95.3%	1.7%	0%	**-**	-	56.5%	6.5%	37.1%	0%	**-**	-	5.6%	84.6%	9.8%	0%	**-**	-	88.0%	2.0%	10.0%	0%	**-**	-	-
% Total	2.2%	68.8%	1.2%	0%	**72.2%**	-	2.2%	0.2%	1.4%	0%	**3.8%**	-	1.2%	17.7%	2.0%	0%	**20.9%**	-	2.7%	0.1%	0.3%	0%	**3.1%**	-	-
PHF	0.673	0.873	0.556	-	**0.891**	-	0.729	0.500	0.523	-	**0.646**	-	0.679	0.905	0.750	-	**0.929**	-	0.846	0.250	0.417	-	**0.781**	-	0.926
Lights	33	1089	19	0	**1141**	-	34	3	22	0	**59**	-	18	275	32	0	**325**	-	44	1	4	0	**49**	-	1574
% Lights	94.3%	97.8%	95.0%	0%	**97.6%**	-	97.1%	75.0%	95.7%	0%	**95.2%**	-	94.7%	96.2%	97.0%	0%	**96.2%**	-	100%	100%	80.0%	0%	**98.0%**	-	97.2%
Articulated Trucks	2	2	0	0	**4**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	5
% Articulated Trucks	5.7%	0.2%	0%	0%	**0.3%**	-	0%	0%	0%	0%	**0%**	-	0%	0.3%	0%	0%	**0.3%**	-	0%	0%	0%	0%	**0%**	-	0.3%
Buses and Single-Unit Trucks	0	23	1	0	**24**	-	1	1	1	0	**3**	-	1	10	1	0	**12**	-	0	0	1	0	**1**	-	40
% Buses and Single-Unit Trucks	0%	2.1%	5.0%	0%	**2.1%**	-	2.9%	25.0%	4.3%	0%	**4.8%**	-	5.3%	3.5%	3.0%	0%	**3.6%**	-	0%	0%	20.0%	0%	**2.0%**	-	2.5%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

4. Houston Avenue at Edwards Street - TMC
Wed May 15, 2024
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187647, Location: 29.770784, -95.372379

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



4. Houston Avenue at Edwards Street - TMC

Wed May 15, 2024
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187647, Location: 29.770784, -95.372379

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg / Direction	Houston Avenue Southbound						Edwards Street Westbound						Houston Avenue Northbound						Edwards Street Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2024-05-15 4:45PM	3	105	5	0	**113**	1	5	2	2	0	**9**	0	9	288	17	0	**314**	0	4	1	4	0	**9**	0	**445**
5:00PM	6	137	2	0	**145**	0	5	2	12	0	**19**	0	13	307	11	0	**331**	0	12	1	7	0	**20**	0	**515**
5:15PM	4	167	13	0	**184**	0	12	0	7	0	**19**	5	10	257	13	0	**280**	0	6	1	6	0	**13**	0	**496**
5:30PM	4	153	8	0	**165**	0	18	0	8	0	**26**	2	7	269	16	0	**292**	0	10	0	8	0	**18**	2	**501**
Total	17	562	28	0	**607**	1	40	4	29	0	**73**	7	39	1121	57	0	**1217**	0	32	3	25	0	**60**	2	**1957**
% Approach	2.8%	92.6%	4.6%	0%	**-**	-	54.8%	5.5%	39.7%	0%	**-**	-	3.2%	92.1%	4.7%	0%	**-**	-	53.3%	5.0%	41.7%	0%	**-**	-	-
% Total	0.9%	28.7%	1.4%	0%	**31.0%**	-	2.0%	0.2%	1.5%	0%	**3.7%**	-	2.0%	57.3%	2.9%	0%	**62.2%**	-	1.6%	0.2%	1.3%	0%	**3.1%**	-	-
PHF	0.708	0.841	0.538	-	**0.825**	-	0.556	0.500	0.604	-	**0.702**	-	0.750	0.913	0.838	-	**0.919**	-	0.667	0.750	0.781	-	**0.750**	-	0.950
Lights	16	554	28	0	**598**	-	39	4	29	0	**72**	-	39	1106	57	0	**1202**	-	32	3	25	0	**60**	-	1932
% Lights	94.1%	98.6%	100%	0%	**98.5%**	-	97.5%	100%	100%	0%	**98.6%**	-	100%	98.7%	100%	0%	**98.8%**	-	100%	100%	100%	0%	**100%**	-	98.7%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0.1%	0%	0%	**0.1%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	1	8	0	0	**9**	-	1	0	0	0	**1**	-	0	14	0	0	**14**	-	0	0	0	0	**0**	-	24
% Buses and Single-Unit Trucks	5.9%	1.4%	0%	0%	**1.5%**	-	2.5%	0%	0%	0%	**1.4%**	-	0%	1.2%	0%	0%	**1.2%**	-	0%	0%	0%	0%	**0%**	-	1.2%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

4. Houston Avenue at Edwards Street - TMC
Wed May 15, 2024
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1187647, Location: 29.770784, -95.372379

Provided by: C. J. Hensch & Associates Inc.
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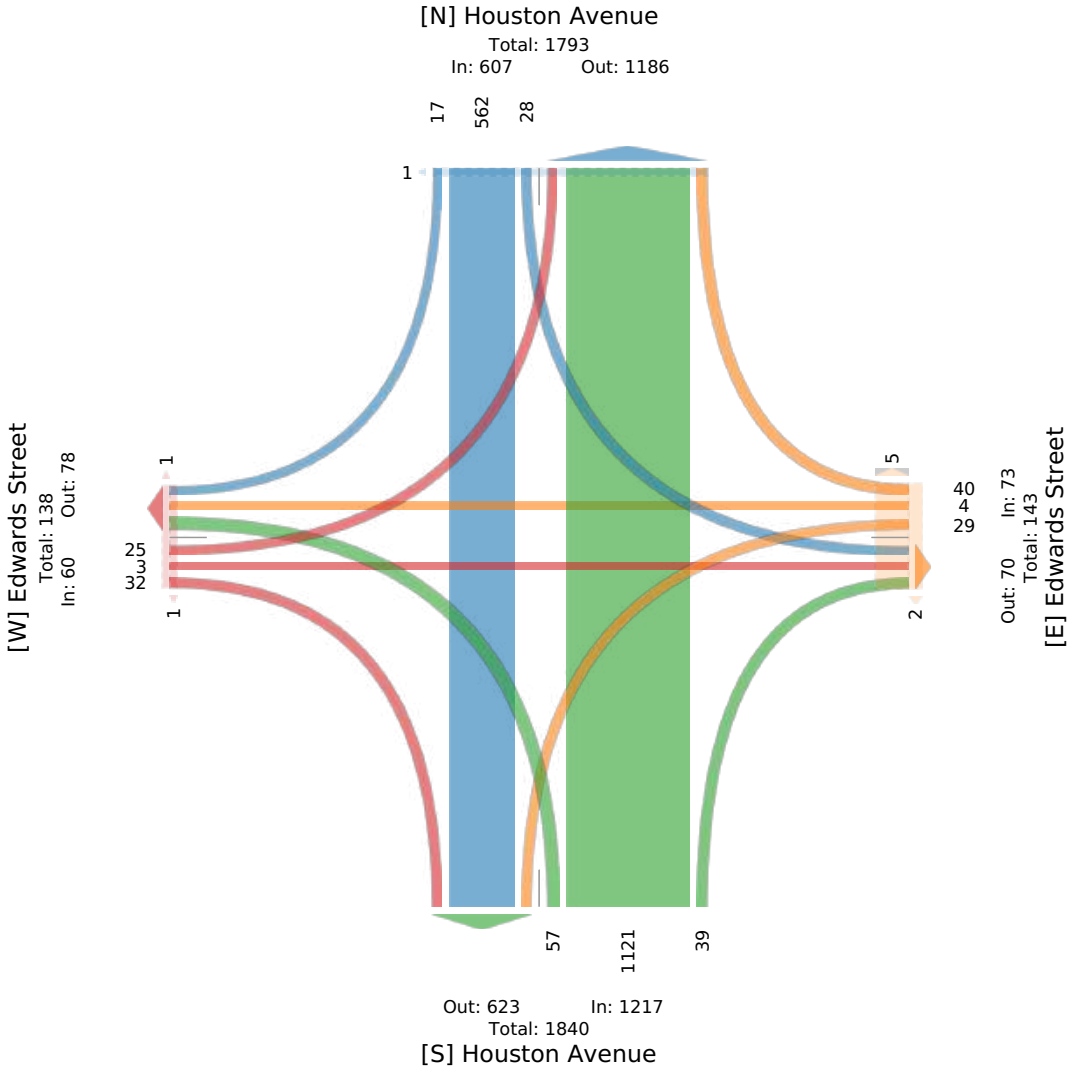

CJ Hensen & Associates, Inc.

TRAFFIC DATA REPORT
SPEED STUDY

Location: Shearn St west of Silver St
Start Date: 5/21/2024

Direction: Westbound

5/21/2024 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00	1	1	0	0	0	0	0	0	0	0	0	0	0	2
4:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	2	0	0	0	0	0	0	0	0	0	0	0	3
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	1	2	0	0	0	0	0	0	0	0	0	0	0	3
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15	2	2	1	0	0	0	0	0	0	0	0	0	0	5
6:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
6:45	0	4	1	0	0	0	0	0	0	0	0	0	0	5
	2	8	2	0	0	0	0	0	0	0	0	0	0	12
7:00	8	1	0	0	0	0	0	0	0	0	0	0	0	9
7:15	5	12	0	0	0	0	0	0	0	0	0	0	0	17
7:30	2	3	1	0	0	0	0	0	0	0	0	0	0	6
7:45	1	6	2	0	0	0	0	0	0	0	0	0	0	9
	16	22	3	0	0	0	0	0	0	0	0	0	0	41
8:00	4	3	3	0	0	0	0	0	0	0	0	0	0	10
8:15	2	5	0	0	0	0	0	0	0	0	0	0	0	7
8:30	4	2	1	0	0	0	0	0	0	0	0	0	0	7
8:45	5	2	1	0	0	0	0	0	0	0	0	0	0	8
	15	12	5	0	0	0	0	0	0	0	0	0	0	32
9:00	3	6	4	0	0	0	0	0	0	0	0	0	0	13
9:15	6	6	2	0	0	0	0	0	0	0	0	0	0	14
9:30	0	3	1	0	0	0	0	0	0	0	0	0	0	4
9:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
	9	20	7	0	0	0	0	0	0	0	0	0	0	36
10:00	2	3	0	0	0	0	0	0	0	0	0	0	0	5
10:15	1	1	1	0	0	0	0	0	0	0	0	0	0	3
10:30	2	4	3	0	0	0	0	0	0	0	0	0	0	9
10:45	2	3	0	0	0	0	0	0	0	0	0	0	0	5
	7	11	4	0	0	0	0	0	0	0	0	0	0	22
11:00	4	4	0	0	0	0	0	0	0	0	0	0	0	8
11:15	2	2	2	0	0	0	0	0	0	0	0	0	0	6
11:30	2	4	1	0	0	0	0	0	0	0	0	0	0	7
11:45	6	3	2	0	0	0	0	0	0	0	0	0	0	11
	14	13	5	0	0	0	0	0	0	0	0	0	0	32
12:00	2	13	2	0	0	0	0	0	0	0	0	0	0	17

1

CJ Hensel & Associates, Inc.

TRAFFIC DATA REPORT
SPEED STUDY

Location: Shearn St west of Silver St
Start Date: 5/21/2024

12:15	4	5	2	0	0	0	0	0	0	0	0	0	0	11
12:30	1	9	2	0	0	0	0	0	0	0	0	0	0	12
12:45	3	7	0	0	0	0	0	0	0	0	0	0	0	10
	10	34	6	0	0	0	0	0	0	0	0	0	0	50
13:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
13:15	1	8	2	0	0	0	0	0	0	0	0	0	0	11
13:30	2	3	3	0	0	0	0	0	0	0	0	0	0	8
13:45	2	6	0	0	0	0	0	0	0	0	0	0	0	8
	5	23	5	0	0	0	0	0	0	0	0	0	0	33
14:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
14:15	2	6	1	0	0	0	0	0	0	0	0	0	0	9
14:30	6	8	1	0	0	0	0	0	0	0	0	0	0	15
14:45	6	10	1	0	0	0	0	0	0	0	0	0	0	17
	14	30	3	0	0	0	0	0	0	0	0	0	0	47
15:00	5	4	0	0	0	0	0	0	0	0	0	0	0	9
15:15	2	3	2	0	0	0	0	0	0	0	0	0	0	7
15:30	1	6	0	0	0	0	0	0	0	0	0	0	0	7
15:45	1	5	1	0	0	0	0	0	0	0	0	0	0	7
	9	18	3	0	0	0	0	0	0	0	0	0	0	30
16:00	3	2	2	0	0	0	0	0	0	0	0	0	0	7
16:15	4	3	0	1	0	0	0	0	0	0	0	0	0	8
16:30	2	5	0	0	1	0	0	0	0	0	0	0	0	8
16:45	2	6	3	0	0	0	0	0	0	0	0	0	0	11
	11	16	5	1	1	0	0	0	0	0	0	0	0	34
17:00	1	3	4	0	0	0	0	0	0	0	0	0	0	8
17:15	5	12	1	0	0	0	0	0	0	0	0	0	0	18
17:30	3	10	3	0	0	0	0	0	0	0	0	0	0	16
17:45	4	3	0	0	0	0	0	0	0	0	0	0	0	7
	13	28	8	0	0	0	0	0	0	0	0	0	0	49
18:00	5	5	1	0	0	0	0	0	0	0	0	0	0	11
18:15	2	5	2	0	0	0	0	0	0	0	0	0	0	9
18:30	1	3	0	0	0	0	0	0	0	0	0	0	0	4
18:45	1	4	0	0	0	0	0	0	0	0	0	0	0	5
	9	17	3	0	0	0	0	0	0	0	0	0	0	29
19:00	2	3	1	0	0	0	0	0	0	0	0	0	0	6
19:15	2	2	0	0	0	0	0	0	0	0	0	0	0	4
19:30	2	0	0	0	0	0	0	0	0	0	0	0	0	2
19:45	3	5	1	0	0	0	0	0	0	0	0	0	0	9
	9	10	2	0	0	0	0	0	0	0	0	0	0	21
20:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
20:15	4	4	1	0	0	0	0	0	0	0	0	0	0	9
20:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5	7	1	0	0	0	0	0	0	0	0	0	0	13
21:00	1	2	0	0	0	0	0	0	0	0	0	0	0	3
21:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:30	0	3	1	0	0	0	0	0	0	0	0	0	0	4
21:45	1	2	0	0	0	0	0	0	0	0	0	0	0	3
	2	9	1	0	0	0	0	0	0	0	0	0	0	12
22:00	2	1	0	0	0	0	0	0	0	0	0	0	0	3
22:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
22:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
22:45	0	0	2	0	0	0	0	0	0	0	0	0	0	2
	2	2	4	0	0	0	0	0	0	0	0	0	0	8
23:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
23:15	2	0	0	0	0	0	0	0	0	0	0	0	0	2
23:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:45	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	3	1	1	0	0	0	0	0	0	0	0	0	0	5
Total	158	286	68	1	1	0	0	0	0	0	0	0	0	514

Percentile	15th	50th	85th	95th
Speed	11	16	19	20
Mean Speed (Average)	16.9			
10 MPH Pace Speed	13-22			

2

CJ Henson & Associates, Inc.

TRAFFIC DATA REPORT
SPEED STUDY

Location: Shearn St west of Silver St
Start Date: 5/21/2024

Number in Pace	467
Percent in Pace	91.0%
Number > 30 MPH	1
Percent > 30 MPH	0.2%

CJ Henson & Associates, Inc.

TRAFFIC DATA REPORT
SPEED STUDY

Location: Shearn St west of Silver St
Start Date: 5/21/2024

Direction: Eastbound

5/21/2024 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
0:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2
0:15	0	0	1	2	0	0	0	0	0	0	0	0	0	3
0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	1	4	0	0	0	0	0	0	0	0	0	5
1:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	1	0	0	0	0	0	0	0	1
3:45	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	0	1	0	1	0	1	0	0	0	0	0	0	0	3
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	0	1	0	1	0	0	0	0	0	0	0	0	0	2
5:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
5:15	0	2	0	1	0	0	0	0	0	0	0	0	0	3
5:30	1	1	4	0	1	0	0	0	0	0	0	0	0	7
5:45	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	1	3	5	2	2	0	0	0	0	0	0	0	0	13
6:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:15	1	1	3	3	0	0	0	0	0	0	0	0	0	8
6:30	0	2	4	1	0	0	0	0	0	0	0	0	0	7
6:45	2	3	5	0	2	0	0	0	0	0	0	0	0	12
	3	6	12	5	2	0	0	0	0	0	0	0	0	28
7:00	5	4	3	2	0	0	0	0	0	0	0	0	0	14
7:15	4	6	6	3	0	0	0	0	0	0	0	0	0	19
7:30	3	9	12	5	2	0	0	0	0	0	0	0	0	31
7:45	1	2	9	11	0	0	0	0	0	0	0	0	0	23
	13	21	30	21	2	0	0	0	0	0	0	0	0	87
8:00	2	5	8	4	0	0	0	0	0	0	0	1	0	20
8:15	1	6	9	3	2	0	0	0	0	0	0	0	0	21
8:30	1	3	5	1	2	0	0	0	0	0	0	0	0	12
8:45	1	4	9	3	0	1	0	0	0	0	0	0	0	18
	5	18	31	11	4	1	0	0	0	0	0	1	0	71
9:00	0	2	3	1	0	0	0	0	0	0	0	0	0	6
9:15	1	5	4	4	0	0	0	0	0	0	0	0	0	14
9:30	0	2	3	8	2	0	0	0	0	0	0	0	0	15
9:45	2	4	3	3	1	0	0	0	0	0	0	0	0	13
	3	13	13	16	3	0	0	0	0	0	0	0	0	48
10:00	0	2	6	3	1	1	0	0	0	0	0	0	0	13
10:15	0	4	7	4	0	0	0	0	0	0	0	0	0	15
10:30	1	3	9	3	0	0	0	0	0	0	0	0	0	16
10:45	2	5	9	2	0	0	0	0	0	0	0	0	0	18
	3	14	31	12	1	1	0	0	0	0	0	0	0	62
11:00	1	6	6	3	1	0	0	0	0	0	0	0	0	17
11:15	1	4	11	2	1	0	0	0	0	0	0	0	0	19
11:30	0	5	6	5	1	0	0	0	0	0	0	0	0	17
11:45	2	2	11	5	0	0	0	0	0	0	0	0	0	20
	4	17	34	15	3	0	0	0	0	0	0	0	0	73
12:00	1	4	5	4	1	0	0	0	0	0	0	0	0	15

1

CJ Henson & Associates, Inc.

TRAFFIC DATA REPORT
SPEED STUDY

Location: Shearn St west of Silver St
Start Date: 5/21/2024

12:15	2	4	5	6	0	0	0	0	0	0	0	0	0	17
12:30	1	3	2	4	0	0	0	0	0	0	0	0	0	10
12:45	2	3	5	12	0	0	0	0	0	0	0	0	0	22
	6	14	17	26	1	0	0	0	0	0	0	0	0	64
13:00	0	0	11	6	0	0	0	0	0	0	0	0	0	17
13:15	1	4	16	3	0	0	0	0	0	0	0	0	0	24
13:30	2	5	9	5	0	0	0	0	0	0	0	0	0	21
13:45	1	2	4	1	2	0	0	0	0	0	0	0	0	10
	4	11	40	15	2	0	0	0	0	0	0	0	0	72
14:00	0	2	3	2	1	0	1	0	0	0	0	0	0	9
14:15	1	3	8	2	0	0	0	0	0	0	0	0	0	14
14:30	2	4	1	4	1	0	0	0	0	0	0	0	0	12
14:45	8	11	6	2	0	0	0	0	0	0	0	0	0	27
	11	20	18	10	2	0	1	0	0	0	0	0	0	62
15:00	3	6	14	3	2	0	0	0	0	0	0	0	0	28
15:15	1	1	8	4	0	0	0	0	0	0	0	0	0	14
15:30	0	6	9	3	2	0	0	0	0	0	0	0	0	20
15:45	1	4	2	8	4	0	0	0	0	0	0	0	0	19
	5	17	33	18	8	0	0	0	0	0	0	0	0	81
16:00	2	2	10	4	2	0	0	0	0	0	0	0	0	20
16:15	1	9	7	3	1	0	0	0	0	0	0	0	0	21
16:30	1	2	11	10	1	1	0	0	0	0	0	0	0	26
16:45	1	3	10	8	1	0	0	0	0	0	0	0	0	23
	5	16	38	25	5	1	0	0	0	0	0	0	0	90
17:00	1	0	5	6	3	0	0	0	0	0	0	0	0	15
17:15	2	2	11	5	1	0	0	0	0	0	0	0	0	21
17:30	3	5	7	11	0	0	0	0	0	0	0	0	0	26
17:45	0	3	16	3	0	1	0	0	0	0	0	0	0	23
	6	10	39	25	4	1	0	0	0	0	0	0	0	85
18:00	1	3	4	7	1	0	0	0	0	0	0	0	0	16
18:15	1	6	5	5	2	0	0	0	0	0	0	0	0	19
18:30	1	2	8	7	0	0	0	0	0	0	0	0	0	18
18:45	1	7	8	12	0	0	0	0	0	0	0	0	0	28
	4	18	25	31	3	0	0	0	0	0	0	0	0	81
19:00	2	6	8	7	0	0	0	0	0	0	0	0	0	23
19:15	0	3	15	3	0	0	0	0	0	0	0	0	0	21
19:30	0	0	6	7	1	0	0	0	0	0	0	0	0	14
19:45	2	2	1	2	2	0	0	0	0	0	0	0	0	9
	4	11	30	19	3	0	0	0	0	0	0	0	0	67
20:00	0	1	5	6	0	0	0	0	0	0	0	0	0	12
20:15	0	6	6	3	0	0	0	0	0	0	0	0	0	15
20:30	0	4	4	4	0	0	0	0	0	0	0	0	0	12
20:45	0	2	4	2	2	0	0	0	0	0	0	0	0	10
	0	13	19	15	2	0	0	0	0	0	0	0	0	49
21:00	1	1	5	1	0	0	0	0	0	0	0	0	0	8
21:15	1	0	7	2	1	0	0	0	0	0	0	0	0	11
21:30	0	4	4	5	1	0	0	0	0	0	0	0	0	14
21:45	0	4	1	2	1	0	0	0	0	0	0	0	0	8
	2	9	17	10	3	0	0	0	0	0	0	0	0	41
22:00	1	0	3	2	1	0	0	0	0	0	0	0	0	7
22:15	0	0	3	1	0	0	0	0	0	0	0	0	0	4
22:30	0	0	1	1	1	0	0	0	0	0	0	0	0	3
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0	7	4	2	0	0	0	0	0	0	0	0	14
23:00	0	1	3	0	0	0	0	0	0	0	0	0	0	4
23:15	0	0	0	2	0	0	0	0	0	0	0	0	0	2
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:45	0	0	0	2	0	0	0	0	0	0	0	0	0	2
	0	1	3	4	0	0	0	0	0	0	0	0	0	8
Total	80	234	444	290	52	5	1	0	0	0	0	1	0	1107

	Percentile	15th	50th	85th	95th
	Speed	16	22	26	29
Mean Speed (Average)		23.0			
10 MPH Pace Speed		19-28			

2

TRAFFIC DATA REPORT
SPEED STUDY

Location: Shearn St west of Silver St
Start Date: 5/21/2024

Number in Pace	781
Percent in Pace	71.0%
Number > 30 MPH	59
Percent > 30 MPH	5.3%

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Appendix

C

Signal Justification Document

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Dart Street Access Management

One method of creating Houston Avenue into a safer corridor for all road users is focusing on access management for both certain driveways and intersections. It was determined that Houston Avenue at Dart Street had some safety concerns due to sight distance issues. The intersections of Houston Avenue at both Dart Street and Edwards Street had a total of 21 crashes. Nearly half of the crashes (47%) involved a driver failure to yield. Drivers traveling NB on Houston Avenue travel at high rates of speed due to the underpass. Additionally, drivers turning from Dart Street or Edwards Street can have a difficult time seeing cross-traffic due to the alignment of the underpass. For this reason, the project team recommends a median closure at Dart Street to prevent conflicts between cross-traffic and left turning traffic in addition to a signal at Houston Avenue at Edwards Street. This would then create a safer intersection for residents on the East side of Houston Avenue to cross.

The Dart Street median closure would improve traffic safety by reducing the number of conflict points where vehicles can potentially collide - in this case left turning traffic off of Dart Street onto southbound Houston Avenue. By limiting the number of places where vehicles can cross over or turn left across traffic, median closures help to decrease the likelihood of head-on and side-impact collisions. This can lead to a reduction in the overall number of collisions and enhance the flow of traffic, making Houston Avenue safer for all road users.

The map shows the new route vehicles on Dart Street would take to cross the corridor safely.

Edwards Street at Houston Avenue Signal

Individuals driving, walking, biking who want to cross Houston Avenue at Edwards Street would need to travel over 1/4 mile each way to the nearest signalized crossing. For a person walking this could mean an additional 10 minutes of travel time, potentially leading them to making a risking, mid-block crossing or not making the trip at all. For those driving, site distance issue and high speeds along Houston Avenue can create for an unsafe experience. This section of Houston Avenue has no signals, with the closest signal to the south at Washington Avenue and the closest signal to the north at Crockett Street. This results in no built infrastructure slowing drivers down so speeding is an issue on this section of Houston Avenue. The Mobility Study received comments from the public stating that they feel trapped and isolated in their neighborhood because of the barrier Houston Avenue creates. A proposed signal at Houston Avenue and Edwards Street would provide necessary safety improvements to the neighborhood and mobility benefits for all users. The signal would also be greatly enhanced by the proposed future improvements to the Houston Ave corridor through the Mobility Plan's Houston Avenue Corridor Vision.

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Appendix

D

Public Engagement

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Introduction

Throughout the planning process, the project team worked extensively with Houston-Galveston Area Council and TIRZ 13 staff to identify key stakeholders and audiences, develop engagement activities and outreach materials, and facilitate information exchange at community events.

Public Involvement Plan

At the beginning of the planning process, the project team developed a Public Involvement Plan (PIP) that provided a framework for meaningful community and stakeholder engagement, with supporting outreach and participation strategies necessary to inform, engage, and develop support for the Mobility Plan.

Target Audiences

Four primary audiences were targeted through community engagement to ensure awareness for the Mobility Plan and encourage participation and feedback.

Residents

All residents, both homeowners and renters, will be encouraged to participate in the development of the Mobility Plan. Addressing the needs of residents of all ages will be particularly important as the needs of various ages and demographics may have differences in transportation needs and desires. Efforts will be made to ensure inclusiveness of elderly, youth, low-income populations, and those who speak primary languages other than English within community engagement efforts.

Local Businesses

Local businesses provide a backbone for the local economy and are key destinations within the study area. Businesses may have different perspectives and needs for patrons and employees to be able to access their establishments.

Community Organizations

As trusted partners within the community, these organizations (such as the First Ward Civic Council) can provide key insights to community needs and offer an opportunity to encourage participation and feedback from the community.

Stakeholder Agencies and Organizations

Stakeholder agencies comprise governmental entities, beyond H-GAC and TIRZ 13, that provide community services or have a coordinating interest in the development of infrastructure within the study area. These agencies provide valuable information regarding the use of services, future projects, and partnership opportunities. These entities mostly comprised the Steering Committee.

Outreach and Engagement Strategies

The PIP outlined the usage of tools including a project webpage, social media, communication and coordination with community organizations, and general media to help promote awareness of the Plan among the Target Audiences. It also identified options for how to use online engagement tools and in-person activities to provide opportunities for a broad cross-section of the community to participate.

Figure A.1. Engagement Milestones

Activity Name	Date	Location
Steering Committee Meeting 1	February 27, 2024	Houston Permitting Center
Community Pop-Up Tabling and Outreach	April 13, 2024	The Deck at Silver Street Studios
Community Pop-Up	April 20, 2024	The Deck at Silver Street Studios
Steering Committee Meeting 2	May 16, 2024	Virtual - Microsoft Teams
Steering Committee Meeting 3	August 22, 2024	Houston-Galveston Area Council

Engagement Methods

Steering Committee

The Steering Committee was comprised of representatives from governmental entities with jurisdiction or significant influence on mobility conditions in the area, including the City of Houston, Harris County Precinct 1, METRO, TIRZ 13, Houston Police Department, Houston Fire Department, and the Texas Department of Transportation (TxDOT).

Meeting Summaries and Activities

The first Steering Committee meeting was held on February 27, 2024 at the Houston Permitting Center. Discussion topics included the Case For Action report, project goals, and an overview of planned community engagement. Attendees shared perspectives including focuses on safety, access, and options for transportation modes within the area, the importance of coordination with local elected officials, and future community meeting formats.

Following community engagement events and outreach activities in April and May 2024, the second Steering Committee held virtually on May 16, 2024 provided an opportunity for the Steering Committee to receive an update on the planning process and review community feedback received to date. There was further discussion regarding the high number of residents that indicated walkability as a priority, traffic volumes and speeds on Houston Avenue and Crockett Street, and design requirements for on-street parking, shared-use paths, and fire apparatus access.

The third Steering Committee meeting held on August 22, 2024 at the Houston-Galveston Area Council offices provided an opportunity for attendees to review and provide feedback on recommendations that were later presented to the community at the October Community Pop-Up.

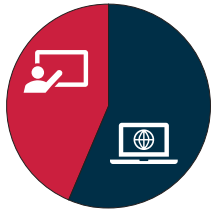
Coordination with Community Groups

In addition to project-specific programming such as the Steering Committee and the Community Pop-Ups, representatives from the project team attended local organizations' meetings including the May 14, 2024 First Ward Civic Council meeting and Super Neighborhood 22's monthly meeting on May 16, 2024.

Steering Committee Meeting 1, February 27, 2024

Community Feedback

The two primary methods of collecting community feedback were the April and October 2024 Community Pop-Up events and online engagement through the Engage HGAC project website. Nearly 300 contributions were received throughout the process.



128
Community Pop-Up Contributions

167
Online Contributions

April 2024 Community Pop-Up

The OSW/TIRZ 13 Phase II Mobility Plan Community Pop-Up took place during the afternoon of April 20, 2024, on the deck at Silver Street Studios in the Sawyer Yards area of the First Ward neighborhood. The Pop-Up took place during a "Third Saturday" art studio event at Sawyer Yards, which attracted members of the public to the area. Promotion for the Pop-Up included posting yard signs within the study area and distributing information at the prior weekend's "Second Saturday" event on April 13, 2024.

The Pop-Up included a variety of educational materials and activities to engage the public. These consisted of an informational board summarizing the project, an interactive map activity with stickers and post-it notes, and a post-it note activity to assess the public's experience walking, biking, taking transit, and driving around the study area. Postcard-sized flyers were also available for attendees and included a QR code to the project website, and over 100 flyers were distributed during the events to raise awareness of the planning process.

At least 30 members of the public visited the Pop-Up, most of whom lived in the study area and many that were involved in the First Ward Civic Club organization. The majority of attendees were engaged community members who were aware of the project and/or had visited the project website.

10 yard signs were placed at strategic locations and intersections within the study area to raise awareness among cyclists, pedestrians, and transit users.

The Pop-Up activities were located near the entrance to an exhibition at Silver Street Studios, allowing the project team to engage exhibition attendees as well as others who planned to attend the engagement event.

Activities and Results

Map Activity

A map of the study area was provided during the Pop-Up and community members were asked to note the following with stickers and post-it note comments: 1) Something You Like, 2) Ideas and Suggestions, and 3) Other Comments.

Common themes identified by the public for this activity were:

- The desire for improved walkability on Washington Avenue and Houston Avenue
- Unsafe walking, biking, and driving conditions on Crockett Street, particularly at Crockett and Silver Street
- Poor sidewalk conditions throughout the study area
- The desire for additional north/south connections, particularly to trailways
- The Spring Street Trail and White Oak Bayou Trail as popular destinations for the community

Mobility Matrix

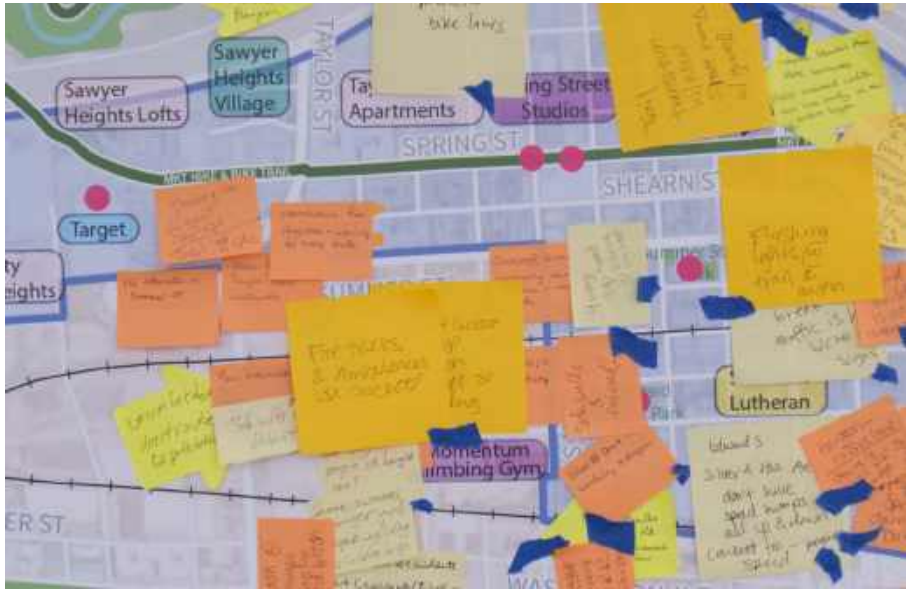
Attendees were asked to identify places they currently go, places they wish they could go, and what would make their experience better for different modes, including walking, rolling, biking, taking transit, and driving:

Walking/Rolling: MKT Trail, Downtown, Buffalo Bayou, Target, and Sawyer Yards were the most common destinations. Suggestions for improvements included safer crossings, connected and good quality sidewalks, and more shade and trees along trailways.

Biking: Common destinations include Downtown, the Heights, and Buffalo Bayou. Participants wanted improvements for bikeway path wayfinding, bike lanes, and shade/trees.

Transit: Destinations include the Medical Center and participants wanted safer connections to Downtown and voiced a desire for a trolley along Washington Ave. from Downtown to Memorial Park.

Driving: Restaurants greater than 3 miles away were primary destinations. Attendees wanted to improve safety of Crockett/Silver St. and increasing the quality of neighborhood streets.



The map activity invited community members to provide comments with stickers and post-it notes.

The matrix activity invited community members to provide comments with stickers and post-it notes.

October 2024 Community Pop-Up

The second Pop-Up event for the OSW/TIRZ 13 Phase II Mobility Plan was held the evening of October 1, 2024 at The Silos at Sawyer Yards. It was part of the First Ward Civic Club's National Night Out, which brought a variety of people to the area and resulted in greater exposure for the project. An estimated 50-75 event attendees reviewed the planning study's recommendations and participated in the pop up activities.

The Pop-Up included a set of presentation boards that showed the draft recommendations from the study. Projects were broken into short-term recommendations, mid- and long-term recommendations, and recommendations for Houston Avenue. Attendees provided feedback through a dot voting exercise and through written comments.

Activities and Results

Dot Voting on Project Recommendations

Participants were asked to review the meeting boards and were provided three different dot options to use during a voting exercise, which are defined below. Participants could vote on each project, though many participants chose only to vote on some projects.

- Projects attendees found exciting
- Projects that were attendees' favorites
- Projects where attendees had some reservations

Figure A.2. Short Term Recommendations Responses

Short-Term Recommendations			
	✓	★	•••
Spring Street Trail Improvements	10	3	0
Crockett Street Improvements	17	7	0
Park Signage and Crosswalks	9	1	0
Crockett Elementary School Enhancements	9	3	0
Sidewalk Prioritization	13	2	0

The second Pop-Up was held at The Silos at Sawyer Yards during National Night Out.

The Community Pop-Up gathered feedback on 23 recommendations that were developed as part of this Phase II Mobility Study.

Figure A.3. Mid- to Long-Term Recommendations Responses

Mid- to Long-Term Recommendations			
	✓	★	•••
Crockett/Silver Traffic Circle	17	8	1
Silver/Dart Intersection and Bikeway	5	1	2
Edwards Street Signal	6	1	2
Sawyer/Taylor/Shearn Access Management	17	4	0
Winter Street Permeable Paver	8	1	0
TxDOT Trail Connections	16	2	0
Crockett/Houston Signal Improvements	19	9	0
Spring Street Driveway Consolidation	10	1	0
METRO Transit Improvements	5	0	2

Figure A.4. Houston Avenue Recommendations Responses

Houston Avenue Recommendations			
	✓	★	•••
Railroad Ramp and Underpass	14	12	0
Access Management (Dart Street Median)	5	0	2
Signal Improvements	9	2	0
Landscaping (Medians, Behind Curbs)	14	2	1
Railroad Safety Crossing at Winter	4	1	1
Parallel Parking	5	2	3
Spring Street Trail Intersection	11	4	1
Mid-Block Crossings	13	1	0
Sidepaths/Back of Curb Bike Facility	13	6	1

Open Feedback

Attendees were also given the chance to provide open ended written feedback during the event. The open-ended feedback helped identify concern regarding through traffic in the area and its impact on safety for vulnerable road users like pedestrians and cyclists.

The October Community Pop-Up gave the project team another opportunity to engage directly with residents.

Attendees voted on the study's draft recommendations using a variety of dots to indicate their favorite projects, exciting projects, and project where they had reservations.

Online Engagement

In addition to in-person engagement activities, the Engage H-GAC online engagement platform provided opportunities for community members and stakeholders who were unable to attend in-person programming to share their perspectives. The online engagement activities mirrored the in-person activities, with an interactive mapping activity allowing participants to identify areas of interest. A discussion forum provided opportunities for open-ended feedback, discussion, and elaboration on key ideas.

Activities and Results

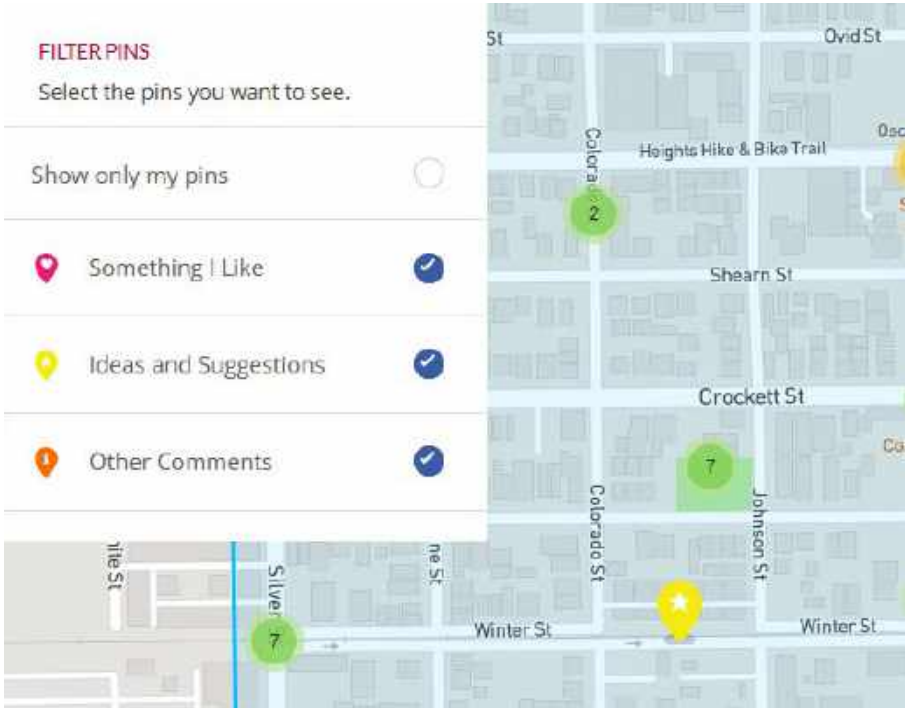
Mapping Activity

The mapping activity included three pin types: "Something I Like", "Ideas and Suggestions", and "Other Comments", allowing participants to identify areas they already value as well as areas for improvement. The location with the most comments was the intersection of Houston Avenue and Spring Street where the trail crosses Houston Avenue. Corridors with the highest number of comments included Houston Avenue and Silver Street, both of which are the major corridors providing north-south access within the study area. Pedestrian crossings and railroad crossings were the major areas of focus, and the feedback largely aligned with the input received at the Community Pop-Up.

Discussion Forum

Three questions were posed for participants to respond to:

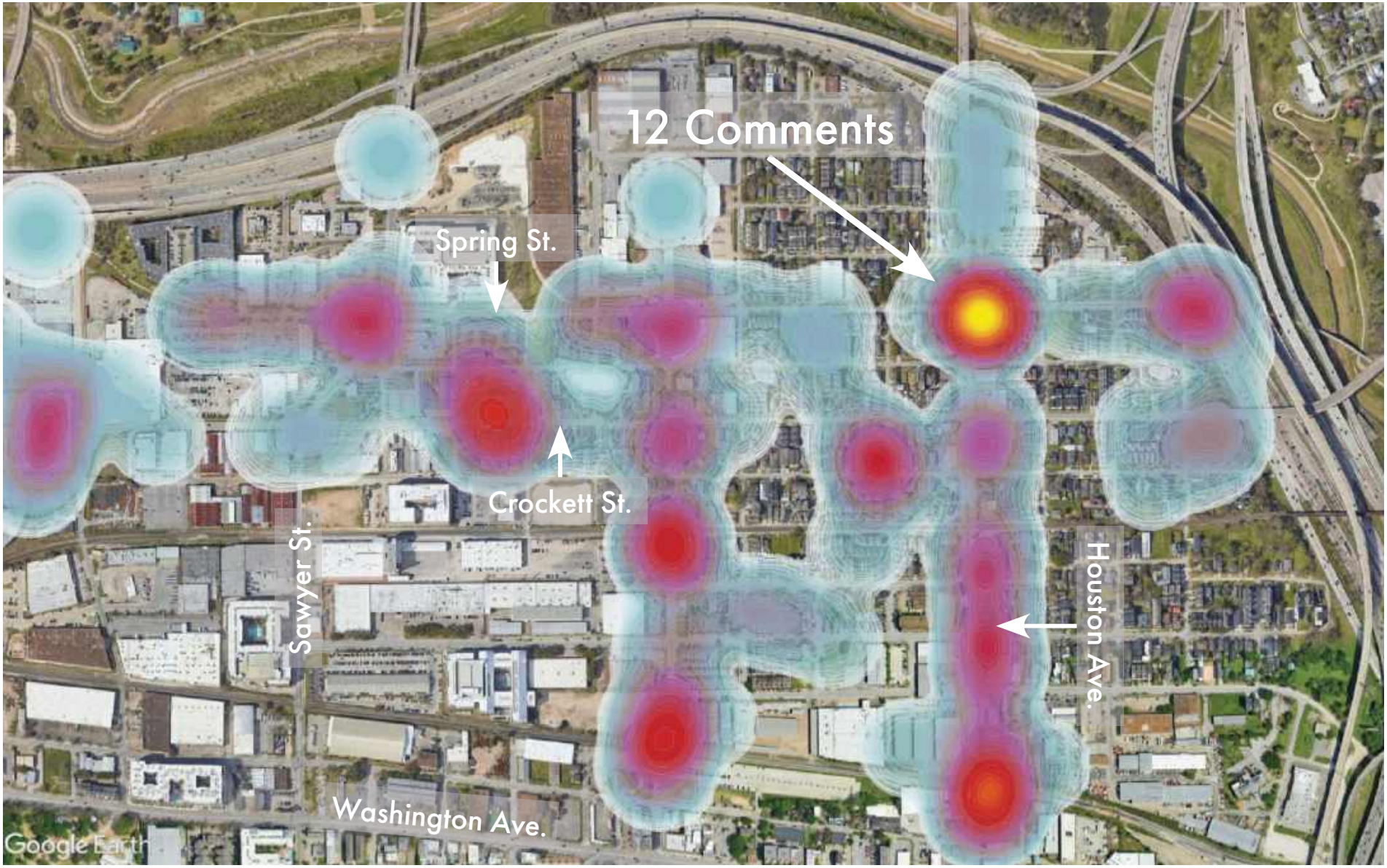
- Why do you live here? What do you like most about the neighborhood?
- What areas or destinations do you have challenges getting to in or around the study area? What makes it challenging?
- If you could start tomorrow, what is the first thing you would improve about mobility in the neighborhood?



Multiple "pin" types were available for online participants to categorize their responses.

The Discussion forum allowed participants to share open-ended feedback and build on each others' insights.

Figure A.5. Heatmap of Online Map Comments



Legend:

Sparse Dense

Key Takeaways

Throughout the planning process, the project team sought to address the community's priority themes and issues through a coordinated suite of projects. The below priorities summarize the initial issues identified by the community as well as preferences for implementation projects.

Community Priority Themes

- Mobility gaps and impediments are affecting the mobility of multi-generational families throughout the neighborhood.
- Respondents seek reduced barriers to mobility through calmer and safer streets.
- Accessibility is a major challenge for those on wheels, such as strollers.
- A lack of comfort elements, signage and wayfinding, and consistent, quality infrastructure impede mode switching.

Community Priority Projects

- There was strong support for improvements on Crockett Street, including: traffic calming and striping projects on both sections east and west of Houston Avenue, the addition of a traffic circle at its intersection at Silver Street, and improvements to the signal at its intersection with Houston Avenue.
- The community generally prioritized pedestrian improvements such as sidewalks, trail connections, and improved crossings over vehicular traffic solutions.
- The Houston Avenue and Crockett Street traffic signal and intersection improvements received the greatest amount of positive feedback among short-term and mid-to-long-term recommendations at the October 1 pop-up event and voting exercise. It had the highest number of green dots and gold stars, with no respondents indicating reservations through yellow dots.
- Among Houston Avenue projects, the community generally prioritized projects that improve the pedestrian and cyclist experience. These projects included the railroad underpass, landscaping, mid-block crossings, and the sidepath.

"I would like a safe way to cross Houston [Avenue] with my daughter."

Comment from study participant from the April 2024 Community Pop-Up.

Birds-eye view of Houston Avenue facing towards Downtown Houston.

Appendix

E

Old Sixth Ward/TIRZ 13 Phase II Mobility Plan

April 2024

City of Houston Neighborhood Traffic Calming Program

Neighborhood Traffic Management Program Overview

Presented by:
Jeffrey S. Weatherford, P.E., PTOE
Deputy Director
Department of Public Works and Engineering

https://www.houstontx.gov/council/committees/tti/20140911/ntmp.pdf

What Is The Neighborhood Traffic Management Program?

- Neighborhood Management Program (NTMP) ordinance is intended "to establish the procedures governing the application for and review, approval, financing and construction of projects to minimize or eliminate traffic congestion, cut-through traffic or other traffic-related problems in a neighborhood area. "
  - Ordinance governing NTMP process can be found in Article XV of Chapter 45 within COH Code of Ordinances.
- NTMP is the program that provides traffic calming devices within a neighborhood to help control speeds, reduce or eliminate cut-through traffic and address other traffic related issues.

Traffic Calming

Institute of Transportation Engineers (ITE) defines traffic calming as "the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users."

Traffic calming is intended to:

- reduce potential traffic accidents
- increase safety & convenience for pedestrians & others
- provide neighborhood revitalization and stability.

History of Traffic Calming in Houston

- The first recorded request in Houston was from Houston Country Club Estates to close a road.
  - Apartment complex was constructed adjacent to a neighborhood
  - Gate was constructed closing the street.
  - Apartment community sued COH in federal court
  - As a result, gate was removed & original Neighborhood Traffic Management Ordinance was passed (1993).

History of Traffic Calming in Houston

- In 2009, Texas Legislature passed a statute that requires the City to:
  - Publish standards
  - Notify the public and receive comments
  - In order to close a street, Council must hold a public hearing and approve the closure by majority vote
  - This statute resulted in the current version of the NTMP ordinance (2010)

Types of Traffic Calming Devices

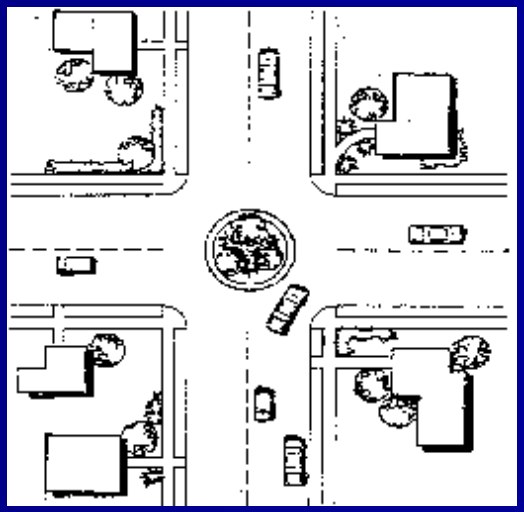
- Speeds Cushions vs. Speed Humps
  - Serve the same purpose
  - HFD prefers speed cushions since they do not impact response times
  - Speed Cushions cost approximately $5,000 per location.
  - Speed Humps cost approximately $1,500 per location

Speed Cushion

Speed Hump

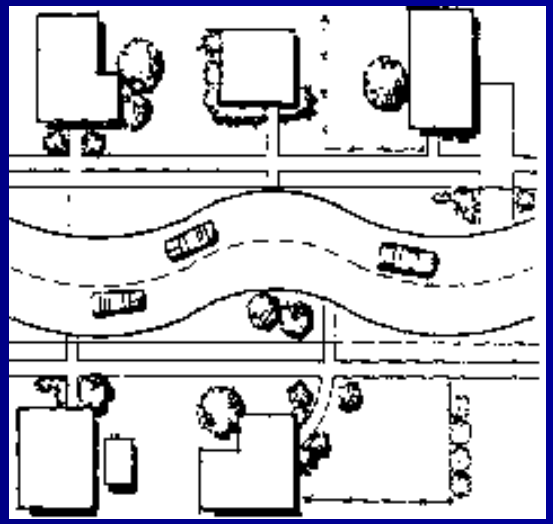
Types of Traffic Calming Devices

- Traffic Calming Circles
  - Not Roundabouts
  - Roundabouts are not traffic calming devices



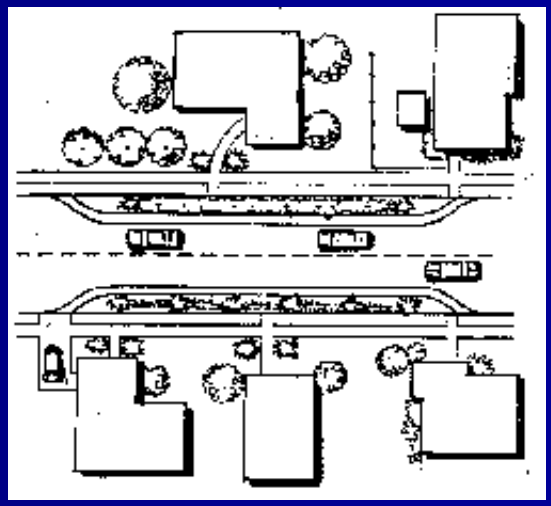
Types of Traffic Calming Devices

- Chicanes
  - Chicanes create horizontal shifts in the roadway (curves)



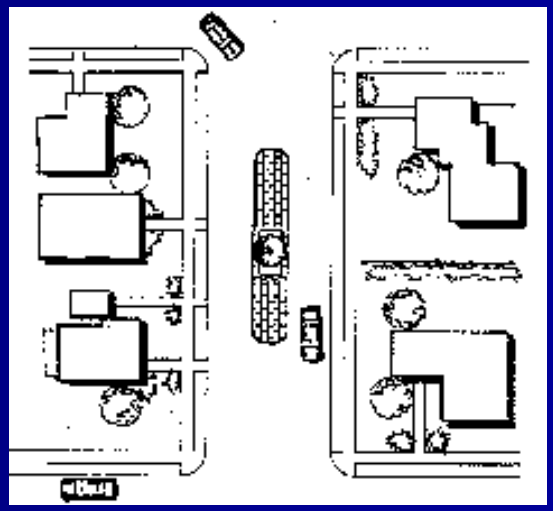
Types of Traffic Calming Devices

- Chokers
  - Chokers create a narrowing of the roadway



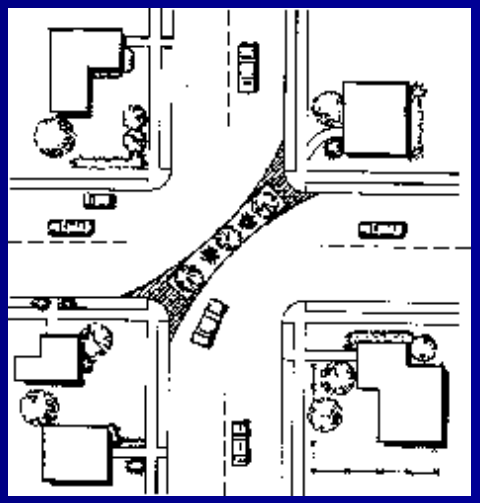
Types of Traffic Calming Devices

- Medians
  - Medians within neighborhoods are intended to create a narrowing of the roadway coupled with a horizontal shift in the travel path



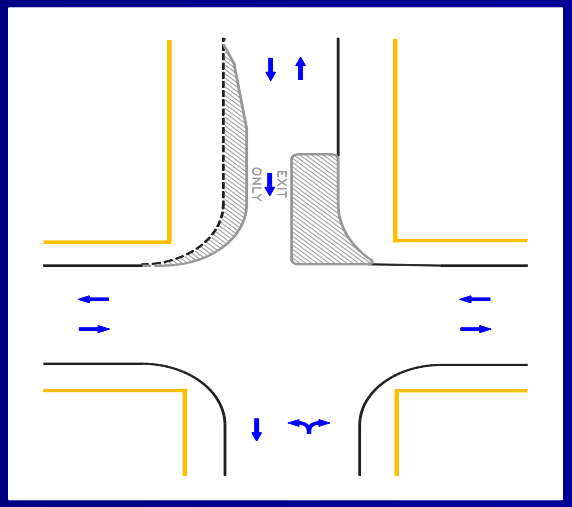
Types of Traffic Calming Devices

- Diverters
  - Diverters are intended to stop thru traffic, forcing a turn.



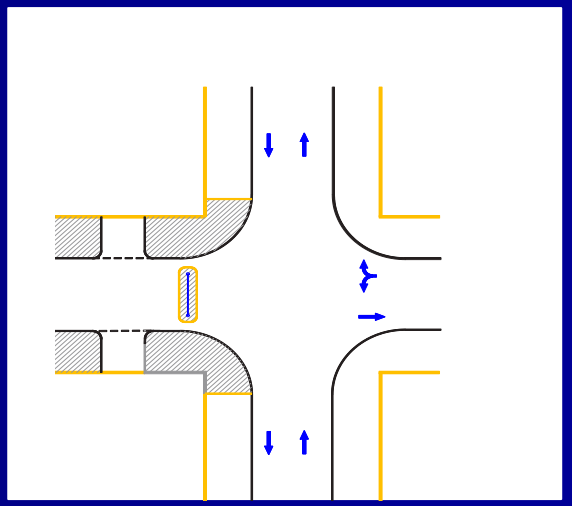
Types of Traffic Calming Devices

- Partial Closure
  - Restricts traffic to outbound only (no turning from the main street)



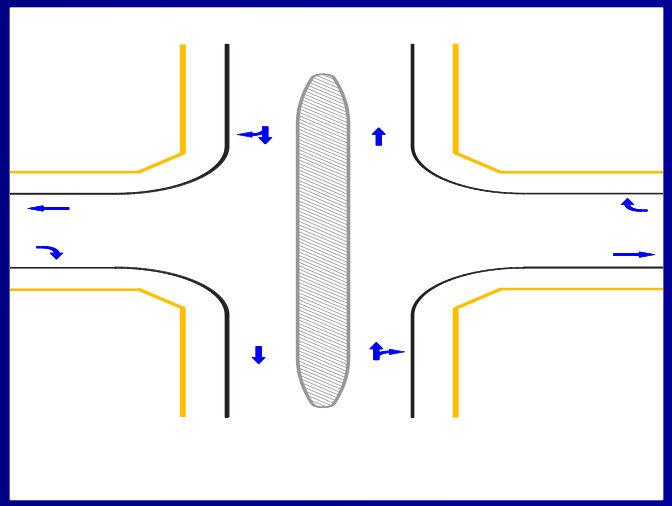
Types of Traffic Calming Devices

- Right Turn In and Out Only
  - Restricts traffic to only right turns into or out of the street
  - Prevents through and left turn movements



Types of Traffic Calming Devices

- Perpendicular Directional Island
  - Restricts traffic to only making right turns into or out of the street
  - Prevents through and left turn movements
  - Similar to the Right Turn In and Out Only



Key Components of the NTMP Ordinance

Neighborhood means any contiguous area within the city that generally has as its boundaries the: (i) interior ROW line of any thoroughfare or collector street; (ii) interior boundary or ROW line of any railroad line, utility or pipeline corridor, river or waterway (not including drainage or flood control ditches not being traversed by other streets within the general locale); (iii) corporate limits of the city; or (iv) any combination of 1 or more of the foregoing boundaries. A neighborhood may consist of 1 or more subdivisions & shall include only those properties within & fronting on or taking their only access from a street within the bounded area.

- i.e., traffic calming devices cannot be installed on major thoroughfares or collector streets

Key Components of the NTMP Ordinance

Interdepartmental review committee consists of 1 representative each from the fire, police, planning and development, solid waste management, public works and engineering, and convention and entertainment facilities departments who shall be appointed by the mayor & 1 representative designated by METRO.

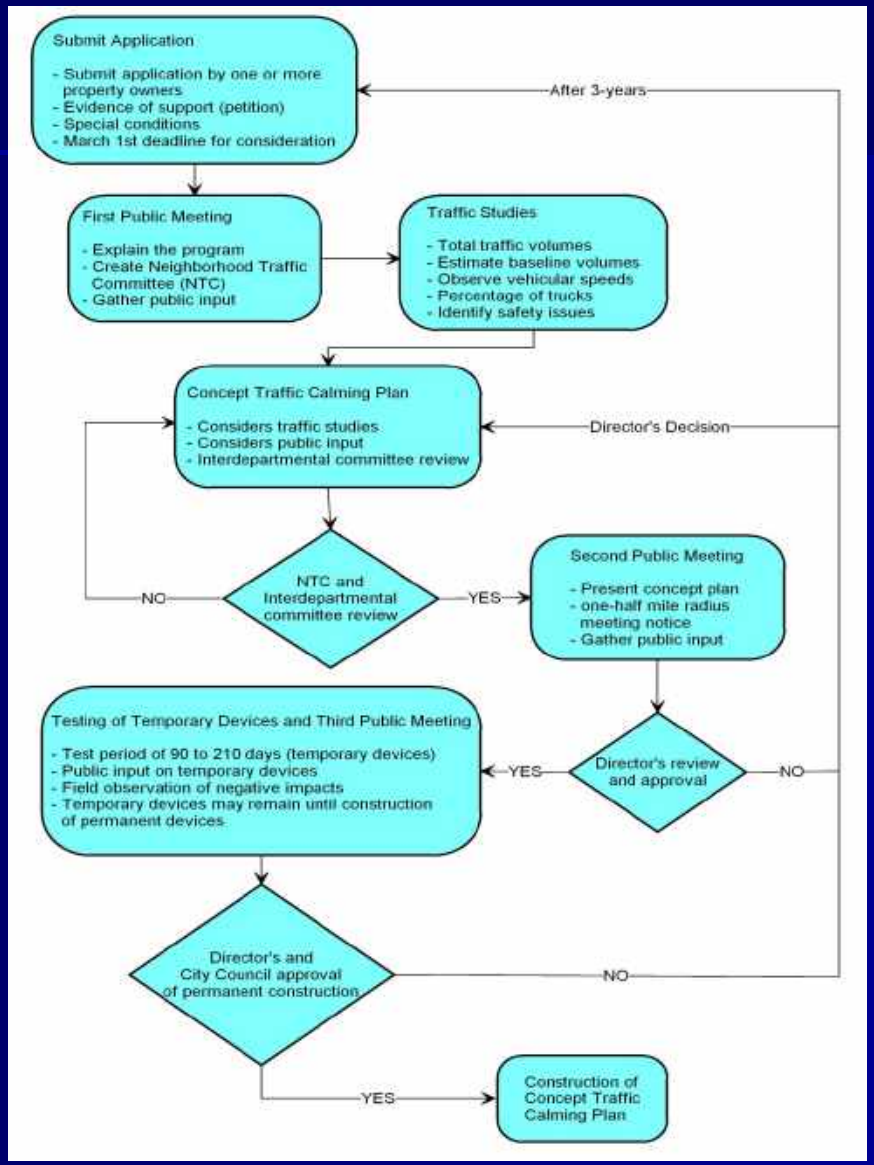
Neighborhood traffic committee consists of not more than 5 members drawn from the residents or property owners within a neighborhood to assist in the processing of a request for a project.

Key Components of the NTMP Ordinance

- City will fund & construct "temporary" devices for
  - Speed cushions; No difference between temporary & permanent devices.
  - Other devices; City uses flexible curbing with delineators mounted on them.

- The neighborhood is responsible for upgrading to permanent devices at their expense.
  - Council enacted a Neighborhood Matching Grant Program that will begin this year to assist financially.

NTMP Process

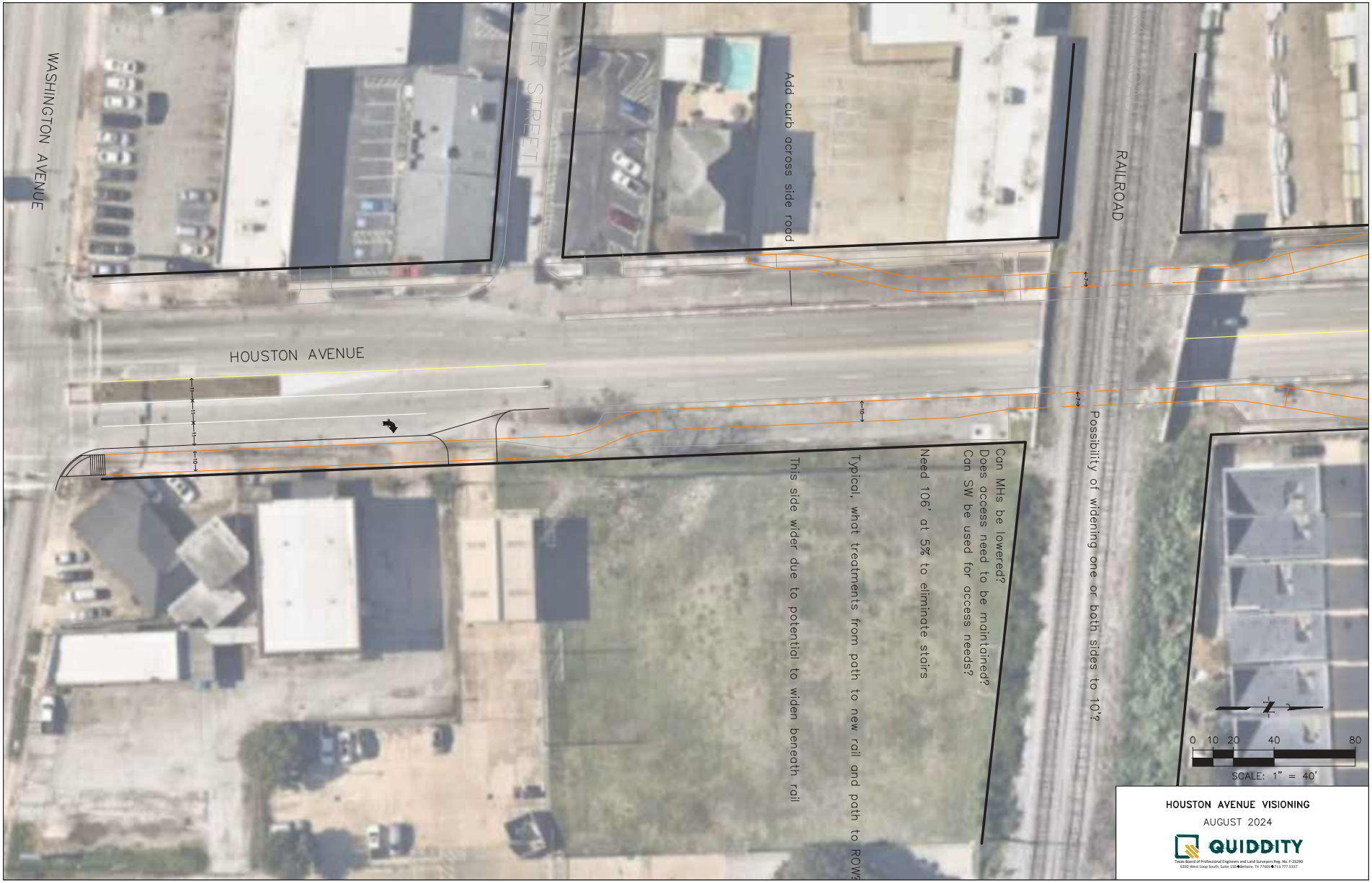



Questions?

Appendix

F

Houston Avenue Schematic


WASHINGTON AVENUE
CENTER STREET
RAILROAD
HOUSTON AVENUE
Add curb across side road
Possibility of widening one or both sides to 10'?
Can MHs be lowered?
Does access need to be maintained?
Can SW be used for access needs?
Need 106' at 5% to eliminate stairs
Typical, what treatments from path to new rail and path to ROW?
This side wider due to potential to widen beneath rail
0 10 20 40 80
SCALE: 1" = 40'
HOUSTON AVENUE VISIONING
AUGUST 2024
QUIDDITY


HOUSTON AVENUE VISIONING
AUGUST 2024
QUIDDITY
EDWARDS STREET
Add Signal
EDWARDS STREET
Head in parking eliminated...can't really
Suggest keeping parking on west side
Head in parking eliminated
Mountable median for emergency vehicles
DART STREET
Head in parking eliminated
Confirm DW needed
METRO Stop
HOUSTON AVENUE
METRO Stop
Parallel parking eliminated
DW, northbound egress to/from business removed
SCALE: 1" = 40'
0 10 20 40 80


HOUSTON AVENUE
WINTER STREET
WINTER STREET
RAILROAD
BINGHAM STREET
BINGHAM STREET
METRO Stop
METRO Stop
Add ped crossing arms? Signage?
Add ped crossing arms? Signage? arm to path and from gate arm to road
Protect oak tree and surround
2 crepe myrtle trees removed
3 oak trees removed
nd shift SW to back of curb, eliminating parking
Oak trees removed
Exist trees removed
0 10 20 40 80
SCALE: 1" = 40'
HOUSTON AVENUE VISIONING
AUGUST 2024
QUIDDITY

SHEARN STREET
CROCKETT STREET
SUMMER STREET
METRO Stop
METRO Stop Relocate?
Intersection Aligned
Building Encroaching ROW?
What to do about SW cafe?
Could eliminate parking and bump curb out...could s
Gap in
0 10 20 40 80
SCALE: 1" = 40'
HOUSTON AVENUE VISIONING
AUGUST 2024
QUIDDITY


ALAMO STREET
OVID STREET
METRO Stop
SPRING STREET
MKT TRAIL
Add RRFB
Add RRFB
SPRING STREET
MKT TRAIL
Extra safety buffer space...could add lane back in
0 10 20 40 80
SCALE: 1" = 40'
HOUSTON AVENUE VISIONING
AUGUST 2024
QUIDDITY

WEBER STREET
IH-10
METRO Stop
METRO Stop
Safety buffer is wide, but could split facilities and put a 4'
.Shepherd/Durham will be a good case study to see how th
0 10 20 40 80
SCALE: 1" = 40'
HOUSTON AVENUE VISIONING
AUGUST 2024
QUIDDITY