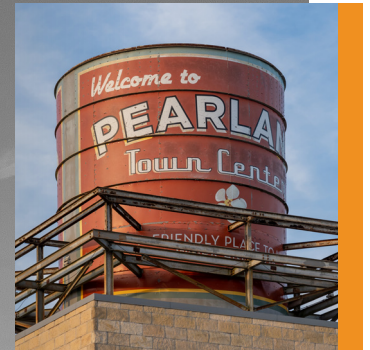


# PEARLAND MOBILITY PLAN



2025



# ACKNOWLEDGMENTS



## Lead Agency HOUSTON-GALVESTON AREA COUNCIL

**Qun Zhao**, Project Manager  
**Carlene Mullins**, Deputy Project Manager  
**Monique Johnson, AICP**, Manager of Subregional Planning  
**Rodney Sigua**, Planner

## Funding Partners Texas Department of Transportation (TxDOT)

The preparation of this document was financed in part through grants from the U.S. Department of Transportation under Section 112 of the 1973 Federal Aid Highway Act and Section 8(d) of the Federal Transit act of 1964, as amended. The contents of this document do not necessarily reflect the official views or policy of the Federal Highway Administration, Federal Transit Administration, U.S. Department of Transportation, or the Texas Department of Transportation.

## Steering Committee

### CITY OF PEARLAND

**Trent Epperson**, City Manager  
**Raj Shrestha, PE**, City Engineer  
**Yolci Ramirez**, Traffic Engineer  
**Vance Wyly**, Director of Community Development  
**Martin Griggs**, Deputy Director of Community Development  
**Lorenzo Wingate, PE**, Director of Public Works  
**Joshua Lee**, Director of Communications  
**Carry Capers**, Director of Parks & Recreation  
**Johnny Spires**, Pearland Police Chief  
**John Thomas**, Pearland Police Captain

### TXDOT

**Ana Ramirez Huerta**, Houston District Area Coordinator  
**Jeffrey English, AICP**, Houston District Planner  
**Glenn Allbritton, PE**, Houston District Engineer  
**Rajendra Hada, PE**, Brazoria Assistant Area Engineer

### BRAZORIA COUNTY

**Matt Hanks, JD, PE** County Engineer

### CITY OF FRIENDSWOOD

**Jildardo Arias, PE, CFM**, Director of Engineering, City Engineer  
**Heather Van Dine**, Assistant Director of Engineering Operations

## Stakeholders

Group members include representatives from the following organizations:

**ADDI Printing**  
**Alvin ISD**  
**Brazoria County Commissioner Precinct 3**  
**Brazoria Drainage District #4**  
**Farmers Insurance**  
**Frontier Forklifts**  
**HCA Houston Healthcare Pearland**  
**Kelsey-Seybold**  
**Pearland Bicycles**  
**Pearland Chamber of Commerce**  
**Pearland Economic Development Corporation**  
**Pearland Emergency Medical Services**  
**Pearland ISD**  
**Pearland Town Center**  
**San Jacinto College**  
**Scooters Coffee**  
**Third Coast Terminals**

## Consultant Team

Prime Consultant:

### KIMLEY-HORN

**Vivek Deshpande, PE**, Project Manager  
**Jenny Lai, AICP**, Planner  
**Ryan Graves, AICP**, Planner  
**Jenny Abrego**, Graphic Designer  
**Mayia Anukwuem**, Graphic Designer  
**Michael Feeney, PE**, Engineer

In partnership with:

### HDR ENGINEERING

**Reddy Edulakanti, PE, PTOE**  
**Suman Poudel, EIT**

### ALLIANCE TRANSPORTATION GROUP

**Ellen Soll, AICP**  
**Thomas Duncan, PE**

### GRADIENT GROUP

**Linc Wright, PE**

### EPS GROUP

**Ryan McKinnis, PE**

### CJ HENSCH

# TABLE OF CONTENTS

**Executive Summary** .....ES1

**01 Introduction**..... 1

1.1 Background and Purpose ..... 2  
 1.2 Project Vision and Goals..... 3  
 1.3 Project Schedule ..... 4  
 1.4 Report Organization..... 6

**02 The Project Process** ..... 7

2.1 The Pearland Mobility Plan Process..... 8  
 2.2 Community Voices ..... 10  
 2.3 Public Outreach Themes..... 14

**03 Existing Conditions**..... 15

3.1 Past Plans Summary ..... 16  
 3.2 Community Snapshot (Demographics Data)..... 19  
 3.3 Environmental Features..... 21  
 3.4 Traffic Generators ..... 23  
 3.5 Roadway and Active Transportation Network..... 25  
 3.6 Crash History..... 32

**04 Plan Recommendations** .....35

4.1 Active Network Recommendations..... 37  
 4.2 Intersection Recommendations ..... 41  
 4.3 Safety Improvement Recommendations..... 60  
 4.4 Technology Recommendations ..... 66  
 4.5 Policy Recommendations ..... 69  
 4.6 Long-term Roadway Network Recommendations ..... 71

**05 Thoroughfare Plan Update** .....73

5.1 Existing Thoroughfare Plan..... 74  
 5.2 Travel Demand Model..... 77  
 5.3 2025 Thoroughfare Plan Update ..... 81

**06 Implementation Plan**.....85

6.1 Project Prioritization..... 86  
 6.2 Project Summary ..... 90  
 6.3 Pearland Mobility Plan Project List ..... 91



# EXECUTIVE SUMMARY

## EXECUTIVE SUMMARY

The Houston-Galveston Area Council (H-GAC) and the City of Pearland partnered to conduct a City-wide Mobility Plan that addressed City's existing and future transportation needs.

The study included public engagement to understand residents' challenges and priorities related to mobility in Pearland. To improve connectivity, efficiency, and safety, the study updated City's Thoroughfare Plan and developed recommendations for short, medium, and long-term transportation projects that can be implemented by the City with strategic partnerships in the region to maintain a general quality of life in this cherished community.

## PROJECT VISION

*The Pearland Mobility Plan will prioritize multi-modal improvements and strategies to improve mobility for people, goods, and services; enhance safety; and accommodate growth. Furthermore, the Plan will develop a trackable list of projects and initiatives for the future.*



**GOAL 1:**  
MOVE PEOPLE  
AND GOODS  
EFFICIENTLY

- ▶ Update Thoroughfare Plan
- ▶ Traffic Analysis
- ▶ Incorporate Transit Study Recommendations



**GOAL 2:**  
IMPROVE SAFETY

- ▶ Countermeasures for Crash hotspots
- ▶ Improve Bike and Pedestrian Connections



**GOAL 3:**  
STRENGTHEN  
REGIONAL  
ECONOMIC  
COMPETITIVENESS

- ▶ Transportation and Development Policy Review
- ▶ Project Prioritization & Dashboard

## Recap of the Project Process

### EXISTING CONDITIONS

The project team collected demographics data and created a series of maps that reflected a variety of transportation related data, including crash history and existing roadway networks. Previous planning documents were reviewed so that recommendations are in line with prior planning efforts.

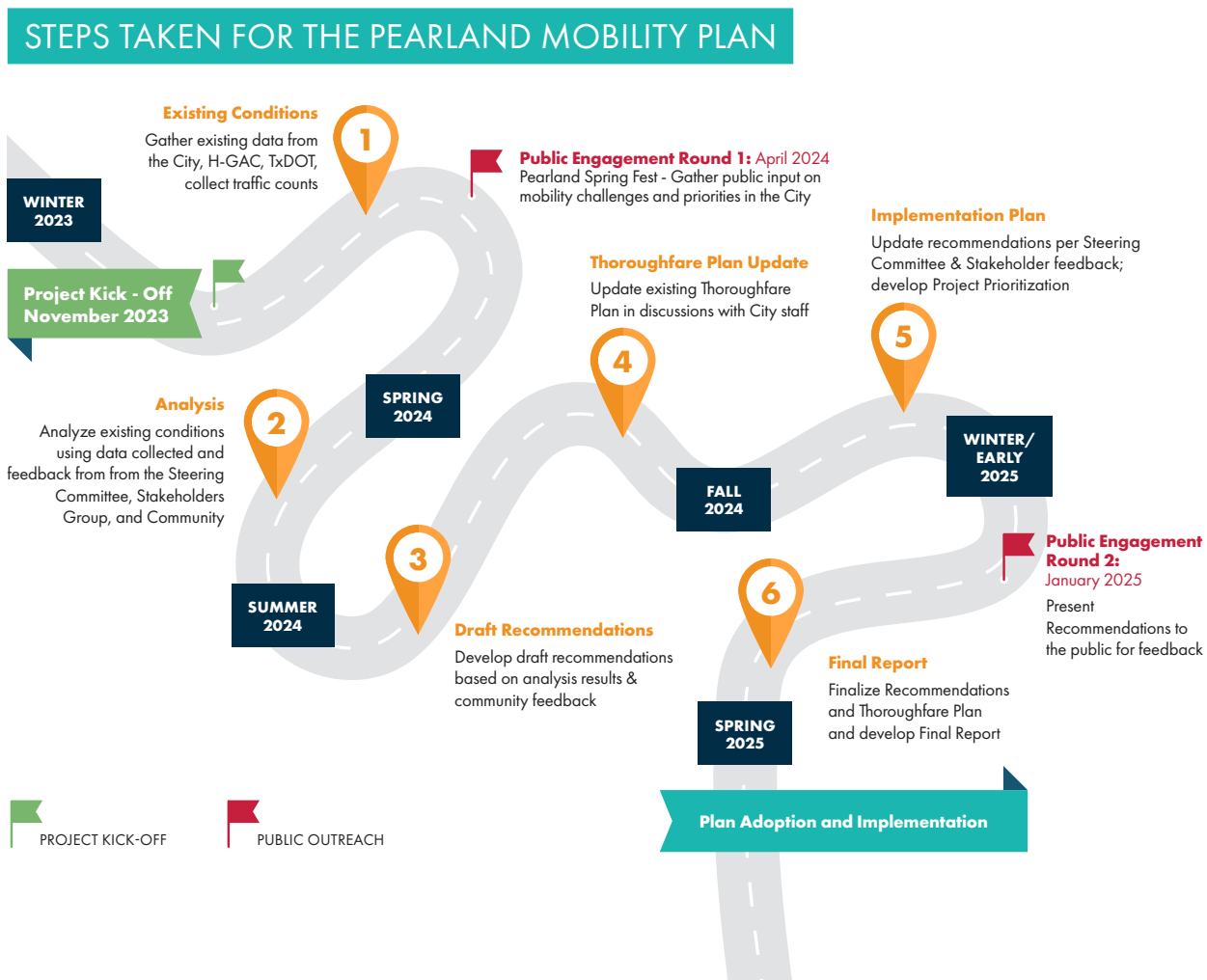
### ANALYSIS & RECOMMENDATIONS DEVELOPMENT

A traffic model was created for 60 intersections to analyze peak-hour conditions to develop short- and medium-term intersection improvements.

Bicycle and pedestrian improvements were identified through public feedback. A 7-year analysis of crash data helped develop a high injury network, leading to the identification of countermeasure improvements at the top four intersections and two corridors. Additionally, traffic technology and policy recommendations were formulated to further enhance safety.

### THOROUGHFARE PLAN UPDATE

Future traffic growth in the City was projected using H-GAC's 2045 Travel Demand Model. By combining model results, on-going development information across the City, and discussions with staff, the Thoroughfare Plan was updated (last updated in 2021).



### IMPLEMENTATION PROCESS

The project team developed a prioritization tool and an online dashboard to support the implementation process following the completion of the project. The prioritization tool is intended to guide decision-making and ranking of ongoing city projects.

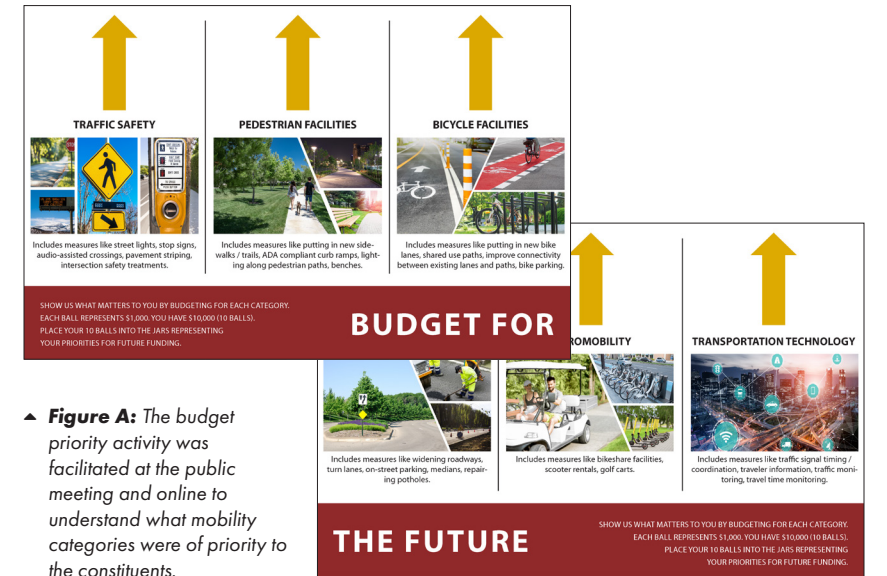
## Public Engagement and Schedule of Events

### 1ST ROUND OF PUBLIC ENGAGEMENT

In the first round of public engagement efforts, the focus was on learning what is working, what is not working, and suggestions on improving the mobility network.

#### Efforts Included:

- ▶ Two Steering Committee Meetings (January 23 and May 30, 2024)
- ▶ Stakeholder Meeting (March 18, 2024)
- ▶ Public Meeting - Pearland Spring Fest (April 6, 2024)
- ▶ Online Engagement (April 1st – April 26, 2024)
- ▶ Survey Questionnaire
- ▶ Budget Prioritization Activity



▲ **Figure A:** The budget priority activity was facilitated at the public meeting and online to understand what mobility categories were of priority to the constituents.

### 2ND ROUND OF PUBLIC ENGAGEMENT

In the second round of public engagement, the project team presented the findings and Draft recommendations to the public to get their feedback and update the recommendations, if needed.

#### Efforts Included:




- ▶ Two Steering Committee Meetings (September 18, 2024, and February 20, 2025)
- ▶ Stakeholder Meeting (November 7, 2024)
- ▶ Public Meeting - Pearland Farmer's Market (January 18, 2025)
- ▶ Online Engagement (January 14 – February 14, 2025)
- ▶ Shared Draft Recommendations
- ▶ Received Public Feedback



▲ **Figure B:** The project team talking with constituents about the proposed mobility improvement recommendations at Farmer's Market

## Recommended Improvements

A list of recommendations was developed under the following categories. The recommendations were also classified as 'Short', 'Medium', and 'Long' term projects from an implementation time frame. For the complete list of recommended projects and associated implementation timeframes, please see Chapter 6: Implementation Plan.

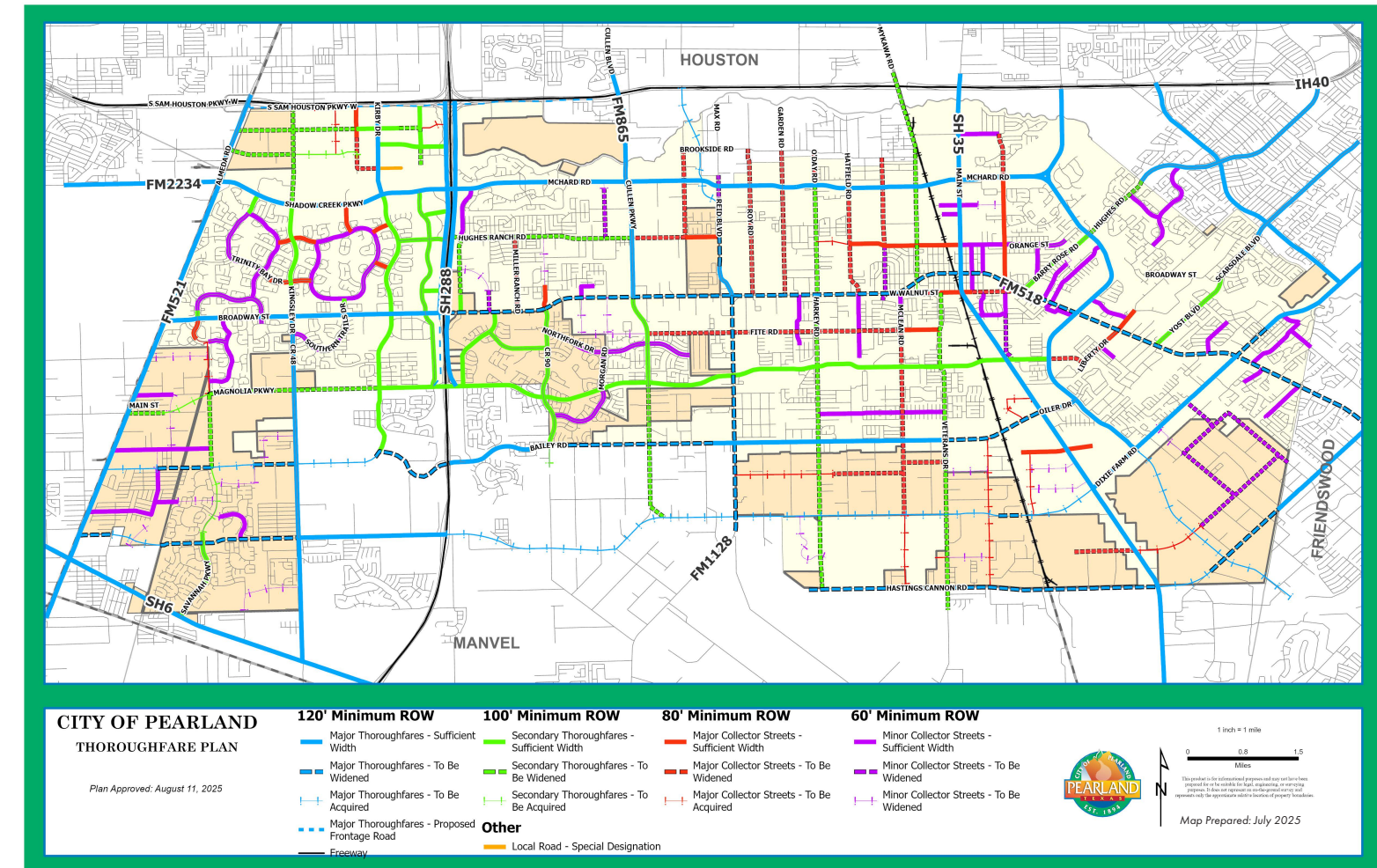
					
<b>ACTIVE TRANSPORTATION NETWORK</b>	<b>INTERSECTION IMPROVEMENTS</b>	<b>SAFETY IMPROVEMENTS</b>	<b>TECHNOLOGY</b>	<b>POLICY</b>	<b>THOROUGHFARE PLAN UPDATES</b>
Enhances facilities for pedestrians, cyclists, and other non-motorized modes of transportation.	Improves traffic operations at intersections to mitigate congestion.	Addresses identified existing safety concerns and risk factors.	Integrates advanced technology solutions consistently to optimize transportation systems and traffic management.	Updates and introduces policies that support and promote efficient and safe transportation.	Updates the Thoroughfare Plan to accommodate growth and changes in travel patterns.

The recommendations are also categorized by implementation timeframes to allow an actionable phased approach:

<b>SHORT-TERM (0-5 years)</b>	<b>MEDIUM-TERM (6-10 years)</b>	<b>LONG-TERM (11+ years)</b>
Immediate actions that address urgent needs and quick wins.	Strategic projects that require planning and coordination but are vital for mid-term goals.	Long-range initiatives designed to align with the city's future vision and sustained growth. In this plan, the Thoroughfare Plan Update falls under the Long-Term recommendations.

## Thoroughfare Plan Update

A Thoroughfare Plan is a long range planning tool that identifies approximate alignment of future roadway connections, classification of roadways, and typical cross-sections based on projected travel demand patterns. It also allows the City to preserve right-of-way for future roadways. The project team used combination of H-GAC Travel Demand Model results, existing and proposed developments across the City, and discussions with Staff to develop the Updated Thoroughfare Plan. There were a total of 12 updates that varied from changing the roadway classification, alignment, and extending or removing roadway link segments. Below map shows the Updated Thoroughfare Plan.

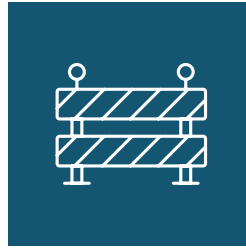


▲ **Figure G:** Updated 2025 Thoroughfare Plan map, adopted by City Council on August 11, 2025.

## Implementation Plan

The following four categories of performance measures have been created to guide future project prioritization. In the development of these categories and associated scoring criteria, along with the data analysis, the project team looked at existing efforts from the City and public engagement feedback. See Chapter 6: Implementation Plan for the project prioritization matrix.

The proposed recommendations of this Plan will provide benefits aimed at improving the City's transportation infrastructure and multimodal experience. The list of roadway improvements focuses on reducing congestion which will also lead to lower automobile emissions. These recommendations are further enhanced by technology solutions designed to improve the driver experience and safety measures. To improve overall network mobility, the Plan includes active transportation recommendations that aim to expand the existing sidewalk network for all users.



### I. SAFETY

This category evaluates projects based on enhancing road safety for different users. The category leverages historical crash data and the high-injury network developed as part of this study, and uses following criteria and corresponding performance measures to prioritize the projects:



### II. RELIABILITY

This category evaluates projects if they would lead to consistent travel times and connections due to: increased roadway capacity (adding lanes, turn bays, missing roadway link); or leveraging technology to improve efficiency. This category was evaluated using two main criteria:



### III. MOBILITY

This category evaluates projects on multi-modal accessibility and connectivity and uses below criteria:



### IV. PROJECT READINESS

This category examines the level of coordination effort needed outside of the City's immediate authority, and focuses on the following sub-categories of evaluation criteria:

## Pearland Mobility Plan Project Recommendations List

### ACTIVE TRANSPORTATION (SHORT-TERM 0-5 YEARS)

	Project Location	Description
SHORT-TERM	1. McHard Road and Stone Road	▶ Install sidewalk infrastructure on Stone Road to connect existing neighborhood to the shared use path on McHard Road
	2. McHard Road and Max Road	▶ Install sidewalk infrastructure on Max Road to connect existing neighborhood to the shared use path on McHard Road
	3. McHard Road and O'Day Road	▶ Install sidewalk infrastructure on O'Day Road to connect existing neighborhood to the shared use path on McHard Road
	4. McHard Road and Roy Road	▶ Install sidewalk infrastructure on Roy Road to connect existing neighborhood to the shared use path on McHard Road
	5. McHard Road and Garden Road	▶ Install sidewalk infrastructure on Garden Road to connect existing neighborhood to the shared use path on McHard Road
	6. McHard Road and Mykawa Road	▶ Install sidewalk infrastructure on Mykawa Road to connect existing neighborhood to the shared use path on McHard Road
	7. Veterans Drive, between Elaine Way and Stonebridge Drive	▶ Install sidewalk along West side of Veterans Drive, to connect existing sidewalk along Veterans Drive to Magonlia Parkway
	8. Manvel Road, between Fite Road and Magnolia Parkway	▶ Coordinate with the Pearland Independent School District to address pedestrian mobility and safety concerns in this area. Consider installing advanced warning signage for vehicles for school crossing and midblock crosswalk marking with appropriate traffic control (such as Rectangular Rapid Flashing Beacon). TxDOT has ongoing project to design roadway improvements in this section of Manvel Road. Preliminary schematic plans for Manvel Road (FM 1128) indicate proposed medians and sidewalks but based on TxDOT project findings, none of the side streets meet criteria for a new traffic signal on Manvel Road.
	9. Pearland Parkway and Oiler Drive	▶ Install new pedestrian crosswalk, signing and marking on Oiler Drive at Towne Lake Drive and on Pearland Pkwy at High School driveway on the north side of the school. Similar to the existing conditions along Manvel Road and Rogers Middle School / Berry Miller Junior High, Pearland High School is situated next to multiple large residential subdivisions with several students walking to the school.
	10. City Wide	▶ Conduct an Americans with Disabilities Act (ADA) Transition Plan

**ACTIVE TRANSPORTATION (MEDIUM-TERM 6-11 YEARS)**

	Project Location	Description
	1. <b>Walnut Street Railroad Crossing</b>	▶ Install at-grade sidewalk across railroad, to connect existing sidewalks along both sides of the railroad crossing

**INTERSECTION PROJECTS (SHORT-TERM 0-5 YEARS)**

	Project Location	Description
<b>SHORT-TERM</b>	1. <b>SH 35 at McHard Road</b>	<ul style="list-style-type: none"> <li>▶ Add eastbound right-turn lane on McHard Road and southbound right-turn lane on SH 35</li> <li>▶ Update traffic signal pole locations in northwest and southwest corners</li> <li>▶ Update sidewalk and ADA facilities on northwest and southwest corners</li> </ul>
	2. <b>SH 35 at Orange Street</b>	<ul style="list-style-type: none"> <li>▶ Update east-west signal phasing</li> <li>▶ Add flashing yellow arrow displays for eastbound and westbound left-turns</li> </ul>
	3. <b>SH 35 at Magnolia Road</b>	<ul style="list-style-type: none"> <li>▶ Restripe eastbound and westbound lanes on Magnolia Road</li> <li>▶ Update east-west signal phasing</li> </ul>
	4. <b>SH 35 at Bailey Road</b>	<ul style="list-style-type: none"> <li>▶ Add eastbound and westbound right-turn lanes on Bailey Road; add southbound right-turn lane on SH 35</li> <li>▶ Replace existing 'span-wire' signal with new 'mast-arm' signal</li> <li>▶ Modify existing sidewalk and ADA facilities impacted in all four corners of the intersection</li> </ul>
	5. <b>Pearland Parkway at Hughes Road</b>	<ul style="list-style-type: none"> <li>▶ Restripe east and west approaches on Hughes Road</li> <li>▶ Add northbound right turn lane on Pearland Pkwy</li> <li>▶ Update east-west signal phasing</li> </ul>
	6. <b>Pearland Parkway at Province Village</b>	<ul style="list-style-type: none"> <li>▶ Restripe east and west approaches on Province Village Dr</li> <li>▶ Update east-west signal phasing</li> </ul>
	7. <b>Pearland Parkway at FM 518</b>	<ul style="list-style-type: none"> <li>▶ Add westbound right turn lane on FM 518</li> <li>▶ Adjust signal timing</li> </ul>
	8. <b>Pearland Parkway at John Lizer Road</b>	<ul style="list-style-type: none"> <li>▶ Add southbound right-turn lane on Pearland Pkwy</li> <li>▶ Adjust signal timing</li> </ul>

**SAFETY COUNTERMEASURE PROJECTS (SHORT-TERM 0-5 YEARS)**

	Project Location	Description
<b>SHORT-TERM</b>	1. <b>Shadow Creek Parkway at Kingsley Drive</b>	▶ Change left-turn signal phasing on Shadow Creek Pkwy from Permitted-Protected to Protected-Only phasing.
	2. <b>McHard Road at Old Alvin Road</b>	▶ Install Advance Warning Flashers on all four approaches
	3. <b>Dixie Farm Road at Oakbrook Drive</b>	▶ Install Advance Warning Signs on Dixie Farm Road
	4. <b>Dixie Farm Road at Hastings Friendswood Road</b>	▶ Install Traffic Signalization – Currently Underway by City
	5. <b>Kirby Road from Shadow Creek Parkway to Magnolia Parkway</b>	<ul style="list-style-type: none"> <li>▶ Install Warning/Guide Signs on Minor Approach</li> <li>▶ Keep Vegetation Trimmed</li> <li>▶ Install Pavement Markings</li> </ul>
	6. <b>FM 2234 from SH 288 to Reflection Bay Drive</b>	<ul style="list-style-type: none"> <li>▶ Improve/Install missing sidewalks links along FM 2234</li> <li>▶ Install/Upgrade pedestrian signals to Accessible Pedestrian Signal (APS) units at existing signals along FM 2234 from SH 288-Reflection Bay Dr</li> </ul>

**POLICY RECOMMENDATIONS**

	Regulation Document	Location in Document	Item	Suggested Action	Recommendations
<b>SHORT-TERM</b>	<b>Engineering Design Criteria Manual</b>	Sections 1.8.2, 1.8.3, 1.8.4	Construction Procedure Requirements	Revise	RE-examine required time for notices, consider increasing notice timeframe to accommodate staff availability
		3.5	Extra Territorial Jurisdiction	Revise	Include language pertaining to S.B. 2038, which went into effect on September 1, 2023, generally authorizes residents of a city's extraterritorial jurisdiction ("ETJ") to petition for removal from the city's ETJ under certain circumstances. Chapter 6 of Design Manual was updated last on October, 2020
		6.1.2	Roadway Design Criteria - Roadside Ditches	Revise	No new streets with roadside ditch is allowed. The standard detail for Asphalt cross-section showing a roadside ditch shall be used for rehabilitation projects only
		6.1.5	Deviations from these Design Criteria	Revise	To allow consistent implementation of design criteria, specify responsible City of Pearland Department(s) and/or designated staff to permit deviations from design criteria
	<b>Engineering Design Criteria Manual, Pearland Thoroughfare Plan (October 2020, with amendments in chapter 2, 5, 7, and 9 in December 2023)</b>	6.3. and 6.4 (Design Manual)	Thoroughfare, Roadway Classifications	Revise	Provide consistent roadway classification cross-sections between the City's Engineering Design Criteria Manual and provisions in the Unified Development Code
	<b>None</b>	-	Coordination between Pearland and Other Agencies	Propose	Develop a coordinated review process with TxDOT and neighboring jurisdictions for future development plats with property boundaries that front TxDOT and/or other jurisdiction owned roadway.
	<b>Subdivision Regulations, Unified Development Code (UDC)</b>	Division 11	Sidewalk Requirements	Revise	2021 Multi-modal plan first noted this item. Update language, existing language for existing vacant parcels is misleading
		Division 11	Sidewalk Requirements	Revise	Update existing UDC to clarify responsible party for coordinating both sides of street for sidewalks
		Varies	TIA Requirement	Revise	Specify all times, not to be determined by City Engineer
		Section 3.2.2.6	Roadway Participation Policies	Revise	Consider Revising based on percentage, not 22' of pavement standard

**INTERSECTION PROJECTS (MEDIUM-TERM 6-11 YEARS)**

	Project Location	Description
<b>MEDIUM-TERM</b>	<b>1. SH 35 at Orange Street</b>	<ul style="list-style-type: none"> <li>▶ Add westbound right-turn lane on Orange Street</li> <li>▶ Adjust signal timing</li> </ul>
	<b>2. SH 35 at Bailey Road</b>	<ul style="list-style-type: none"> <li>▶ Add second left northbound turn lane on SH 35</li> <li>▶ Modify sidewalk and ADA facilities in the southwest corner</li> <li>▶ Update east-west signal phasing</li> </ul>
	<b>3. SH 35 at Dixie Farm Road</b>	<ul style="list-style-type: none"> <li>▶ Add northbound right-turn lane on SH 35</li> <li>▶ Modify sidewalk, relocate signal pole in median and modify ADA facilities in the southeast corner</li> <li>▶ Adjust signal timing</li> </ul>
	<b>4. SH 35 at Hastings Canon Road</b>	<ul style="list-style-type: none"> <li>▶ Add eastbound right-turn lane on Hastings Canon Road</li> <li>▶ Replace existing 'span-wire' signal with new 'mast-arm' signal</li> <li>▶ Adjust signal timing</li> </ul>
	<b>5. Pearland Parkway at Hughes Road</b>	<ul style="list-style-type: none"> <li>▶ Add a second southbound left-turn lane on Pearland Pwky</li> <li>▶ Add a second westbound left-turn lane on Hughes Road</li> <li>▶ Modify signal head layouts for southbound and westbound left turn lane additions</li> <li>▶ Adjust signal phasing and signal timing</li> </ul>
	<b>6. Pearland Parkway at FM 518</b>	<ul style="list-style-type: none"> <li>▶ Add eastbound right-turn lane on FM 518; and add eastbound and westbound right-turn lanes on Pearland Pkwy</li> <li>▶ Modify sidewalk and ADA facilities in the A northwest and B southeast corners</li> <li>▶ Adjust signal timing</li> </ul>
	<b>7. Pearland Parkway at John Lizer Road</b>	<ul style="list-style-type: none"> <li>▶ Widen John Lizer road to a four lane divided section from Pearland Parkway to just west of existing bridge (approximately 1000 Feet)</li> <li>▶ Modify sidewalk and ADA facilities in the northeast and southeast corners</li> <li>▶ Remove split phase</li> </ul>
	<b>8. Pearland Parkway at Dixie Farm Road</b>	<ul style="list-style-type: none"> <li>▶ Add westbound right-turn lane on Dixie Farm Road</li> <li>▶ Modify sidewalk and ADA facilities at the northeast and northwest corners of the intersection</li> <li>▶ Relocate existing traffic signal pole in the northwest corner of the intersection</li> <li>▶ Adjust signal timing</li> </ul>

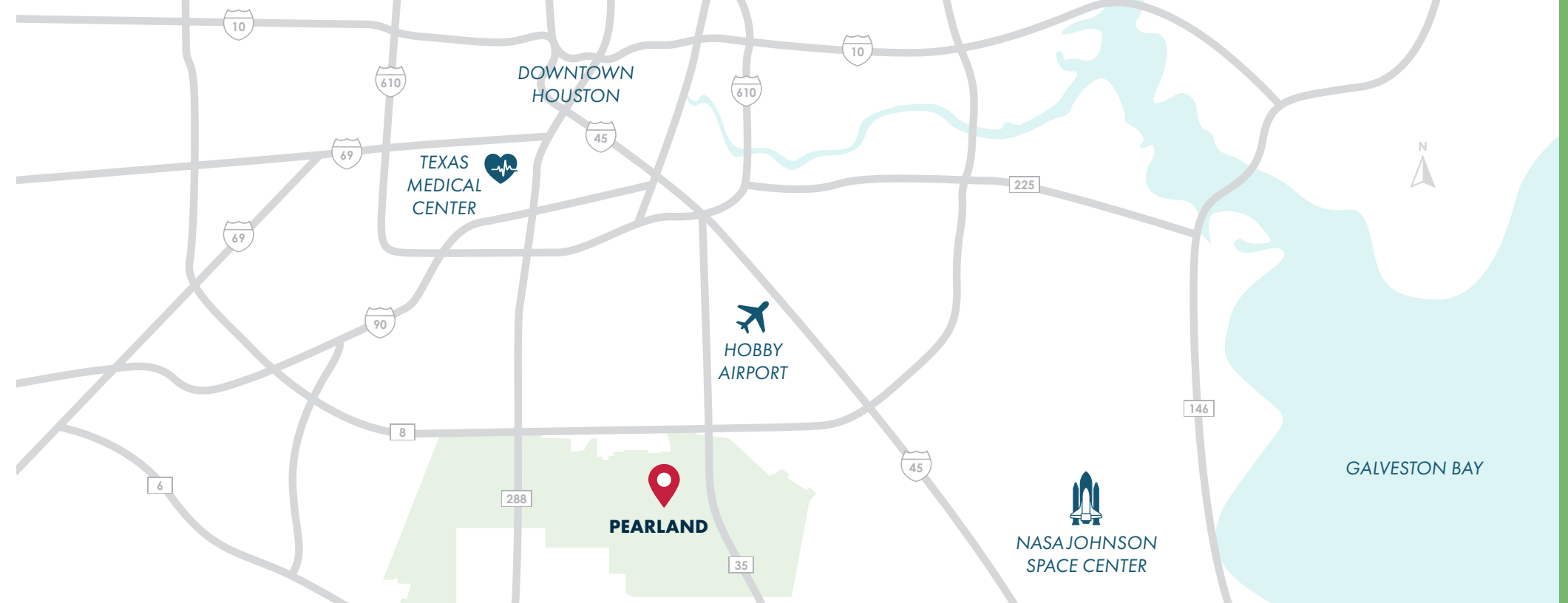
**LONG-TERM PROJECT RECOMMENDATION (11+ YEARS)**

	Major Thoroughfare	Recommended Improvement
LONG-TERM	1. Reid Blvd	▶ Extend Reid Boulevard from McHard Road to Beltway 8. Match the 4-lane boulevard cross-section of Reid Blvd (McHard to FM 518) to provide connectivity to Beltway 8
	2. Dixie Farm Road	▶ Extend Dixie Farm Road (four lane divided) from SH 35 to Veterans Dr
	Secondary Thoroughfare	Recommended Improvement
	3. Harkey Road	▶ Widen existing 2-lane roadway from CR 100 to FM 518 to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path
	4. O'Day Road	▶ Widen existing 2-lane asphalt roadway from FM 518 to McHard Road to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
	5. Veterans Drive	▶ Widen existing 2-lane asphalt roadway from Bailey Avenue to Walnut Street to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
	6. Mykawa Road	▶ Widen existing 2-lane asphalt roadway from FM 518 to Beltway 8 to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
	7. Cullen Pkwy	▶ Widen existing 2-lane asphalt roadway from Magnolia Pkwy to Bailey Road to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
	8. Kingsley Blvd	▶ Widen existing 2-lane roadway from Clear Creek Pkwy to Beltway 8 to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path

	Major Collector	Recommended Improvement
LONG-TERM	9. Roy Road	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from McHard Road to FM 518
	10. Garden Road	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from McHard Road to FM 518
	11. Hatfield Road	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from McHard Road to FM 518
	12. Old Alvin Road	▶ Widen existing 2-lane roadway from McHard Road to Knapp Road to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path on one side of the road
	13. Fite Road	▶ Widen existing 2-lane roadway from McLean Road to Cullen Pkwy to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path on one side of the road
	14. Miller Ranch Road	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from Hughes Ranch Road to FM 518.
	15. Hughes Ranch Road	▶ Widen existing 2-lane roadway from Stone Road to Cullen Pkwy to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path on one side of the road



# INTRODUCTION



## INTRODUCTION

### 1.1 Background and Purpose

Pearland, Texas is located approximately 20 miles south of Downtown Houston. The unique location offers its residents convenient access to the Greater Houston Area, including: the Texas Medical Center, Hobby Airport, NASA Johnson Space Center, the Galveston Bay, and other major employment and activity centers. Since the late 1990's, Pearland has experienced significant population growth. Between 2010 to 2020, the City was ranked as the eighth fastest growing City in the nation with a population of 100,000 or greater.

In the 2020 US Census Bureau data, the total population within Pearland city limits was 125,828. Based on the City's residential building permits data in 2025 Q1, it is estimated that Pearland's total population is 160,400 including City Limits and Extra Territorial Jurisdiction. Pearland has become an increasingly desirable place to live and work, which presents both challenges and opportunities in terms of improving multimodal connectivity and mobility while accommodating growth and redevelopment across the city. The challenge is to balance reducing vehicular congestion and updating roadway network for future growth while incorporating residents' priorities.

The Houston-Galveston Area Council (H-GAC) and the City of Pearland partnered together to conduct a city-wide mobility study that examined the City's transportation network and developed a mobility plan that includes an implementation framework along with an updated thoroughfare plan. The goal of this study was to holistically examine the City's transportation network, and to develop strategies and guidelines to maximize network efficiency. The study identified existing and future transportation needs by integrating land use and future growth scenarios. The goal of the study was to guide development of short, medium, and long-term transportation investments by improving safety and traffic flow, mitigating congestion, and general quality of life.

## 1.2 Project Vision and Goals

The Project Team developed a Vision statement for the study which provided the framework and guidelines to identify specific Goals to achieve the vision. Below Vision and Goals were adopted for the study after discussions and feedback from the Steering Committee.

### PROJECT VISION

The Pearland Mobility Plan will prioritize multi-modal improvements and strategies to improve mobility for people, goods, and services; enhance safety; and accommodate growth. Furthermore, the Plan will develop a trackable list of projects and initiatives for the future.



▲ **Figure 1.1:** 1st Stakeholders Group Meeting on March 18th, 2024. Members gathered in person at the Pearland Chamber of Commerce.

### GOAL 1: MOVE PEOPLE AND GOODS EFFICIENTLY

- ▶ The project team took updated traffic counts at over 60 intersections along with traffic counts gathered from other concurrent studies.
- ▶ Updated the Thoroughfare Plan, which was last officially updated by the City of Pearland on August 9, 2021 (Ord 1517 - 4). Since then, there have been changes to existing developments and traffic conditions.
- ▶ Recommendations from the Pearland Transit Study, that was finished in winter 2024 were incorporated ahead of this Plan's various recommendations.

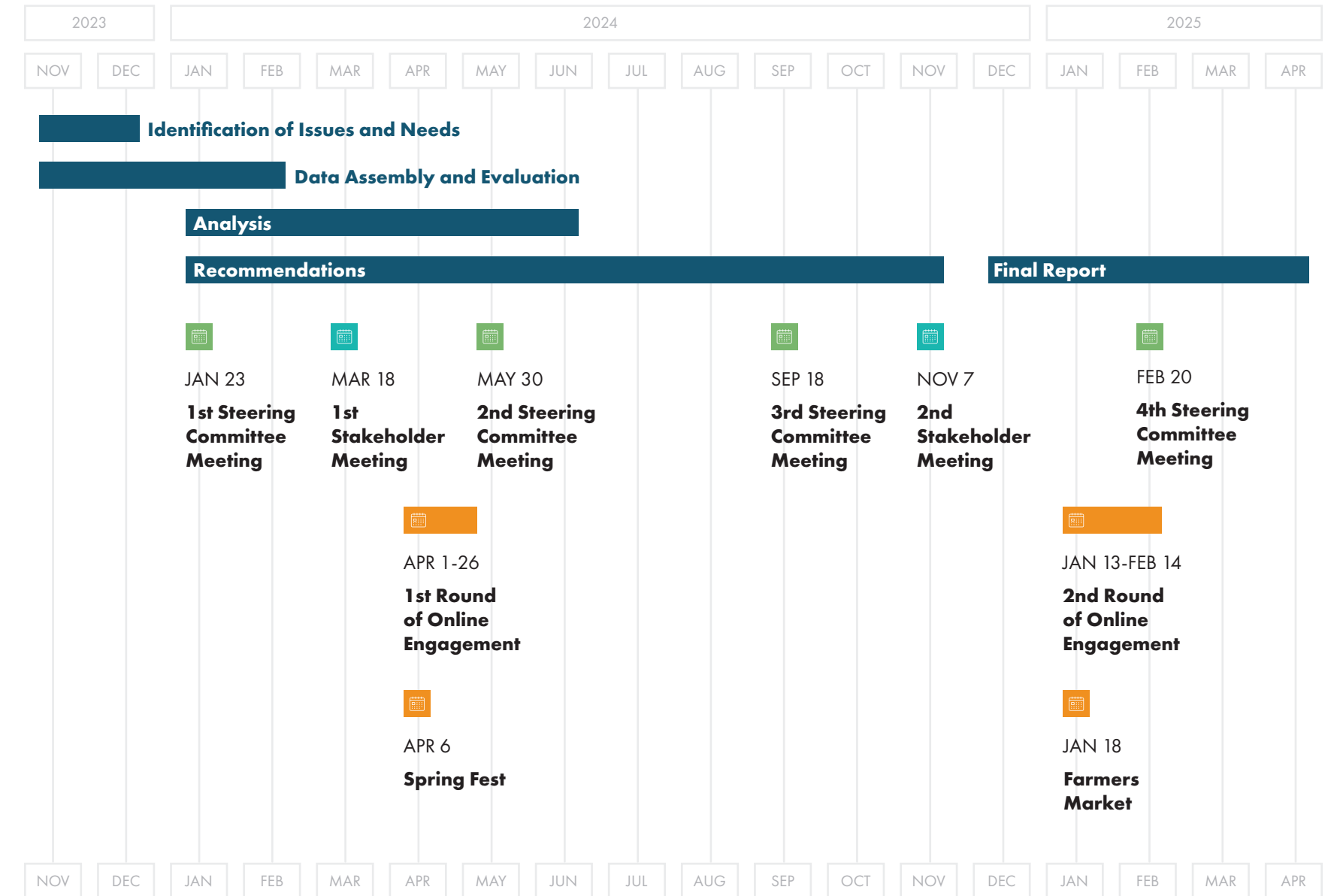
### GOAL 2: IMPROVE SAFETY

- ▶ The project team examined 7 years of available Texas Department of Transportation (TxDOT) data for current hotspots, particularly for those that involved crashes with bicyclists and pedestrians.
- ▶ Recommend safety improvements for high crash locations- Recommend improvements to bike & pedestrian connections
- ▶ Building off the prior Pearland Multi-modal Plan and the City's existing sidewalk needs dashboard, recommendations to improve connectivity was provided for the overall network.

### GOAL 3: STRENGTHEN REGIONAL ECONOMIC COMPETITIVENESS

- ▶ The project team looked through existing codes and policies, to make sure the recommendations and recommended projects can be implemented given the City's existing policies and codes.
- ▶ Review and suggest changes to transportation and development policies- Develop project prioritization criteria and project dashboard.

## 1.3 Project Schedule





## 1.4 Report Organization

This report documents the efforts and processes taken and is organized into the following chapters:

### CHAPTER 1

**Introduction** – Explains project’s background, vision and goals, project timeline, and high-level summary of the project’s scope items

### CHAPTER 2

**The Project Process** – Describes the steering committee and stakeholder group’s guidance on the study, and the public outreach efforts taken to involve the community and gather collective input

### CHAPTER 3

**Existing Conditions** – Summarizes past planning efforts from the City of Pearland, examines congestion, safety, and connectivity concerns from data collected

### CHAPTER 4

**Recommendations Development** – Explains how short-term and medium-term recommendations can improve existing mobility concerns

### CHAPTER 5

**Thoroughfare Plan Update** – Applies findings from Existing Conditions, and Recommendations Development to develop an updated Thoroughfare Plan Map

### CHAPTER 6

**Implementation Plan** – Summarizes the complete list of recommendations and projects from this study, and steps the City of Pearland can take to prioritize and strategize tasks for implementation



▲ **Figure 2.1:** Image courtesy of City of Pearland.

## THE PROJECT PROCESS

### 2.1 The Pearland Mobility Plan Process

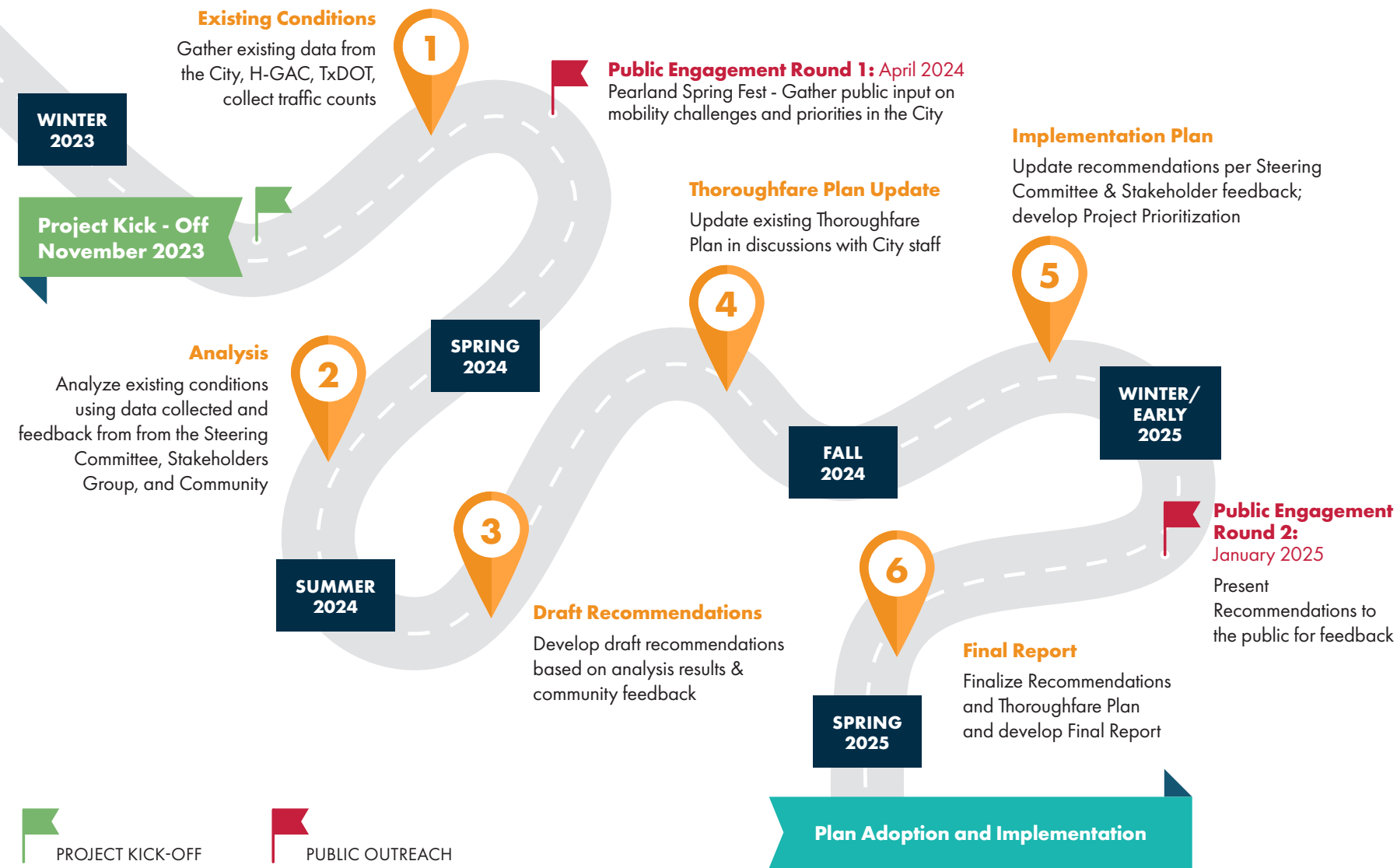
The guiding components of this Pearland Mobility Plan are to move people and goods efficiently, improve safety, strengthen regional economic competitiveness. At the start of this project, a Public Participation Plan was put together to outline the strategies and public outreach opportunities required to ensure that not only will this project engage with the city’s constituents but ensure that the feedback received reflects constituents that represent the overall study area. The planning process included two public outreach meetings, two 1-month long online feedback tools/surveys, four Steering Committee meetings, and two community Stakeholders Group meetings.

In addition to community engagement and obtaining external feedback, the project team focused on examining the existing transportation and mobility conditions with available data from City of Pearland, Houston-Galveston Area Council, Texas Department of Transportation, US Census Bureau, FEMA, and previous planning studies adopted by the City. As part of existing conditions analysis, daily traffic counts were collected at 60 critical intersections throughout the City which were identified in discussions with City staff.

In between the first and second round of community engagement, a list of preliminary recommendations was presented to and updated through discussions with the Steering Committee and Stakeholders Group. Ultimately, the list of projects shown in the Implementation Plan chapter of this study has been reviewed by members of the project team, the Steering Committee, Stakeholders Group, and feedback gathered from community engagement.

On May 19th, the Pearland Mobility Plan Team presented at Pearland City Council – Executive Session to the Council members. Following questions and addressing comments, the final Pearland Mobility Plan was accepted by the City Council on June 9th, 2025.

# STEPS TAKEN FOR THE PEARLAND MOBILITY PLAN



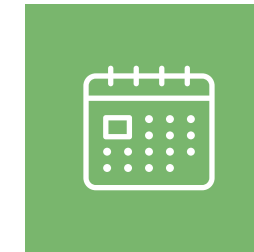
## 2.2 Community Voices

### STEERING COMMITTEE

The Steering Committee provided overall guidance and critical feedback on the methodology and recommendations of the study. Four (4) Steering Committee meetings were conducted at various stages where the project team provided status updates including context, findings, and recommendations of the study.

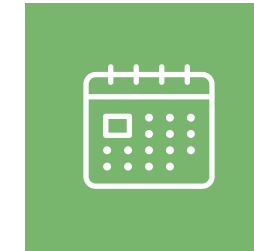
Steering Committee Members included representatives from the following organizations:

- ▶ City of Pearland
  - > City Manager
  - > Engineering and Public Works
  - > Community Development
  - > Parks and Recreation
  - > Fire
  - > Police
  - > Communications
- ▶ City of Friendswood - City Engineer
- ▶ TxDOT Houston District
- ▶ TxDOT Brazoria Area Engineer
- ▶ Houston-Galveston Area Council
- ▶ Brazoria County - County Engineer



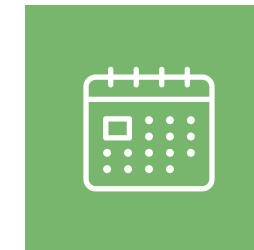
#### MEETING #1

**Date:** January 2024  
**Topics:** Introduction, Data Collection, and public engagement efforts



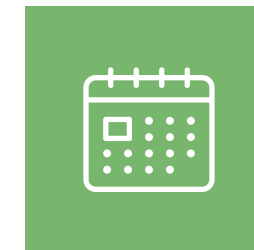
#### MEETING #2

**Date:** May 2024  
**Topics:** Existing Conditions, Analysis Workshop



#### MEETING #3

**Date:** September 2024  
**Topics:** Preliminary Recommendations, Draft Travel Demand Model Results



#### MEETING #4

**Date:** February 2025  
**Topics:** Updated Travel Demand Model Results, Thoroughfare Plan, and Project Prioritization Matrix

## STAKEHOLDERS GROUP

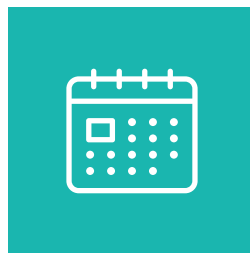
Stakeholders represent entities, both public and private organizations, that have a vested interest in the production of the Mobility Plan. Some key members from the Steering Committee were also part of the Stakeholder group. Two (2) Stakeholder meetings were held with study area landowners, businesses, and other interested parties. Members were identified during the beginning phases of the project. These Stakeholder meetings were conducted to get feedback on proposed recommendations and solicit and build continuing support for all recommendations.

Stakeholders Group Members included representatives from the following organizations:

- ▶ ADDI Printing
- ▶ Alvin ISD
- ▶ Brazoria County Commissioner Precinct 3
- ▶ Farmers Insurance
- ▶ Frontier Forklifts
- ▶ HCA Houston Healthcare Pearland
- ▶ Kelsey-Seybold
- ▶ Pearland Bicycles
- ▶ Pearland Chamber of Commerce
- ▶ Pearland Economic Development Corporation
- ▶ Pearland Emergency Medical Services
- ▶ Pearland ISD
- ▶ Pearland Town Center
- ▶ San Jacinto College
- ▶ Scooters Coffee
- ▶ Third Coast Terminals



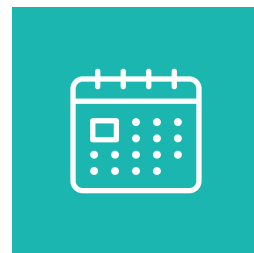
▲ **Figure 2.2:** Stakeholders Meeting #1 - March 18th, 2024. Members participating in the Budget Prioritization activity.



### MEETING #1

**Date:** March 2024

**Topics:** Introduction, Data Collection, and public engagement efforts



### MEETING #2

**Date:** November 2024

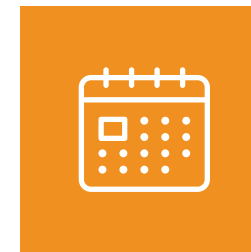
**Topics:** Draft recommendations, Thoroughfare Plan - updates and safety toolbox



▲ **Figure 2.3:** Public Outreach at Pearland Farmer's Market, January 18th, 2025

## STUDY AREA CONSTITUENTS (IN-PERSON OUTREACH AND ONLINE)

The residents' feedback and input in the Plan are imperative, as they are the individuals experiencing the existing conditions and will be impacted by the potential decisions from the recommendations of the study. The public was given opportunities to provide input and feedback through various methods including in-person meetings and online engagement.



### PUBLIC MEETING #1 (SPRING FEST)

**Date:** April 6, 2024

**Location:** Independence Park and Project Website

**Purpose:** Gather input on the location of specific needs and goals of the community

**Engagement Activity:**

- ▶ QR link for the online survey
- ▶ Budget Prioritization Activity
- ▶ Spin the wheel to win a prize

**TRAFFIC SAFETY**

Includes measures like street lights, stop signs, audio-assisted crossings, pavement striping, intersection safety treatments.

**PEDESTRIAN FACILITIES**

Includes measures like putting in new sidewalks / trails, ADA compliant curb ramps, lighting along pedestrian paths, benches.

**BICYCLE FACILITIES**

Includes measures like putting in new bike lanes, shared use paths, improve connectivity between existing lanes and paths, bike parking.

SHOW US WHAT MATTERS TO YOU BY BUDGETING FOR EACH CATEGORY. EACH BALL REPRESENTS \$1,000. YOU HAVE \$10,000 (10 BALLS). PLACE YOUR 10 BALLS INTO THE JARS REPRESENTING YOUR PRIORITIES FOR FUTURE FUNDING.

## BUDGET FOR

**ROADWAY IMPROVEMENTS**

Includes measures like widening roadways, turn lanes, on-street parking, medians, repairing potholes.

**MICROMOBILITY**

Includes measures like bikeshare facilities, scooter rentals, golf carts.

**TRANSPORTATION TECHNOLOGY**

Includes measures like traffic signal timing / coordination, traveler information, traffic monitoring, travel time monitoring.

SHOW US WHAT MATTERS TO YOU BY BUDGETING FOR EACH CATEGORY. EACH BALL REPRESENTS \$1,000. YOU HAVE \$10,000 (10 BALLS). PLACE YOUR 10 BALLS INTO THE JARS REPRESENTING YOUR PRIORITIES FOR FUTURE FUNDING.

## THE FUTURE

▲ **Figure 2.4:** Categories for the Budget Prioritization activity during 1st round of public engagement.

# Proposed Recommendations Feedback



"The school buses have difficulty making a right turn from Broadway Street onto Sunrise Meadow Dr."



Eight out of the 12 inputs received pertained to sidewalk-related improvements outside of the ones recommended by the Study Team

"Add sidewalk at roundabout from Lakes of Highland Glen to Cockrell Elementary"

"More sidewalks everywhere are needed"



"Fix signal timing at Magnolia & Pearland Pkwy."

"Left turn light at Magnolia and McLean, the left on Magnolia heading south. The light often skips the turn."

"These proposals are awesome! Thank you for these projects to improve the city."

Figure 2.5: Feedback from 2nd round of public engagement. Sample of recommendations poster board shared during public meeting.

Regional Collaboration • Transportation Planning • Multi-

## PUBLIC MEETING #2 (PEARLAND FARMER'S MARKET)

**Date:** January 18, 2025  
**Location:** Independence Park and Project Website  
**Purpose:** Gather input on draft recommendations  
**Engagement Activity:**  
 > Boards  
 > Spin the wheel to win a prize

### Proposed City-Wide Improvements

Pearland Mobility Study

Along with the location specific recommendations, a list of holistic recommendations for Pearland's mobility network is listed below, ranging from system wide technology improvements to long-term mobility planning.

#### Traffic Technology Improvements

Recommendations to expand the list of equipments at all traffic signals:

- Left-turn Flashing Yellow Arrow Displays
- Radar vehicle detection
- Battery Back-up Units
- Signal Communication (Fiber or Wireless)
- CCTV Cameras
- Accessible Pedestrian Signal (APS) Units
- Emergency Preemption Equipment

#### Recommendations for traffic systems:

- Leading Pedestrian Interval (LPI)
- Update Central Control System
- Coordinated Signal Timing Plans
- Staff Traffic Management Center
- Advanced Traffic Signal Performance Measures (ATSPMs)
- Arterial Dynamic Message Signs

#### Emerging Traffic Technology Improvements

Recommendations for long-term technology related improvements:

- ITS Master Plan for the City
- Autonomous & Connected Vehicle (AV/CV) Framework
- Regional Transportation Systems Management & Operations (TSMO)

#### Americans with Disabilities Act (ADA) Transition Plan

Based on the Americans with Disabilities Act (ADA) – Civil Rights Law, Title II, it is recommended that the City follow the following administrative requirements:

- Completion of a Self-Evaluation
- Development of ADA complaint procedure
- Designation of 1 person to oversee Title II compliance
- Develop ADA Transition Plan to schedule removal of barriers uncovered by "Self Evaluation" process

#### Long-Term Recommendations (11+ Years)

Thoroughfare Plan Updates along with updated travel demand modeling results. In conjunction with the pedestrian infrastructure improvements, it is recommended that John Lizer Road, from Pearland Pkwy to Shady Bend Dr be widened up to 4 lanes.



Figure 2.6: The H-GAC Project Manager, Qun Zhao and Mayor Kevin Cole along with other festival attendees participate in the project prioritization engagement activity.

## 2.3 Public Outreach Themes

### INITIAL CONCERNS WE HEARD

In the first round of Community Engagement, the Steering Committee and Stakeholders Group members were asked to provide feedback on the City of Pearland map of existing areas of concern from mobility and traffic safety perspective. In the public outreach format, the project team offered several ways to collect feedback, beginning with asking the Steering Committee members and Stakeholders Group members to write on the blank paper map, existing areas of concern.

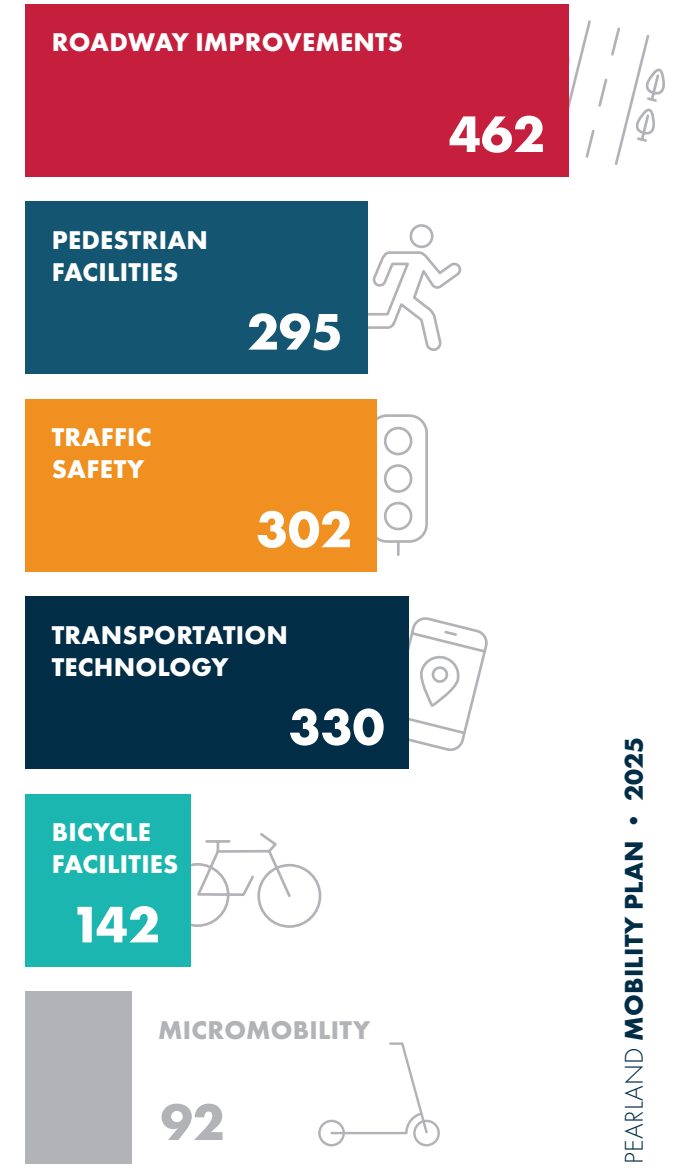
In the initial stages of feedback, there was a recurring theme of several issues which led the project team to create a public engagement activity to solicit feedback in the form of a game like activity. The Budget Prioritization activity, which mimicked a voting jar contest asked the constituents to vote on their most prioritized transportation concern for the City, as if the voting coins were their own money. Each participant was provided with 10 tokens and placed the desired number in each of the 6 category jars. The same activity was made available online on the project website. Through the Spring Fest and online participation, a total of 163 participants voted and the results based on total votes per category are shown in the graph to the right.

Additionally, a survey was conducted during the first round of public engagement, over 225 participants filled out the survey for transportation in the City. Some big key themes that the project team learned from the first round of participation include:

- > Residents want more sidewalks and safer infrastructure
- > Road Conditions / Maintenance, followed by congestion, and Intersection Improvements were the most pressing transportation issue for the residents

## BUDGET PRIORITIZATION RESULTS

The graph below shows the total votes received by category.





# 03 EXISTING CONDITIONS

## EXISTING CONDITIONS

### BACKGROUND/REGIONAL CONTEXT

The City of Pearland is located in Southeast Texas approximately 20 minutes south of downtown Houston. The city is primarily located in Brazoria County, but also has portions extending into Fort Bend and Harris counties. Some major highways that pass through the city include SH 35 and SH 288 running south-north, and FM 2234 (McHard Road) and FM 518 (Broadway Street) running east-west. The study area, made up of Pearland city limits (49 square miles) and the extraterrestrial jurisdiction (20 square miles), covers a total of 69 square miles.

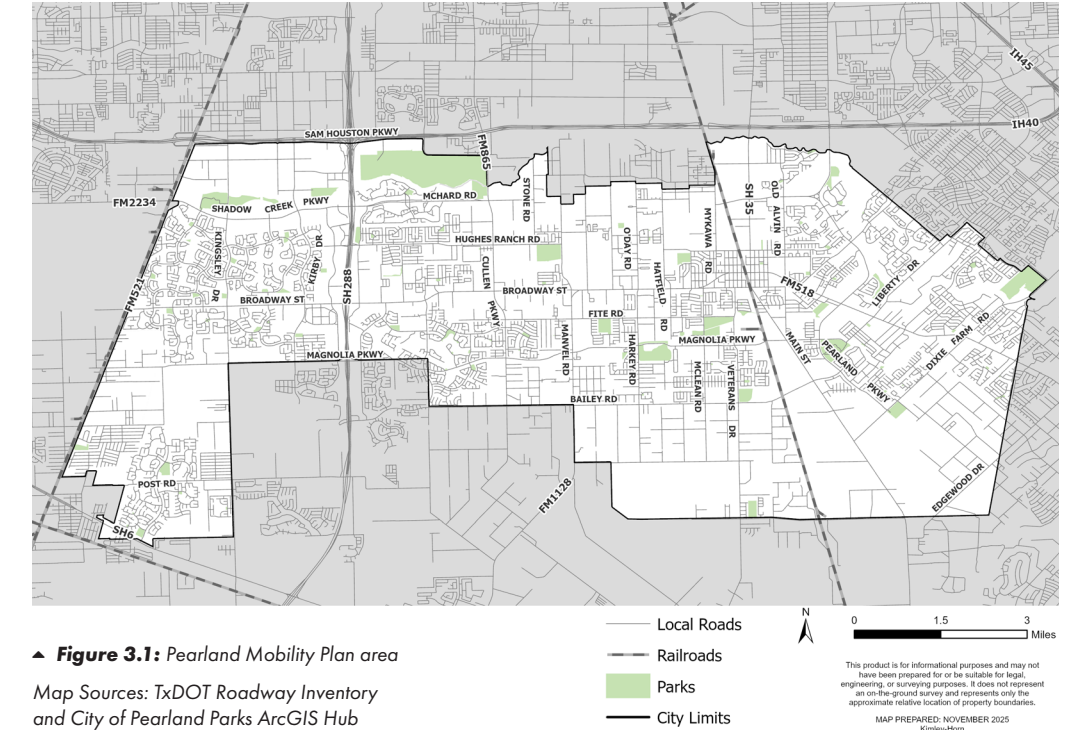
### 3.1 Past Plans Summary

This section of the report examines past plans' findings and recommendations, including ones that are currently underway.

The list of plans examined includes (in order):

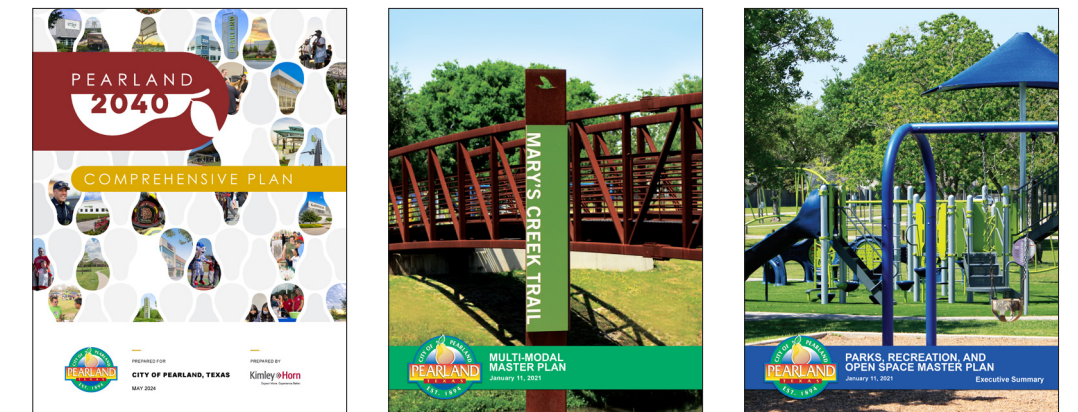
- ▶ Pearland Comprehensive Plan
- ▶ Pearland Transit Study
- ▶ Pearland Multi-Modal Master Plan
- ▶ 2021 Updates to Pearland Thoroughfare Plan
- ▶ PEDC Broadway Corridor Development Plan
- ▶ Pearland Parks Master Plan
- ▶ TxDOT FM 518 Widening

In the plans referenced, each past plan's high-level goals and recommendations are summarized, where applicable. For each plan, the summary includes a general synopsis, vision/goals, and recommendations.



▲ **Figure 3.1:** Pearland Mobility Plan area

Map Sources: TxDOT Roadway Inventory and City of Pearland Parks ArcGIS Hub

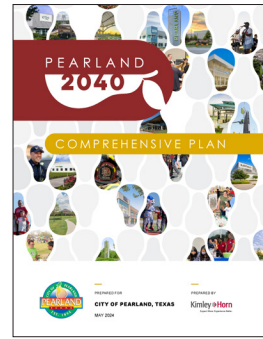


▲ **Figures 3.2:** Previous planning efforts in Pearland

## PEARLAND COMPREHENSIVE PLAN

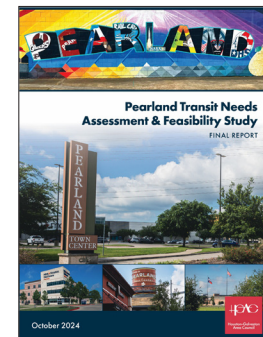
The Pearland Comprehensive Plan was approved in 2024, and it was an update to the 2015 Comprehensive Plan. The plan focused on anticipating the growth in Pearland for the subsequent years. Most of the plan focused on land use, but also included components of thoroughfare planning and mobility. As part of the mobility component; the plan noted there are multiple barriers, including railroads, freeways, and waterways, that limit mobility, specifically in the east and west directions. The plan also stated that the majority of trips in Pearland are made by automobile and numerous intersections are at or nearing capacity. The plan recommended three goals:

- ▶ Update the Pearland Thoroughfare Plan to include definitions and descriptions of roadway classifications, cross-sections, and access management standards
- ▶ Continue to implement the recommendations from the City of Pearland Multi-Modal Master Plan to provide a well-designed and continuous pedestrian and bicycle network
- ▶ Update Pearland’s Unified Development Code (UDC) with specific pedestrian realm requirements in areas with “Middle Market” housing, including shade, wider sidewalks, refuge, benches, trash receptacles, etc.



## PEARLAND TRANSIT STUDY

In 2024, H-GAC conducted a Transit Needs Assessment and Alternatives Review. The H-GAC project team reviewed previous studies, made peer comparisons, and looked at commuting trends. The study evaluated alternatives such as microtransit or ride hailing. The Plan compared the existing service and the alternatives based on cost and ridership. In summary, the Study provided four alternative options to the existing state of Transit in Pearland:



**ALTERNATIVE 1 – EXISTING SERVICE ONLY:** In this alternative, Pearland would continue operating its current transit services without any expansion (the “No Build” option). The focus remains on maintaining the Harris County Rides program, which provides transit services to seniors and individuals with disabilities.

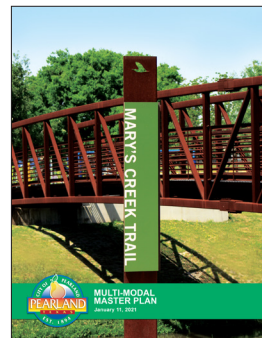
**ALTERNATIVE 2 – EXISTING SERVICE AND WEST PEARLAND PARK-AND-RIDE FOR INTERCITY SERVICES:** The second alternative builds upon the existing intracity service provided by Harris County Rides, as outlined in Alternative 1. In addition to continuing this service, it introduces the Pearland West intercity commuter/park-and-ride service, which is considered the most cost-effective option for Pearland.

**ALTERNATIVE 3 – PEARLAND WEST PARK-AND-RIDE (INTERCITY) & CITYWIDE MICROTRANSIT (INTRACITY) SERVICES:** Alternative 3 proposes the implementation of a microtransit service within the city of Pearland, in conjunction with the Pearland West intercity commuter/park-and-ride service.

**ALTERNATIVE 4 – PEARLAND WEST PARK-AND-RIDE-SERVICE (INTERCITY) & CITYWIDE RIDE-HAILING (INTRACITY) SERVICES:** Alternative 4 focuses on implementing a ride-hailing service within the city of Pearland, alongside the Pearland West intercity commuter/park-and-ride service. This combination is regarded as the most cost-constrained and effective solution for the city’s transit needs.

## PEARLAND MULTI-MODAL MASTER PLAN

The Pearland Multi-Modal Master Plan was adopted in 2021. The Plan is to develop an efficient, safe, and connected network of active transportation routes throughout the City of Pearland by linking neighborhoods to commercial areas, recreational areas, or other commonly frequented locations. The Plan incorporated proposed future trail alignments and implementation plans outlined within the 2007 Trail Master Plan and Sidewalk Program. The Plan analyzed principal corridors, thoroughfares, daily traffic data, and conducted Level of Service analysis. The Plan noted safety concerns such as where pedestrian or bicycle accidents occurred, primarily in the city’s major intersections. The Plan included vehicular accidents, which were more frequent along SH 288, McHard Road, and Broadway Street. The Plan proposed updating street sections to include wider sidewalks, buffers for pedestrians, and making connections to trails for more active transportation.



## 2021 UPDATES TO PEARLAND THOROUGHFARE PLAN

During the updates to the Thoroughfare Plan, two specific study areas of the existing 2018 Thoroughfare Plan were examined. An analysis was performed of the alignments in the two study areas defined below, using outputs from the Houston-Galveston Area Council (H-GAC) travel demand model, existing and future land uses, existing Right of Way (ROW) and parcel maps, and existing barriers.

**STUDY AREA 1:** bounded by South Freeway 288 on the west, Sam Houston Tollway to the north, Telephone Road to the east, and Broadway Street/FM 518 to the south.

### Summary of Changes:

- ▶ Miller Ranch Road - Status change
- ▶ Unnamed Minor Collectors - Removal
- ▶ Silverlake Parkway - Additional study
- ▶ Hughes Ranch Road - Extend study

**STUDY AREA 2:** bounded by Alameda School Road/Kingsley Drive to the west, Sam Houston Tollway to the north, South Freeway 288 to the east, and Shadow Creek Parkway to the south.

This area is also referred to as the Lower Kirby District; a “Lower Kirby Urban Center Master Plan and Implementation Strategy” was completed for the area in 2011.

### Summary of Changes:

- ▶ Southbelt Industrial Drive – Realignment
- ▶ N Spectrum Boulevard - Status change; reclassification – downgrade; realignment
- ▶ Fruge Road/Promenade Shops Drive, between Kirby Drive and S Spectrum Boulevard - Reclassification – downgrade; removal; reclassification – upgrade
- ▶ S Spectrum Boulevard - Reclassification – downgrade; realignment; status change
- ▶ Reflection Bay Drive – Removal
- ▶ Promenade Shops Drive north of S Spectrum Boulevard - Reclassification – upgrade; status change
- ▶ Labrador Road/Del Papa Street - Extend; partial removal; reclassification – upgrade; status change

## PEDC BROADWAY STREET CORRIDOR DEVELOPMENT PLAN

In 2020, the Pearland Economic Development Corporation (PEDC) and City completed the Broadway Street Corridor Development Plan (CDP) to evaluate the impact of Broadway Street’s reconstruction and widening. The CDP studied Broadway Street from SH 288 to SH 35. The plan made infrastructure recommendations related to mobility, drainage, utilities, bicycle and pedestrian paths, streetscape, and connectivity. The roadway was determined to be congested and had many safety concerns. The plan called for reconstructing the roadway as an urban cross section with no open ditches, reducing Right-of-Way (ROW) width and lane widths, and moving the shared use lanes from on-street to off-street. The plan also identified landscaping improvements such as benches and street trees along pedestrian paths.



## PEARLAND PARKS MASTER PLAN

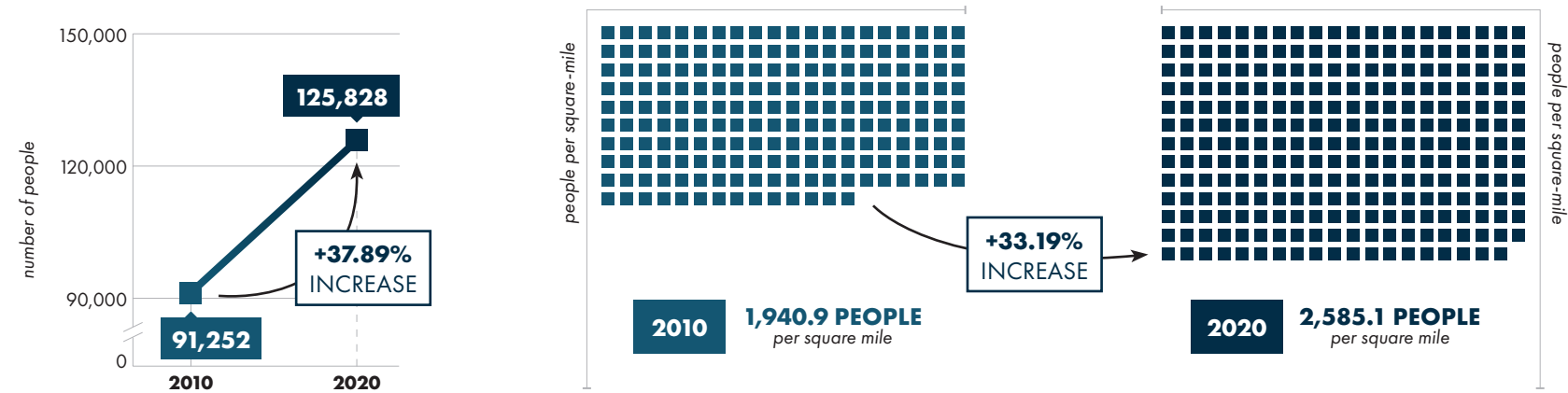
The Parks Master Plan was adopted in 2021. The plan is to establish a cohesive parks and recreation system for the City. The Plan identified needs such as more trails and bike facilities. Goals of the Plan include a safe and connected system of off-street pedestrian facilities and improving vehicular and active transportation wayfinding.

## TXDOT FM 518 WIDENING

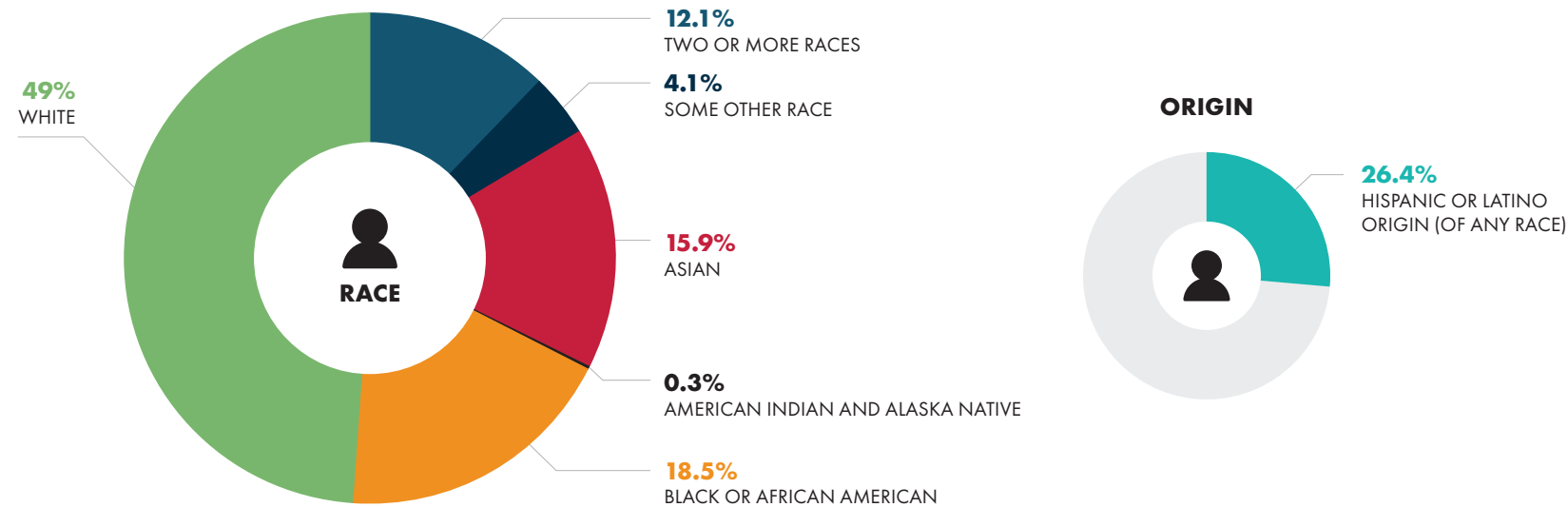
From SH 288 to SH 35, TxDOT has planned for widening Broadway Street (FM 518) from the existing four-lane facility to a six-lane urban section with a raised median. The proposed improvements would require approximately 25 acres of additional ROW with anticipated residential and commercial displacement. Phase 1 of the project (SH 288 - Cullen Parkway) is projected to be let for construction by TxDOT in 2025.

### 3.2 Community Snapshot

**POPULATION** Pearland has experienced significant population growth since the millennium. In decades leading up to the 90's, Pearland's population toggled around the 20,000 mark. Between the two most recent decades as seen in the data below, there has been a 37.89% increase in population. Based on the Houston-Gavleston Area Council's Regional Growth Forecast, the projected population of Pearland will be over 158,000 by 2045.



**DEMOGRAPHICS** Based on the most recent 2022 American Community Survey 5-Year Data, the graphic below shows Pearland's diverse racial demographic make up. In particular, the Asian population, comprises almost 16% of the residents. In comparison to the greater Brazoria County, and Houston Metro area, the Asian populations only represents 8% of the total population.



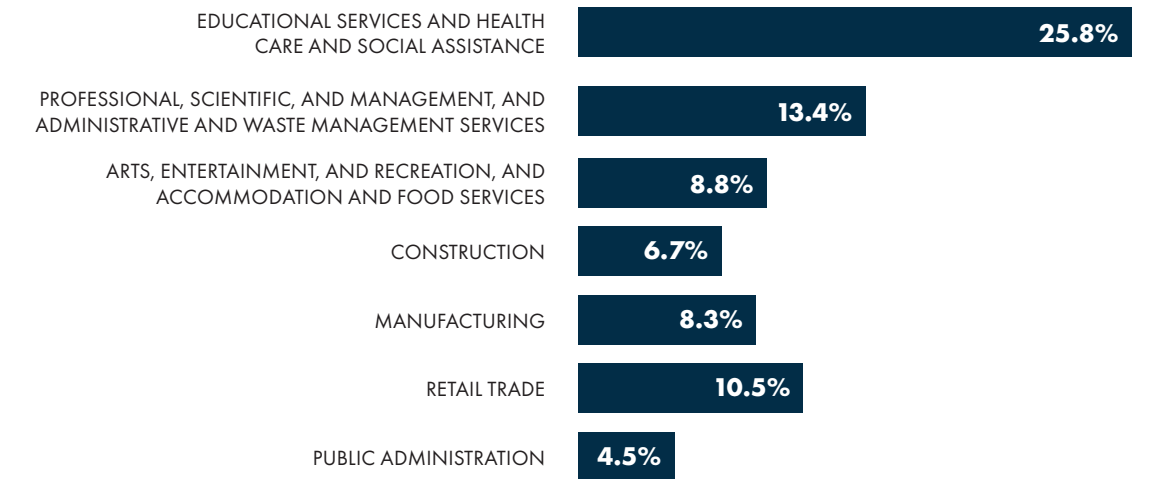
### EMPLOYMENT CHARACTERISTICS

The employment rate is 68.1% according to the 2022 Census Bureau American Community Survey 5-Year Estimates.

The figure to the right shows the percentage breakdowns of employment sectors of Pearland's residents. The industry categories are directly from Census Bureau's American Community Survey 5-Year Dataset, DPO3.

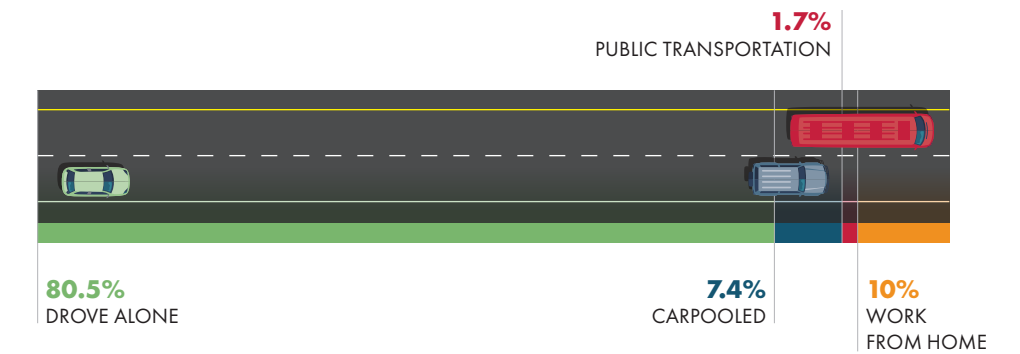
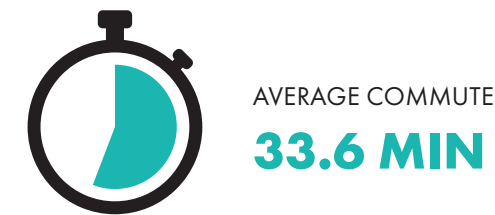


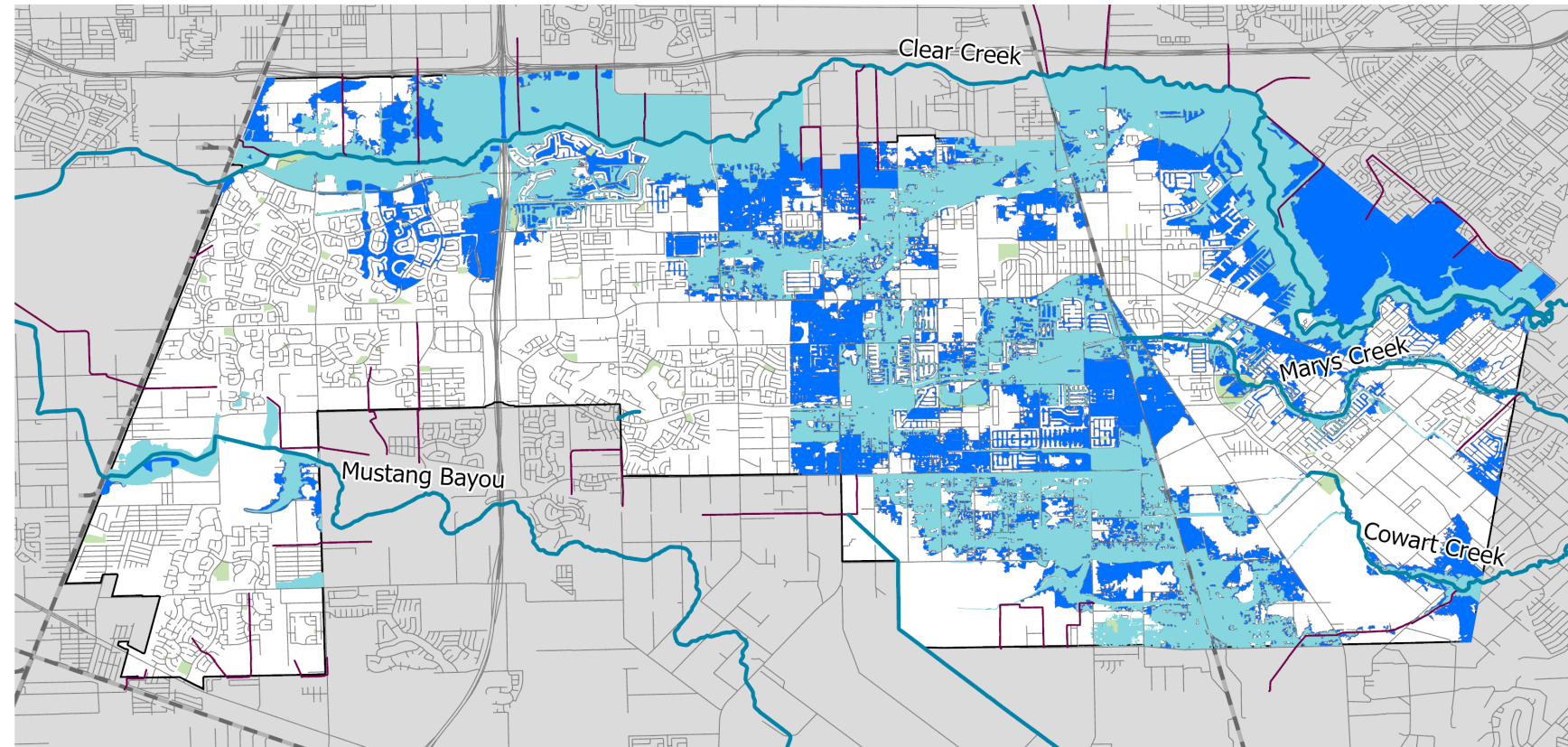
### INDUSTRY BREAKDOWN



### COMMUTING TRENDS

According to the American Community Surveys 2018-2022 5-year estimates, the commute time for workers aged 16 years and above is 33.6 minutes. 80.5% drove alone, 7.4% carpoled, and 1.7% took public transportation, walked, or by other means. Roughly 6,337 people work from home, which is about 10% of employed individuals in Pearland.





▲ **Figure 3.3:** Flood zones within Pearlland

Map Sources: City of Pearlland Flood Zone, TxDOT Streams

100 Year  
500 Year

Bayous and Creeks  
Canal



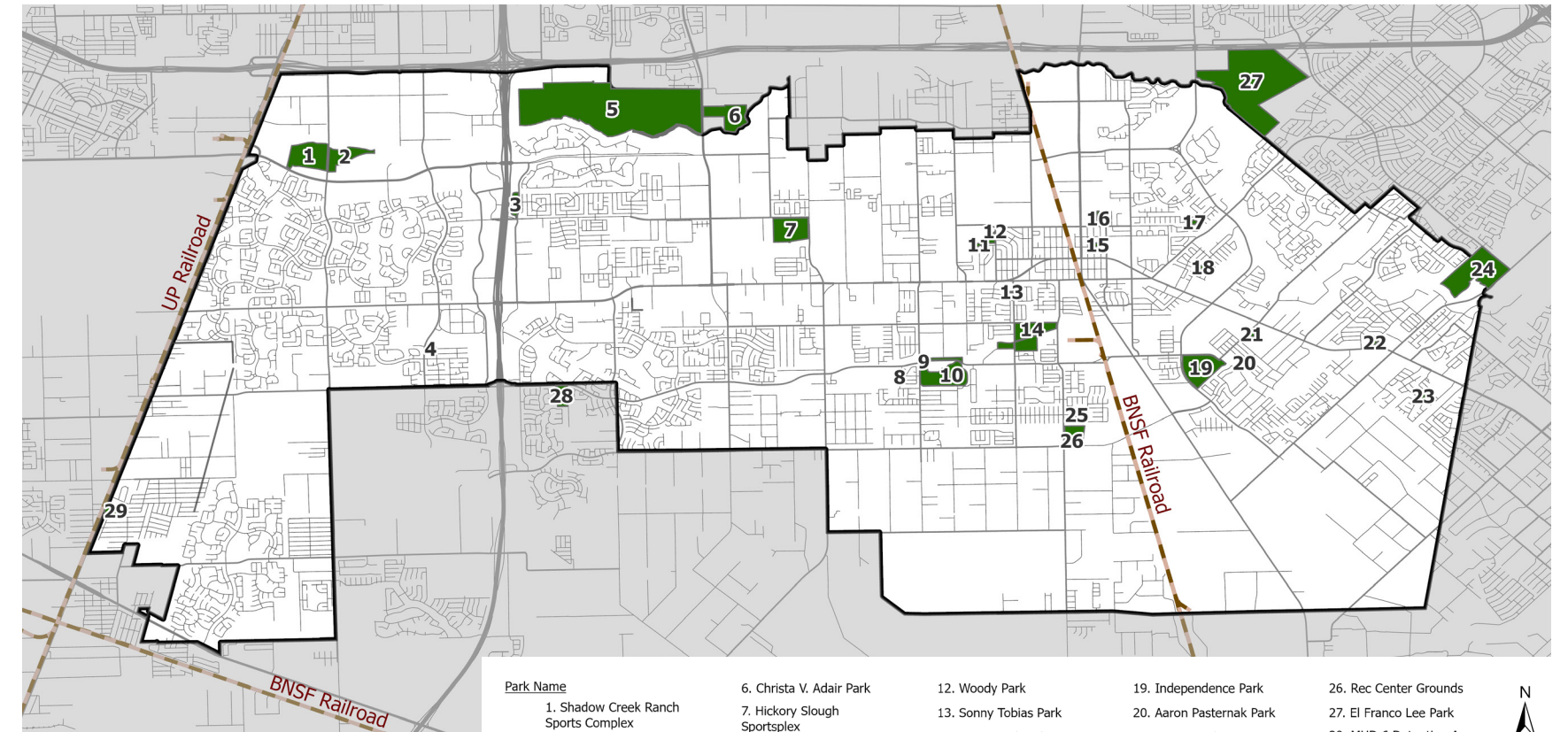
0 1.5 3 Miles

This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

### 3.3 Environmental Features

Several major bayous and creeks in Pearlland create unique barriers to transportation in the City as well as large floodplains. These bodies of water include including Clear Creek, Mary’s Creek, Cowart Creek ,and Mustang Bayou.

Drainage facilities in different areas of Pearlland are managed by the Pearlland Drainage District, the Brazoria Co. C & R District, and the Iowa Colony Drainage District.



▲ **Figure 3.4:** Existing parks and railroads

Map Sources: City of Pearlland Parks, TxDOT Texas Railroads

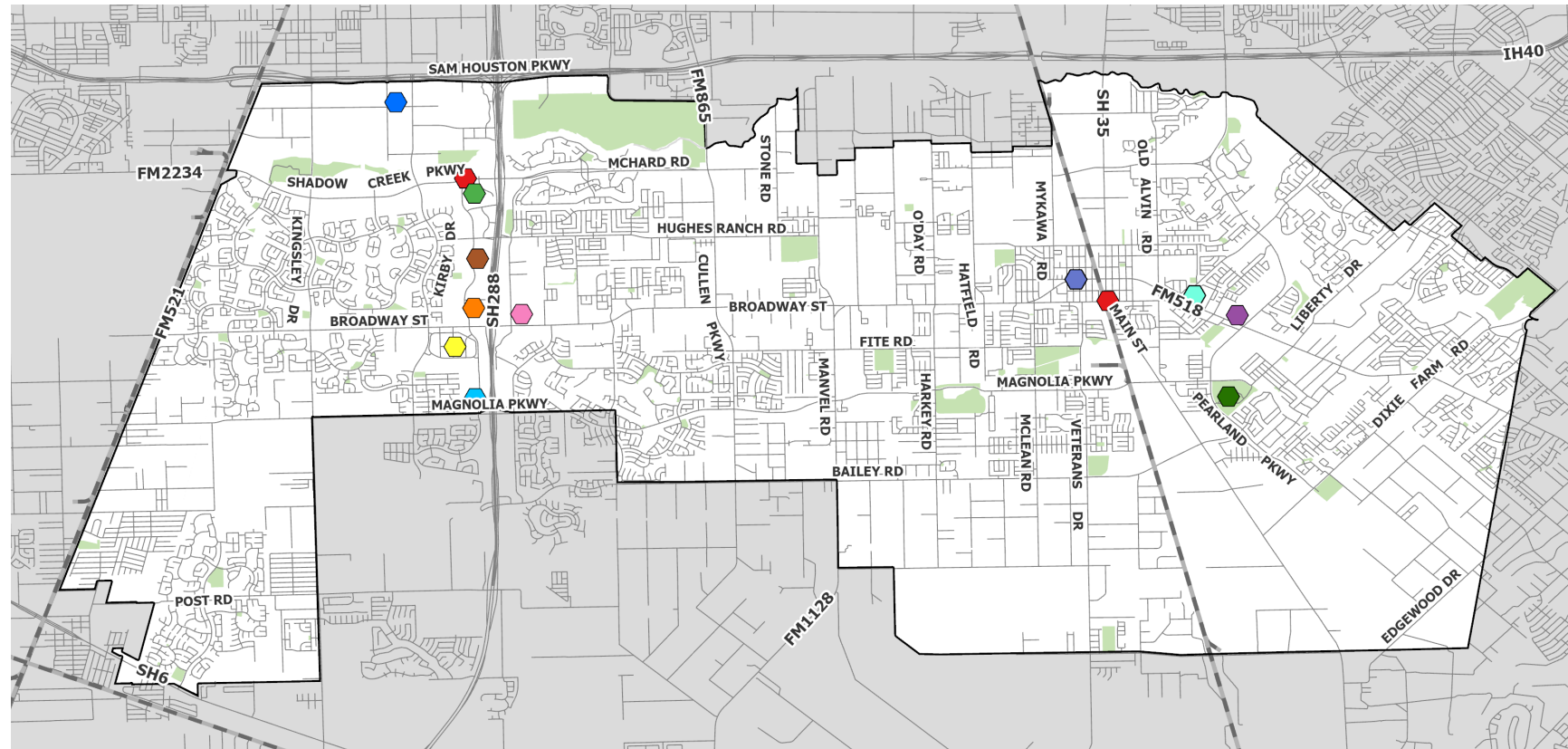
Park Name				
1. Shadow Creek Ranch Sports Complex	6. Christa V. Adair Park	12. Woody Park	19. Independence Park	26. Rec Center Grounds
2. Shadow Creek Ranch Nature Trail	7. Hickory Slough Sportsplex	13. Sonny Tobias Park	20. Aaron Pasternak Park	27. El Franco Lee Park
3. Southdown Park	8. Cypress Village Park	14. Centennial Park	21. Heritage Plaza	28. MUD 6 Detention Area Park
4. Southgate Park	9. Edible Trail	15. Zychlinski Park	22. Woodcreek Park	29. Mustang Community Center
5. Tom Bass Regional Park	10. John Hargrove Environmental Complex	16. Hunter Park	23. Pine Hollow Park	
	11. Corrigan Park	17. Creekside Park	24. Dixie Farm Road Park	
		18. Hyde Park	25. Canterbury Park	

### RAILROAD

There are two main railroad lines that affect the traffic within the Plan area. Burlington Northern Santa Fe (BNSF) railroad runs northwest to southeast roughly parallel to Mykawa Rd. and South Main St. There are above grade crossings at McHard Rd., Magnolia Parkway, and Bailey Rd. where as Orange St., Broadway St., and Walnut St. are at-grade crossings. Union Pacific Railroad (UPRR) runs just outside of Pearlland’s western city boundary along FM 521.

### PARKS & RECREATION

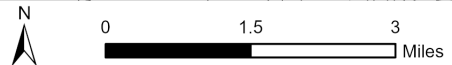
According to the inventory included in the 2020 Parks, Recreation, and Open Space masterplan, the City of Pearlland operates over 546.9 acres of parks, natural spaces, trails, and athletic complexes. This system is complemented by 968.5 acres owned by local school districts that are open to the public and 1,418.3 acres owned by local homeowner’s associations as amenity centers, trails, pocket parks, golf courses, etc. The trails system is primarily recreational in nature, operates along floodplains, and connectivity among trail segments is limited.



▲ **Figure 3.5: Traffic Generators**

Map Sources: Google Maps, public feedback

- Buc-ee's
- HEB-Plus
- Lower Kirby Business Park
- Costco Wholesale
- Pearland Town Center
- Pearland Plaza
- HCA Houston Healthcare Pearland
- Sam's Club
- FM 518 Area Local Businesses
- Walmart Supercenter
- Independence Park
- HEB

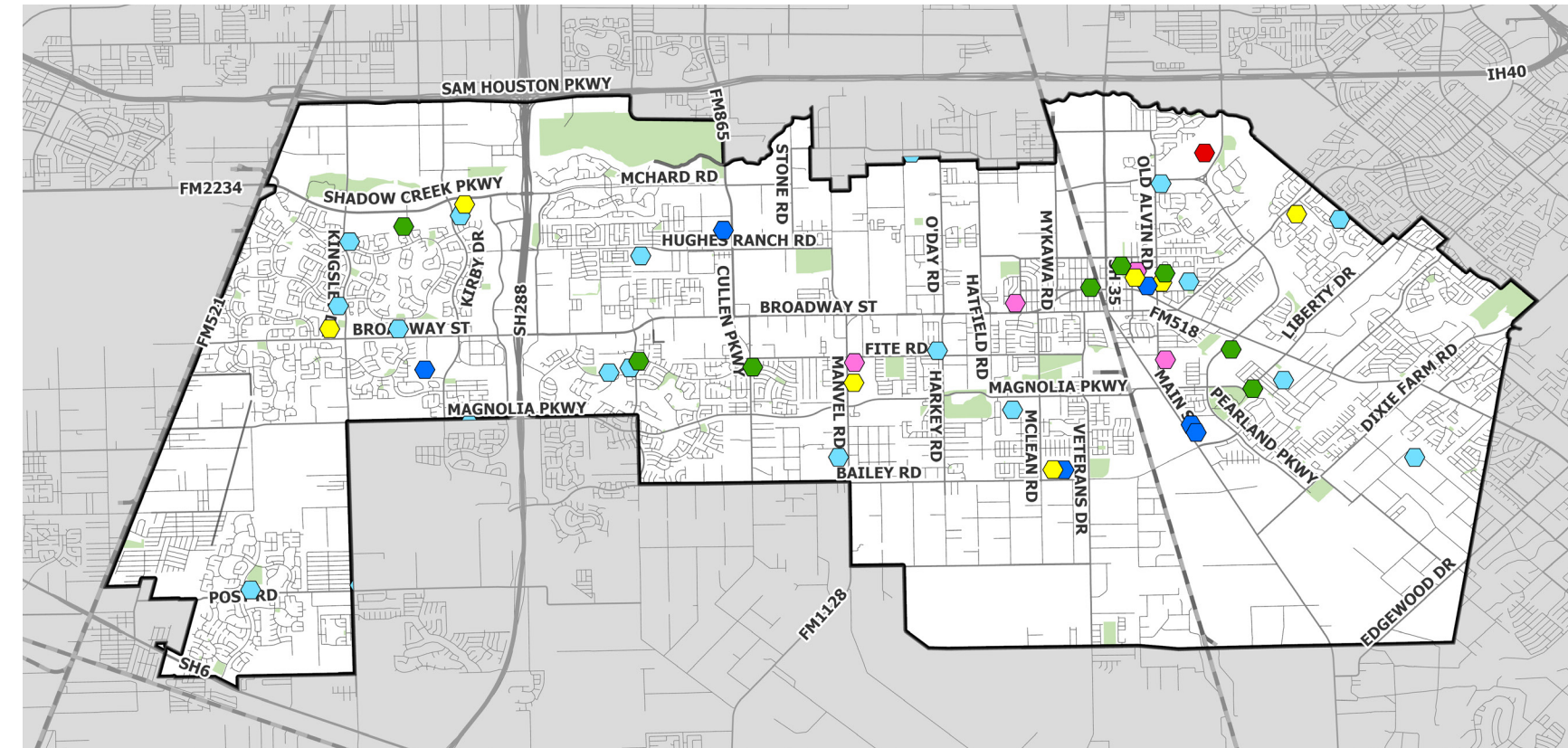


This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

### 3.4 Traffic Generators

#### TRAFFIC GENERATORS

The major traffic generators shown on the map above consists of mostly large retail and major business and retail centers.



▲ **Figure 3.6: Traffic Generators - Schools**

Map Source: Pearland ISD

#### Traffic Generators - Schools

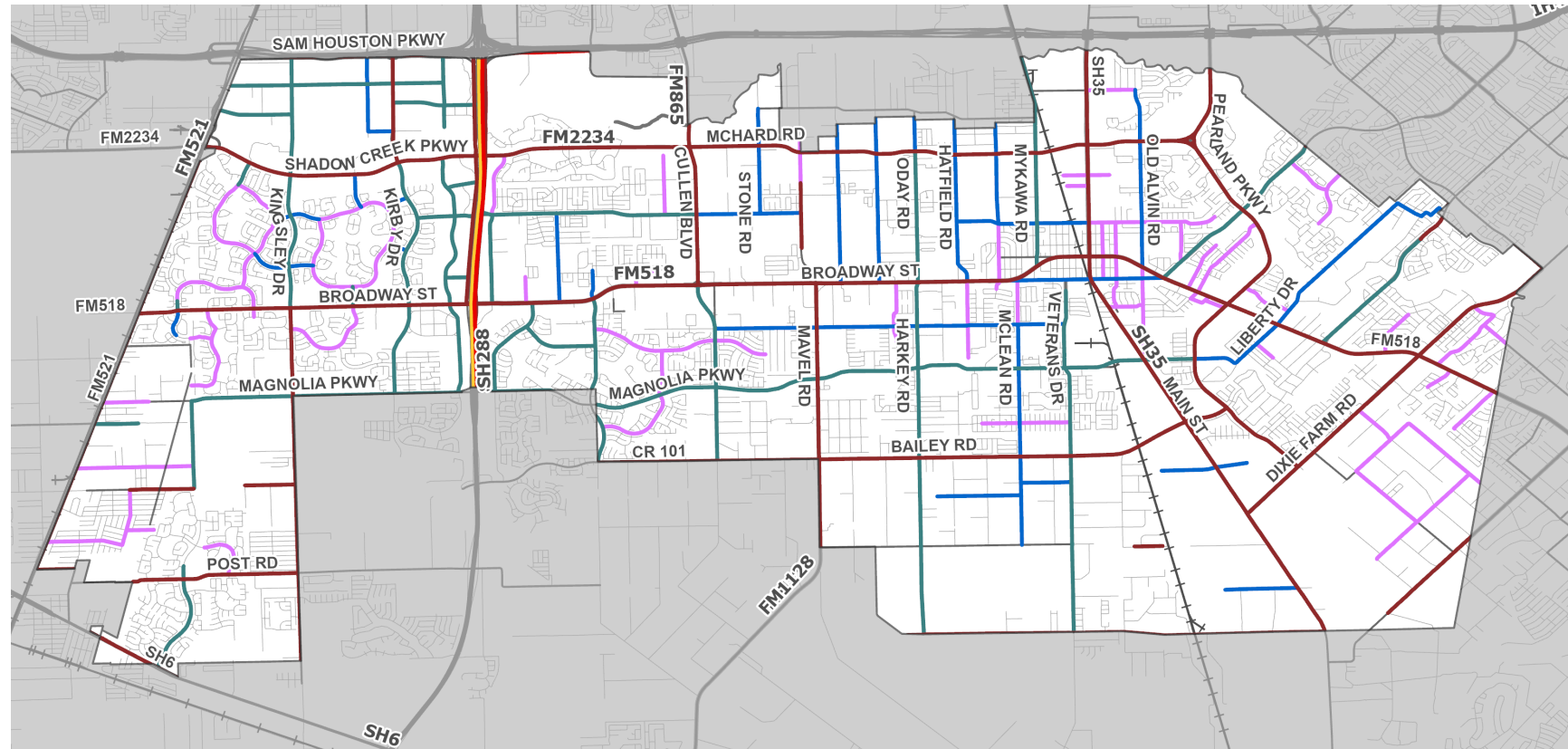
- Elementary School
- Middle School
- Junior High School
- High School
- Private School
- Post-Secondary University



This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

#### TRAFFIC GENERATORS - SCHOOLS

The map above shows the public and private K-12 and Pos-Secondary schools within the City limits.

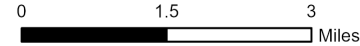


▲ **Figure 3.7: Road Classifications**

Map Source: TxDOT Roadway Inventory, City of Pearland Major Thoroughfare Plan

**Road Classifications**

- Freeway
- Toll-Lane
- Major Thoroughfares
- Secondary Thoroughfares
- Major Collector
- Minor Collector



This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

### 3.5 Roadway and Active Transportation Network

#### MAJOR ROADWAYS

A map of major roadways and their classification system are shown above.

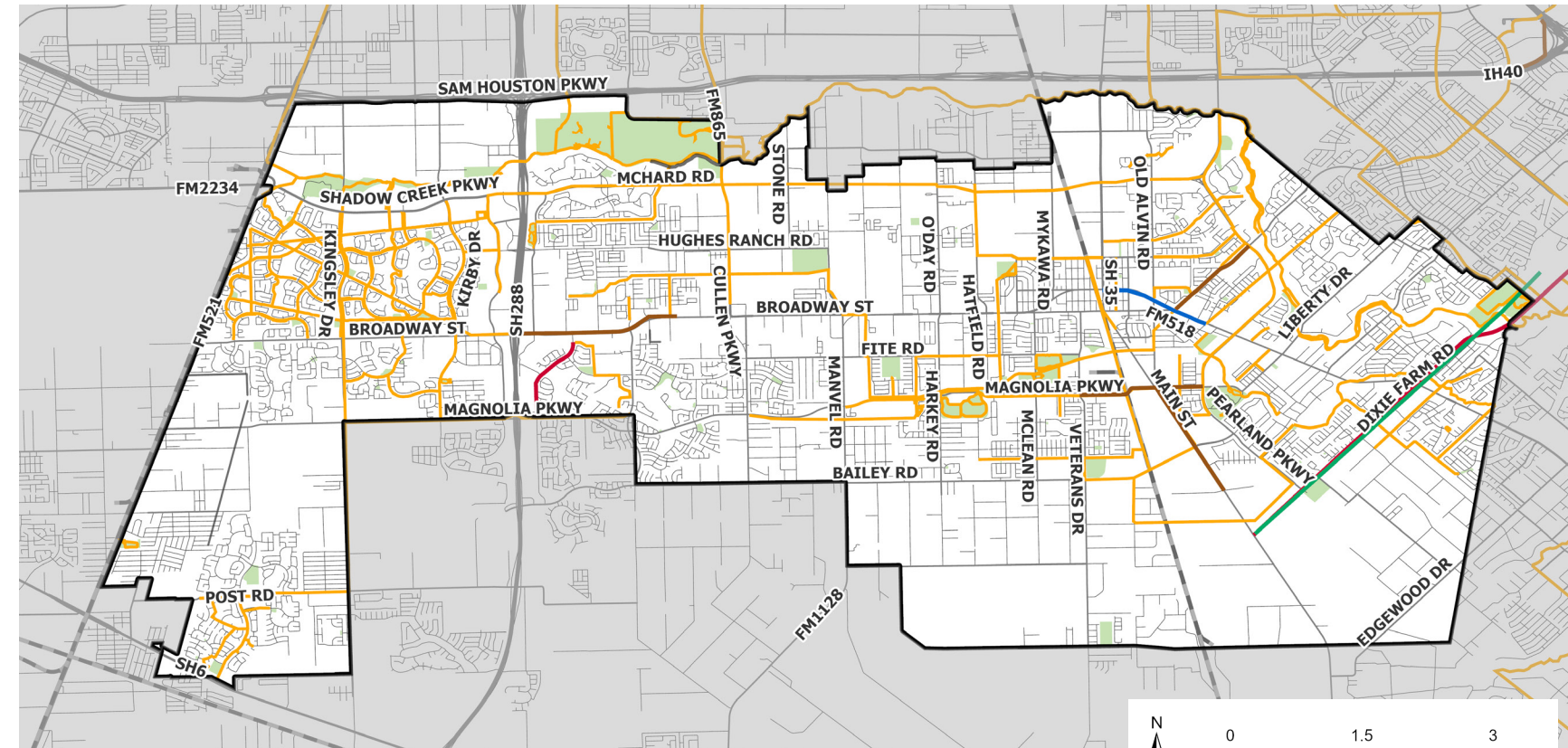
#### TxDOT owned

- ▶ SH288
- ▶ SH 6
- ▶ FM 521
- ▶ FM 518 (Broadway St.) - East of SH 28

- ▶ SH35 (Main St.)
- ▶ FM 1128 (Manvel Rd.)
- ▶ FM 865 (Cullen Blvd.) - North of FM 514
- ▶ FM 2234 (Shadow Creek Pkwy-McHard Rd)

#### Locally owned

- ▶ Pearland Parkway
- ▶ Bailey Rd.
- ▶ Magnolia Parkway
- ▶ Dixie Farm Rd.

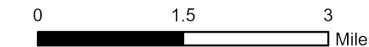


▲ **Figure 3.8: Map of bicycle and pedestrian facilities**

Map Source: Houston Galveston Area Council - Bike Pedestrian Network 8C

**Bicycle/Pedestrian Facility Type**

- Shared Use Path/Trail
- Pedestrian Trails
- Signed Shared Roadway
- Bike Lane
- Signed Shoulder Bike Route



This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

#### EXISTING BIKE AND PEDESTRIAN FACILITIES

The map above shows existing bicycle and pedestrian trails within Pearland, including facilities that are open to the general public and facilities that are privately owned by Home Owner Associations, etc.

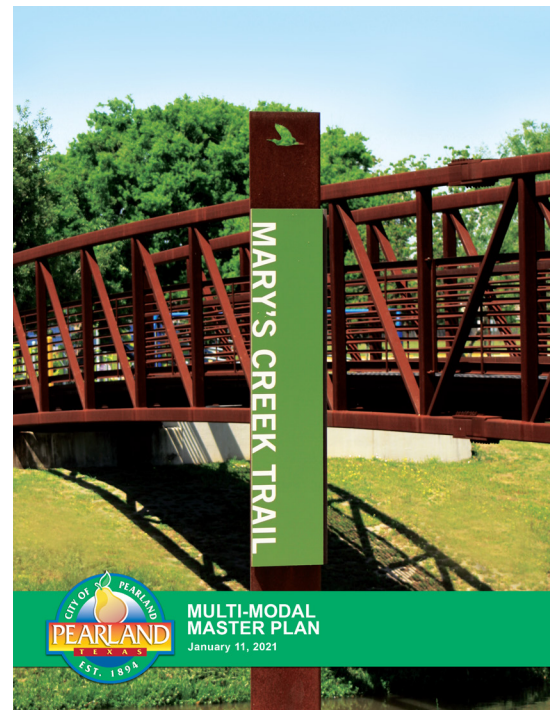
Based on the most recent Houston Galveston Area Council Bike and Pedestrian Data obtained in November 2024, the total length in Miles of are characterized by the following:

- ▶ 244.57 Miles of Shared Use Path
- ▶ 4.29 Miles of Signed Shared Roadway
- ▶ 1.17 Miles of Bike Lane
- ▶ 7.53 Miles of Signed Shoulder Bike Route

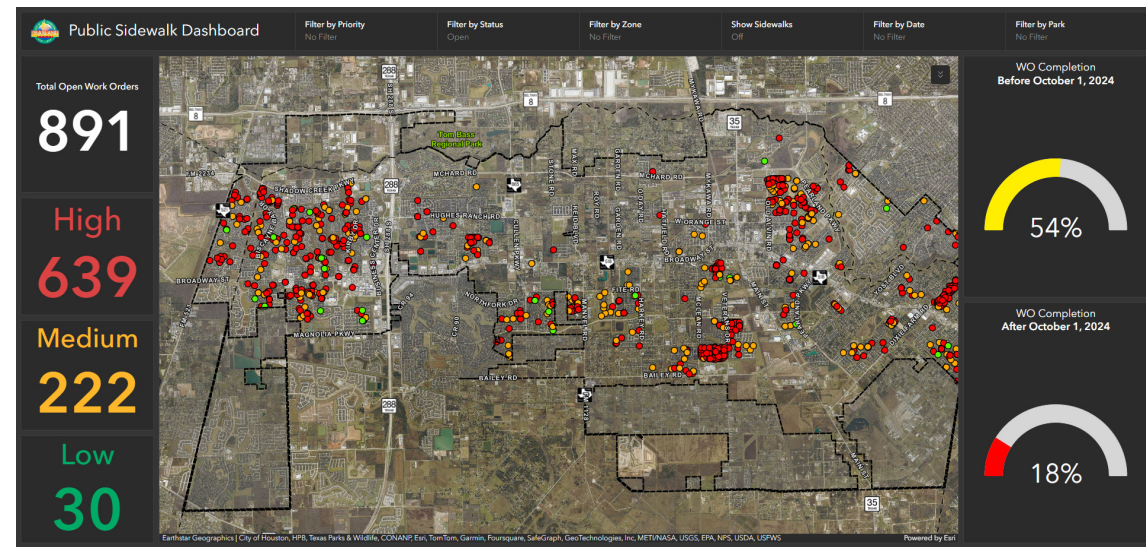
The City of Pearland maintains a transportation network that consists of 980 lane miles and 617 miles of sidewalk. Previous studies conducted by the City including the Pearland Multi-Modal Master Plan, Pearland 2045 Comprehensive Plan, and the City of Pearland Parks, Recreation, Open Space, Trails Master Plan 2020, included recommendations to improve sidewalk network. The City of Pearland offers a **Connect2Pearland** portal where the residents can report various issues including sidewalk repair and connections. The City reviews all such requests and prioritizes them as 'High', 'Medium', 'Low' based on criteria from the Sidewalk Repair Policy and issues work orders and maintains a **Public Sidewalk Dashboard** where the residents can track the status of sidewalk repair requests.



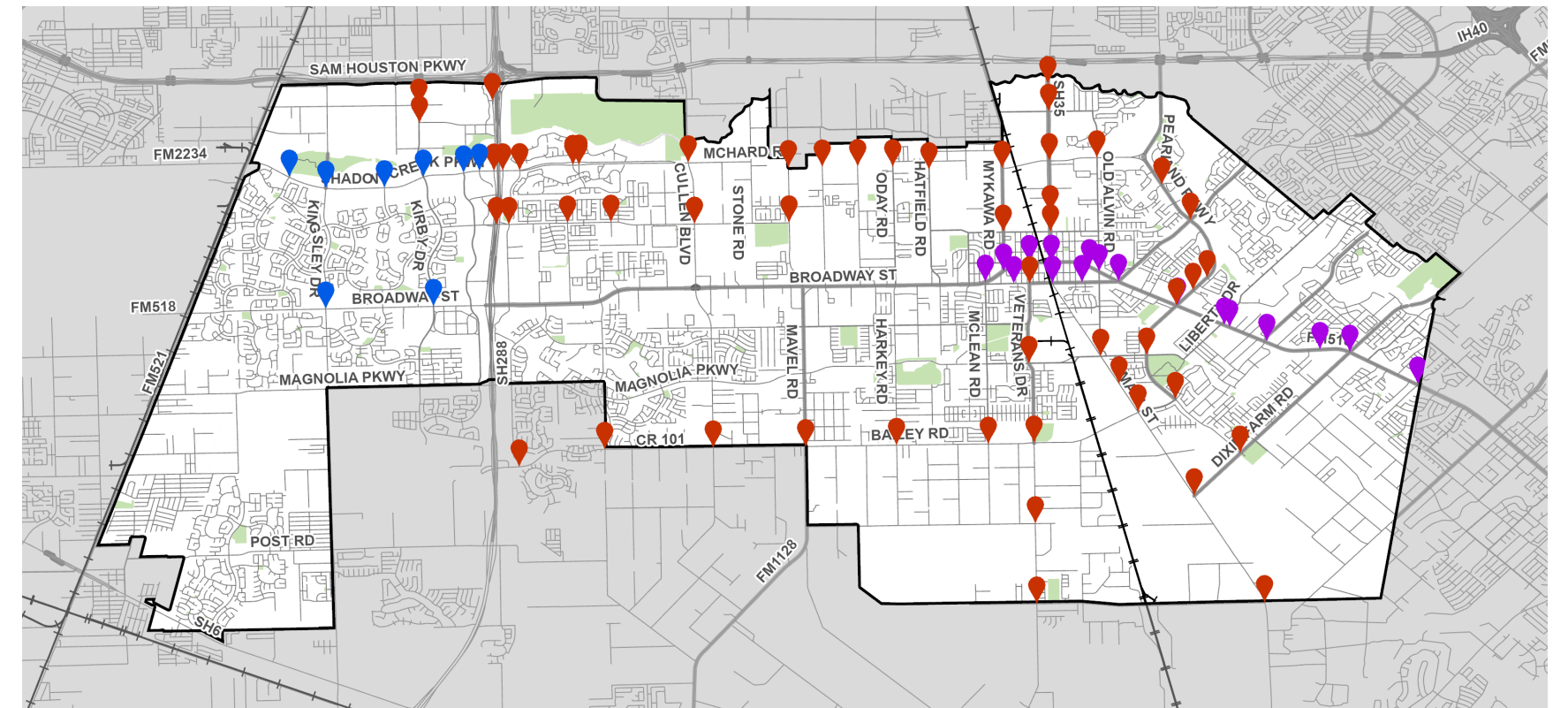
▲ **Figure 3.9:** Connect2Pearland portal



▲ **Figure 3.10:** City of Pearland's Multi-Modal Master Plan, adopted in 2021



▲ **Figure 3.11:** Public Sidewalk Dashboard  
Source: <https://pearland.maps.arcgis.com/apps/dashboards/0547d0b759c5443e993b74e5ddf34b65>

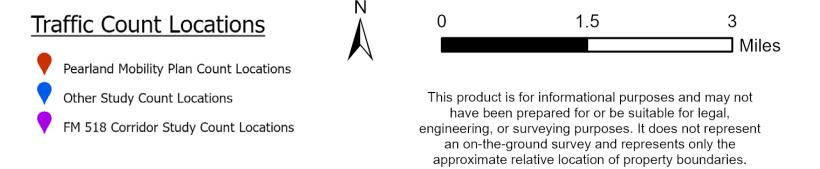


▲ **Figure 3.12:** Map of traffic count locations  
Map Sources: City of Pearland, CJ Hensch Data Collection

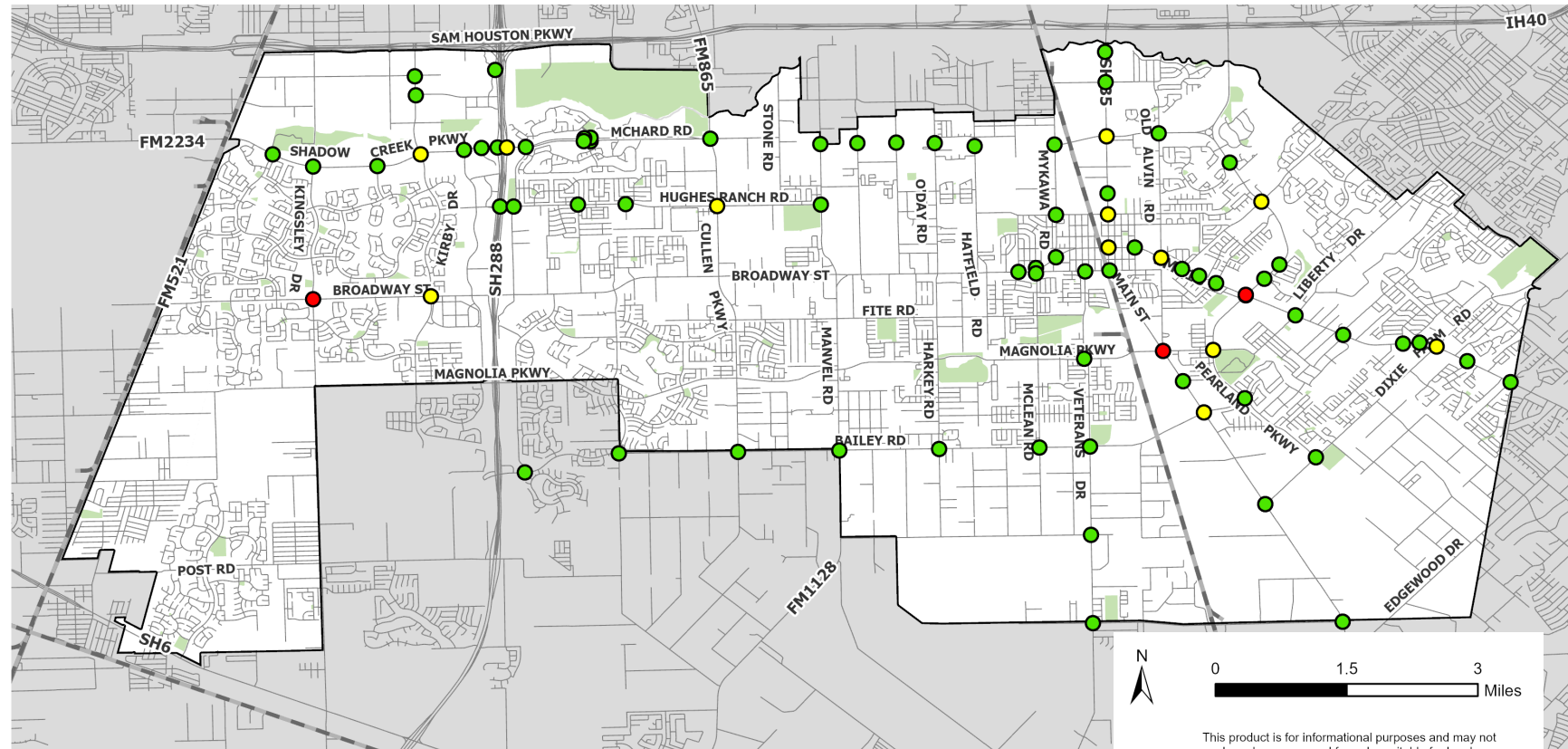
### TRAFFIC COUNT LOCATIONS

The Pearland Mobility Plan did not collect traffic counts or analyze intersections along FM 518/Broadway Street between SH 288 to SH 35 since TxDOT is widening that portion of the road.

To understand traffic operations at intersections, existing AM (7-9 am) and PM (4-6 pm) peak-period turning movement counts were collected. Peak periods reflect highest traffic activity at intersections or segments on right-of-way. The locations were determined in discussions with City staff who provided additional traffic counts from previous studies and projects. The map above represents the counts that were collected for the Pearland Mobility Plan, and obtained from previous and ongoing studies.



This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.



▲ **Figure 3.13:** Level of Service - AM Peak

**TRAFFIC SIGNAL OPERATIONS ANALYSIS**

Existing AM and PM peak-hour operations were analyzed by developing a Synchro traffic model for approximately 60 intersections.

**LEVEL OF SERVICE**

Level of Service, commonly referred to as LOS is an industry-standard term used to describe a driver's experience on the road and at intersections regarding the flow of surrounding traffic. LOS is categorized from the alphabetical order of A to F. Level A represents free flowing, the closer to "F", the more congested or past capacity.

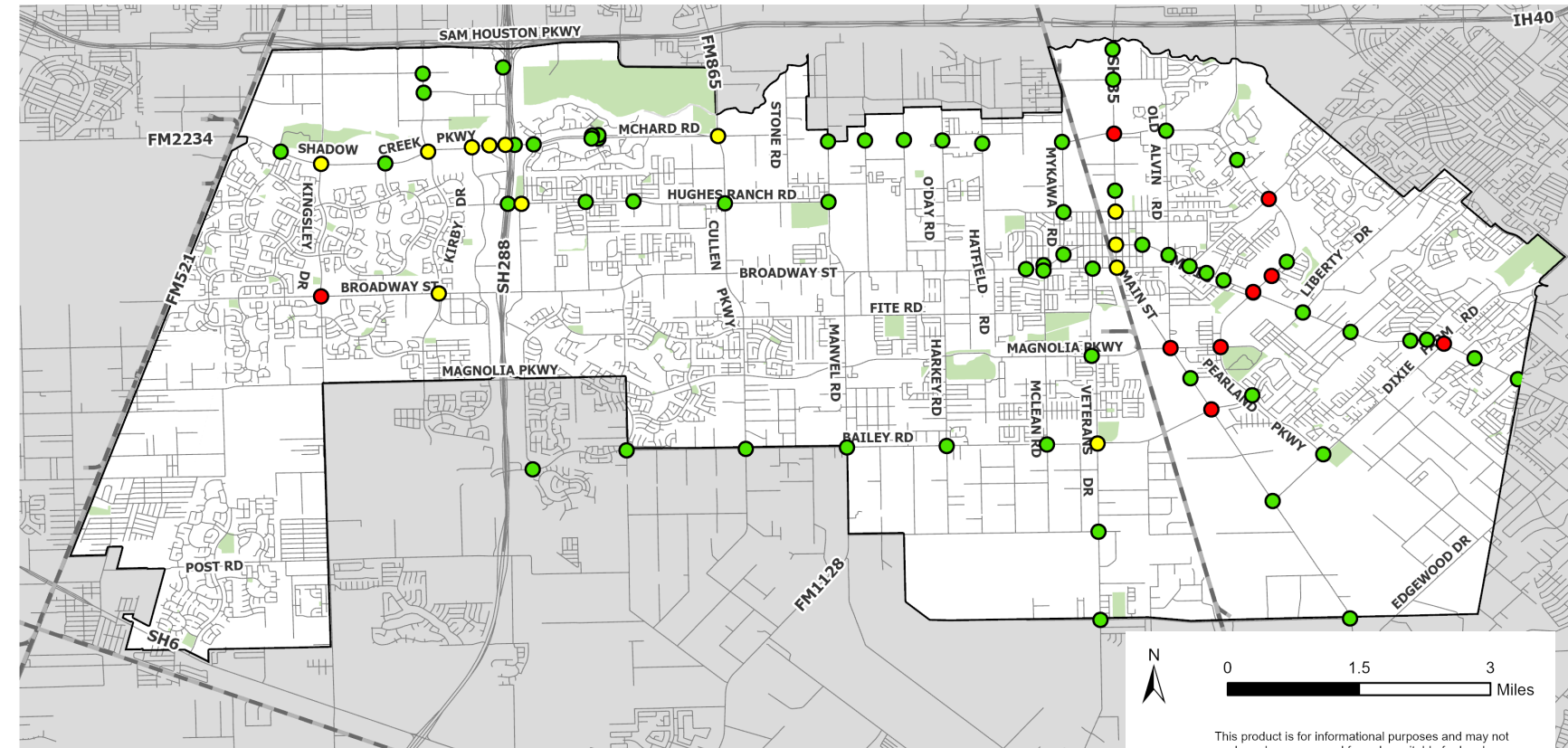
**AM PEAK CONDITIONS**

Figure 3.13 shows the Level of Service at key study intersections during morning peak time. The majority of the count locations had peak time frame between 7-9am.

Level of Service

- **A-C** Free flowing traffic, high speeds, no delays
- **D** Stable flow, fluctuating speeds, moderate to long delays
- **E-F** Very low speeds, frequent stopping, volume is nearing/greater than capacity

This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.



▲ **Figure 3.14:** Level of Service - PM Peak

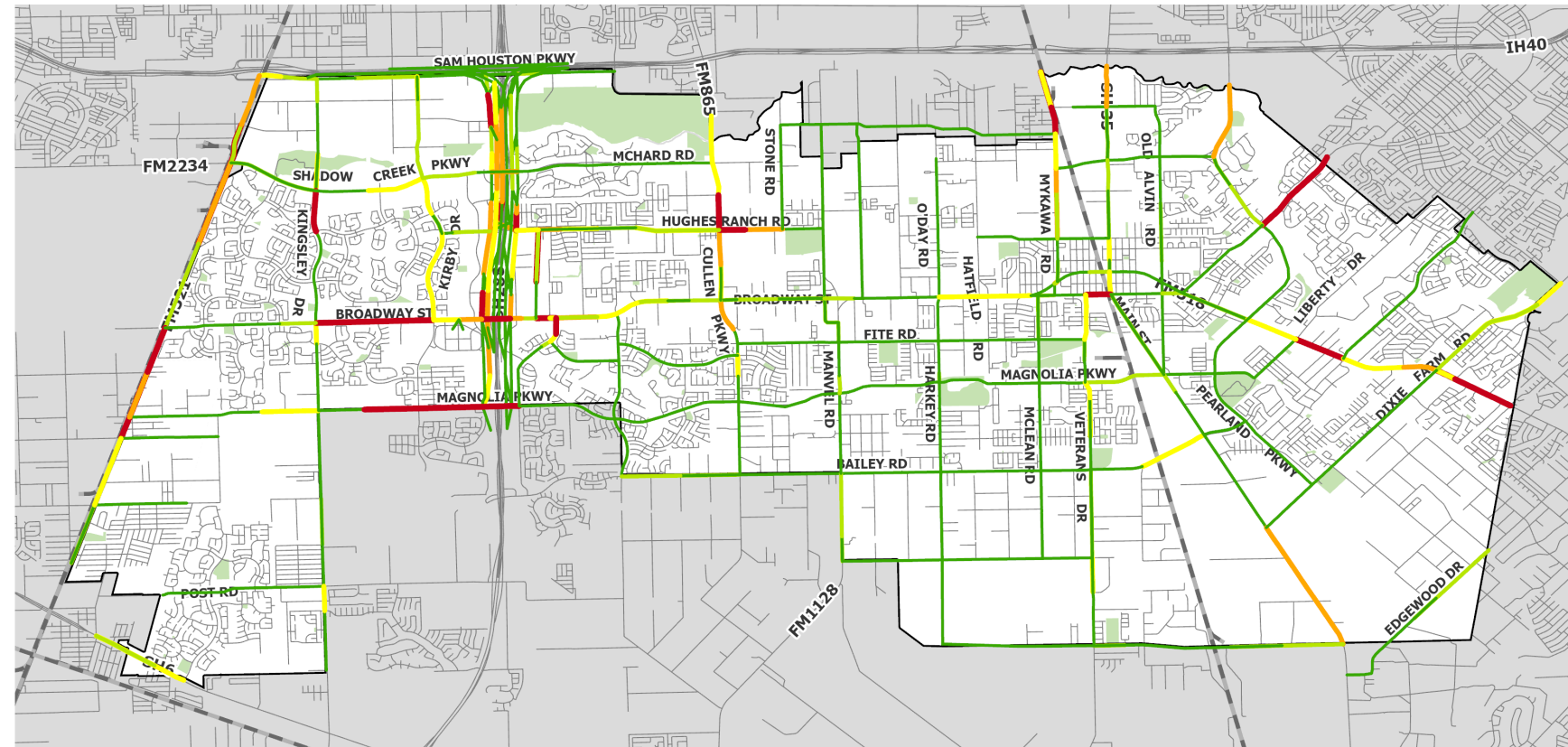
**PM PEAK CONDITIONS**

Figure 3.14 shows the Level of Service at key study intersections during afternoon peak time. The majority of the count locations had peak time frame between 4-6 pm.

Level of Service

- **A-C** Free flowing traffic, high speed, no delays
- **D** Stable flow, fluctuating speeds, moderate to long delays
- **E-F** Very low speeds, frequent stopping, volume is nearing/greater than capacity

This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.



▲ **Figure 3.15:** 2023 Daily Volume to Capacity Ratio (V/C)

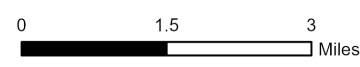
Map Source: Houston-Galveston Area Council-Travel Demand Model

### TRAVEL DEMAND MODELING

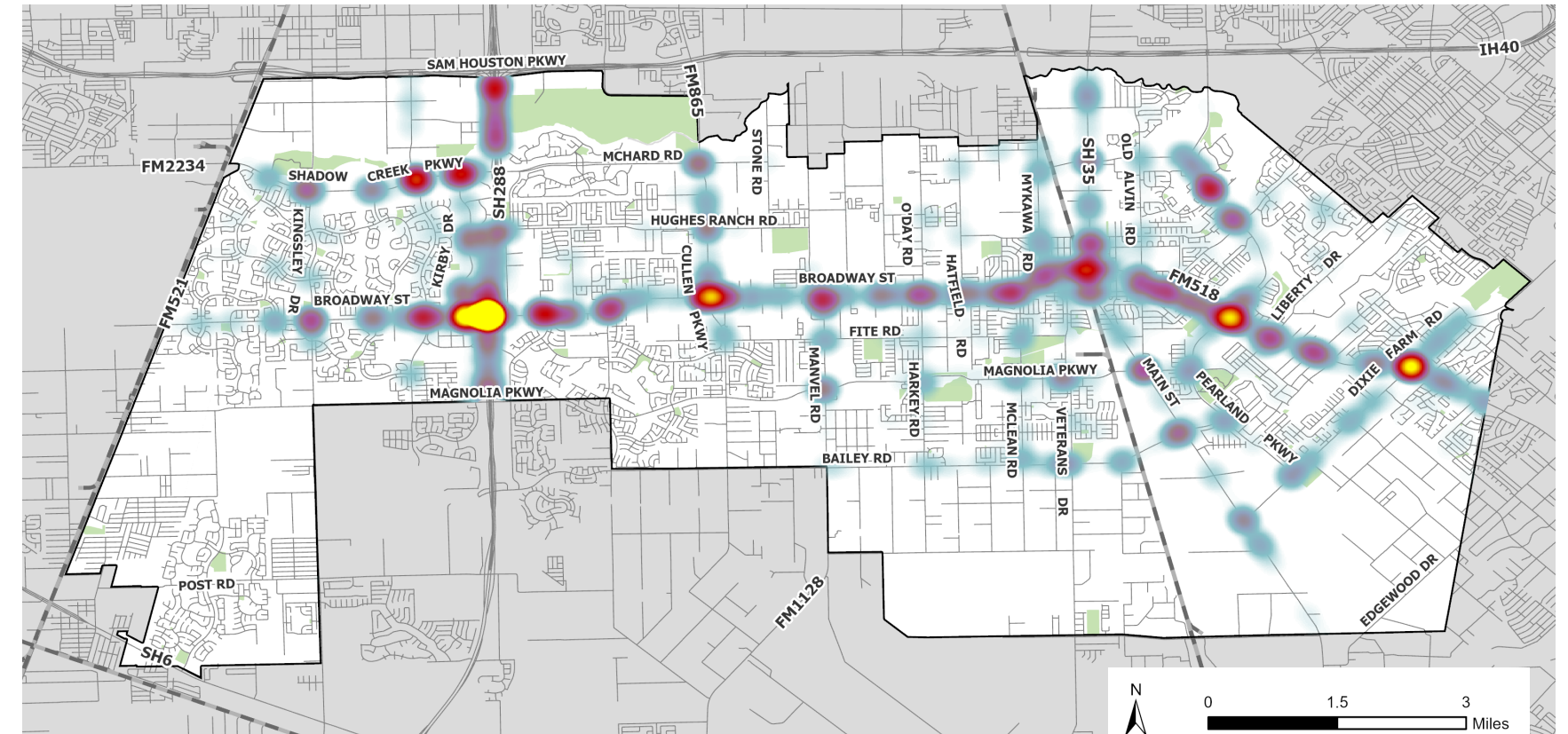
A Travel Demand Model (TDM) is a long range planning tool that allows planning for future roadway connections or capacity enhancements based on projected traffic volumes and travel patterns using future land-uses and demographics of the area. Using H-GAC's current TDM for the region, above map was created to show 2023 traffic conditions of the City's roadway network. In Section 5: Thoroughfare Plan Update, future projected scenarios for 2045 incorporates updates to roadway network to accommodate projected traffic conditions.

#### V/C Ratios and Traffic Conditions

- $\leq .7$  Free flow / Stable flow with unaffected speed (A,B)
- $.71 \leq .8$  Stable flow but speed is affected (C)
- $.81 \leq .9$  High-Density but the stable flow (D)
- $.91 \leq 1.0$  Traffic Volume near or at capacity level with low speed (E)
- $> 1.0$  Breakdown flow (F)



This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.



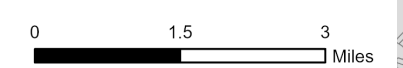
▲ **Figure 3.16:** Crash Heat Map

Map Source: TxDOT CRIS 2017-2023

#### Crash Heat Map

TxDOT CRIS Data: 2017 - 2023

- Fewer Crashes
- More Crashes



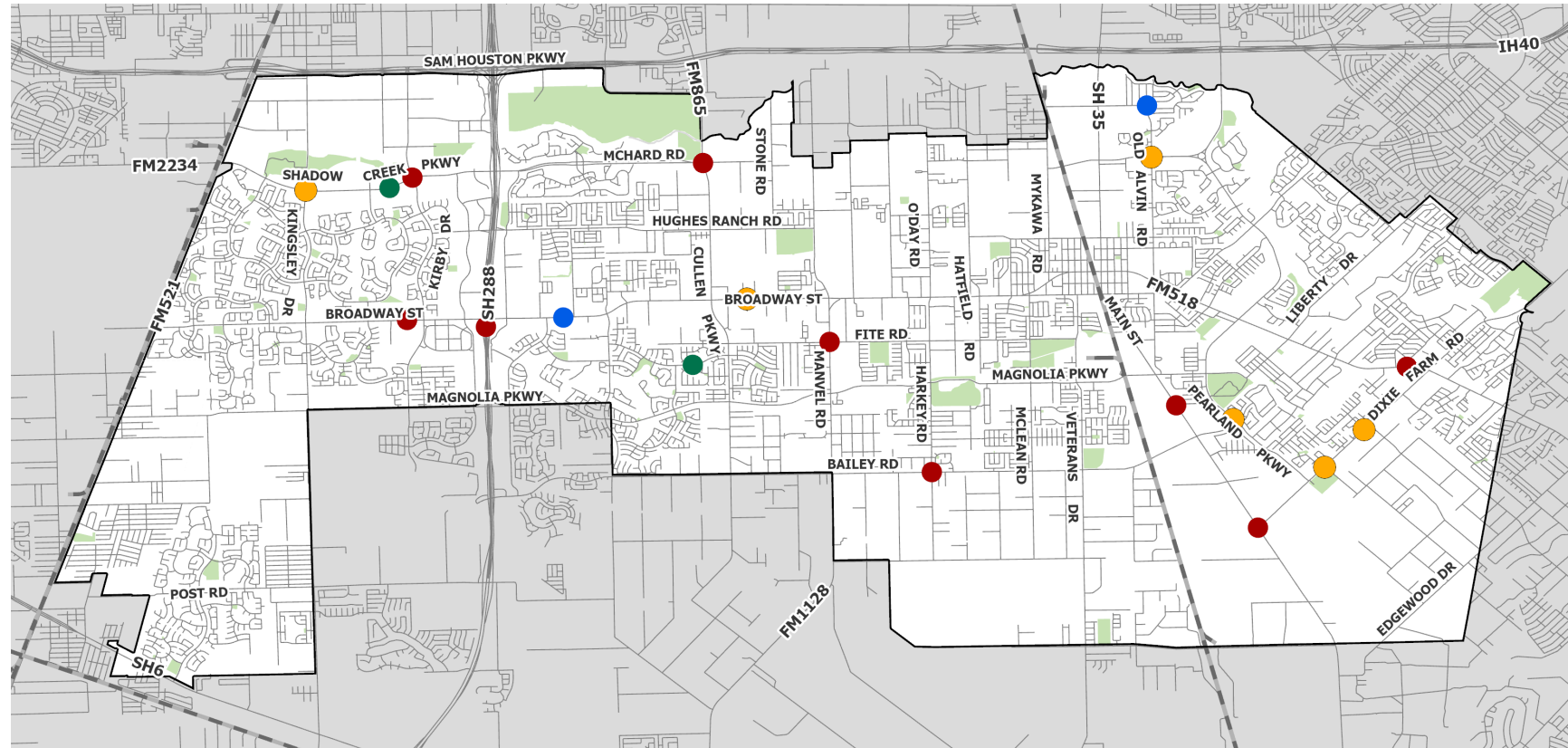
This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

## 3.6 Crash History

### CRASH DATA SUMMARY

For this plan, Crash data was obtained from the TxDOT Crash Records Information System (CRIS) collected from 2017 – 2023. In those seven years, a total of 13,427 crashes were reported within the study area. This data was used to create the heat map in Figure 3.16, and shows that various intersections along FM 518, also known as Broadway Street locally had several large hot spots indicating the highest amounts of crashes. Most intersection-related crashes were clustered around the following intersections along Broadway Street/FM 518:

- ▶ SH - 288: 494 crashes
- ▶ Cullen Boulevard: 149 crashes
- ▶ SH 35 / Main Street: 67 crashes
- ▶ Pearland Parkway: 119 crashes
- ▶ Dixie Farm Road: 98 crashes



▲ **Figure 3.17:** Crash Fatalities Map  
Map Source: TxDOT CRIS 2017-2023

**CRASHES WITH FATALITIES**

Of the 21 fatalities that occurred between 2017 to 2023, 13 crashes occurred at intersections. Eleven (11) of the crashes occurred during day time. In terms of contributing factors there was a wide distribution of factors. The following page examines pedestrian and cyclist related crashes.

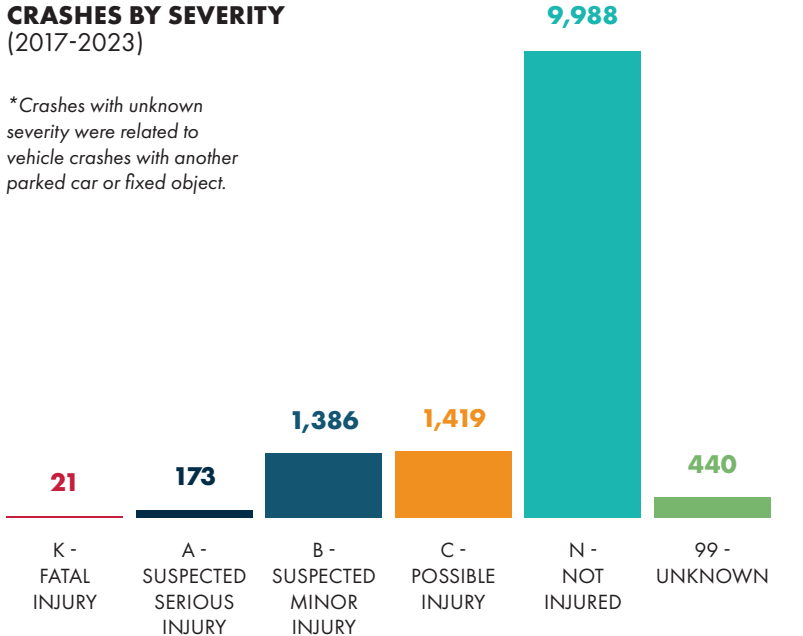


**CRASH CHARACTERISTICS**

Of the 13,427 total crashes reported, 38% (5,167) of crashes were intersection-related. In general, the leading contributing factor in crashes reported was due to failure to control speed (29%) followed by failing to yield to the right of way (27%), and disregarding stop signs or light (13%). The most common manner of collision in which the crashes occurred, two vehicles were going the same direction and where the moving car crashed into the stopped car (31%), followed by two moving cars headed in the same direction (15%), and two cars headed in the opposite direction at a left turn intersection (14%). In terms of crash severity, 74% (9,988) of the crashes reported had no injuries, and approximately 0.15% (21) of the crashes reported one or more fatalities. Of the 21 fatal crashes, two (2) fatalities were associated with a cyclist and two (2) fatalities were associated with pedestrians.

**CRASHES BY SEVERITY (2017-2023)**

\*Crashes with unknown severity were related to vehicle crashes with another parked car or fixed object.



▲ **Figure 3.18:** Crashes by Severity 2017-2023

**BIKE AND PEDESTRIAN CRASHES WITH SUSPECTED SERIOUS INJURY**

In total, there were 191 crashes that involved cyclists or pedestrians between 2017 - 2023, Figure 3.18 shows break down of the two groups. Within these crashes 34 crashes resulted in fatal injury or suspected serious injury. The main contributing factor in such crashes, seven (7) involved the pedestrian failed to yield the right of way to vehicles, four (4) crashes resulted from the driver failed to yield the right of way to pedestrians.

In terms of manner of collision, 22 of 34 crashes involved vehicles heading straights, six (6) crashes happened while the vehicle turned left, four (4) crashes while the vehicle turned right, and one (1) crash occurred from the vehicle backing out.



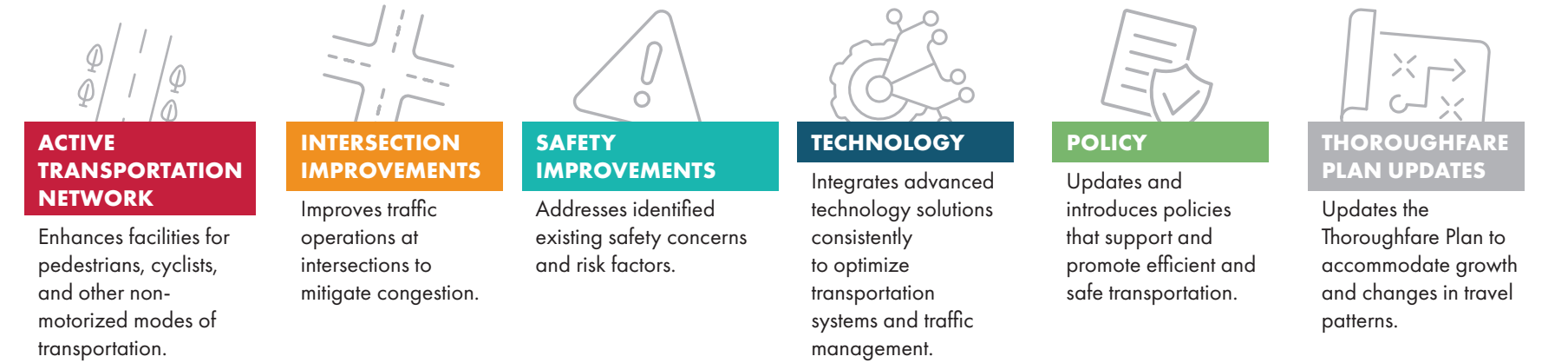
▲ **Figure 3.19:** Bike & Pedestrian Crashes 2017-2023



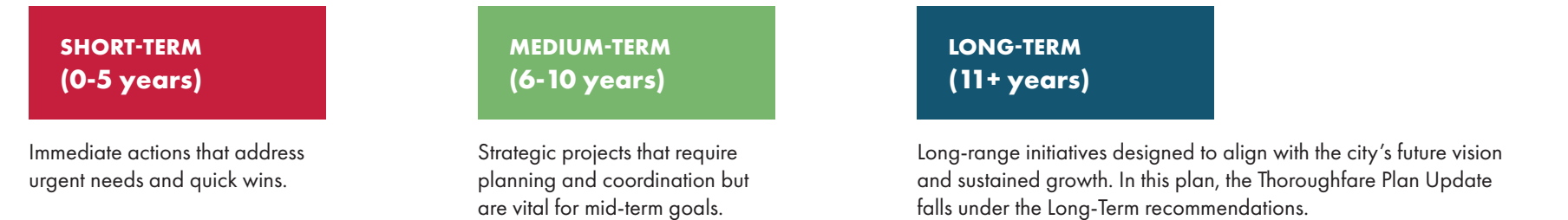
## PLAN RECOMMENDATIONS

The recommendations of the Pearland Mobility Plan are a result of a comprehensive evaluation of existing traffic conditions and future needs. This evaluation incorporated projected growth and development trends, as well as input from key stakeholders. Initial recommendations were presented and subsequently refined based on public feedback.

Recommendations are categorized into distinct areas to address various aspects of the transportation network:



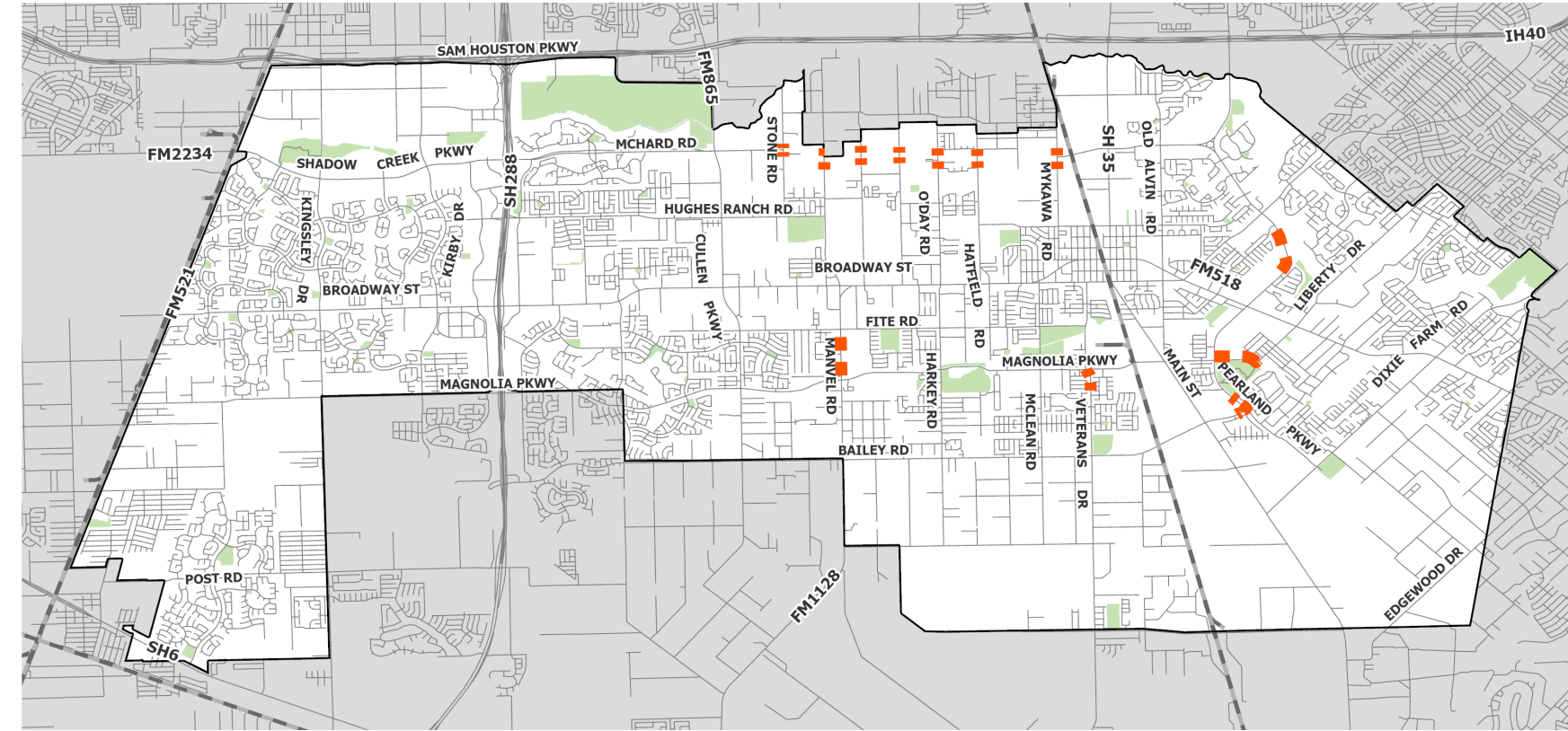
The recommendations are also categorized by implementation timeframes to allow an actionable phased approach:



The following sections detail these recommendations, outlining specific strategies and actions to improve transportation infrastructure, enhance safety, and support long-term mobility goals.

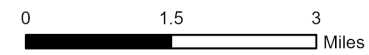
## 4.1 Active Transportation Network

Public feedback on existing sidewalk and bicycle infrastructure network was consistently the most frequently commented on mobility category in the two rounds of community engagement. In the development of active transportation network recommendations, the project team also examined projects called out in prior planning efforts. Including the 2021 Multi-Modal Master Plan and the City's Sidewalk Services dashboard, to ensure that the recommendations shown in Figure 4.1 Active Transportation Network recommendations build upon existing conditions and past initiatives. Most of the recommendations below are short-term recommendations, that the City may implement in the next five years.



▲ Figure 4.1: Active Transportation Network recommendations

Active Transportation Network Recommendations



This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

MAP PREPARED: NOVEMBER 2025  
Kimley-Horn

SHORT-TERM

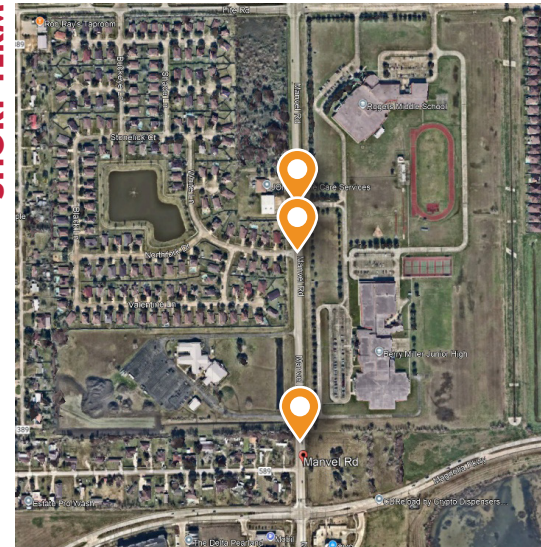


### MCHARD CONNECTING STREETS

📍 **Location:** Side streets along McHard Road (east of Cullen Blvd.)

- 🚧 **Challenge:** Existing residential neighborhoods adjacent to McHard Road (east of Cullen Blvd.) do not have access to the shared use path along McHard Road. The shared use path was constructed as part of the roadway expansion project on McHard Road.
- 🟢 **Recommendation:** Install new sidewalk infrastructure along the side streets to provide connectivity to the shared use path along McHard Road. The list of connecting streets include:
  - ▶ Stone Road
  - ▶ Max Road
  - ▶ O'Day Road
  - ▶ Roy Road
  - ▶ Garden Road
  - ▶ Mykawa Road
- 💰 **Estimated Planning Level Cost:** \$600,000

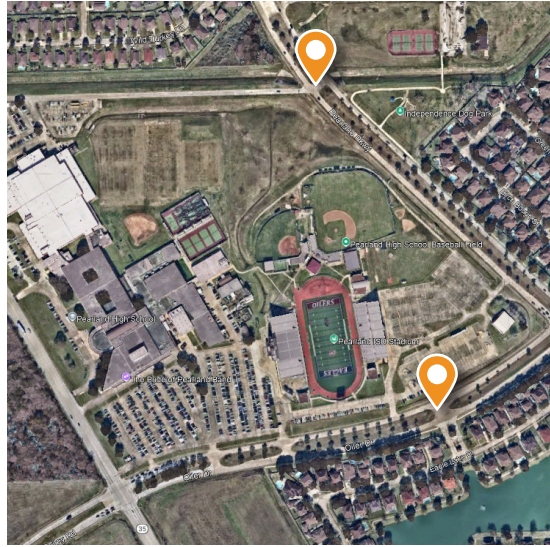
SHORT-TERM



### MANVEL ROAD - SCHOOL CROSSING IMPROVEMENTS

📍 **Location:** Manvel Road (FM 1128) between Fite Road and Magnolia Pkwy along the Rogers Middle School and Berry Miller Junior High School

- 🚧 **Challenge:** Students from residential neighborhood walk across Manvel Road at midblock locations to access the schools. No pedestrian crossings, markings, or signing is present on Manvel Road.
- 🟢 **Recommendation:** Coordinate with the Pearland Independent School District to address pedestrian mobility and safety concerns in this area. Consider installing advanced warning signage for vehicles for school crossing and midblock crosswalk marking with appropriate traffic control (such as Rectangular Rapid Flashing Beacon). TxDOT has ongoing project to design roadway improvements in this section of Manvel Road. Preliminary schematic plans for Manvel Road (FM 1128) indicate proposed medians and sidewalks but based on TxDOT project findings, none of the side streets meet criteria for a new traffic signal on Manvel Road.
- 💰 **Estimated Planning Level Cost:** \$120,000



### PEARLAND PARKWAY AND OILER DRIVE - SCHOOL CROSSING IMPROVEMENTS

**Location:** Pearlland High School access off Pearland Pkwy and Oiler Drive

- Challenge:** Missing pedestrian crosswalk or striping for students walking to the high school
- Recommendation:** Install new pedestrian crosswalk, signing and marking on Oiler Drive at Towne Lake Drive and on Pearland Pkwy at High School driveway on the north side of the school. Similar to the existing conditions along Manvel Road and Rogers Middle School / Berry Miller Junior High, Pearlland High School is situated next to multiple large residential subdivisions with several students walking to the school.
- Estimated Planning Level Cost:** \$120,000



### VETERANS DRIVE EXISTING SIDEWALK

**Location:** Veterans Drive between Elaine Way and Stonebridge Drive

- Challenge:** Sidewalk on the west side along Veterans Drive ends abruptly north of Elaine Way
- Recommendation:** Construct sidewalk connection on the west side from current location to Stonebridge Drive. There is an existing crosswalk on Veterans Drive on the south side of Stonebridge Drive which connects the west side to the sidewalk on the east side along Veterans Drive. Constructing the missing segment of the sidewalk will allow pedestrians and bikes on the west side to be able to cross Veterans Drive at designated location. This would also provide a continuous path for pedestrians between Bailey Avenue and Magnolia Pkwy. Since the subdivision is built-out, it is unlikely that this segment of missing sidewalk will be developed through a private citizen or developer.
- Estimated Planning Level Cost:** \$450,000



### WALNUT STREET RAILROAD CROSSING

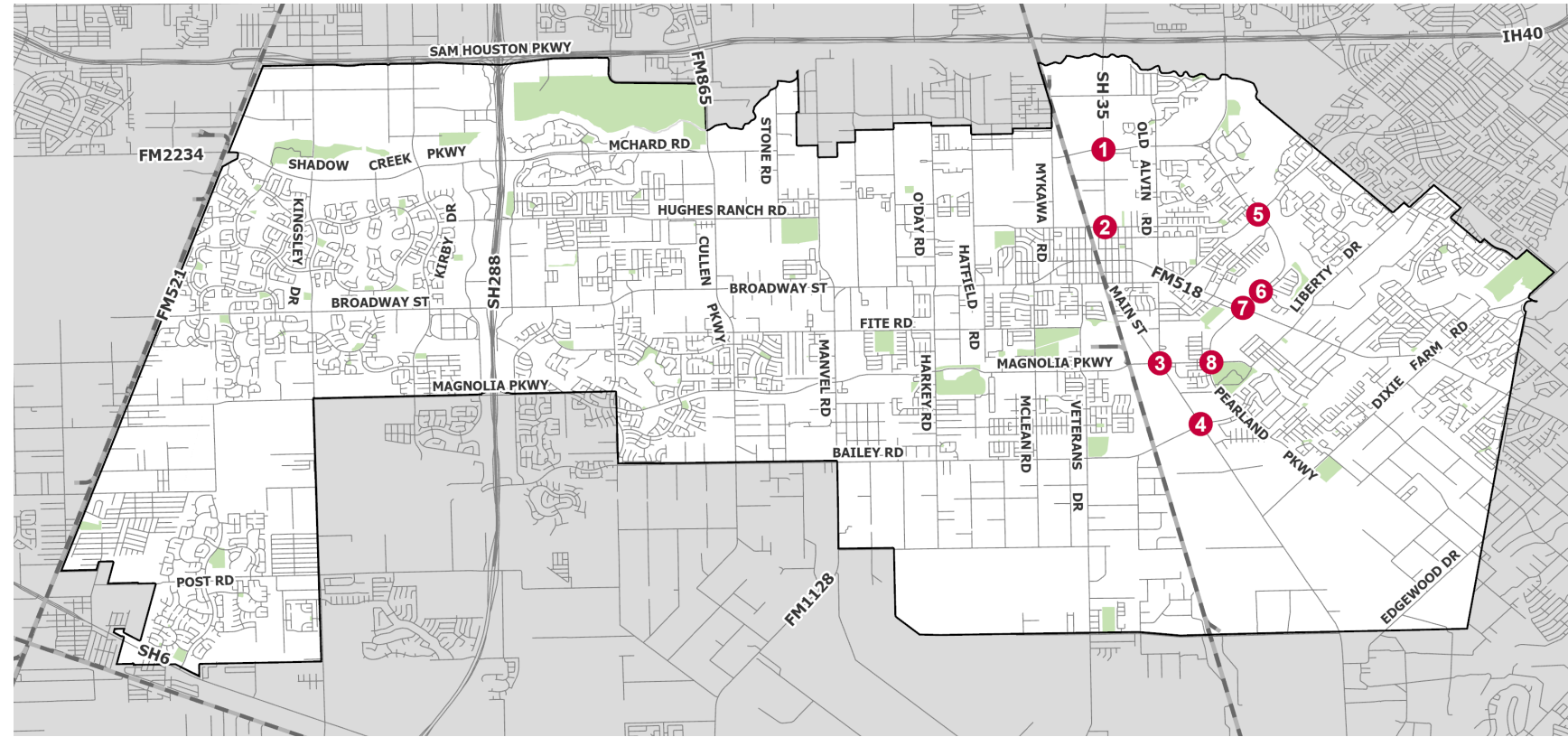
**Location:** Walnut Street at railroad crossing (just west of SH 35)

- Challenge:** Existing sidewalks Sidewalks along Walnut Street on both north and south sides end abruptly immediately before the railroad crossing.
- Recommendation:** Install sidewalk segments along Walnut Street through the at-grade railroad crossing to connect existing sidewalks on the west side to the traffic signal at SH 35 and Walnut Street. This will require coordination with the BNSF Railway Company.
- Estimated Planning Level Cost:** \$200,000

## 4.2 Intersection Recommendations

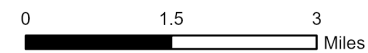
### SHORT-TERM RECOMMENDATIONS

An operational analysis of key study intersections was conducted using Synchro software for typical AM and PM peak periods in analysis years 2024 and 2034. To estimate volumes for future analysis years, it was assumed that traffic would increase at an average annual rate of 4%. The recommendations for the study intersections are summarized in Figure 4.2: Intersection Recommendations, Short-Term timeframe for the short term (0-5 years).



▲ **Figure 4.2:** Intersection Recommendations, Short-Term timeframe

● Short Term Intersection Improvements Locations



This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

## SHORT-TERM

### 1 SH 35 AT MCHARD ROAD

PROPOSED PAVEMENT WIDENING

PROPOSED TURN LANE



#### IMPROVEMENT

- 1 Add A eastbound and B southbound right turn lanes
- 2 Update traffic signal pole locations in A northwest and B southwest corners
- 3 Update sidewalk and ADA facilities on A northwest and B southwest corners



ESTIMATED PLANNING LEVEL COST  
\$1,000,000

**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

2 SH 35 AT ORANGE STREET

★ IMPROVEMENT

- 1 Remove east-west split phase
- 2 Add flashing yellow arrow displays for eastbound and westbound left-turns

ESTIMATED PLANNING LEVEL COST  
\$15,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

3 SH 35 AT MAGNOLIA ROAD

★ IMPROVEMENT

- 1 Restripe lanes on eastbound and westbound
- 2 Remove east-west 'Split Phase'

ESTIMATED PLANNING LEVEL COST  
\$15,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

4 SH 35 AT BAILEY ROAD

PROPOSED PAVEMENT WIDENING PROPOSED TURN LANE

★  
IMPROVEMENT

- 1 Add A eastbound, B westbound, and C southbound right turn lanes
- 2 Replace existing 'span-wire' signal with new 'mast-arm' signal
- 3 Modify existing sidewalk and ADA facilities impacted in all four corners of the intersection

\$  
ESTIMATED PLANNING LEVEL COST  
\$1,600,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

5 PEARLAND PARKWAY AT HUGHES ROAD

PROPOSED PAVEMENT WIDENING PROPOSED TURN LANE

★  
IMPROVEMENT

- 1 Restripe east and west approaches on Hughes Road
- 2 Add northbound right turn lane on Pearland Pkwy
- 3 Remove east-west split phase

\$  
ESTIMATED PLANNING LEVEL COST  
\$450,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

6 PEARLAND PARKWAY AT PROVINCE VILLAGE

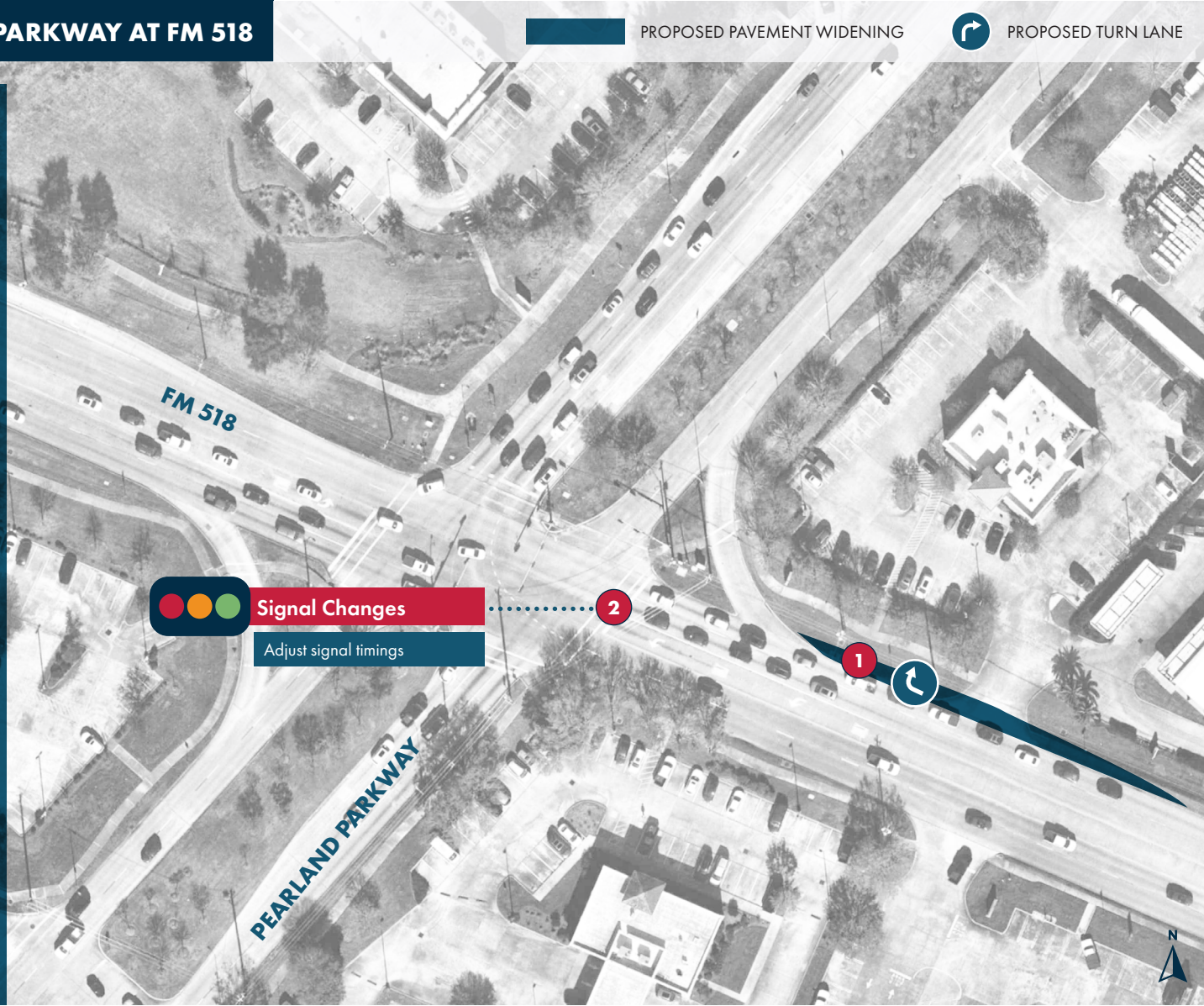
- ★ IMPROVEMENT
  - 1 Restripe east and west approaches on Province Village Dr
  - 2 Remove east-west split phase
- \$ ESTIMATED PLANNING LEVEL COST  
\$15,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

7 PEARLAND PARKWAY AT FM 518

- ★ IMPROVEMENT
  - 1 Add westbound right turn lane on FM 518
  - 2 Adjust signal timings
- \$ ESTIMATED PLANNING LEVEL COST  
\$300,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

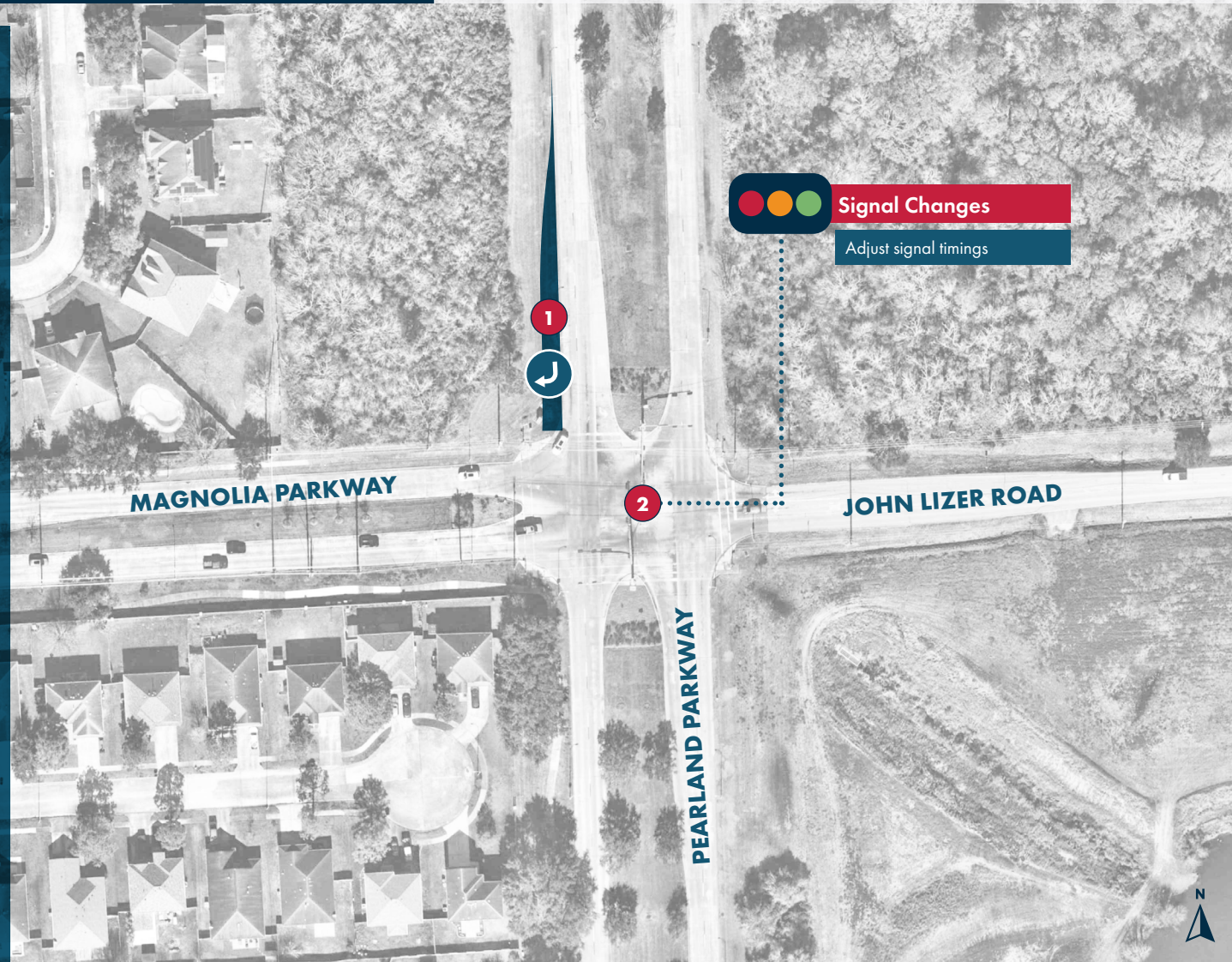
8 PEARLAND PARKWAY AT JOHN LIZER ROAD

PROPOSED PAVEMENT WIDENING

PROPOSED TURN LANE

- ★ IMPROVEMENT
  - 1 Add southbound right turn lane
  - 2 Adjust signal timings
- ESTIMATED PLANNING LEVEL COST
 

450,000

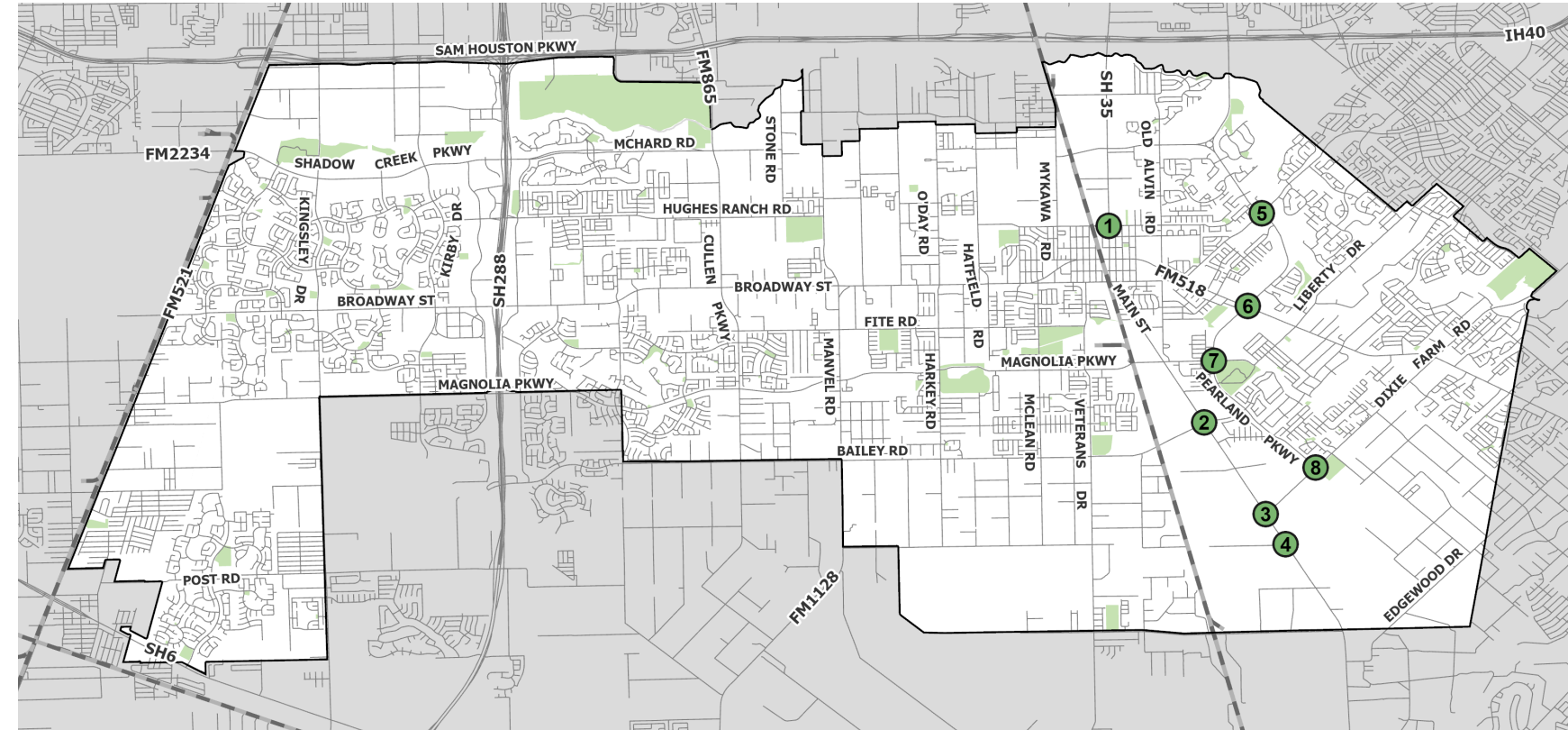


Note: Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

Page left blank intentionally

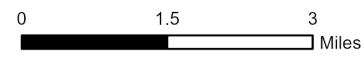
## MEDIUM-TERM RECOMMENDATIONS

An operational analysis of key study intersections was conducted using Synchro software for typical AM and PM peak periods in analysis years 2024 and 2034. To estimate volumes for future analysis years, it was assumed that traffic would increase at an average annual rate of 4%. The recommendations for the study intersections are summarized in Figure 4.3: Medium-term Intersection Recommendations for the medium term (6-10 years).



▲ **Figure 4.3:** Medium-term Intersection Recommendations

● Medium Term Intersection Improvements



This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

## MEDIUM-TERM

### 1 SH 35 AT ORANGE STREET

PROPOSED PAVEMENT WIDENING

PROPOSED TURN LANE

★ IMPROVEMENT

- 1 Add westbound right turn lane
- 2 Adjust signal timing

ESTIMATED PLANNING LEVEL COST  
\$450,000

Signal Changes

Adjust signal timings

**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

2 SH 35 AT BAILEY ROAD

PROPOSED PAVEMENT WIDENING

PROPOSED TURN LANE

- ★ IMPROVEMENT
- 1 Add second left northbound turn lane on SH 35
- 2 Modify sidewalk and ADA facilities in the southwest corner
- 3 Remove split phase

ESTIMATED PLANNING LEVEL COST  
\$750,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

3 SH 35 AT DIXIE FARM ROAD

PROPOSED PAVEMENT WIDENING

PROPOSED TURN LANE

- ★ IMPROVEMENT
- 1 Add northbound right turn lane
- 2 Modify sidewalk, relocate signal pole in median and modify ADA facilities in the southeast corner
- 3 Adjust signal timings

ESTIMATED PLANNING LEVEL COST  
\$450,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

4 SH 35 AT HASTINGS CANON ROAD

PROPOSED PAVEMENT WIDENING



PROPOSED TURN LANE

- ★ IMPROVEMENT
- 1 Add eastbound right turn lane on Hastings Cannon Rd.
- 2 Replace existing 'span-wire' signal with new 'mast-arm' signal
- 3 Adjust signal timings

\$ ESTIMATED PLANNING LEVEL COST  
\$750,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

5 PEARLAND PARKWAY AT HUGHES ROAD

PROPOSED PAVEMENT WIDENING



PROPOSED TURN LANE

- ★ IMPROVEMENT
- 1 Add a second southbound left-turn lane on Pearland Pwky
- 2 Add a second westbound left-turn lane on Hughes Road
- 3 Modify signal head layouts for southbound and westbound left turn lane additions
- 4 Adjust signal phasing and timing

\$ ESTIMATED PLANNING LEVEL COST  
\$1,200,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

6 PEARLAND PARKWAY AT FM 518

PROPOSED PAVEMENT WIDENING

PROPOSED TURN LANE

★ IMPROVEMENT

- 1 Add A eastbound, B northbound and C southbound right turn lanes
- 2 Modify sidewalk and ADA facilities in the A northwest and B southeast corners
- 3 Adjust signal timings

\$ ESTIMATED PLANNING LEVEL COST \$1,000,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

7 PEARLAND PARKWAY AT JOHN LIZER ROAD

PROPOSED PAVEMENT WIDENING

★ IMPROVEMENT

- 1 Widen John Lizer road to a four lane divided section from Pearlland Parkway to just west of existing bridge (approximately 1000 Feet)
- 2 Modify sidewalk and ADA facilities in the A northeast and B southeast corners
- 3 Remove split phase

\$ ESTIMATED PLANNING LEVEL COST \$2,500,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

8 PEARLAND PARKWAY AT DIXIE FARM ROAD

PROPOSED PAVEMENT WIDENING

PROPOSED TURN LANE

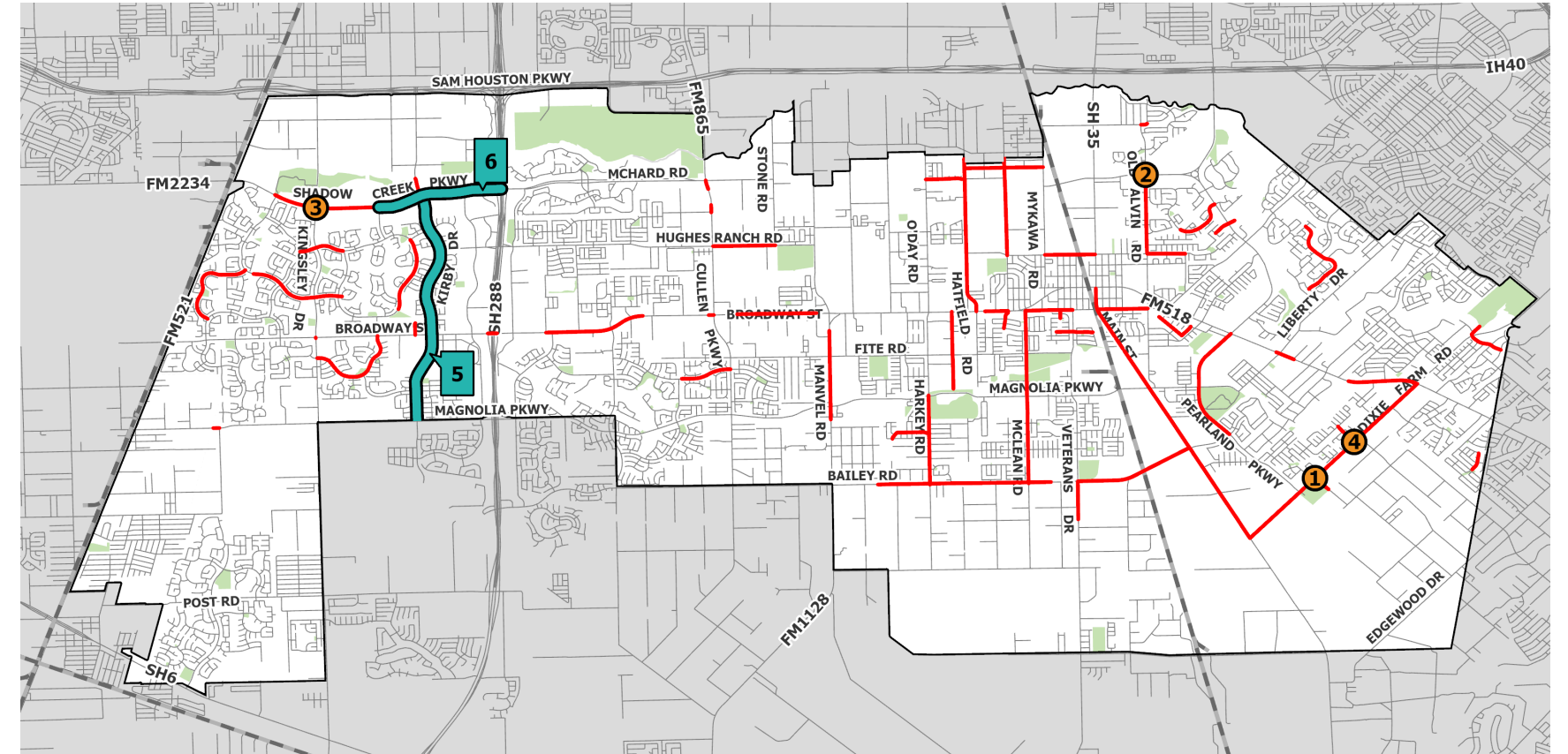
- ★ IMPROVEMENT
- 1 Add westbound right turn lane
- 2 Modify sidewalk and ADA facilities in the A northeast and B northwest corners
- 3 Relocate existing traffic signal pole in the northwest corner
- 4 Adjust signal timings
- ESTIMATED PLANNING LEVEL COST  
\$185,000



**Note:** Improvements shown are conceptual in nature and shall not be used for bidding or construction. Construction costs shown are planning level estimates only and not based on survey or engineering plans. Planning level cost estimates do not include any new right-of-way acquisition costs.

4.3 Safety Improvement Recommendations

A network screening was conducted to develop a High-Injury Network (HIN), a subset of roadways which account for a large percentage of crashes. For the Plan, the HIN is based on fatal and serious injury crashes from TxDOT's Crash Records Information System (CRIS) for 2018-2022. Crashes were weighted based on severity and normalized by traffic volumes available in TxDOT's 2023 roadway inventory to isolate locations with the highest risk based on observed crash history. High risk intersections were identified based on crashes that were reported within 50-feet of the intersection center. Resulting HIN is provided as in Figure 4.4: Safety Improvement Recommendations locations based on High Injury Network.



▲ **Figure 4.4:** Safety Improvement Recommendations locations based on High Injury Network  
Map source: TxDOT CRIS

- Priority Corridors
- Priority Intersections
- High Injury Network Roadway Segments

0 1.5 3 Miles

This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

▼ **Table 4.1:** Intersection Safety Recommendations

	Intersection	Crash History	Recommended Improvement
<b>SHORT-TERM</b>	<b>Shadow Creek Parkway at Kingsley Drive</b> <b>1</b>	<ul style="list-style-type: none"> <li>▶ Two fatal crashes where drivers disregarded traffic signals. Both happened in daylight, with one involving speeding.</li> <li>▶ Three crashes resulting in severe injuries occurred with left-turns failing to yield to oncoming traffic. One occurred at night, and two involved speeding.</li> <li>▶ Two crashes where drivers lost control during sudden maneuvers or misjudged turns. The proximity of utility poles to the road increases the risk of collisions if vehicles lose control.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Change Left-Turn Movement from Permitted-Protected to Protected on Major Approach</li> </ul> <p><b>\$ Estimated Planning Cost:</b> \$5,000, existing equipment can be used.</p>
	<b>McHard Road at Old Alvin Road</b> <b>2</b>	<ul style="list-style-type: none"> <li>▶ One fatal crash where driver disregarded a signal during cloudy daylight, causing an angle collision.</li> <li>▶ One crash resulting in severe injury occurred at night under lighted but cloudy conditions driver ignored a signal and collided with an object.</li> <li>▶ One bicyclist related collision</li> </ul>	<ul style="list-style-type: none"> <li>▶ Install Advance Warning Flashers on All Four Approaches</li> </ul> <p><b>\$ Estimated Planning Cost:</b> \$30,000</p>
	<b>Dixie Farm Road at Oakbrook Drive</b> <b>3</b>	<ul style="list-style-type: none"> <li>▶ One fatal crash where driver ran a red light while speeding in daylight, causing an angle collision.</li> <li>▶ One fatal crash where driver turned right on a red light without yielding to oncoming traffic, leading to an angle crash.</li> <li>▶ One crash resulting in severe injury driver was speeding, leading to a rear-end collision.</li> <li>▶ All crashes occurred in daylight under cloudy conditions, suggesting drivers may misjudge distances or fail to notice signals.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Install Advance Warning Signs on Dixie Farm Road</li> </ul> <p><b>\$ Estimated Planning Cost:</b> \$10,000</p>
	<b>Dixie Farm Road at Hastings Friendswood Road</b> <b>4</b>	<ul style="list-style-type: none"> <li>▶ One fatal crash occurred during daylight under clear weather conditions.</li> <li>▶ One crash resulting in severe injury with stop sign violation leading to a fixed-object crash.</li> <li>▶ One crash resulting in severe injury with unsafe lane change resulting in a rear-end crash.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Install Traffic Signalization – Currently Underway by City</li> </ul> <p><b>\$ Estimated Planning Cost:</b> \$350,000</p>

▼ **Table 4.2:** Corridor Safety Recommendations


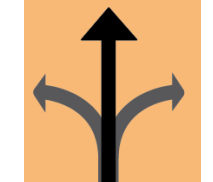

	Corridor	Crash History	Recommended Improvement
<b>SHORT-TERM</b>	<b>Kirby Road from Shadow Creek Parkway to Magnolia Parkway</b> <b>5</b>	<ul style="list-style-type: none"> <li>▶ One fatal crash where a vehicle departed its lane and hit a roadside pole.</li> <li>▶ Five crashed with severe injuries involved drivers failing to yield during left turns or while entering/exiting driveways, leading to angle collisions with oncoming traffic, or drivers swerving to avoid pedestrians and hitting trees/poles.</li> <li>▶ Two bicyclist related collision</li> <li>▶ Two fixed object collisions</li> </ul>	<ul style="list-style-type: none"> <li>▶ Install Warning/Guide Signs on Minor Approach</li> <li>▶ Keep Vegetation Trimmed</li> <li>▶ Install Pavement Markings (Shared Bike Lane Markings)</li> </ul> <p><b>\$ Estimated Planning Cost:</b> \$90,000</p>
	<b>FM 2234 from SH 288 to Reflection Bay Drive</b> <b>6</b>	<ul style="list-style-type: none"> <li>▶ One fatal crash involved a pedestrian who failed to yield the right of way to a vehicle; struck in dark, unlighted conditions.</li> <li>▶ Seven crashes with severe injuries involved drivers failing to yield during left turns or while entering/exiting driveways, leading to angle collisions with oncoming traffic, or drivers swerving into poles.</li> <li>▶ Two pedestrian related collisions</li> </ul>	<ul style="list-style-type: none"> <li>▶ Improve/Install missing sidewalks links along FM 2234</li> <li>▶ Install/Upgrade pedestrian signals to Accessible Pedestrian Signal (APS) units at existing signals along FM 2234 from SH 288-Reflection Bay Dr</li> </ul> <p><b>\$ Estimated Planning Cost:</b> \$1,300,000</p>

Priority locations for safety improvements were identified based on HIN results, engineering judgement, and stakeholder priorities with a focus on identifying locations that would have the greatest safety impact on a large number of road users. Location specific recommendations are detailed in above table. In addition, the following safety countermeasures should be considered at all intersections:

- ▶ Intersection safety lighting
- ▶ Revitalization of pavement markings including crosswalks
- ▶ Retroreflective backplates at signalized intersections
- ▶ Review of clearance intervals at signalized intersections

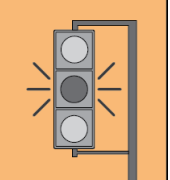
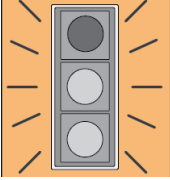

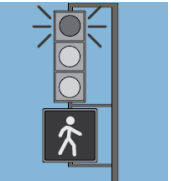
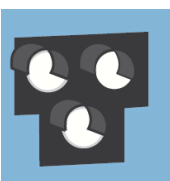

A Safety Countermeasure Toolbox was developed, featuring a curated selection of Proven Safety Countermeasures<sup>1</sup> from the Federal Highway Administration (FHWA) effective in reducing roadway fatalities and serious injuries. Each countermeasure includes a Crash Reduction Factor (CRF) where available, indicating the expected percentage decrease in crashes if implemented, based on data from the FHWA Crash Modification Clearinghouse<sup>2</sup>.

A combination of these countermeasures were considered while developing recommendations for improvements at high crash locations. This toolbox may also be used by the City to identify improvements at other locations.

<h3>Appropriate Speed Limits</h3>  <p>Setting appropriate speed limits is one of the most effective strategies for reducing fatalities and serious injuries.</p> <p>Speed limits should consider a range of factors, such as land use, traffic, road geometry, and pedestrian and cyclist activity. If a pedestrian is struck by a vehicle, their chance of serious injury or death drops drastically when vehicles are traveling at lower speeds.</p> <p>One way of reducing speeds is by establishing reduced speed zones in areas where there is a high amount of pedestrian activity. There are other key activities and factors to consider such as road design, visibility, and land use when designating areas for reduced speed zones.</p> <p><b>Speed Management</b></p>	<h3>Dedicated Turn Lanes at Intersections</h3>  <p>Dedicated turn lanes can provide separation between turning traffic that is slowing or stopped and through traffic. Left and right turn lanes create a space that holds vehicles waiting to turn and is a space for deceleration prior to turning. In addition, turn lanes can add operational improvements that reduce traffic delays.</p> <p>Turn lanes should be considered for intersection locations where there is a significant volume of turning vehicles, or where there is a history of turn-related crashes.</p> <p><b>Crash Reduction Factors</b>  <b>Installation of Left Turn lane: 25%</b>  <b>Installation of Right turn lane: 35%</b></p> <p>TxDOT HSIP Work Codes: 509, 519, 520, 521, 522, 526</p> <p><b>Intersections</b></p>	<h3>Corridor Access Management</h3>  <p>Corridor access management involves controlling the amount of entry and exit points along a roadway, including driveways and other roadway. This strategy reduces the number of conflict points between roadway users of all types. Examples include: raised medians, reducing driveway density, adjusting intersection spacing, providing turn lanes, and utilizing roundabouts.</p> <p>Corridor access management strategies can be implemented alone or in combination with one another. Effective strategies take into account the flow of traffic, locations of conflict points, and land use while maintaining mobility for all modes of transportation.</p> <p>TxDOT HSIP Work Codes: 201, 203, 509, 516, 519, 518, 519, 520, 521, 522, 526, 547</p> <p><b>Intersections</b></p>
--	---	--


<sup>1</sup><https://highways.dot.gov/safety/proven-safety-countermeasures>

<sup>2</sup><https://cmfclearinghouse.fhwa.dot.gov/index.php>

<h3>Yellow Change Intervals</h3>  <p>A yellow change interval is the length of time that a signalized intersection displays a yellow signal. An appropriate interval reduces crashes by decreasing red-light runners, which is one of the leading causes of severe crashes. The appropriate time can be influenced by road geometry and speed limits. Signal timings should be regularly evaluated and adjusted, ideally through automated measures (ATSPMs).</p> <p><b>Crash Reduction Factor: 27%</b> TxDOT HSIP Work Code: 108, 138</p> <p><b>Intersections</b></p>	<h3>Backplates with Retroreflective Borders</h3>  <p>Adding backplates with retroreflective borders to traffic signals can improve the visibility of traffic signals to drivers in both daytime and nighttime conditions. Backplates can also alert drivers of an intersection if a power outage causes a signal to go dark. This is a low cost treatment that involves installing reflective tape or replacing backplates. In addition, retroreflective borders can be set as the standard for intersection signals.</p> <p><b>Crash Reduction Factor: 24%</b> TxDOT HSIP Work Code: 108</p> <p><b>Intersections</b></p>	<h3>Crosswalk Visibility Enhancements</h3>  <p>The main crosswalk enhancements are high visibility crosswalk patterns, additional lighting, and enhanced signage and pavement markings. These make pedestrians visible to drivers and help show people where to cross the road. Enhancements are most appropriate for crossings of multi-lane roadways with greater than 10,000 Average Annual Daily Traffic (AADT).</p> <p><b>Crash Reduction Factor: 44%</b> TxDOT HSIP Work Codes: 108, 131, 304, 403</p> <p><b>Pedestrians/Cyclists</b></p>
<h3>Leading Pedestrian Interval</h3>  <p>Leading pedestrian intervals allow pedestrians to enter an intersection 3-7 seconds before vehicles are given a green light. This gives pedestrians the opportunity to establish their presence in the intersection, gives individuals more time to cross the road, and increases the likelihood that vehicles yield to pedestrians.</p> <p><b>Crash Reduction Factor: 16%</b> TxDOT HSIP Work Code: 109</p> <p><b>Pedestrians/Cyclists</b></p>	<h3>Pedestrian Hybrid Beacons (PHB)</h3>  <p>Pedestrian hybrid beacons are traffic control devices used at midblock crossings and uncontrolled intersections to help pedestrians safely cross higher-speed roads. Pedestrians activate the PHB that signals for drivers to slow, come to a stop while people are crossing, and then proceed.</p> <p><b>Crash Reduction Factor: 15%</b> TxDOT HSIP Work Code: 143</p> <p><b>Pedestrians/Cyclists</b></p>	<h3>Rectangular Rapid Flashing Beacons (RRFB)</h3>  <p>RRFBs are LED lights used on pedestrian warning signs to alert drivers of pedestrians entering a crosswalk. RRFBs can greatly increase the yielding rate of vehicles, and can be activated manually or by remote pedestrian detection. RRFBs are beneficial to include with trail and school crossing warning signs.</p> <p>TxDOT HSIP Work Code: 144</p> <p><b>Pedestrians/Cyclists</b></p>

Sources: <https://highways.dot.gov/safety/proven-safety-countermeasures>, <https://cmfclearinghouse.fhwa.dot.gov/index.php>

### Walkways




Walkways are designated spaces for pedestrians to travel along roadways. These include sidewalks, shared use paths, or walkable roadway shoulders. Walkway types depend on roadway context (rural, suburban, or urban) and characteristics. Walkways should be designed with people of all ages and abilities in mind so that people with mobility aids and families with strollers can utilize them.

**Crash Reduction Factor: 65%**  
TxDOT HSIP Work Codes: 407, 408

Pedestrians/Cyclists

### Lighting



At night, traffic is normally much lighter, allowing drivers to travel at faster speeds. Providing adequate lighting at intersections, crosswalks, and along roadways can help drivers identify and avoid obstacles in the road. Lighting can be designed with minimal excessive light impacting nearby properties. In addition, lighting can be designed in a way that reduces fixed-object crash severity.

**Crash Reduction Factor: 49%**  
TxDOT HSIP Work Code: 304

Integrative Approaches


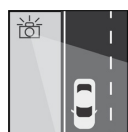


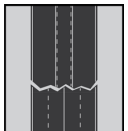
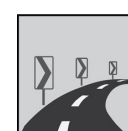
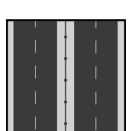


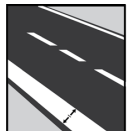


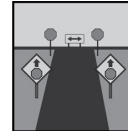
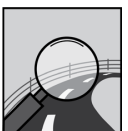

### Local Road Safety Plans



A local road safety plan (LRSP) provides a structure for identifying, analyzing, and prioritizing roadway safety improvements on local roads. Local road safety plans can be tailored to community needs, but generally involve identifying stakeholders, analyzing crash data, choosing countermeasures, and implementing the solutions. Data driven safety plans help to select strategies that have the highest impact in reducing fatal and severe crashes.

Integrative Approaches

Additional Proven Safety Countermeasures are listed below.

<h4>Speed Management</h4>  <p>Variable Speed Limits</p>  <p>Speed Cameras</p>	<h4>Pedestrian /Cyclist</h4>  <p>Bike Lanes</p>  <p>Pedestrian Refuge Islands</p>  <p>Road Diets</p>	<h4>Roadway Departure</h4>  <p>Enhanced Curve Delineation</p>  <p>Median Barriers</p>  <p>Roadside Improvements at Curves</p>  <p>SafetyEdge<sup>SM</sup></p>  <p>Wider Edge Lines</p>	<h4>Intersections</h4>  <p>Reduced Left Turn Conflict</p>  <p>Roundabouts</p>  <p>Multiple Low Cost Measures</p>	<h4>Integrative Approaches</h4>  <p>Road Safety Audit</p>  <p>Friction Management</p>
--	---	---	---	--

Sources: <https://highways.dot.gov/safety/proven-safety-countermeasures>, <https://cmfclearinghouse.fhwa.dot.gov/index.php>

## 4.4 Technology Recommendations

### TECHNOLOGY

The vision of the City's Mobility Plan revolves around creating a transportation network that is safe, efficient, and accessible for all users. A key component of achieving this vision is the integration of modern technology into our City's transportation systems. From enhancing pedestrian safety with Leading Pedestrian Intervals to preparing for the future with Autonomous & Connected Vehicle frameworks, these technology recommendations offer practical solutions to modern transportation challenges. By embracing these innovations, the City can build a transportation network that supports the growth in the region.

### EQUIPMENT

The City has installed several of these devices and technology at existing traffic signals. The benefits and efficiency at a citywide level will be realized by systematically deploying the equipment at all traffic signal locations. It is also critical to plan for a proactive preventative maintenance schedule for the equipment to ensure optimal performance.



**Left-turn flashing yellow arrow displays:** Provide an opportunity for vehicles to make left-turns at signalized intersections, in a safer and more efficient manner



**Radar vehicle detection:** This technology improves consistency in vehicle detection at intersections and improves overall signal efficiency



**Battery back-up units:** Ensuring that traffic signals remain operational during power outages, these units are crucial for maintaining traffic safety and minimizing disruptions



**Signal communication (fiber or wireless):** Upgrading to fiber or wireless communication systems will enhance the reliability and responsiveness of traffic signals, allowing for better coordination and traffic flow



**CCTV cameras:** Installing cameras at intersections will help monitor traffic conditions and improve incident response times



**Audible pedestrian signal (APS) units:** These units assist visually impaired pedestrians by providing audible cues that indicate when it is safe to cross the street



**Emergency preemption equipment:** This equipment allows emergency vehicles to control traffic signals, ensuring they can pass through intersections quickly and safely

A combination of below recommendations at specific locations and at a citywide level will allow the City of Pearland to leverage technology to increase traffic operations efficiency and safety.

#### LEADING PEDESTRIAN INTERVAL (LPI)

One of the most effective ways to enhance pedestrian safety at intersections is through the implementation of Leading Pedestrian Intervals (LPI). LPI gives pedestrians a head start by providing them with a few seconds of a walk signal before vehicles get a green light. This simple timing change reduces the likelihood of pedestrian-vehicle conflicts by making pedestrians more visible, making crossings safer for everyone.

#### STAFF TRAFFIC MANAGEMENT CENTER

A well-staffed Traffic Management Center (TMC) plays a vital role in overseeing and managing the entire transportation system. The TMC serves as the nerve center where trained professionals monitor traffic conditions, respond to incidents, and make real-time adjustments to traffic signals. This proactive approach ensures a quicker response to any traffic-related issues, improving overall traffic flow and safety. To more fully recognize the benefit of this facility additional staff dedicated to the TMC are recommended.

#### UPDATED CENTRAL CONTROL SYSTEM

A modernized central control system is essential for efficient traffic management. Upgrading the central control system allows for real-time monitoring and adjustments of traffic signals, ensuring smoother traffic flow and reducing delays. This system can integrate various data sources, such as traffic cameras and sensors, to make informed decisions that benefit all road users. It is recommended to update to a central control system that is not tied to a specific type of traffic signal controller to allow for Citywide use.

#### ADVANCED TRAFFIC SIGNAL PERFORMANCE MEASURES (ATSPMs)

Advanced Traffic Signal Performance Measures (ATSPMs) provide detailed insights into the performance of traffic signals. By analyzing data on signal timing, traffic volumes, and delays, transportation agencies can identify inefficiencies and implement targeted improvements. ATSPMs enable data-driven decision-making, leading to more responsive and adaptive traffic signal systems.

#### COORDINATED SIGNAL TIMING PLANS

Coordinated signal timing plans are designed to optimize traffic flow along major corridors. By synchronizing traffic lights, vehicles can move through multiple intersections without unnecessary stops, reducing travel time and fuel consumption. This coordination helps alleviate congestion, especially during peak hours, and creates a more efficient transportation network. It is recommended to increase the number of coordinated corridors across the City.

#### ARTERIAL DYNAMIC MESSAGE SIGNS

Dynamic Message Signs (DMS) are electronic signs placed along major roadways to provide real-time information to drivers. These signs can display messages about traffic conditions, road closures, and detours, helping drivers make informed decisions about their routes. By keeping drivers informed, DMS contribute to smoother traffic flow and enhanced safety.



#### EMERGING TRAFFIC TECHNOLOGY

The field of traffic management is constantly evolving, with new technologies emerging to address various challenges. Embracing these emerging technologies can lead to significant improvements in traffic management and safety. Below are some programmatic initiatives that the City may undertake to develop a specific plan tailored to Pearland's needs.

#### ITS MASTER PLAN FOR THE CITY

An Intelligent Transportation System (ITS) Master Plan outlines a comprehensive strategy for integrating advanced technologies into the city's transportation infrastructure. The plan includes goals, objectives, and a roadmap for implementing various ITS solutions, such as traffic management systems, communication networks, and data analytics platforms. A well-crafted ITS Master Plan ensures a cohesive and coordinated approach to modernizing the transportation system.

#### AUTONOMOUS & CONNECTED VEHICLE (A/CV) FRAMEWORK

Autonomous and connected vehicles (A/CVs) represent the future of transportation. Developing a framework for integrating A/CVs into the existing transportation system is crucial for maximizing their benefits. This framework may include guidelines for vehicle communication and infrastructure requirements. By preparing for the widespread adoption of A/CVs, we can enhance road safety, reduce congestion, and improve overall mobility.

#### REGIONAL TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS (TSMO)

Regional Transportation Systems Management & Operations (TSMO) focuses on improving the efficiency and reliability of the transportation system across an entire region. TSMO strategies include coordinated traffic signal systems, incident management programs, and traveler information services. By taking a regional approach, TSMO ensures that transportation improvements are consistent and effective, benefiting all communities within the region.

## 4.5 Policy Recommendations

### ADA TRANSITION PLAN (SHORT-TERM)

The Americans with Disabilities Act (ADA) is a Civil Rights Law wherein the Title II applies to all government entities with more than 50 employees, and requires the agencies to ensure that their programs, services, and activities are accessible to individuals with disabilities. Title II also requires the agencies to:

- ▶ Complete a self-evaluation
- ▶ Designate a person to oversee Title II compliance
- ▶ Develop an ADA complaint procedure
- ▶ Develop an ADA Transition Plan

An ADA Transition Plan is a comprehensive document that outlines the steps the City will take to achieve full compliance with ADA standards. This plan includes a thorough assessment of current infrastructure, identification of barriers to accessibility, and a detailed strategy for removing these barriers within a specified timeframe.

The ADA Transition Plan aligns closely with the overall goals of the City’s Mobility Plan. One of the primary objectives of the Mobility Plan is to create a safe, efficient, and inclusive transportation network that meets the needs of all users. By removing accessibility barriers and upgrading infrastructure to ADA standards, the City can ensure that its transportation systems are not only functional but also equitable.

### POLICY

The Engineering Design Criteria Manual and Unified Development Code were reviewed to identify changes to support Pearland’s mobility goals. In addition to specific actions related to each document, it is recommended to establish additional coordination between the City and other agencies for subdivision pl–ats located in Pearland but fronting TxDOT or County owned roads. Specific actions and relevant policy sections are also detailed in Table 4.3.

### ENGINEERING DESIGN CRITERIA MANUAL

- Review and consider an extension of required timeframe for construction notices
- Incorporate language pertaining to S.B. 2038 related to City’s Extraterritorial Jurisdiction
- Clarify responsibility for approving new street construction with roadside ditches
- Clarify responsible party for approving deviations from design criteria
- Address differences in roadway classifications between the 2014 Thoroughfare Plan and Section 6.3

### SUBDIVISION REGULATIONS, UNIFIED DEVELOPMENT CODE

- Clarify existing language related to vacant parcels
- Clarify responsible party for coordination related to sidewalks
- Specify times related to TIA requirements
- Consider revising Roadway Participation Policies to be based on percentage

▼ Table 4.3 – Policy Recommendations

Regulation Document	Location in Document	Item	Suggested Action	Recommendations
<b>Engineering Design Criteria Manual</b>	Sections 1.8.2, 1.8.3, 1.8.4	Construction Procedure Requirements	Revise	RE-examine required time for notices, consider increasing notice timeframe to accommodate staff availability
	3.5	Extra Territorial Jurisdiction	Revise	Include language pertaining to S.B. 2038, which went into effect on September 1, 2023, generally authorizes residents of a city’s extraterritorial jurisdiction (“ETJ”) to petition for removal from the city’s ETJ under certain circumstances. Chapter 6 of Design Manual was updated last on October, 2020
	6.1.2	Roadway Design Criteria - Roadside Ditches	Revise	No new streets with roadside ditch is allowed. The standard detail for Asphalt cross-section showing a roadside ditch shall be used for rehabilitation projects only
	6.1.5	Deviations from these Design Criteria	Revise	To allow consistent implementation of design criteria, specify responsible City of Pearland Department(s) and/or designated staff to permit deviations from design criteria
<b>Engineering Design Criteria Manual, Pearland Thoroughfare Plan (October 2020, with amendments in chapter 2, 5, 7, and 9 in December 2023)</b>	6.3. and 6.4 (Design Manual)	Thoroughfare, Roadway Classifications	Revise	Provide consistent roadway classification cross-sections between the City’s Engineering Design Criteria Manual and provisions in the Unified Development Code
<b>None</b>	-	Coordination between Pearland and Other Agencies	Propose	Develop a coordinated review process with TxDOT and neighboring jurisdictions for future development plats with property boundaries that front TxDOT and/or other jurisdiction owned roadway.
<b>Subdivision Regulations, Unified Development Code (UDC)</b>	Division 11	Sidewalk Requirements	Revise	2021 Multi-modal plan first noted this item. Update language, existing language for existing vacant parcels is misleading
	Division 11	Sidewalk Requirements	Revise	Update existing UDC to clarify responsible party for coordinating both sides of street for sidewalks
	Varies	TIA Requirement	Revise	Specify all times, not to be determined by City Engineer
	Section 3.2.2.6	Roadway Participation Policies	Revise	Consider Revising based on percentage, not 22’ of pavement standard

## 4.6 Long-Term Roadway Project Recommendations

Table 4.4 shows the list of recommended roadway projects to be implemented in the long-term (11+ years). This list of projects supports the findings of the 2045 H-GAC Travel Demand Modeling scenarios, and aligns with the City's future mobility needs as reflected in Chapter 5: Thoroughfare Plan Update.

▼ **Table 4.4** – Long Term Project Recommendation

	Major Thoroughfare	Recommended Improvement
LONG-TERM	<b>1. Reid Blvd</b>	▶ Extend Reid Boulevard from McHard Road to Beltway 8. Match the 4-lane boulevard cross-section of Reid Blvd (McHard to FM 518) to provide connectivity to Beltway 8
	<b>2. Dixie Farm Road</b>	▶ Extend Dixie Farm Road (four lane divided) from SH 35 to Veterans Dr
	Secondary Thoroughfare	Recommended Improvement
	<b>3. Harkey Road</b>	▶ Widen existing 2-lane roadway from CR 100 to FM 518 to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path
	<b>4. O'Day Road</b>	▶ Widen existing 2-lane asphalt roadway from FM 518 to McHard Road to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
	<b>5. Veterans Road</b>	▶ Widen existing 2-lane asphalt roadway from Bailey Avenue to Walnut Street to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
	<b>6. Mykawa Road</b>	▶ Widen existing 2-lane asphalt roadway from FM 518 to Beltway 8 to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
	<b>7. Cullen Pkwy</b>	▶ Widen existing 2-lane asphalt roadway from Magnolia Pkwy to Bailey Road to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
	<b>8. Kingsley Blvd</b>	▶ Widen existing 2-lane roadway from Clear Creek Pkwy to Beltway 8 to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path

	Major Collector	Recommended Improvement
LONG-TERM	<b>9. Roy Road</b>	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from McHard Road to FM 518
	<b>10. Garden Road</b>	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from McHard Road to FM 518
	<b>11. Hatfield Road</b>	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from McHard Road to FM 518
	<b>12. Old Alvin Road</b>	▶ Widen existing 2-lane roadway from McHard Road to Knapp Road to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path on one side of the road
	<b>13. Fite Road</b>	▶ Widen existing 2-lane roadway from McLean Road to Cullen Pkwy to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path on one side of the road
	<b>14. Miller Ranch Road</b>	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from Hughes Ranch Road to FM 518.
	<b>15. Hughes Ranch Road</b>	▶ Widen existing 2-lane roadway from Stone Road to Cullen Pkwy to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path on one side of the road



## THOROUGHFARE PLAN UPDATE

### 5.1 Existing Thoroughfare Plan

A well-planned transportation network is essential for supporting growth, mobility, and economic development within a city. The Thoroughfare Plan serves as a long-term blueprint for the city's roadway network, guiding the development of major streets and ensuring efficient movement of people and goods. A Thoroughfare Plan is not a list of projects, it establishes the functional hierarchy of roadways—such as thoroughfares, collectors, and local streets—and provides a framework for future roadway improvements, extensions, and new connections. The City maintains a Thoroughfare Plan to promote orderly development, coordinate transportation investments, and preserve right-of-way for future roadway needs.

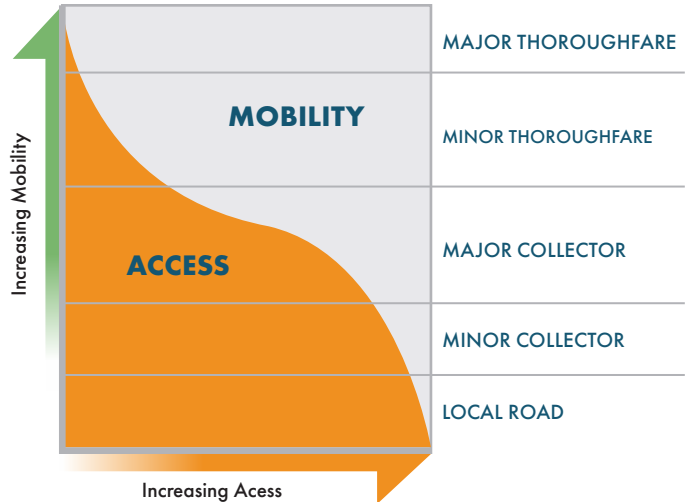
#### ✓ A THOROUGHFARE PLAN:

- ▶ Is a long range (50+ years) planning tool
- ▶ Preserves right-of-way for future transportation infrastructure
- ▶ Identifies approximate alignment, classification of future roadways, and typical cross-sections
- ▶ Coordinates with neighboring counties and cities
- ▶ Gathers input from the general public and community stakeholders

#### ✗ A THOROUGHFARE PLAN DOES NOT:

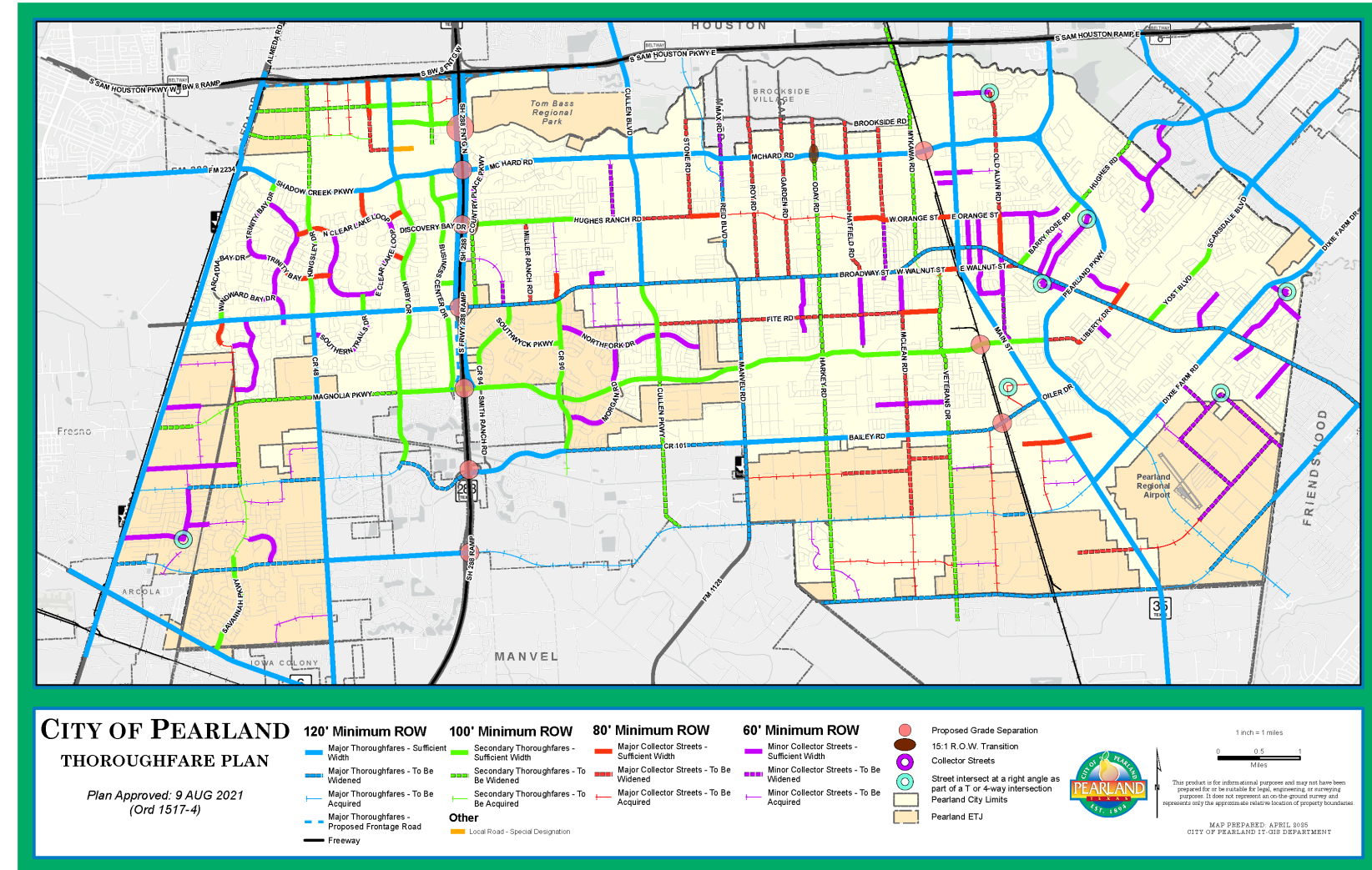
- ▶ Change ownership of land use
- ▶ Require agencies/local government to build any roadway project
- ▶ Prioritize roadway projects
- ▶ Include survey, design, cost estimate or schedule of any roadway project
- ▶ Develop a plan for funding any specific roadway project

Roadway classifications balance mobility—the ability to move traffic efficiently—and access—the ability to reach adjacent properties. Major thoroughfares are high-capacity corridors designed to move traffic efficiently across a region, with limited direct property access to minimize delays. They typically include many travel lanes and require more right-of-way. In contrast, local streets prioritize access, providing direct connections to homes and businesses with lower speeds and minimal through traffic. As roads transition between these classifications, they gradually balance the trade-off between moving traffic efficiently and providing access to adjacent properties.

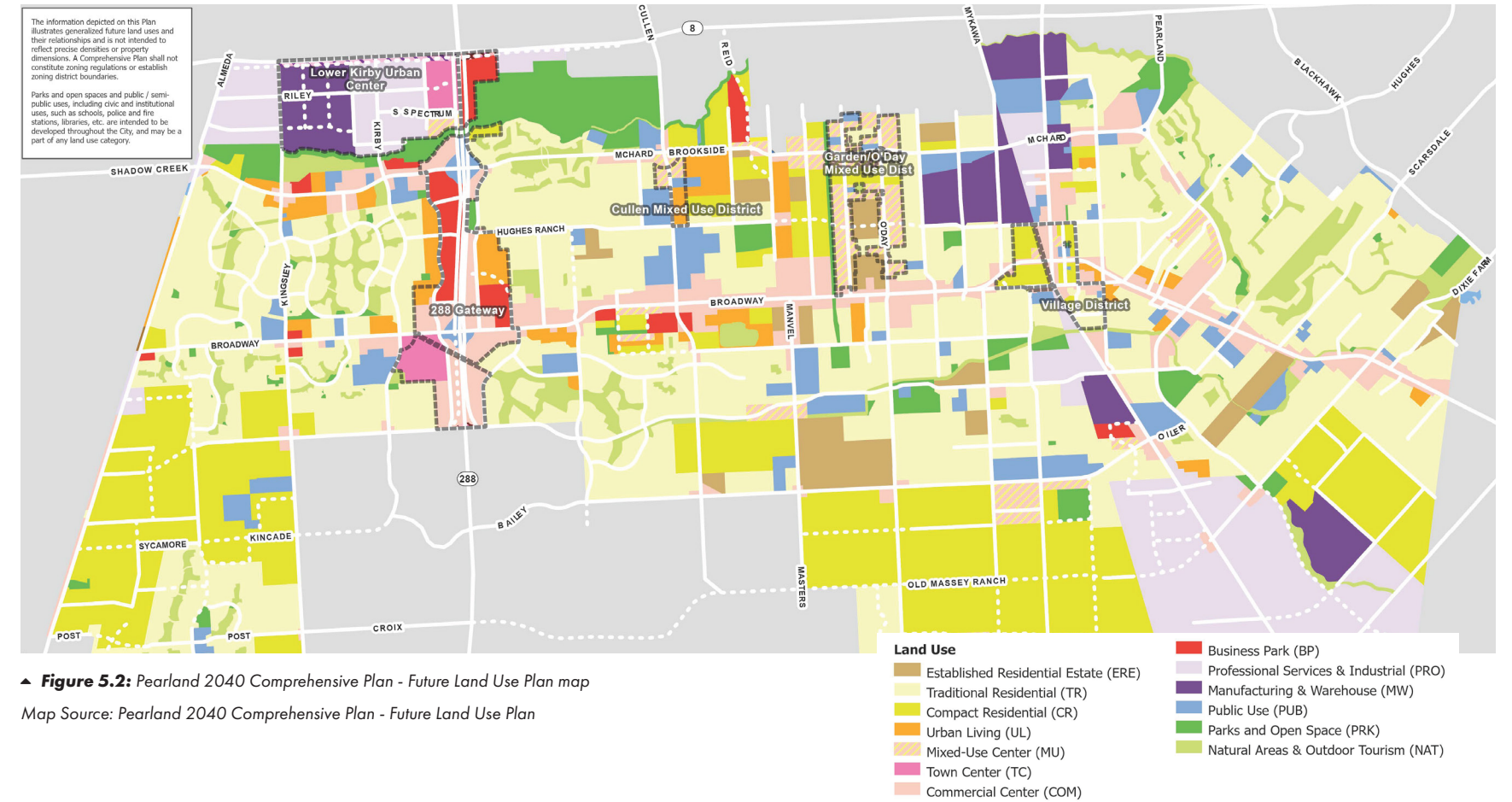


The current City of Pearland Thoroughfare Plan was approved in August 2021. As the City continues to grow, it is essential to re-evaluate and modify the Plan based on changes to land uses and traffic conditions. Changes to the current Thoroughfare Plan were evaluated using:

- ▶ Houston-Galveston Area Council (H-GAC) travel demand model results for future conditions, referencing the 2040 Pearland Comprehensive Plan's Future Land Use Map.
- ▶ Geometric constraints for roadway alignments shown on existing Thoroughfare Plan



▲ **Figure 5.1:** Existing Thoroughfare Plan Map, adopted by City of Pearland City Council on August 9th, 2021. (Ord 1517-4)



▲ **Figure 5.2:** Pearland 2040 Comprehensive Plan - Future Land Use Plan map  
Map Source: Pearland 2040 Comprehensive Plan - Future Land Use Plan

### LAND USE

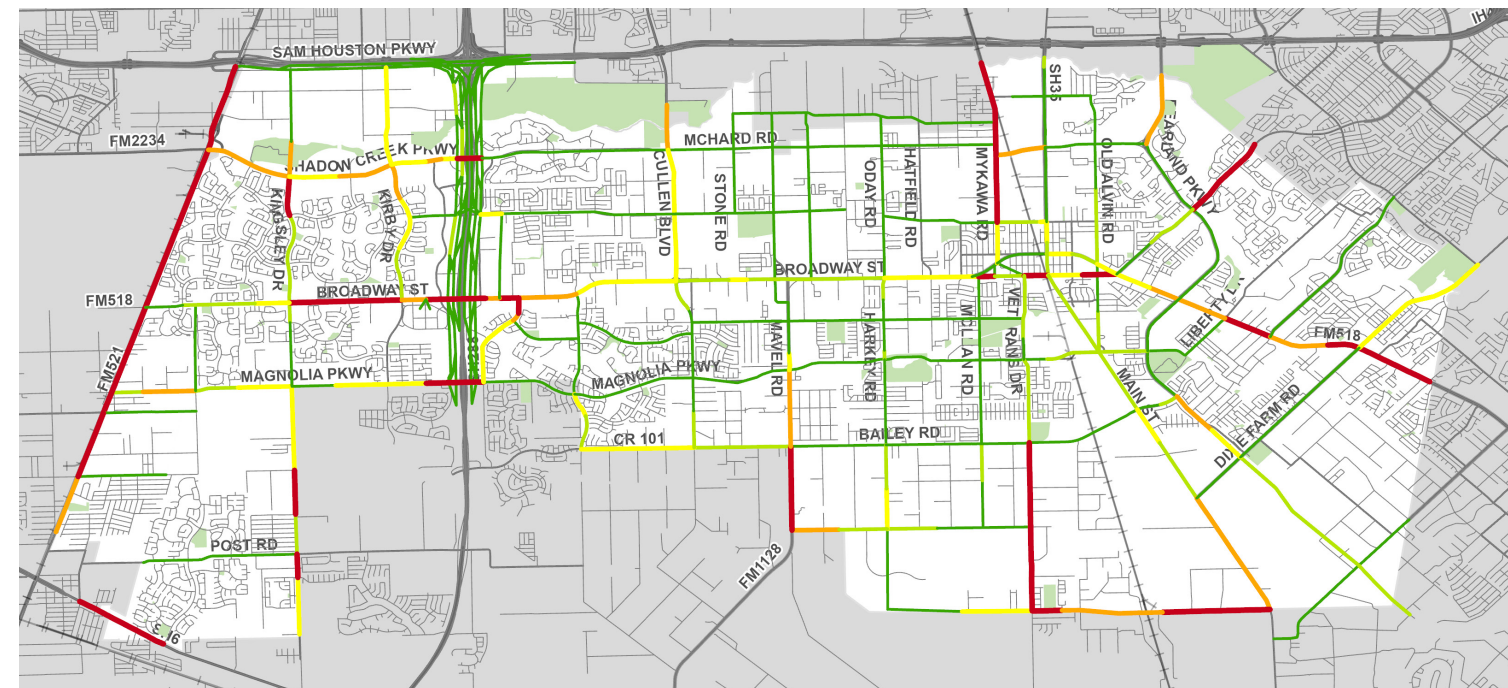
According to the Pearland 2040 Comprehensive Plan, 76% of the land in Pearland's city limits is currently built out and developed. As a traditional suburban community, Pearland is largely zoned for single-family residential at varying densities. Commercial and multifamily development occurs largely around major roadways like Main St., Broadway St., McHard Rd., and SH 288. Broadway St. is largely a commercial corridor. Some industrial development exists along Mykawa Rd. and S Main St. Main St. south of Bailey Rd. is largely industrial. At Broadway and Main St., lots are smaller and zoned for Old Townsite.

The Pearland 2040 Comprehensive Plan included analysis for six catalyst sites, Lower Kirby, Hughes Ranch/Stone, Greater Old Town, Old Massey Ranch, SH 35/Bailey, and Broadway/Cullen. These areas in town have developable land and will likely be a future focus of development. Each of these areas emphasize having compact design and a mix of uses in a large-scale context. At the smaller scale, the Plan calls for sustainable and infill development, which could include increasing density in already developed areas or adding in accessory dwelling units (ADUs) to single-family homes.

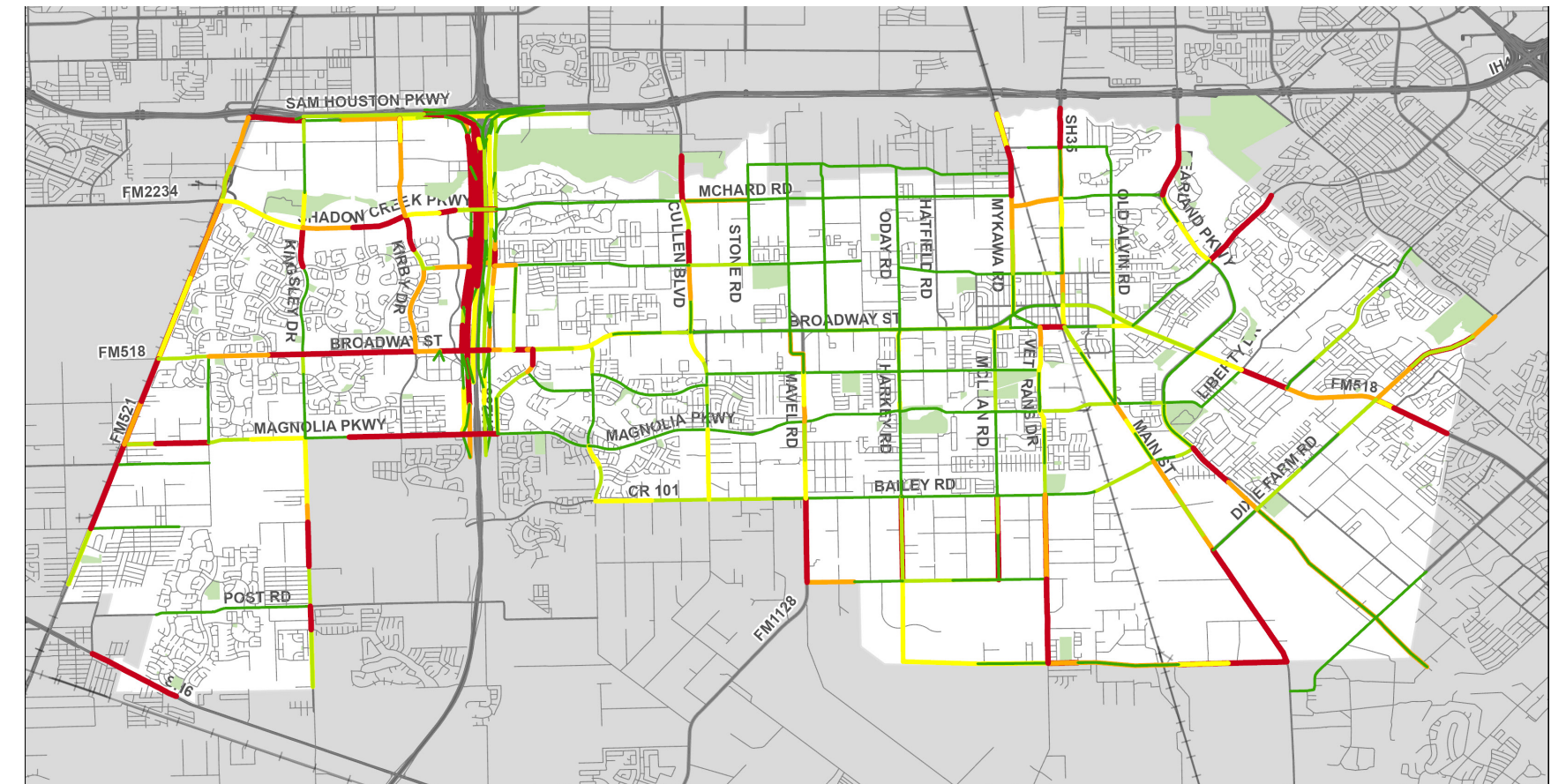
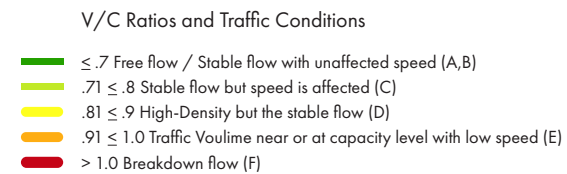
## 5.2 Travel Demand Model

Travel Demand Model is an important tool to forecast and analyze travel patterns within the region and involves predicting how people and goods will move across the transportation network, including roads, highways, and public transit. H-GAC's regional model for 2045 was used to analyze different scenarios for roadway sections, connections, and future land-use plans. To understand how future changes in land use, demographics, and socio-economic factors will impact Pearland's roads, an analysis was completed comparing volume-to-capacity (V/C) ratios between different scenarios. Volume-to-capacity (V/C) ratio maps are used to assess the performance of roadways by comparing the volume of traffic (number of vehicles) to the capacity of the road (how many vehicles it can handle). A high V/C ratio indicates that a road is operating near or over its capacity, leading to congestion. The congestion levels on the maps were also shown via Level of Service (LOS) which generally provides an indication of how smoothly traffic is flowing with LOS A indicating free-flowing traffic with minimal restrictions; and LOS F indicating congestion.

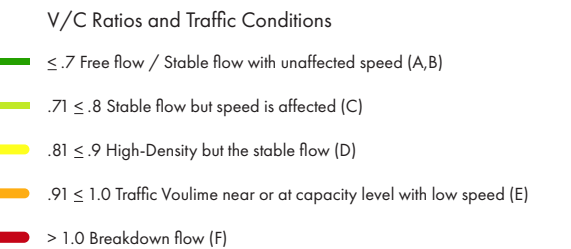
Base Scenario - The study reviewed 2045 traffic flow conditions in City of Pearland using H-GAC roadway network and land-uses. Map shows conditions based on projected daily traffic counts on the roadways.



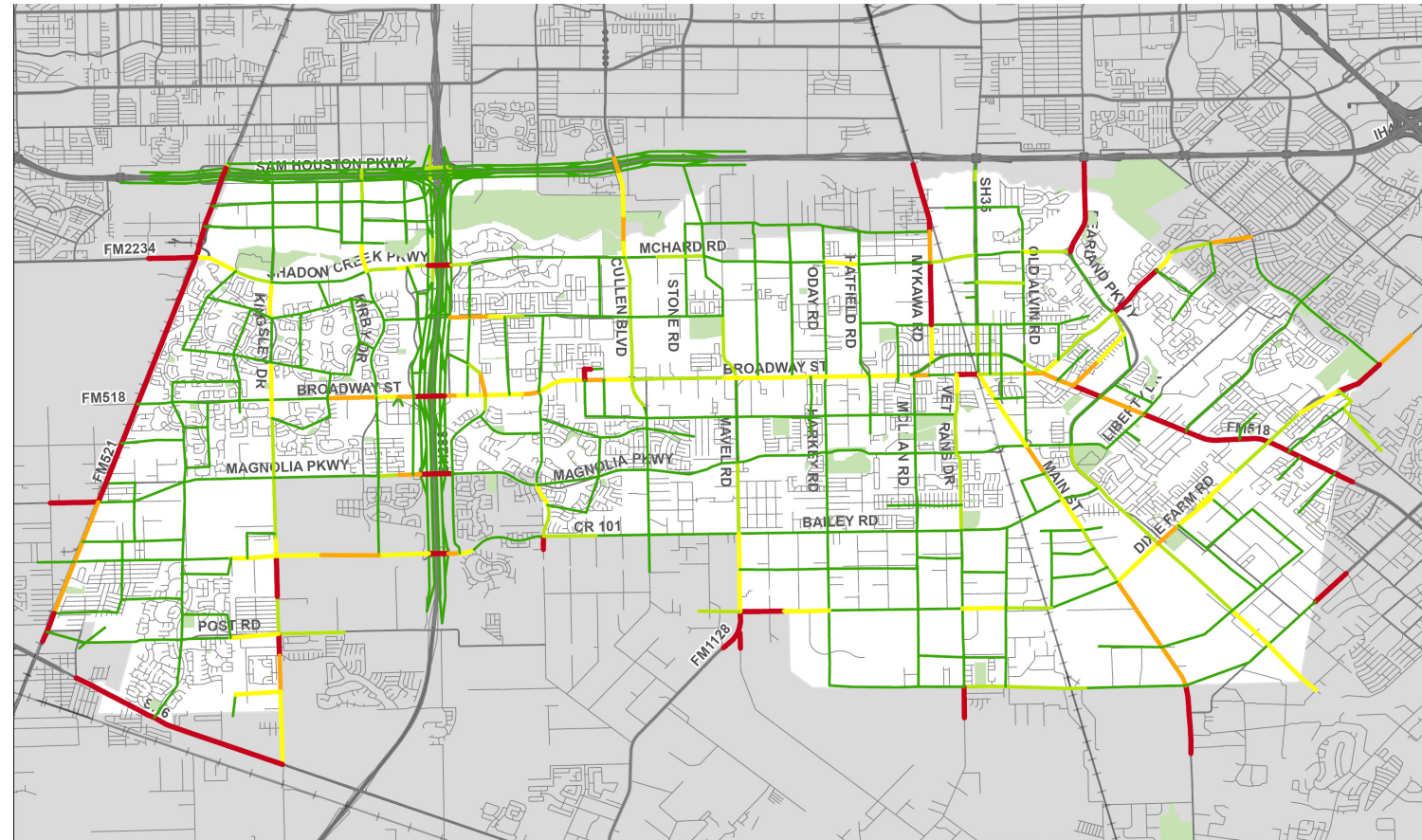
▲ **Figure 5.3:** 2045 'Daily Volumes' - Travel Demand Model Results  
Map Source: Houston-Galveston Area Council



▲ **Figure 5.4:** 2045 'PM Peak' Volumes - Travel Demand Model Results



Proposed Scenario: The travel demand model was updated to include City's Thoroughfare network and also update the land-uses to match the Pearland Comprehensive Plan's Future Land Use Plan (FLUP). The map shows future traffic conditions in Pearland based on project 'daily' traffic volumes.



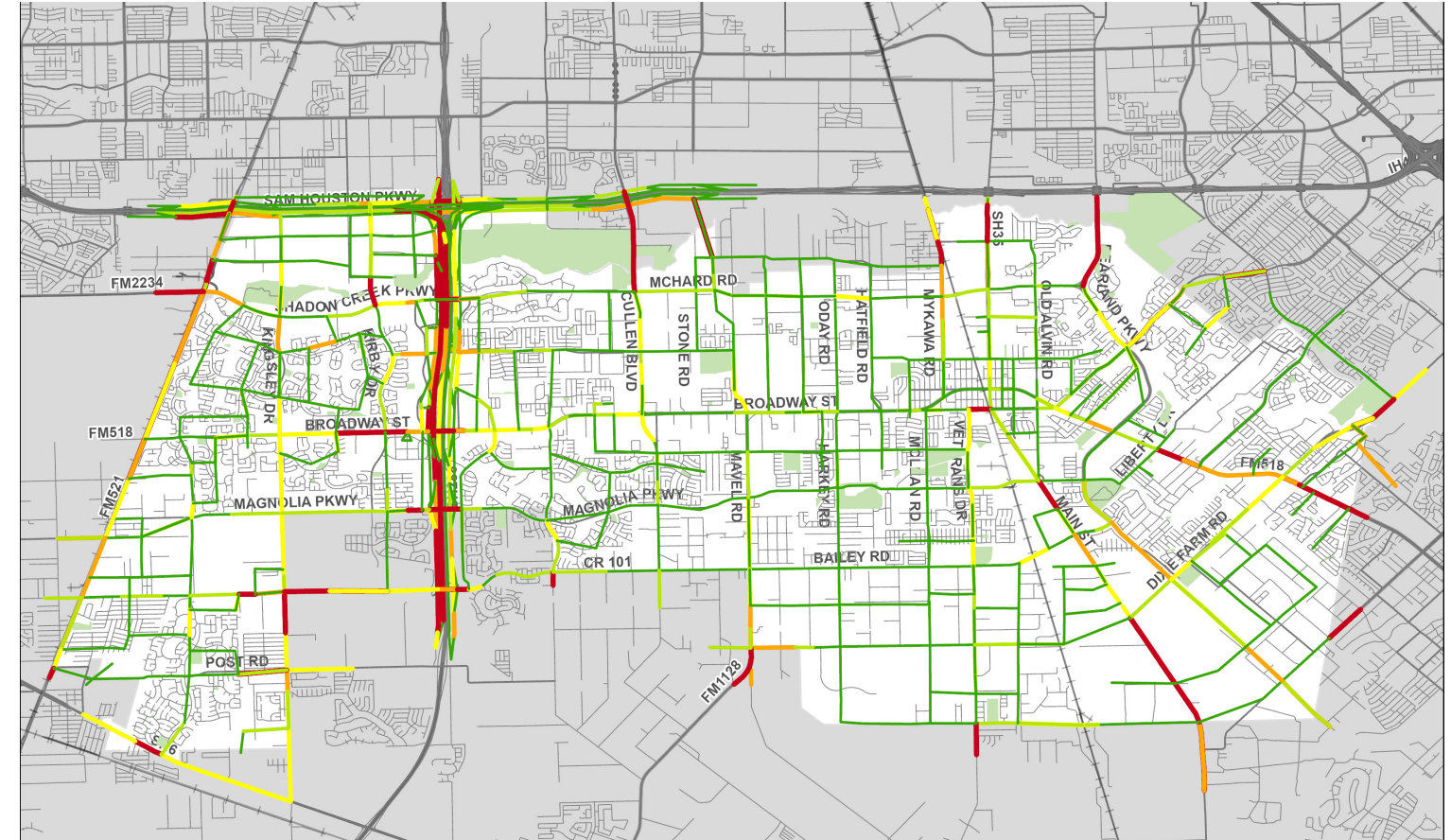
▲ **Figure 5.5:** 2045 'Daily Volumes' with FLUP and Thoroughfare Changes - Travel Demand Model Results

Map Source: Houston-Galveston Area Council

V/C Ratios and Traffic Conditions

- ≤ .7 Free flow / Stable flow with unaffected speed (A,B)
- .71 ≤ .8 Stable flow but speed is affected (C)
- .81 ≤ .9 High-Density but the stable flow (D)
- .91 ≤ 1.0 Traffic Volume near or at capacity level with low speed (E)
- > 1.0 Breakdown flow (F)

Proposed Scenario: The travel demand model was updated to include City's Thoroughfare network and also update the land-uses to match the Pearland Comprehensive Plan's Future Land Use Plan (FLUP). The map shows future traffic conditions in Pearland based on projected 'PM peak' traffic volumes.



▲ **Figure 5.6:** 2045 'PM Peak' with FLUP and Thoroughfare Changes - Travel Demand Model Results

Map Source: Houston-Galveston Area Council

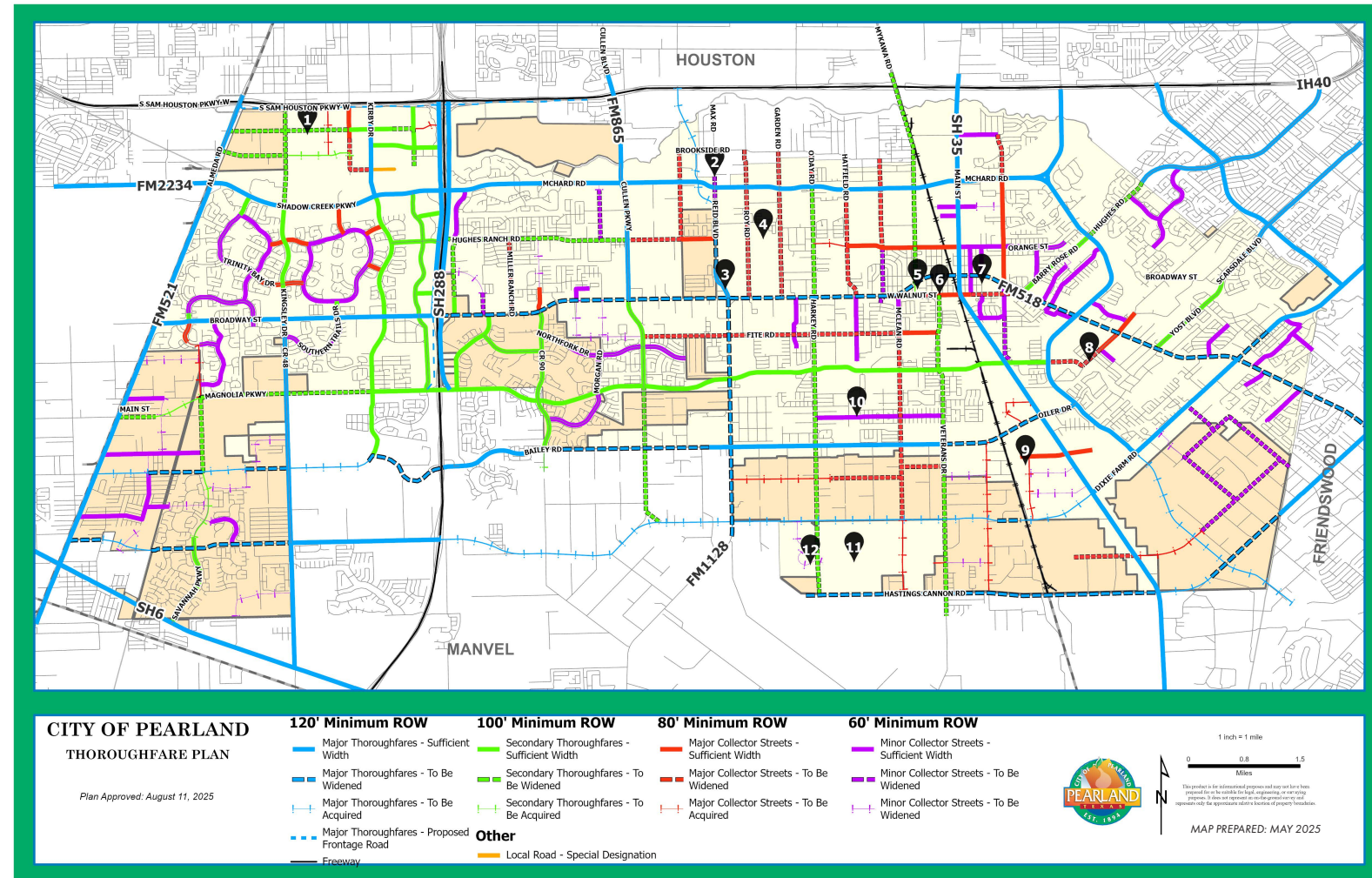
V/C Ratios and Traffic Conditions

- ≤ .7 Free flow / Stable flow with unaffected speed (A,B)
- .71 ≤ .8 Stable flow but speed is affected (C)
- .81 ≤ .9 High-Density but the stable flow (D)
- .91 ≤ 1.0 Traffic Volume near or at capacity level with low speed (E)
- > 1.0 Breakdown flow (F)

### 5.3 2025 Thoroughfare Plan Update

Thoroughfare Plan Update based on travel demand model results and feedback from City staff, the community, Steering Committee, the Proposed Thoroughfare Map for City of Pearland is updated as shown.

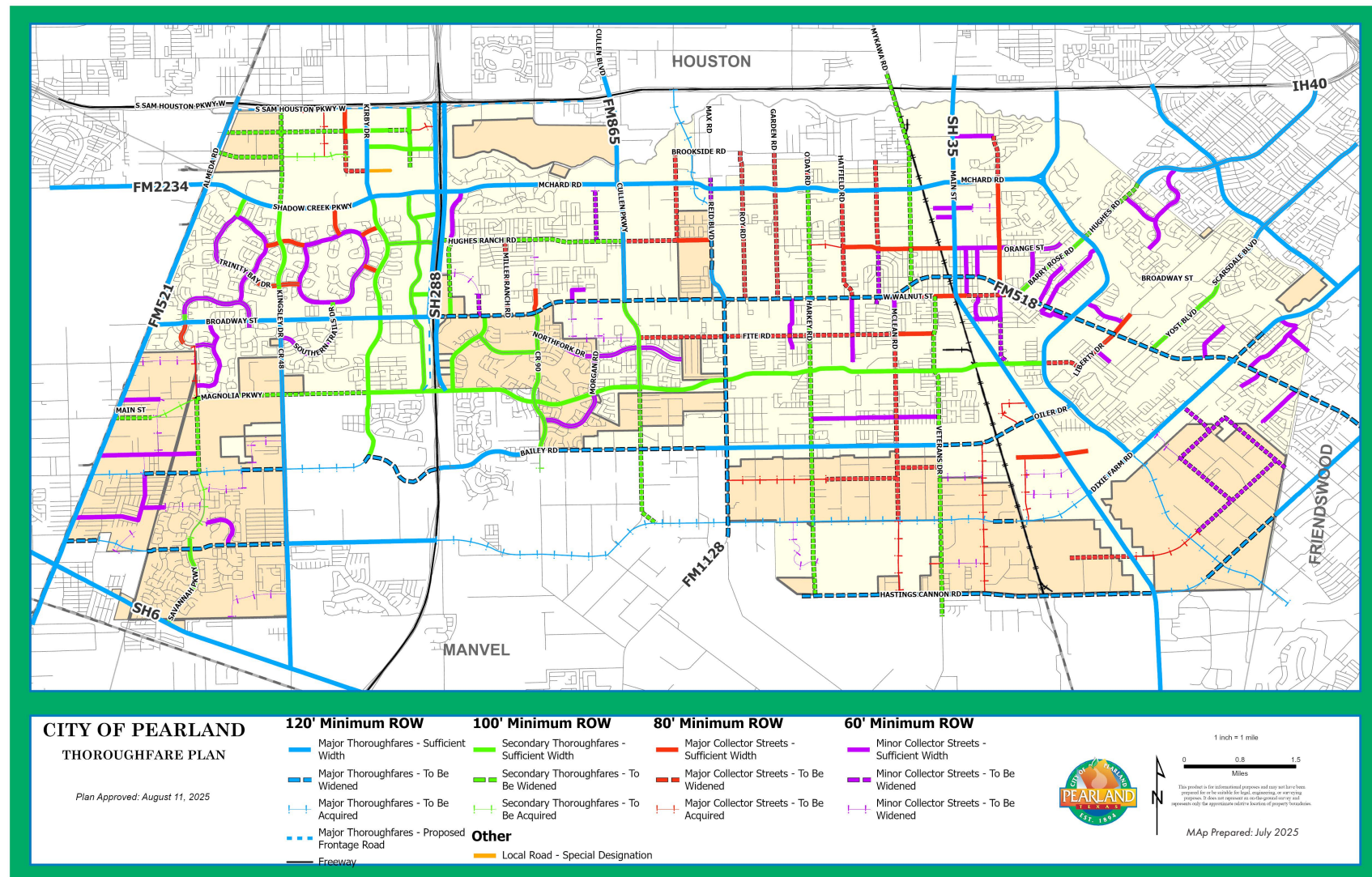
An updated Thoroughfare Plan map is provided as Figure 5.7 with recommended changes annotated and outlined below.



▲ Figure 5.7: Updated Thoroughfare Plan with Annotated Changes

▼ Table 5.1: Recommendations to the Thoroughfare Plan with numbered changes

Change #	Roadway / Area	Limits	Current Classification	Future Classification (if Different)	Recommendation			
					Remove Future Alignment	Change Future Alignment	Add Future Widening	Change Classification, No ROW Change
1	Lower Kirby Area	Sam Houston Parkway to E-W Secondary Thoroughfare	Major Collector	-	X			
2	Max Road	Brookside Road to north of McHard Road	Minor Collector	Local Road				X
3	Reid Boulevard	North of Avalon Manor Lane to Broadway Street	Local Road	Major Thoroughfare				X
4	Hughes Ranch Road	Reid Boulevard to O'Day Road	Major Collector	-	X			
5	Mykawa Road	Broadway Street to Walnut Street	Secondary Thoroughfare	-		X		
6	Veterans Drive	at Walnut Street	Secondary Thoroughfare	-		X		
7	South Galveston Avenue	Broadway Street to Walnut Street	Minor Collector	Local Road				X
8	Liberty Drive	John Lizer Road to Shady Bend Drive	Major Collector	-			X	
9	Alexander Development Area	Industrial Drive to Dixie Farm Road	Major Collector	-		X		
10	Springfield Avenue	Spring Meadow Drive to Harkey Road	Minor Collector	Local Road				X
11	Massey Oak Subdivision East Adjacent Area	McLean Road to Harkey Road	Major Collector	-	X			
12	Massey Oak Subdivision	Old Massey Ranch Road to Hastings Cannon Road	Minor Collector	-		X		



▲ **Figure 5.8:** Updated 2025 Thoroughfare Plan map, adopted by City Council on August 11, 2025.

Page left blank intentionally



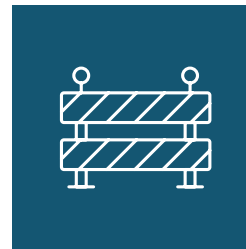
# IMPLEMENTATION PLAN

## 6.1 Project Prioritization

In the previous two chapters, Recommendations Development and Thoroughfare Plan Update, the study outlined a variety of recommended projects based on analysis of existing and projected conditions as well as public engagement feedback. In this section, a project prioritization matrix is provided as framework to aid the City on deciding which projects to implement in an objective and consistent manner while still allowing staff the flexibility to update the categories and criteria depending on City’s evolving priorities.

The project prioritization matrix assigns scores to recommended projects based on four categories: Safety, Reliability, Mobility, and Project Readiness. Each category includes multiple criteria scored using key performance measures. These measures are assigned points based on factors like impact, data availability, and local preference, with a maximum score of 100.

The categories, criteria, and performance measures are detailed in the following pages.



### I. SAFETY

This category evaluates projects based on enhancing road safety for different users. The category leverages historical crash data and the high-injury network developed as part of this study, and uses following criteria and corresponding performance measures to prioritize the projects:

**1. Critical Crash Locations** – Uses this criteria to evaluate a project based on its location and uses below ‘performance measures’ or qualifying factors to prioritize the project:

- a) Does the project location include roadway segments or intersections with fatalities or crashes with serious injuries (K, A crashes) (15 points)
- b) Does the project location include roadway segments or intersections with a high number of non K-A crashes (10 points)
- c) Projects at locations with minimal crashes will receive no points in this category (0 points)

*Example: SH 35 at McHard Road, Install Right Turn Lanes. This project provided dedicated right turn lanes at a congested intersection separating turning vehicles from the through lanes reducing the potential for rear-end crashes. This project would receive 10 points.*

**2. Safety Enhancements** – This criteria focuses on specific safety related improvements recommended in a project. The criteria uses the following five ‘performance measures’ to award points for a project with each measure receiving up to five (5) points:

- a) Sight Distance (5 points)
- b) Traffic Calming (5 points)
- c) Access Management (5 points)
- d) Traffic Channelization (5 points)
- e) Protected Turning Movements (5 points)

*Example: Oak Brook Dr @ Dixie Farm Rd – Traffic Signal Updates. The proposed project would improve site distance and add traffic calming, so this project would receive 10 points.*



## II. RELIABILITY

This category evaluates projects if they would lead to consistent travel times and connections due to: increased roadway capacity (adding lanes, turn bays, missing roadway link); or leveraging technology to improve efficiency. This category was evaluated using two main criteria:

**1. Reduce V/C Ratio** – The volume to capacity (v/c) ratios from traffic modeling were used a metric to understand level of congestion and prioritize the impact of the project. Projects may be ranked based on reduction in the volume-to-capacity ratio at an intersection or roadway segment. Below are the performance measures used for this criteria:

- a) Projects that may lead to V/C reduction by 0.25 or more (15 points)
- b) Projects that may lead to V/C reduction by 0.15 or more but less than 0.25 (10 points)
- c) Projects that may lead to V/C reduction by 0.05 or more but less than 0.15 (5 points)

*Example: McHard Road at Pearland Parkway – Adding additional turning lanes to the completed corridor reduce the V/C ratio for the intersection from 1.07 to 0.82, so this project would receive 15 points.*



## III. MOBILITY

This category evaluates projects on multi-modal accessibility and connectivity and uses below criteria:

**1. Bicycle mobility** – Project increases bike connectivity including new bike lanes or multi-use paths, or removing gaps within the network (5 points)

*Example: John Lizer from Pearland Parkway to Liberty – This project would add bike lanes along a section of roadway, providing a new connection within the City adjacent to a major park. This project would receive 5 points.*

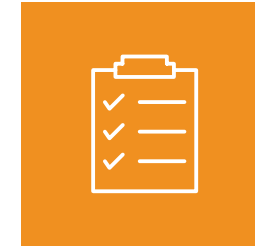
**2. Improve Operation** – This criteria measures roadway connectivity, access, and leveraging technology to improve traffic flow. Below are the performance measures that may be used for this criteria:

- a) Project connects corridors (5 points)
- b) Project removes major barriers (5 points)
- c) Leverage traffic signal technology such as updated vehicle detection, or emergency vehicle preemption, or Flashing Yellow Arrow) (5 points)

*Example: Railroad Crossing @ SH 35 and FM518. This project would remove an at-grade railroad crossing that that currently impacts traffic on FM 518, and turning movements from SH35. This project would receive 5 points.*

**2. Pedestrian mobility** – A project receives 5 points for this criteria if they include elements that improve pedestrian mobility within the City network including new sidewalks or multi-use paths, removing gaps within the network, or adding sidewalk ramps.

*Example: John Lizer from Pearland Parkway to Liberty – This project would add sidewalks along a section of roadway, providing a new connection within the City adjacent to a major park. This project would receive 5 points*



## IV. PROJECT READINESS

This category examines the level of coordination effort needed outside of the City’s immediate authority, and focuses on the following sub-categories of evaluation criteria:

**1. Right-of-Way (ROW)** – Since acquiring new ROW for an infrastructure project can be an expensive and long drawn out process, improvements that may be implemented within existing ROW can lead to higher benefits within a shorter period of time. Below are the performance measures used to prioritize projects:

- a) Project requires new ROW (0 points)
- b) No additional ROW is needed (5 points)

**2. Jurisdictional Coordination** – A project receives 5 points for this criteria if it exists solely within the jurisdiction of City of Pearland and does not require coordination with other jurisdictions (i.e. Other Cities, Counties, or TxDOT) streamlining the project approval and construction process.

*Example: Pearland Parkway @ Hughes Rd. – This project exists completely within the City’s jurisdiction and does not require approval or coordination with outside agencies. This project would receive 5 points.*

*Example: Pearland Parkway @ Province Village Dr. Signal Phasing – This project can be implemented without obtaining additional ROW. This project would receive 5 points.*

**3. Coordinated Effort** – A project receives 5 points if they are located along corridors or intersections in which other projects can be completed at the same time. For example, during construction, Public works can repair existing water or sewer lines, or install new utilities, thereby providing savings to the City by reducing work.

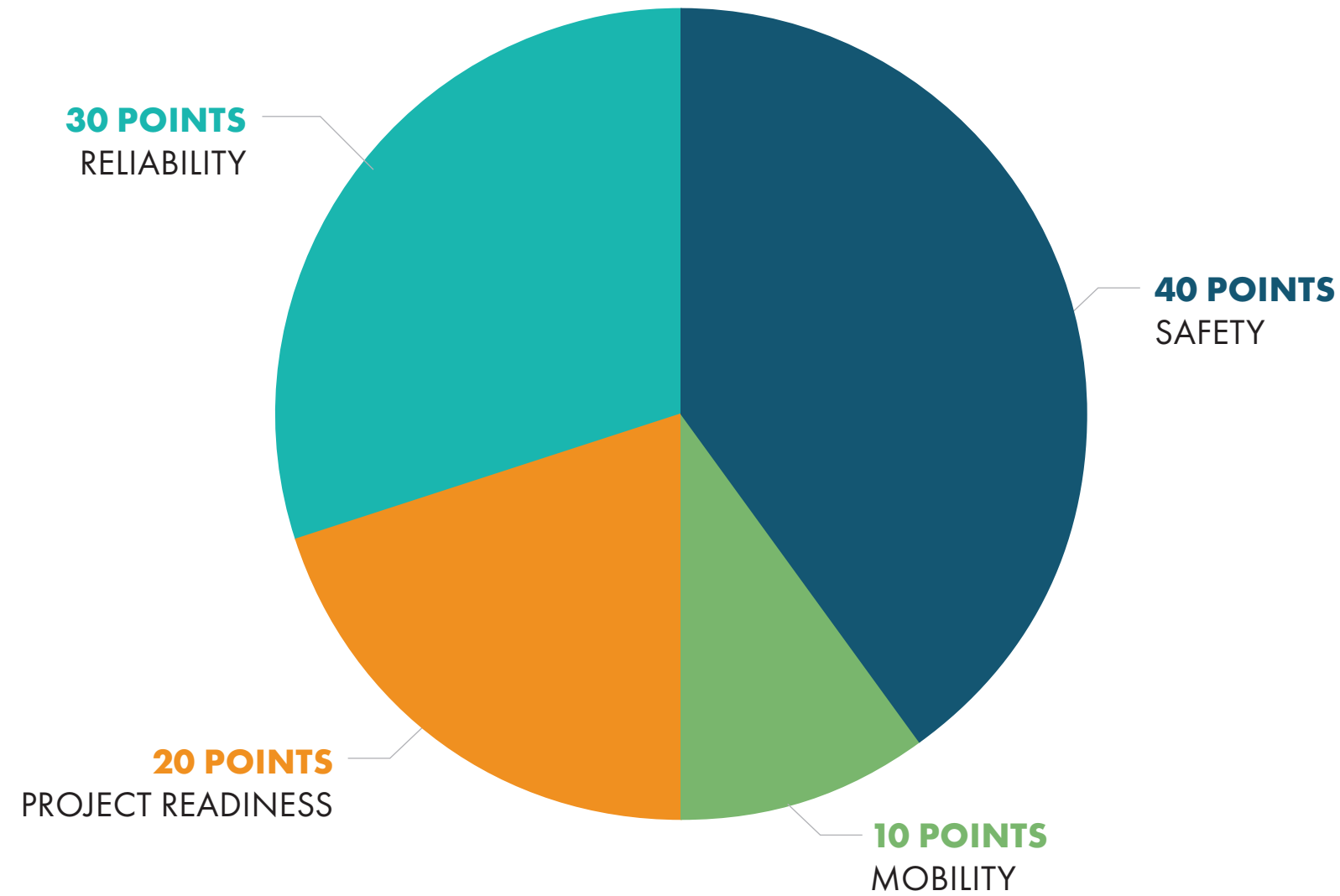
*Example: Additional coordination will need to occur with the Public Works department to review the future CIP program for locations of proposed projects.*

**4. Funding Opportunities** – A project receives 5 points if they are either already in design or have funding (full or partial) secured as it represents a potential to implement and construct these projects faster than others.

*Example: Additional coordination will need to occur with the Public Works department to determine which projects have preliminary designs or some form of funding.*

Evaluation criteria is summarized in a matrix, as provided in Figure 6.1: Project Prioritization Matrix. This matrix can be applied to each project identified within the study to provide a score for prioritizing projects for implementation. An example completed matrix is provided in Table 6.1: Example Project Scoring for John Lizer Road Widening from Pearland Parkway to Liberty Dr.

▼ **Figure 6.1:** Project Prioritization Matrix



▼ **Table 6.1:** Example Project Scoring (This is a reference guide only, the specific project mentioned below has not been examined by the City of Pearland during the Pearland Mobility Plan)

<b>Sample Project Scoring</b>				
<b>Project:</b> John Lizer Road Widening from Pearland Parkway to Liberty Dr.				
<b>Project Summary:</b> Project will improve the existing two lane, two way road with roadside drainage to four lane curb and gutter road with sidewalks				
Category	Max Points	Criteria	Project Goals	Score
Safety	15	Critical Crash Locations	John Lizer at Pearland Parkway has some history of crashes	10
	25	Safety Enhancements	Project Channelizes the roadway by removing roadside ditches and adding curb and gutter. Project provides protected turning movements	5 5
Reliability	15	Reduce V/C	Project reduces V/C by 0.15 (Assumed)	10
	15	Improve Operation	Project adds additional Capacity Project adds Traffic Signal Technology	5 5
Mobility	5	Bicycle Mobility	Project will add bike connectivity to the network	5
	5	Pedestrian Mobility	Project will add pedestrian connectivity to the network	5
Project Readiness	5	ROW Concerns	ROW Needed	0
	5	Jurisdictional Coordination	Project Completely within COP	5
	5	Coordinated Effort	Project Can be coordinated with other Departments	5
	5	Design and Funding	Project is not in design, does not have funding	0

## 6.2 Project Summary

The proposed recommendations of this Plan will provide benefits aimed at improving the City’s transportation infrastructure and multimodal experience. The list of roadway improvements focuses on reducing congestion which will also lead to lower automobile emissions. These recommendations are further enhanced by technology solutions designed to improve the driver experience and safety measures. To improve overall network mobility, the Plan includes active transportation recommendations that aim to expand the existing sidewalk network for all users.

The success of these recommendations will be influenced by local and regional policies and codes. The policy recommendations in this Plan should be reviewed comprehensively at the city level, across various departments, and in coordination with neighboring governing agencies.

To execute the recommendations outlined in this plan, it is advisable for the City to incorporate the projects in a multi-year Capital Improvements Project program. The City can collaborate with State and Federal entities to leverage additional funding for projects. For example, the City can submit a grant application for projects recommended in this plan during the H-GAC Transportation Improvement Program’s Call for Projects.

### 6.3 Pearland Mobility Plan Project List

#### ACTIVE TRANSPORTATION (SHORT-TERM 0-5 YEARS)

	Project Location	Description	Mobility Benefits	Estimated Cost	Implementation Partners
<b>SHORT-TERM</b>	1. <b>McHard Road and Stone Road</b>	▶ Install sidewalk infrastructure on Stone Road to connect existing neighborhood to the shared use path on McHard Road	Expands the sidewalk network and increases multi-modal mobility.	\$100,000	City of Pearland
	2. <b>McHard Road and Max Road</b>	▶ Install sidewalk infrastructure on Max Road to connect existing neighborhood to the shared use path on McHard Road	Expands the sidewalk network and increases multi-modal mobility.	\$100,000	City of Pearland
	3. <b>McHard Road and O'Day Road</b>	▶ Install sidewalk infrastructure on O'Day Road to connect existing neighborhood to the shared use path on McHard Road	Expands the sidewalk network and increases multi-modal mobility.	\$100,000	City of Pearland
	4. <b>McHard Road and Roy Road</b>	▶ Install sidewalk infrastructure on Roy Road to connect existing neighborhood to the shared use path on McHard Road	Expands the sidewalk network and increases multi-modal mobility.	\$100,000	City of Pearland
	5. <b>McHard Road and Garden Road</b>	▶ Install sidewalk infrastructure on Garden Road to connect existing neighborhood to the shared use path on McHard Road	Expands the sidewalk network and increases multi-modal mobility.	\$100,000	City of Pearland
	6. <b>McHard Road and Mykawa Road</b>	▶ Install sidewalk infrastructure on Mykawa Road to connect existing neighborhood to the shared use path on McHard Road	Expands the sidewalk network and increases multi-modal mobility.	\$100,000	City of Pearland
	7. <b>Veterans Drive, between Elaine Way and Stonebridge Drive</b>	▶ Install sidewalk along West side of Veterans Drive, to connect existing sidewalk along Verterans Drive to Magonlia Parkway	Expands the sidewalk network and increases multi-modal mobility.	\$450,000	City of Pearland

	Project Location	Description	Mobility Benefits	Estimated Cost	Implementation Partners
<b>SHORT-TERM</b>	8. <b>Manvel Road, between Fite Road and Magnolia Parkway</b>	▶ Coordinate with the Pearland Independent School District to address pedestrian mobility and safety concerns in this area. Consider installing advanced warning signage for vehicles for school crossing and midblock crosswalk marking with appropriate traffic control (such as Rectangular Rapid Flashing Beacon). TxDOT has ongoing project to design roadway improvements in this section of Manvel Road. Preliminary schematic plans for Manvel Road (FM 1128) indicate proposed medians and sidewalks but based on TxDOT project findings, none of the side streets meet criteria for a new traffic signal on Manvel Road.	Expands the sidewalk network and increases multi-modal mobility.	\$120,000	City of Pearland, TxDOT, Pearland ISD
	9. <b>Pearland Parkway and Oiler Drive</b>	▶ Install new pedestrian crosswalk, signing and marking on Oiler Drive at Towne Lake Drive and on Pearland Pkwy at High School driveway on the north side of the school. Similar to the existing conditions along Manvel Road and Rogers Middle School / Berry Miller Junior High, Pearland High School is situated next to multiple large residential subdivisions with several students walking to the school.	Expands the sidewalk network and increases multi-modal mobility.	\$120,000	City of Pearland, TxDOT, Pearland ISD
	10. <b>City Wide</b>	▶ Conduct an Americans with Disabilities Act (ADA) Transition Plan	Expands the sidewalk network and increases multi-modal mobility.	\$250,000	City of Pearland

#### ACTIVE TRANSPORTATION (MEDIUM-TERM 6-10 YEARS)

	Project Location	Description	Mobility Benefits	Estimated Cost	Implementation Partners
	1. <b>Walnut Street Railroad Crossing</b>	▶ Install at-grade sidewalk across railroad, to connect existing sidewalks along both sides of the railroad crossing	Expands the sidewalk network and increases multi-modal mobility.	\$200,000	City of Pearland, TxDOT, BNSF

**INTERSECTION PROJECTS (SHORT-TERM 0-5 YEARS)**

	Project Location	Description	Mobility Benefits	Estimated Cost	Implementation Partners
<b>SHORT-TERM</b>	<b>1. SH 35 at McHard Road</b>	<ul style="list-style-type: none"> <li>▶ Add eastbound right-turn lane on McHard Road and southbound right-turn lane on SH 35</li> <li>▶ Update traffic signal pole locations in northwest and southwest corners</li> <li>▶ Update sidewalk and ADA facilities on northwest and southwest corners</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increases vehicular capacity</li> <li>▶ Reduces automobile emissions</li> <li>▶ Reduces traffic congestion</li> </ul>	\$1,000,000	City of Pearland, TxDOT
	<b>2. SH 35 at Orange Street</b>	<ul style="list-style-type: none"> <li>▶ Update east-west signal phasing</li> <li>▶ Add flashing yellow arrow displays for eastbound and westbound leftturns</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increases vehicular capacity</li> <li>▶ Reduces automobile emissions</li> <li>▶ Reduces traffic congestion</li> </ul>	\$15,000	City of Pearland, TxDOT
	<b>3. SH 35 at Magnolia Road</b>	<ul style="list-style-type: none"> <li>▶ Restripe eastbound and westbound lanes on Magnolia Road</li> <li>▶ Update east-west signal phasing</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increases vehicular capacity</li> <li>▶ Reduces automobile emissions</li> <li>▶ Reduces traffic congestion</li> </ul>	\$15,000	City of Pearland, TxDOT
	<b>4. SH 35 at Bailey Road</b>	<ul style="list-style-type: none"> <li>▶ Add eastbound and westbound right-turn lanes on Bailey Road; add southbound right-turn lane on SH 35</li> <li>▶ Replace existing 'span-wire' signal with new 'mast-arm' signal</li> <li>▶ Modify existing sidewalk and ADA facilities impacted in all four corners of the intersection</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increases vehicular capacity</li> <li>▶ Reduces automobile emissions</li> <li>▶ Reduces traffic congestion</li> </ul>	\$1,600,000	City of Pearland, TxDOT
	<b>5. Pearland Parkway at Hughes Road</b>	<ul style="list-style-type: none"> <li>▶ Restripe east and west approaches on Hughes Road</li> <li>▶ Add northbound right turn lane on Pearland Pkwy</li> <li>▶ Update east-west signal phasing</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increases vehicular capacity</li> <li>▶ Reduces automobile emissions</li> <li>▶ Reduces traffic congestion</li> </ul>	\$450,000	City of Pearland
	<b>6. Pearland Parkway at Province Village</b>	<ul style="list-style-type: none"> <li>▶ Restripe east and west approaches on Province Village Dr</li> <li>▶ Update east-west signal phasing</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increases vehicular capacity</li> <li>▶ Reduces automobile emissions</li> <li>▶ Reduces traffic congestion</li> </ul>	\$15,000	City of Pearland

	Project Location	Description	Mobility Benefits	Estimated Cost	Implementation Partners
<b>SHORT-TERM</b>	<b>7. Pearland Parkway at FM 518</b>	<ul style="list-style-type: none"> <li>▶ Add westbound right turn lane on FM 518</li> <li>▶ Adjust signal timing</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increases vehicular capacity</li> <li>▶ Reduces automobile emissions</li> <li>▶ Reduces traffic congestion</li> </ul>	\$300,000	City of Pearland, TxDOT
	<b>8. Pearland Parkway at John Lizer Road</b>	<ul style="list-style-type: none"> <li>▶ Add southbound right-turn lane on Pearland Pkwy</li> <li>▶ Adjust signal timing</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increases vehicular capacity</li> <li>▶ Reduces automobile emissions</li> <li>▶ Reduces traffic congestion</li> </ul>	\$450,000	City of Pearland

**SAFETY COUNTERMEASURE PROJECTS (SHORT-TERM 0-5 YEARS)**

	Project Location	Description	Mobility Benefits	Estimated Cost	Implementation Partners
<b>SHORT-TERM</b>	1. <b>Shadow Creek Parkway at Kingsley Drive</b>	▶ Change left-turn signal phasing on Shadow Creek Pkwy from Permitted-Protected to Protected-Only phasing.	Improves safety for drivers, pedestrians/ cyclists	\$5,000 (reprogramming) Existing equipment can be used.	City of Pearland
	2. <b>McHard Road at Old Alvin Road</b>	▶ Install Advance Warning Flashers on all four approaches	Improves safety for drivers, pedestrians/ cyclists	\$30,000	City of Pearland
	3. <b>Dixie Farm Road at Oakbrook Drive</b>	▶ Install Advance Warning Signs on Dixie Farm Road	Improves safety for drivers, pedestrians/ cyclists	\$10,000	City of Pearland
	4. <b>Dixie Farm Road at Hastings Friendswood Road</b>	▶ Install Traffic Signalization – Currently Underway by City	Improves safety for drivers, pedestrians/ cyclists	\$350,000	City of Pearland
	5. <b>Kirby Road from Shadow Creek Parkway to Magnolia Parkway</b>	▶ Install Warning/Guide Signs on Minor Approach ▶ Keep Vegetation Trimmed ▶ Install Pavement Markings	Improves safety for drivers, pedestrians/ cyclists	\$90,000	City of Pearland
	6. <b>FM 2234 from SH 288 to Reflection Bay Drive</b>	▶ Improve/Install missing sidewalks links along FM 2234 ▶ Install/Upgrade pedestrian signals to Accessible Pedestrian Signal (APS) units at existing signals along FM 2234 from SH 288-Reflection Bay Dr	Improves safety for drivers, pedestrians/ cyclists	\$1,300,000	City of Pearland, TxDOT

**INTERSECTION PROJECTS (MEDIUM-TERM 6-10 YEARS)**

	Project Location	Description	Mobility Benefits	Estimated Cost	Implementation Partners
<b>MEDIUM-TERM</b>	1. <b>SH 35 at Orange Street</b>	▶ Add westbound right-turn lane on Orange Street ▶ Adjust signal timing	▶ Increases vehicular capacity ▶ Reduces automobile emissions ▶ Reduces traffic congestion	\$450,000	City of Pearland
	2. <b>SH 35 at Bailey Road</b>	▶ Add second left northbound turn lane on SH 35 ▶ Modify sidewalk and ADA facilities in the southwest corner ▶ Update east-west signal phasing	▶ Increases vehicular capacity ▶ Reduces automobile emissions ▶ Reduces traffic congestion	\$750,000	City of Pearland, TxDOT
	3. <b>SH 35 at Dixie Farm Road</b>	▶ Add northbound right-turn lane on SH 35 ▶ Modify sidewalk, relocate signal pole in median and modify ADA facilities in the southeast corner ▶ Adjust signal timing	▶ Increases vehicular capacity ▶ Reduces automobile emissions ▶ Reduces traffic congestion	\$450,000	City of Pearland, TxDOT
	4. <b>SH 35 at Hastings Canon Road</b>	▶ Add eastbound right-turn lane on Hastings Canon Road ▶ Replace existing 'span-wire' signal with new 'mast-arm' signal ▶ Adjust signal timing	▶ Increases vehicular capacity ▶ Reduces automobile emissions ▶ Reduces traffic congestion	\$750,000	City of Pearland, TxDOT
	5. <b>Pearland Parkway at Hughes Road</b>	▶ Add a second southbound left-turn lane on Pearland Pwky ▶ Add a second westbound left-turn lane on Hughes Road ▶ Modify signal head layouts for southbound and westbound left turn lane additions ▶ Adjust signal phasing and signal timing	▶ Increases vehicular capacity ▶ Reduces automobile emissions ▶ Reduces traffic congestion	\$1,200,000	City of Pearland

	Project Location	Description	Mobility Benefits	Estimated Cost	Implementation Partners
MEDIUM-TERM	<b>6. Pearland Parkway at FM 518</b>	<ul style="list-style-type: none"> <li>▶ Add eastbound right-turn lane on FM 518; and add eastbound and westbound right-turn lanes on Pearland Pkwy</li> <li>▶ Modify sidewalk and ADA facilities in the A northwest and B southeast corners</li> <li>▶ Adjust signal timing</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increases vehicular capacity</li> <li>▶ Reduces automobile emissions</li> <li>▶ Reduces traffic congestion</li> </ul>	\$1,000,000	City of Pearland, TxDOT
	<b>7. Pearland Parkway at John Lizer Road</b>	<ul style="list-style-type: none"> <li>▶ Widen John Lizer road to a four lane divided section from Pearland Parkway to just west of existing bridge (approximately 1000 Feet)</li> <li>▶ Modify sidewalk and ADA facilities in the northeast and southeast corners</li> <li>▶ Remove split phase</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increases vehicular capacity</li> <li>▶ Reduces automobile emissions</li> <li>▶ Reduces traffic congestion</li> </ul>	\$2,500,000	City of Pearland
	<b>8. Pearland Parkway at Dixie Farm Road</b>	<ul style="list-style-type: none"> <li>▶ Add westbound right-turn lane on Dixie Farm Road</li> <li>▶ Modify sidewalk and ADA facilities at the northeast and northwest corners of the intersection</li> <li>▶ Relocate existing traffic signal pole in the northwest corner of the intersection</li> <li>▶ Adjust signal timing</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increases vehicular capacity</li> <li>▶ Reduces automobile emissions</li> <li>▶ Reduces traffic congestion</li> </ul>	\$185,000	City of Pearland

### LONG TERM PROJECT RECOMMENDATION (11+ YEARS)

	Major Thoroughfare	Recommended Improvement
LONG-TERM	<b>1. Reid Blvd</b>	▶ Extend Reid Boulevard from McHard Road to Beltway 8. Match the 4-lane boulevard cross-section of Reid Blvd (McHard to FM 518) to provide connectivity to Beltway 8
	<b>2. Dixie Farm Road</b>	▶ Extend Dixie Farm Road (four lane divided) from SH 35 to Veterans Dr
	Secondary Thoroughfare Recommended Improvement	
	<b>3. Harkey Road</b>	▶ Widen existing 2-lane roadway from CR 100 to FM 518 to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path
	<b>4. O'Day Road</b>	▶ Widen existing 2-lane asphalt roadway from FM 518 to McHard Road to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
	<b>5. Veterans Road</b>	▶ Widen existing 2-lane asphalt roadway from Bailey Avenue to Walnut Street to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
	<b>6. Mykawa Road</b>	▶ Widen existing 2-lane asphalt roadway from FM 518 to Beltway 8 to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
	<b>7. Cullen Pkwy</b>	▶ Widen existing 2-lane asphalt roadway from Magnolia Pkwy to Bailey Road to 4-lane concrete divided roadway with curb & gutter, underground drainage, and a single 10' sidewalk along one site
<b>8. Kingsley Blvd</b>	▶ Widen existing 2-lane roadway from Clear Creek Pkwy to Beltway 8 to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path	

	Major Collector	Recommended Improvement
LONG-TERM	9. Roy Road	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from McHard Road to FM 518
	10. Garden Road	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from McHard Road to FM 518
	11. Hatfield Road	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from McHard Road to FM 518
	12. Old Alvin Road	▶ Widen existing 2-lane roadway from McHard Road to Knapp Road to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path on one side of the road
	13. Fite Road	▶ Widen existing 2-lane roadway from McLean Road to Cullen Pkwy to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path on one side of the road
	14. Miller Ranch Road	▶ Widen existing 2-lane roadway to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path from Hughes Ranch Road to FM 518.
	15. Hughes Ranch Road	▶ Widen existing 2-lane roadway from Stone Road to Cullen Pkwy to a 4-lane undivided concrete curb and gutter cross-section with a 10' shared use path on one side of the road

END OF REPORT