VII. Outcomes

The previous chapter explored design examples and related key factors for consideration at a micro level. However, how these recommendations translate to the greater system is more evident at the macro level where various systems interact. As such, this chapter of the Report represents the system improvement recommendations for the Northwest Study Area as it pertains to the subregional network. The resulting "network maps" represent a plan that identifies system gaps and highlights potential modifications for improvements both on the MTFP and MMC classifications. The resulting networks depicted work to connect the different facilities to enhance the efficient movement of people throughout the Study Area, achieving the purpose of this study.

The following maps show a comprehensive look at the Northwest Study Area based on the recommendations found within this document.

- 2035 Major Thoroughfare and Freeway Plan
- Bike Vision Map
- Intersection Analysis
- Transit and Pedestrian Vision Map
- Multi-Modal Classification Map

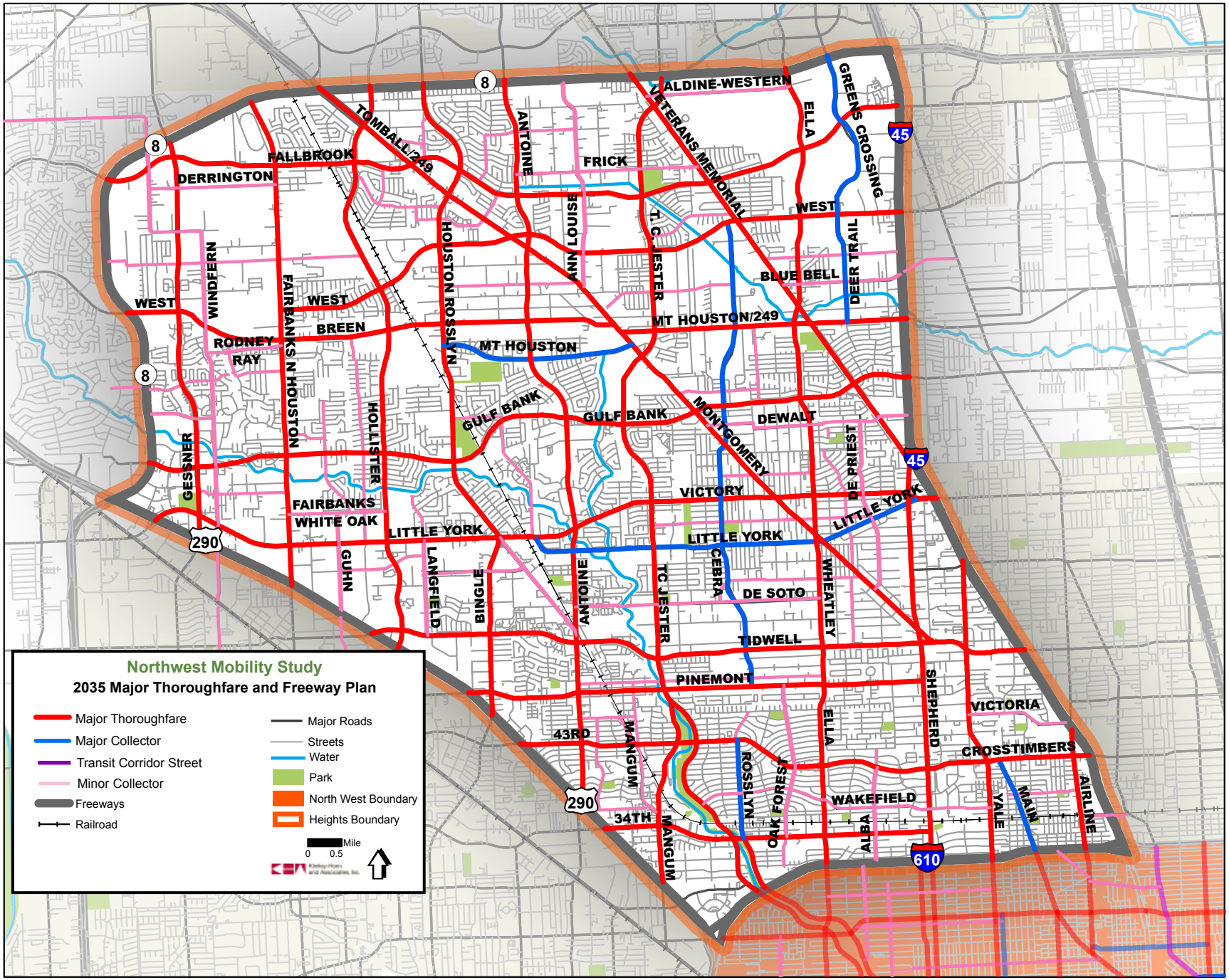
7.1 2035 Major Thoroughfare and Freeway Plan

As explained in the Existing Conditions section of this report, the Major Thoroughfare and Freeway Plan (MTFP) is the City of Houston's guiding document for future corridors. Based on the provided function classification, the MTFP provides the City with essential data regarding the future capacity need of the corridor. Without this roadmap, identifying projects, funding needs, and priorities would be difficult.

The Northwest area faces connectivity challenges as proposed corridors transition between City of Houston and Harris County jurisdiction. The MTFP looks beyond these boundaries and focuses on the regional network. It also looks at ways to adjust the existing corridors to better suit the communities needs.

The recommendation for the Northwest is to focus on creating fully connected corridors. Providing for effective through movements of vehicles increases the efficient movement of people. An updated Major Thoroughfare and Freeway Plan is envisioned, as seen in the adjoining map. Public comments, workshop results, and the analysis from the Project Team of the traffic demand model, intersections, and planned road improvements were all factors in this development.

For a full list of detailed recommendations in table form, please visit the detailed corridor sheets and associated matrix provided in Chapter VI. A Balanced Approach of this Report.


Northwest Mobility Study
2035 Major Thoroughfare and Freeway Plan
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YALE
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OAK FOREST
ROSSLYN
MANGUM
43RD
34TH

FIGURE 7.1

7.2 Intersection Analysis

Development of Future Intersection Conditions

The traditional traffic engineering approach for growing traffic volumes across a network of streets is to simply start from a point in time at which intersection-specific information is collected, and then grow the volumes at a consistent growth rate over the planning horizon. The largest challenge to this approach - within a study area of this larger size - is that over time redevelopment and traffic patterns shift. This causes the steady rate of growth to be over/under estimated for more localized conditions. This study attempts to estimate the future operating conditions at the intersections by using the existing traffic counts as a baseline, and growing them based upon the growth witnessed in the travel demand model.

Intersection data for the portions of Northwest in Harris County (outside of the City of Houston's jurisdiction) were not available at the time of this study. Consequently, count-based recommendations are not provided for those intersections. Additionally, analysis of the intersections with the bounding Interstates and State Highways was not included in the scope of this study due to ongoing major reconstruction projects along US 290 and IH 610. As such, this study acknowledges that intersections with the freeways are typically congested and in need of mitigation, but projections for these intersections will be altered greatly once reconstruction is completed. This is due to many factors, including that traffic patterns typically normalize one-year after construction is finished.

Analyzing Future Conditions

The general level of congestion within the larger corridors suggests that overall intersection level of service will be manageable, but could be improved in 2035. The following maps illustrates the intersection congestion levels for the AM peak in 2035. The Northwest area is quite large and has a largely suburban make-up. The area is also missing many through connections, with roads not continuing across the study area. This is a major factor contributing to poor intersection level of service (LOS). Future AM peak period has twenty-five major signalized intersections rating an LOS of F and an additional seven with an LOS of E. The remaining intersections are ranked A-D. The PM peak period show a similar result with twenty-three intersections with an LOS of F and four with an LOS of E.

Mitigating the Near Term Conditions

Specific projects have been identified for the near term at intersections to help mitigate congestion that exists today. These planning-level concepts are provided with specific recommendations and their improvements will help with congestion levels during peak hours and throughout the day as well.

Mitigating the Long Term Conditions

The mitigation opportunities for the 2035 scenario will be affected by many improvements other than intersection enhancements. Connecting roads, and the adjustment of the number of lanes by corridor, will impact the movement of vehicles at intersections. Signal timing improvements are recommended following road and intersection design changes. Specific intersection improvements can be found in this section.

Intersection Improvement Recommendations

The following set of tables and associated system maps indicate the intersections with recommended near- and long-term mitigation improvements. The project team identified improvements based on several variables which include growth rates, existing traffic counts, projected traffic volumes, land use, and the MTFP. The labeled intersection corresponds to the ID number on the following tables.

ID Number	Intersection	Proposed Near TermMitigation	Proposed Long Term Mitigation
1	34th @ Ella	Modify Eastbound and Westbound left-turn phases to permissive/protected phase on 34th St	Add Northbound and Southbound Right-Turn Bay on Ella Add additional Northbound Left-Turn Bay to make dual left-turns on Ella Add Eastbound Right-Turn Bay on 34th Street Modify North and Southbound Left-Turn phases to Protected phases on Ella
2	34th @ Mangum/Watonga	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	Add additional Southbound Thru lane on Watonga Add additional Northbound Thru lane on Mangum Add Eastbound and Westbound Right-Turn Bay on 34th Street
3	34th @ Shepherd	Optimize Offsets Optimize Splits Modify East and Westbound left-turn phases to permissive/protected phases on 34th St Modify Southbound and Northbound left-turn phases to protected phases on Shepherd	Add additional Northbound Left-Turn Bay to make dual left-turns on Shepherd Add Southbound Right-Turn Bay on Shepherd Add additional Eastbound Right-Turn Bay to make dual right-turns on 34th Street Modify Southbound Left-Turn phase to Protected phase on Shepherd
4	34th @ E TC Jester	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	Add Southbound Right-Turn Bay on E. TC Jester Add Eastbound Right-Turn Bay on 34th Street
5	34th @ W TC Jester	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	Add Northbound and Southbound Right-Turn Bay on W. TC Jester Add Eastbound Right-Turn Bay on 34th Street
6	43rd @ Antoine	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	Add additional Northbound and Southbound Left-Turn Bay to make dual leftturns on Antoine Modify North and Southbound Left-Turn phases to Protected phases on Antoine

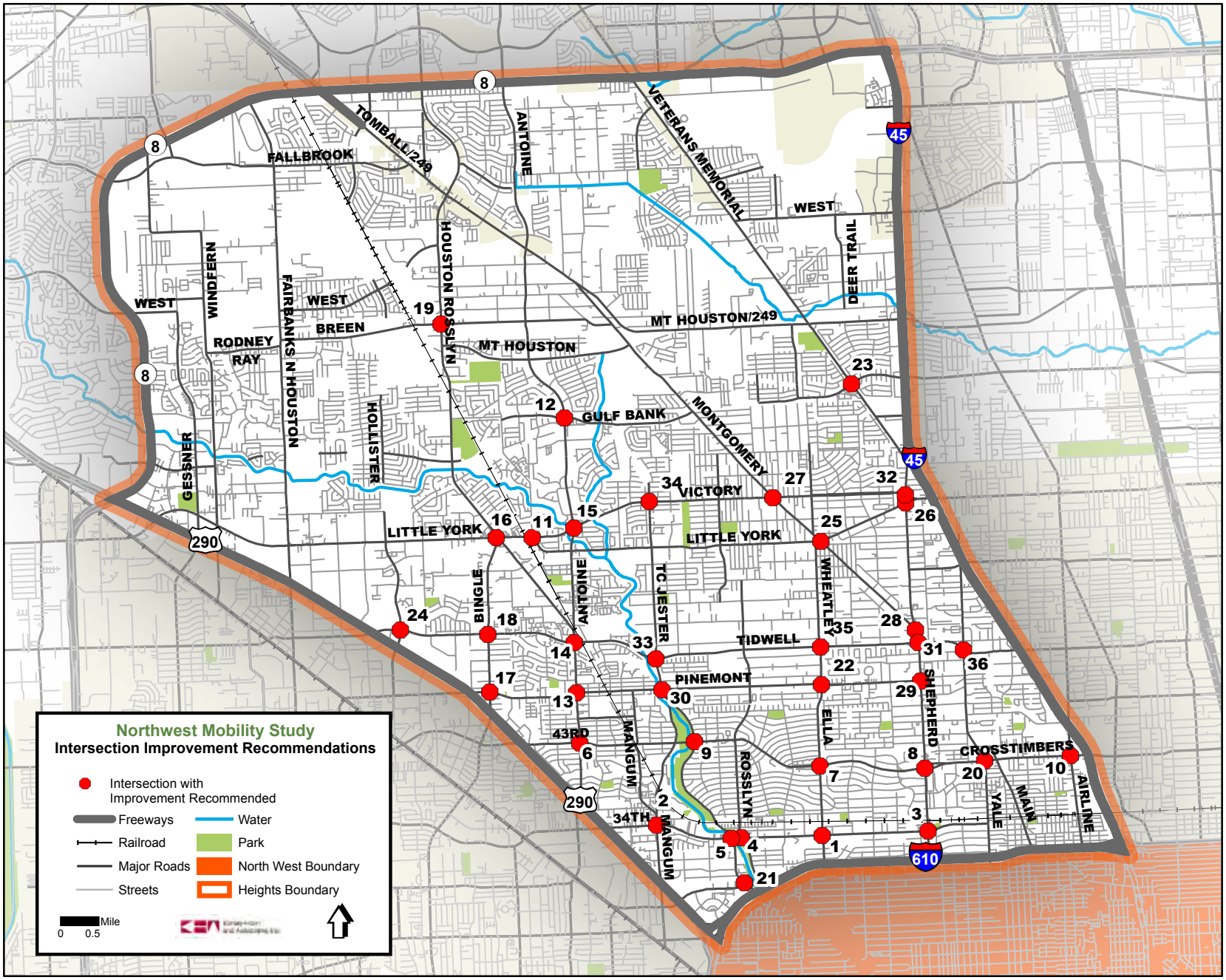
ID Number	Intersection	Proposed Near TermMitigation	Proposed Long Term Mitigation
7	43rd @ Ella	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	Add Northbound and Southbound Right-Turn Bay on Ella Add Eastbound and Westbound Right-Turn Bay on 43rd Street
8	43rd/Crosstimbers @ Shepherd	Optimize Offsets Optimize Splits	Add additional Northbound and Southbound Thru lanes on Shepherd OR Add Northbound and Southbound Right-Turn Bay on Shepherd Add additional Westbound Left-Turn Bay to make dual left-turns on Crosstimbers
9	43rd @ TC Jester	Optimize Offsets Optimize Splits Modify Northbound and Southbound left-turn phases to permissive/protected phases at this intersection Remove the small island in the middle of the intersection	Add Eastbound and Westbound Right-Turn Bay on 43rd Street
10	Crosstimbers @ Airline	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	
11	Little York @ Alabonson/Victory	Optimize Offsets Optimize Splits	Possible roundabout configuration
12	Gulf Bank @ Antoine	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	
13	Pinemont @ Antoine	Optimize Offsets Optimize Splits Modify Eastbound and Westbound left-turn phases to permissive/protected phases on Pinemont	Add additional Northbound and Southbound Left-Turn Bay to make dual leftturns on Antoine Add Westbound Right-Turn Bay on Pinemont

ID Number	Intersection	Proposed Near TermMitigation	Proposed Long Term Mitigation
14	Tidwell @ Antoine	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	Add additional Northbound and Southbound Left-Turn Bay to make dual left-turns on Antoine Modify Eastbound, Westbound, Northbound and Southbound Left-Turn phases to Protected phases at this intersection
15	VIctory @ Antoine	Optimize Offsets Optimize Splits Increase the Southbound left-turn bay length to provide minimum 200 ft on Antoine	Add Westbound Right-Turn Bay on Victory Add Southbound and Northbound Right-Turn Bay on Antoine Add additional Westbound and Eastbound Left-Turn Bay to make dual left-turns on Victory
16	Little York @ Bingle/N Houston Rosslyn	Optimize Offsets Optimize Splits	Add Northbound and Southbound Right-Turn Kane Extend Northbound and Southbound Left-Turn Bay by additional 50-100' Add an addition Westbound Thru Lane for the Westbound approach Add additional Eastbound Left-Turn Bay to make dual left-turns on W. Little York
17	Pinemont @ Bingle	Optimize Offsets Optimize Splits Modify Eastbound and Westbound left-turn phases to permissive/protected phases on Pinemont	Add additional Southbound Left-Turn Bay to make dual left-turns on Bingle Add additional Eastbound and Westbound Left-Turn Bay to make dual left-turns on Pinemont Add Westbound Right-Turn Bay on Pinemont Add Northbound Right-Turn Bay on Bingle Modify East and Westbound Left-Turn phases to Protected phases on Pinemont
18	Tidwell @ Bingle	Optimize Offsets Optimize Splits Modify Eastbound and Westbound left-turn phases to permissive/protected phases on Tidwell	Add Westbound and Eastbound Right-Turn Bay on Tidwell Add Northbound and Southbound Right-Turn Bay on Bingle Add additional Eastbound and Westbound Left-Turn Bay to make dual left-turns on Tidwell Modify East and Westbound Left-Turn phases to Protected phases on Tidwell

ID Number	Intersection	Proposed Near TermMitigation	Proposed Long Term Mitigation
19	Breen @ N Houston Rosslyn	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	Add additional Southbound and Northbound thru lanes on N. Houston Rosslyn Add Southbound and Northbound right-turn bay on N. Houston Rosslyn
20	Crosstimbers @ Yale	Optimize Offsets Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	
21	Dacoma @ TC Jester	Optimize Offsets Optimize Splits Modify Northbound left-turn phase to permissive/protected phases on W. TC Jester	
22	Pinemont @ Ella	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound Left-turn phases to Permissive/Protected phases at this intersection	
23	Gulf Bank @ Stuebner Airline/Veterans Memorial	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	Add Eastbound Right-Turn Bay on W. Gulf Bank
24	Tidwell @ Hollister	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	Add additional Northbound and Southbound Thru lanes on Hollister Add Westbound and Eastbound Right-Turn Bay on Tidwell Add additional Northbound and Southbound Left-Turn Bay to make dual left-turns on Hollister Add Southbound Right-Turn Bay on Hollister Modify North and Southbound Left-Turn phases to Protected phases on Hollister
25	Little York @ Montgomery	Optimize Offsets Add additional Eastbound left-turn bay to make dual left-turns on W. Little York Modify Northbound and Southbound left-turn phases to permissive/protected on W. Montgomery	

ID Number	Intersection	Proposed Near TermMitigation	Proposed Long Term Mitigation
26	Little York @ Shepherd	Optimize Offsets and Splits Modify the Eastbound approach lane configuration from 2 thru lanes and 1 left-turn lane to 1 thru lane and 2 left-turn lanes make dual left-turns on W. Little York	
27	Victory @ Montgomery	Optimize Offsets Optimize Splits	Add additional Southbound Left-Turn Bay to make dual left-turns on W. Montgomery Add Westbound Right-Turn Lane Modify Eastbound, Westbound, Northbound and Southbound Left-Turn phases to Protected phases at this intersection
28	Montgomery @ Shepherd		Optimize Splits
29	Pinemont @ Shepherd		Add additional Northbound Left-Turn Bay to make dual left-turns on Shepherd Add Southbound Right-Turn Bay on Shepherd
30	Pinemont @ TC Jester	Optimize Offsets Optimize Splits Modify Eastbound and Westbound left-turn phases to permissive/protected phases on Pinemont	Add Eastbound Right-Turn Bay on Pinemont
31	Tidwell @ Shepherd	Optimize Offsets Optimize Splits Modify Eastbound and Westbound left-turn phases to permissive/protected phases on Tidwell	Add Westbound and Eastbound Right-Turn Bay on Tidwell Add additional Eastbound Left-Turn Bay to make dual left-turns on Tidwell Add additional Northbound and Southbound Left-Turn Bay to make dual left-turns on Shepherd Modify East and Westbound Left-Turn phases to Protected phases on Tidwell
32	Victory @ Shepherd	Optimize Offsets Optimize Splits Add Southbound right-turn bay on Shepherd	Add additional Northbound Left-Turn Bay to make dual left-turns on Shepherd Add additional Eastbound Left-Turn Bay to make dual left-turns on Victory

ID Number	Intersection	Proposed Near TermMitigation	Proposed Long Term Mitigation
33	Tidwell @ TC Jester	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	Add additional Westbound Left-Turn Bay to make dual left-turns on Tidwell Add additional Northbound Left-Turn Bay to make dual left-turns on TC Jester Add Eastbound and Westbound Right-Turn Bay on Tidwell Modify Eastbound, Westbound, Northbound and Southbound Left-Turn phases to Protected phases at this intersection
34	Victory @ TC Jester	Optimize Offsets Optimize Splits Add Eastbound right-turn bay on Victory	
35	Tidwell @ Ella/Wheatley	Optimize Offsets Optimize Splits Modify Eastbound, Westbound, Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	
36	Tidwell @ Yale	Optimize Offsets Optimize Splits Modify Northbound and Southbound left-turn phases to permissive/protected phases at this intersection	Add Eastbound Right-Turn Bay on Tidwell Add additional Northbound Left-Turn Bay to make dual left-turns on Yale Modify Eastbound, Westbound, Northbound and Southbound Left-Turn phases to Protected phases at this intersection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Intersection Improvement Recommendations
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FIGURE 7.2

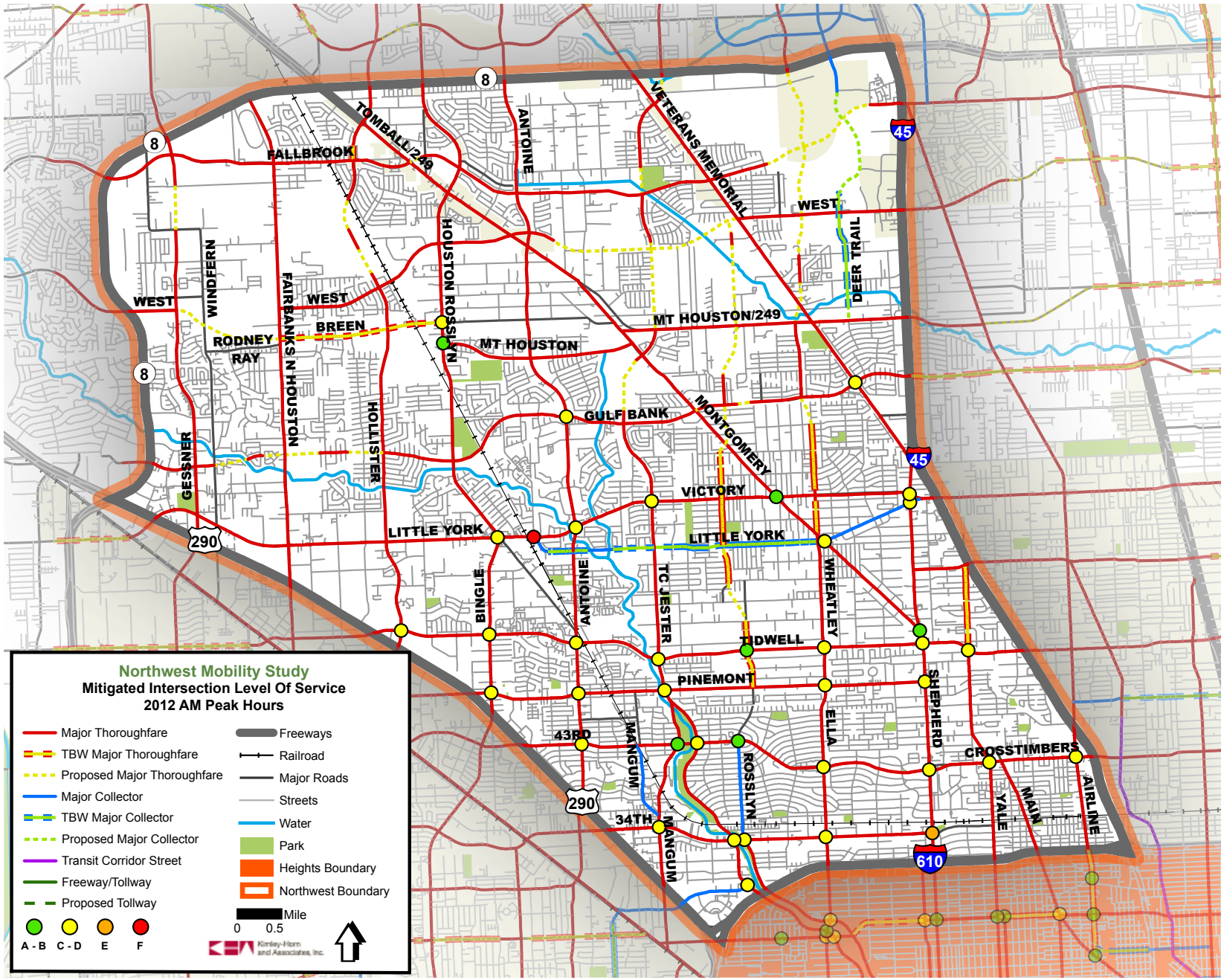
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FIGURE 7.3

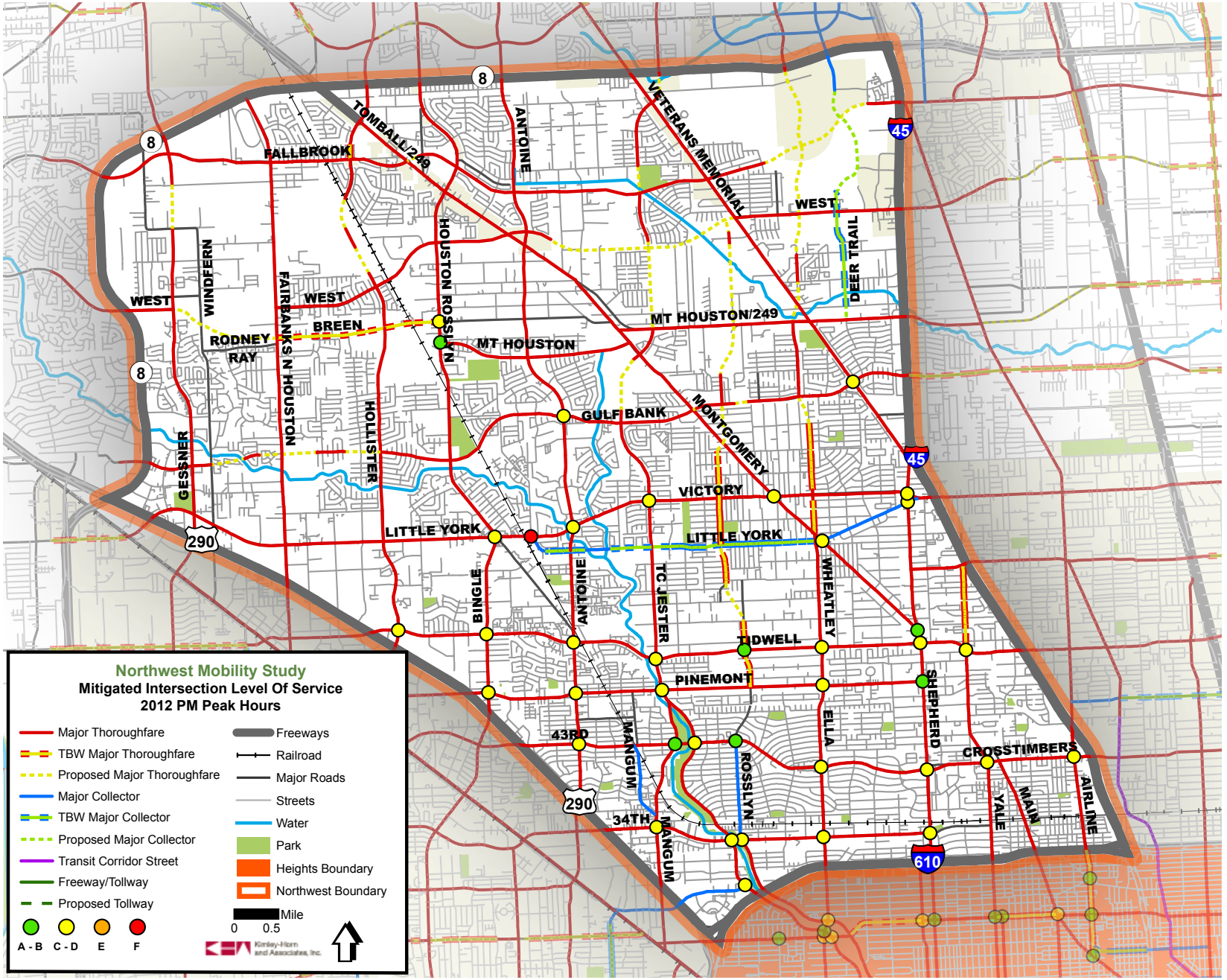
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FIGURE 7.4

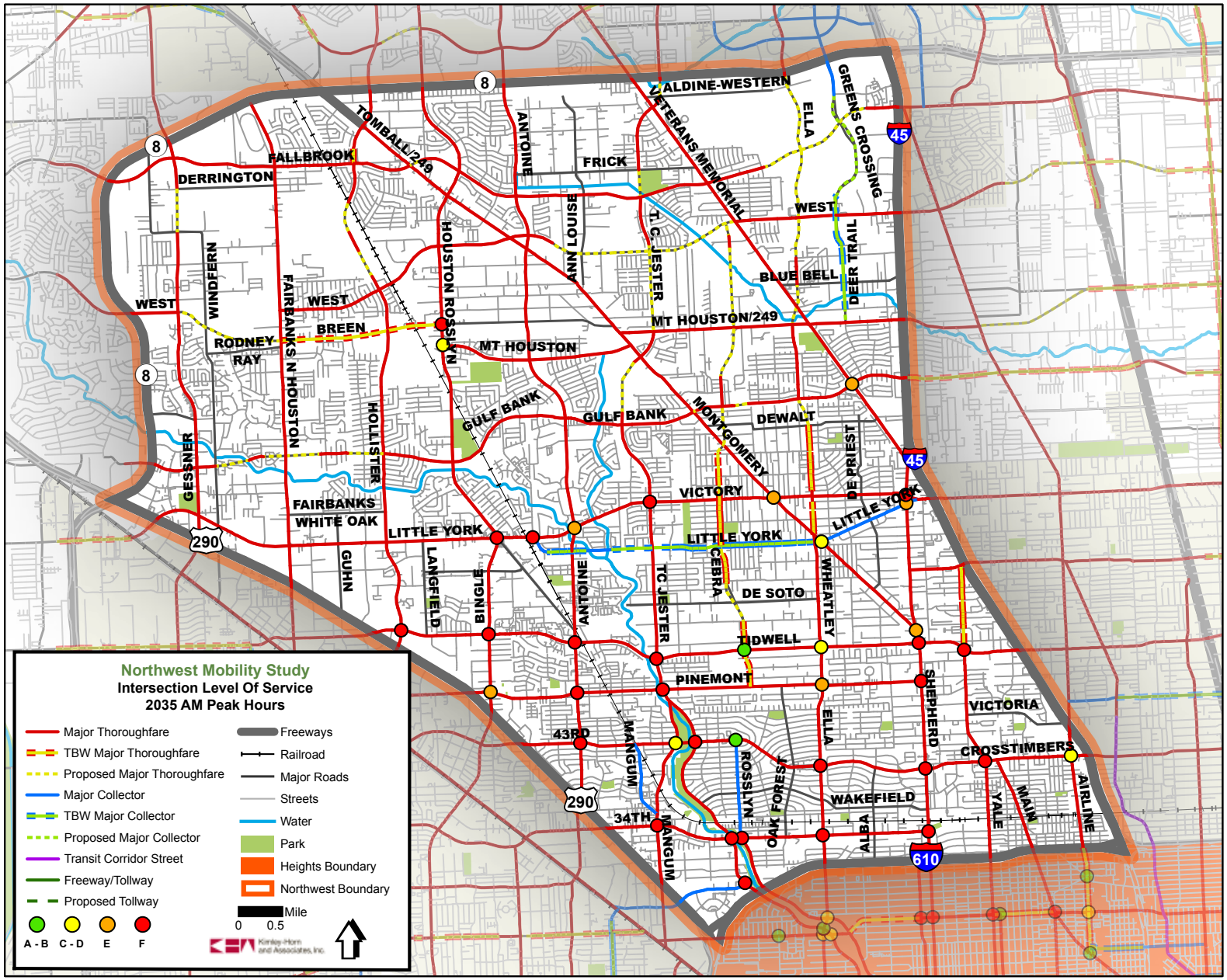
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FIGURE 7.5

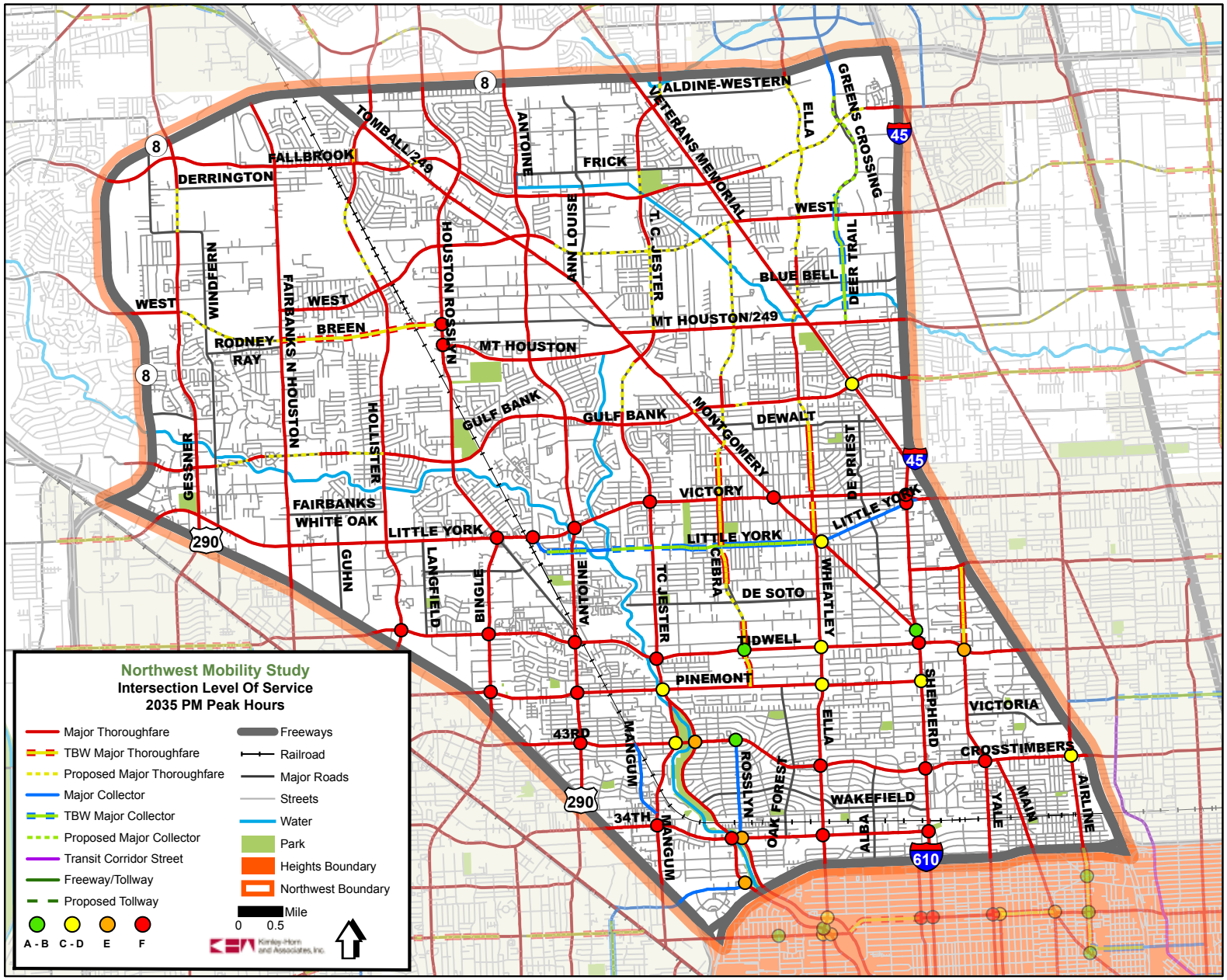
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FIGURE 7.6

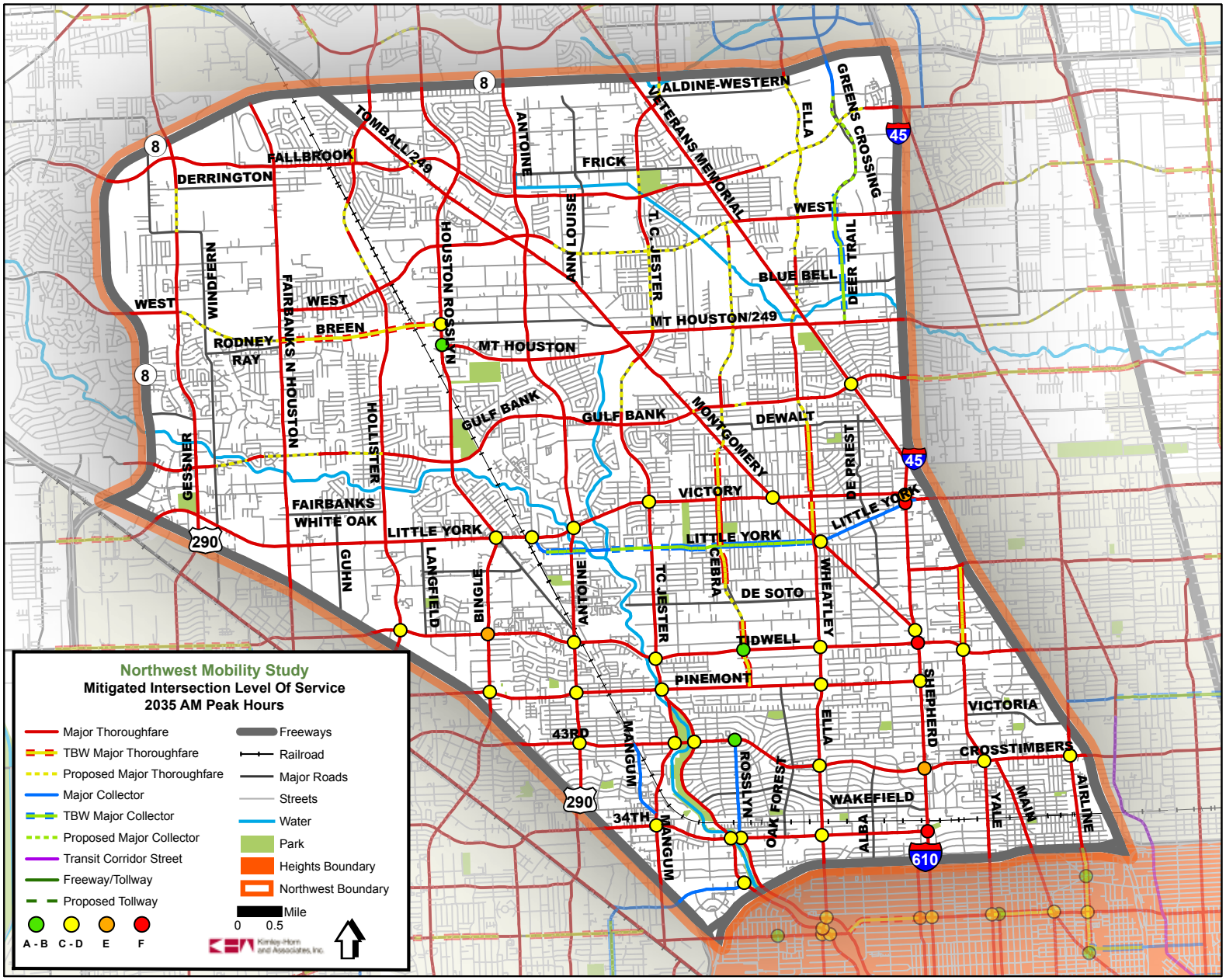
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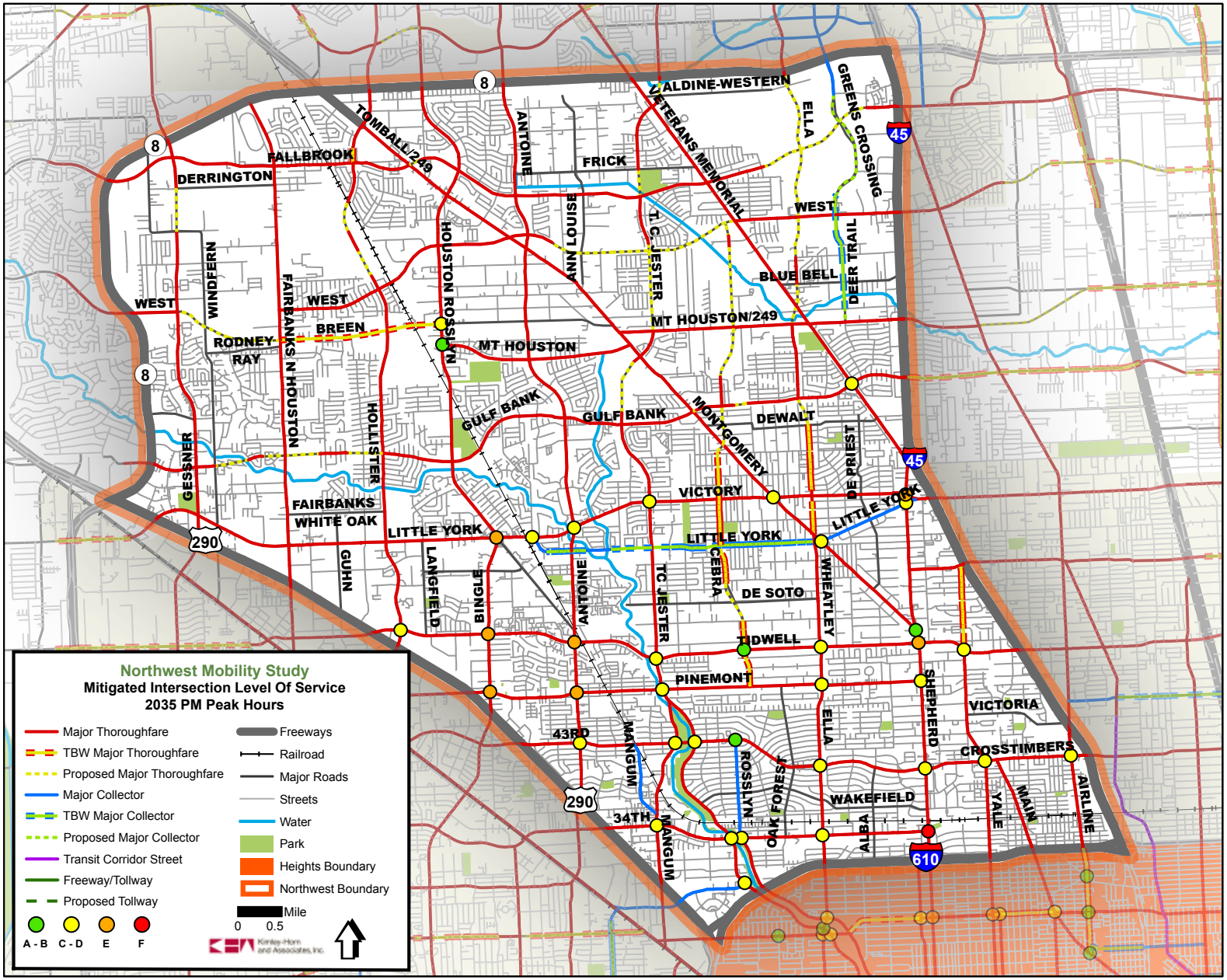
FIGURE 7.7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PINEMONT
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VICTORIA
CROSSTIMBERS
AIRLINE
MAIN
YALE
43RD
MANGUM
34TH
ROSSLYN
OAK FOREST
WAKEFIELD
ALBA
8
45
290
610

FIGURE 7.8

7.3 Bike Vision Map

The current bicycle network within the Northwest Study Area is limited, but room for expansion is evident. Planning for future facilities as streets redevelop, in addition to working with existing corridor design to create viable bicycle facilities, is essential in creating a well-connected network. **Trail heads** - or key access points from on-street to off-street biking facilities - are identified on the following system map for bike facilities; however, this list is in no way exhaustive and instead meant to start discussion concerning where and when such transition points are warranted.

In general, the Northwest Study Area maintains a more dense composition of development and existing street networks south of Gulf Bank Rd than the north. As such, there is a greater opportunity to promote on-street bike facilities in this southern half of the Study Area. However, off-street facility potential is greatest as defined in more detail below.

The Northwest area is also home to several bayous, including the larger White Oak and Halls Bayous. These are great assets in developing the off-street bicycle network in the Northwest area. The success of other bayou trail projects will encourage the construction of some form of off-street facility. The expansion of this network for recreational and commuter purposes is essential in spurring the multi-modal nature of the area as population and employment numbers begin to increase.

PHOTO PROVIDED COURTESY CITY OF HOUSTON

Finally, based on the Project Teams evaluation, and various discussions with the County, identified gaps within the on-street network highlight those critical corridors that represent essential commuting considerations within the Northwest study area's bikeway network.

Although the exact design is not yet understood, the corridors highlight the need for this additional consideration where the primary consideration for future design - as seen by the County and City alike - is the safety of the user where separated multi-use paths or the like may be most appropriate along high capacity/high speed corridors. However, until a more detailed understanding of the engineering considerations involved in such an endeavor, the highlighted critical corridors provide a baseline for future discussion.

For a more detailed discussion addressing street connectivity issues within this Study Area see section 5.4 Street Connectivity Considerations in Chapter V of this Report.

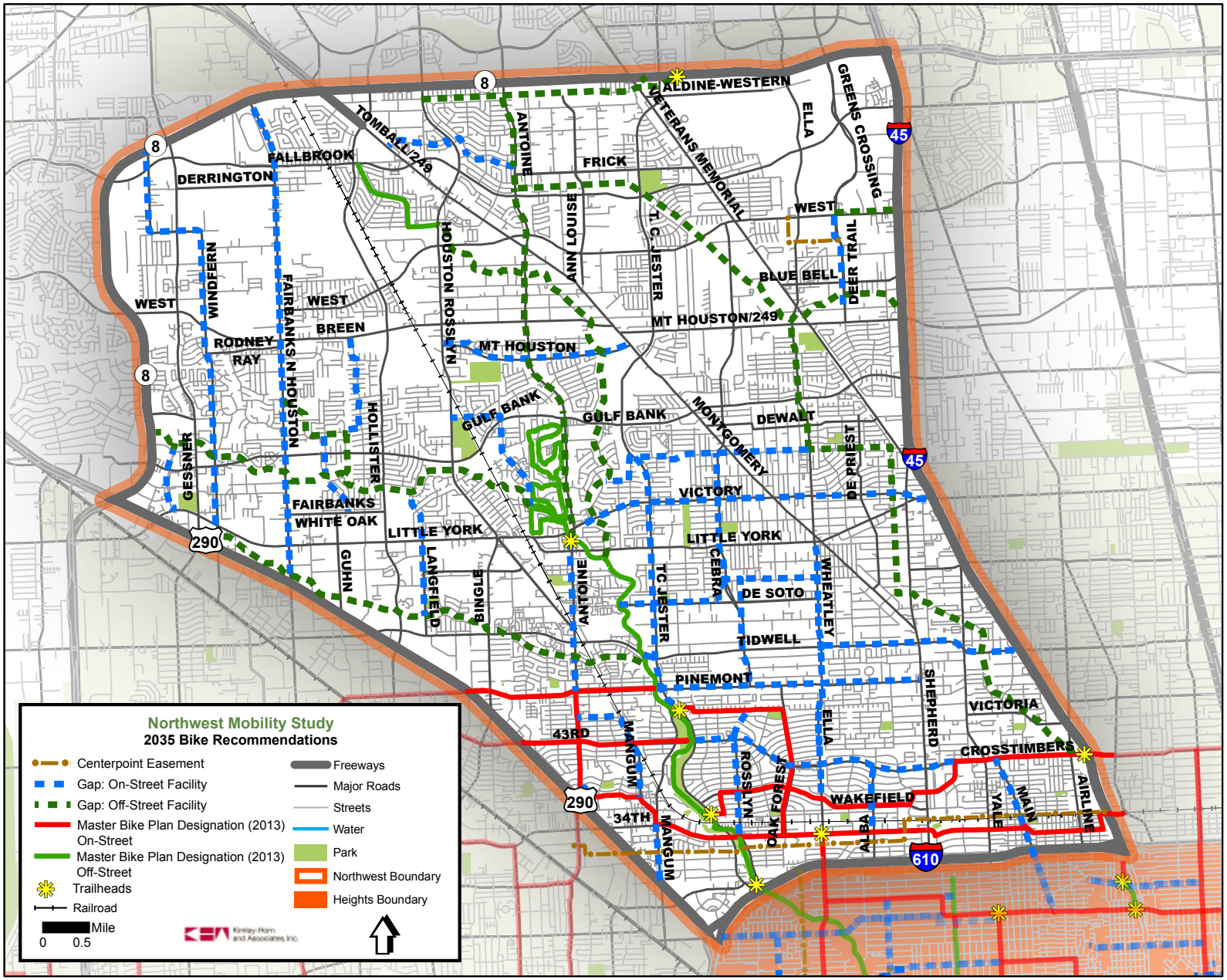

Northwest Mobility Study
2035 Bike Recommendations
Centerpoint Easement
Gap: On-Street Facility
Gap: Off-Street Facility
Master Bike Plan Designation (2013) On-Street
Master Bike Plan Designation (2013) Off-Street
Trailheads
Railroad
Mile
0 0.5
Freeways
Major Roads
Streets
Water
Park
Northwest Boundary
Heights Boundary
Kinsley-Horn and Associates, Inc.
ALDINE-WESTERN
VETERANS MEMORIAL
ELLA
GREENS CROSSING
FRICK
ANN LOUISE
T. C. JESTER
WEST
DEER TRAIL
BLUE BELL
MT HOUSTON/249
TOMBALL/249
HOUSTON ROSSLYN
MT HOUSTON
DERRINGTON
FALLBROOK
WINDFERN
WEST
RODNEY
RAY
WEST
BREEN
FAIRBANKS N HOUSTON
HOLLISTER
GESSNER
GULF BANK
GULF BANK
MONTGOMERY
DEWALT
DE PRIEST
VICTORY
FAIRBANKS
WHITE OAK
LITTLE YORK
LITTLE YORK
GUHN
LANGFIELD
BINGLE
ANTOINE
TC JESTER
CEBRA
DE SOTO
WHEATLEY
TIDWELL
PINEMONT
SHEPHERD
VICTORIA
43RD
MANGUM
ELLA
CROSSTIMBERS
ROSSLYN
OAK FOREST
WAKEFIELD
AIRLINE
MAIN
YALE
34TH
MANGUM
ALBA
8
45
290
610

FIGURE 7.9

7.4 Transit and Pedestrian Vision Map

The transit network within the Northside area is extensive, as seen in Chapter II. Existing Conditions. As detailed in Chapter V, Section 5.6 Transit Corridor Considerations, the project team evaluated the existing network based on defined transit needs. The resulting map identifies those areas in need of transit facilities. In compilation with Scenario 5 results, two transit types are depicted in final system recommendations including: Local Bus facilities and Bus Rapid Transit (BRT), or routes that facilitate the movement of larger numbers of persons across greater distances with less stops. METRO's light rail line, which came on line in December of 1013, is also depicted. See Figure 7.10 for more information.

Several High Frequency Routes are recommended located mostly along high capacity corridors with regional significance. Projections indicate the most popular routes will continue to be those that provide access to and from Houston's downtown. .

- **Feeder routes**: While the High Frequency Routes provide superior transit service along with heavy transit demand, feeder routes connect larger residential communities to these frequent routes. These routes may also connect local destinations, thus providing an effective transit network in the overall area.

With the expansion of the transit network (including the opening of the light-rail line) enhancements to pedestrian facilities within the Study Area are priority for the study area. Specifically, it is recommended that wider sidewalks be provided on corridors with transit. Wider sidewalks enhance safety of the pedestrian realm which encourages increased access to transit. For more information regarding the pedestrian realm and proper facility types see Chapter VI. A Balanced Approach.

BUS RAPID TRANSIT (BRT)

LOCAL BUS

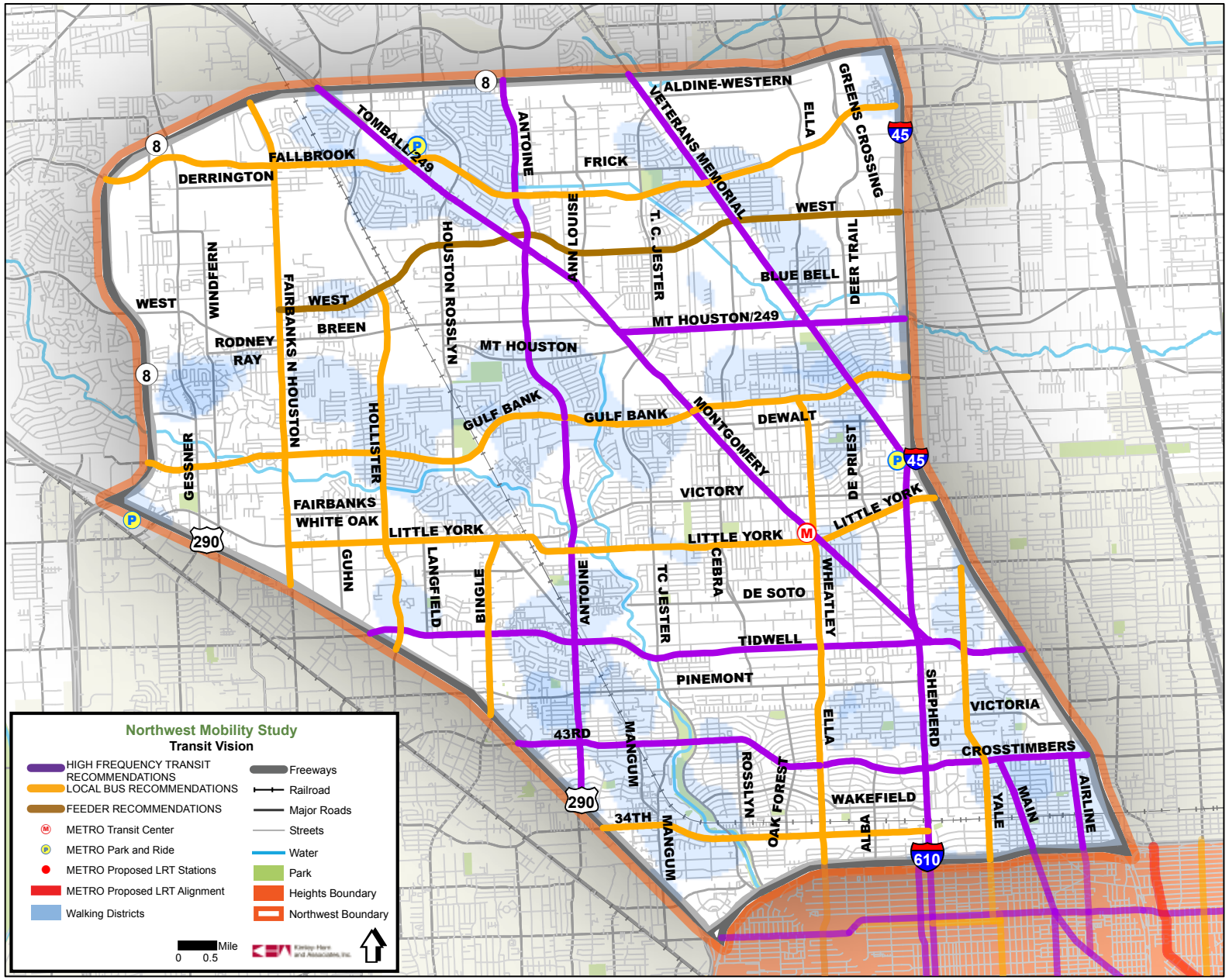

Northwest Mobility Study
Transit Vision
HIGH FREQUENCY TRANSIT RECOMMENDATIONS
LOCAL BUS RECOMMENDATIONS
FEEDER RECOMMENDATIONS
METRO Transit Center
METRO Park and Ride
METRO Proposed LRT Stations
METRO Proposed LRT Alignment
Walking Districts
Freeways
Railroad
Major Roads
Streets
Water
Park
Heights Boundary
Northwest Boundary
Mile
0 0.5
TOMBALL/249
FALLBROOK
DERRINGTON
WEST
WINDFERN
RODNEY
RAY
GESSNER
FAIRBANKS N HOUSTON
WEST
BREEN
HOLLISTER
FAIRBANKS
WHITE OAK
GUHN
LANGFIELD
BINGLE
HOUSTON ROSSLYN
ANTOINE
FRICK
ANN LOUISE
MT HOUSTON
GULF BANK
GULF BANK
LITTLE YORK
LITTLE YORK
ANTOINE
TC JESTER
T. C. JESTER
ALDINE-WESTERN
VETERANS MEMORIAL
ELLA
GREENS CROSSING
WEST
DEER TRAIL
BLUE BELL
MT HOUSTON/249
MONTGOMERY
DEWALT
DE PRIEST
VICTORY
LITTLE YORK
CEBRA
DE SOTO
WHEATLEY
TIDWELL
PINEMONT
SHEPHERD
VICTORIA
CROSSTIMBERS
43RD
MANGUM
ELLA
ROSSLYN
OAK FOREST
WAKEFIELD
34TH
MANGUM
ALBA
YALE
MAIN
AIRLINE
8
290
45
610
P
M

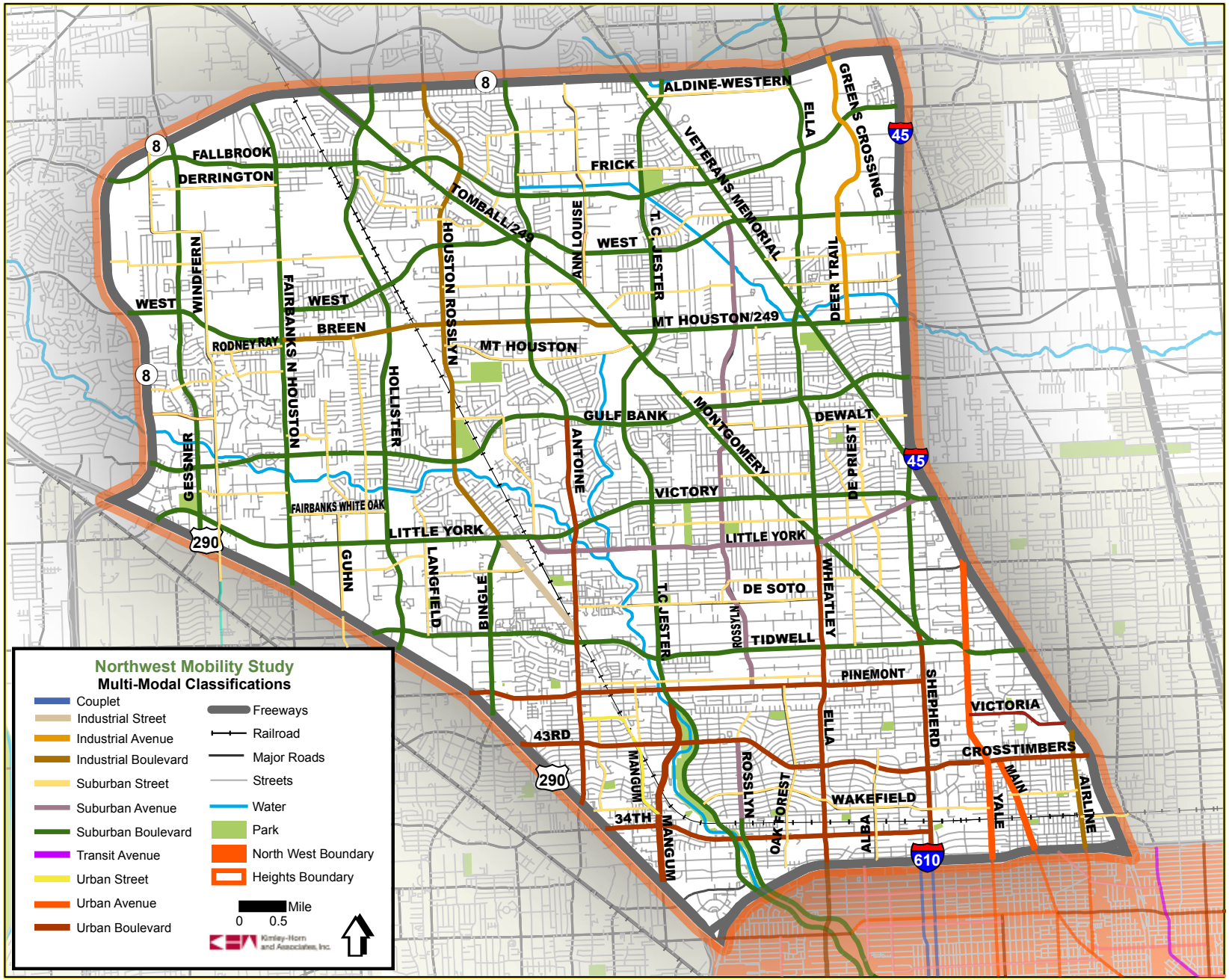
FIGURE 7.10

7.5 Multi-Modal Classification Map

TThe Multi-Modal Classification Map depicts a public street type classification system that takes into account the functional classification system and land use context, inclusive of right-of-way width, number of lanes, and traffic volume. The MMC can be found in Chapter 10 of the Design Manual for Street Paving Design Requirements.

The multi-modal classification identifies the options for widths of the road based on the modal uses. Corridor classifications were identified in conjunction with the City of Houston's Public Works and Engineering Department (PWE) and Planning and Development Department (PDD). Individual corridor evaluation is summarized in Chapter VI, Section 6.2 Corridor Sheets. The MMC Map shown in Figure 7.11 is representative of the 2035 MTFP network, and as such includes all existing as well as planned roads projected to be built by 2035.

Based on the evaluation of the MMC designations provided in Chapter 10, Appendix 2 of the City of Houston Infrastructure Design Manual, it is recommended that provided right-of-way designations as currently defined be reevaluated. Specific attention should be given to how a Boulevard and Avenue are defined where provided ROW designations of 100' or 80' do not necessarily reflect older corridors characteristic of Houston streets.


Northwest Mobility Study
Multi-Modal Classifications
Couplet
Industrial Street
Industrial Avenue
Industrial Boulevard
Suburban Street
Suburban Avenue
Suburban Boulevard
Transit Avenue
Urban Street
Urban Avenue
Urban Boulevard
Freeways
Railroad
Major Roads
Streets
Water
Park
North West Boundary
Heights Boundary
Mile
0 0.5
Kimley-Horn and Associates, Inc.
ALDINE-WESTERN
GREEN'S CROSSING
ELLA
VETERANS MEMORIAL
FRICK
FALLBROOK
DERRINGTON
TOMBALL/249
ANNE LOUISE
T.C. JESTER
WEST
DEER TRAIL
WINDFERN
WEST
FAIRBANKS N HOUSTON
WEST
BREEN
HOUSTON ROSSLYN
MT HOUSTON/249
RODNEY RAY
MT HOUSTON
HOLLISTER
GULF BANK
MONTGOMERY
DEWALT
DE PRIEST
GESSNER
ANTOINE
VICTORY
FAIRBANKS WHITE OAK
LITTLE YORK
LITTLE YORK
GUHN
LANGFIELD
BINGLE
T.C. JESTER
ROSSLYN
DE SOTO
WHEATLEY
TIDWELL
PINEMONT
SHEPHERD
VICTORIA
43RD
ELLA
CROSSTIMBERS
MAIN
YALE
AIRLINE
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ROSSLYN
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WAKEFIELD
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MANGUM
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610

FIGURE 7.11

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