

Master Mobility Plan Update

CITY COUNCIL MEETING
OCTOBER 23, 2018

Benefits of Transportation Planning



- Framework for Growth
- System Alignments/ ROW Preservation/ Design Standards
- Land Use/ Transportation Relationship
- Multimodal Considerations
- Coordination with Other Planning Initiatives
- Infrastructure and Utilities Coordination
- Capital Improvements Programming
- Funding of Improvements
- Informed Public



Mobility Planning Process



Study Process

1. Guiding Principles and Goals

2. Assessment of Existing Systems

3. Travel Forecasting

4. Mobility Plan Update

5. Implementation & Prioritization

6. Documentation

Mobility Centered Goals and Objectives



Mobility, Safety and Preservation of Existing Infrastructure



Investment in **maintenance, rehabilitation, safety** and **reconstruction** of existing systems.

Enhance Economic Vitality



Enhance the economic competitiveness **using resources in a cost effective manner.**

Fiscal Stewardship



Provide a **detailed roadmap of actions** for transportation and infrastructure improvements.

Special Place to Live



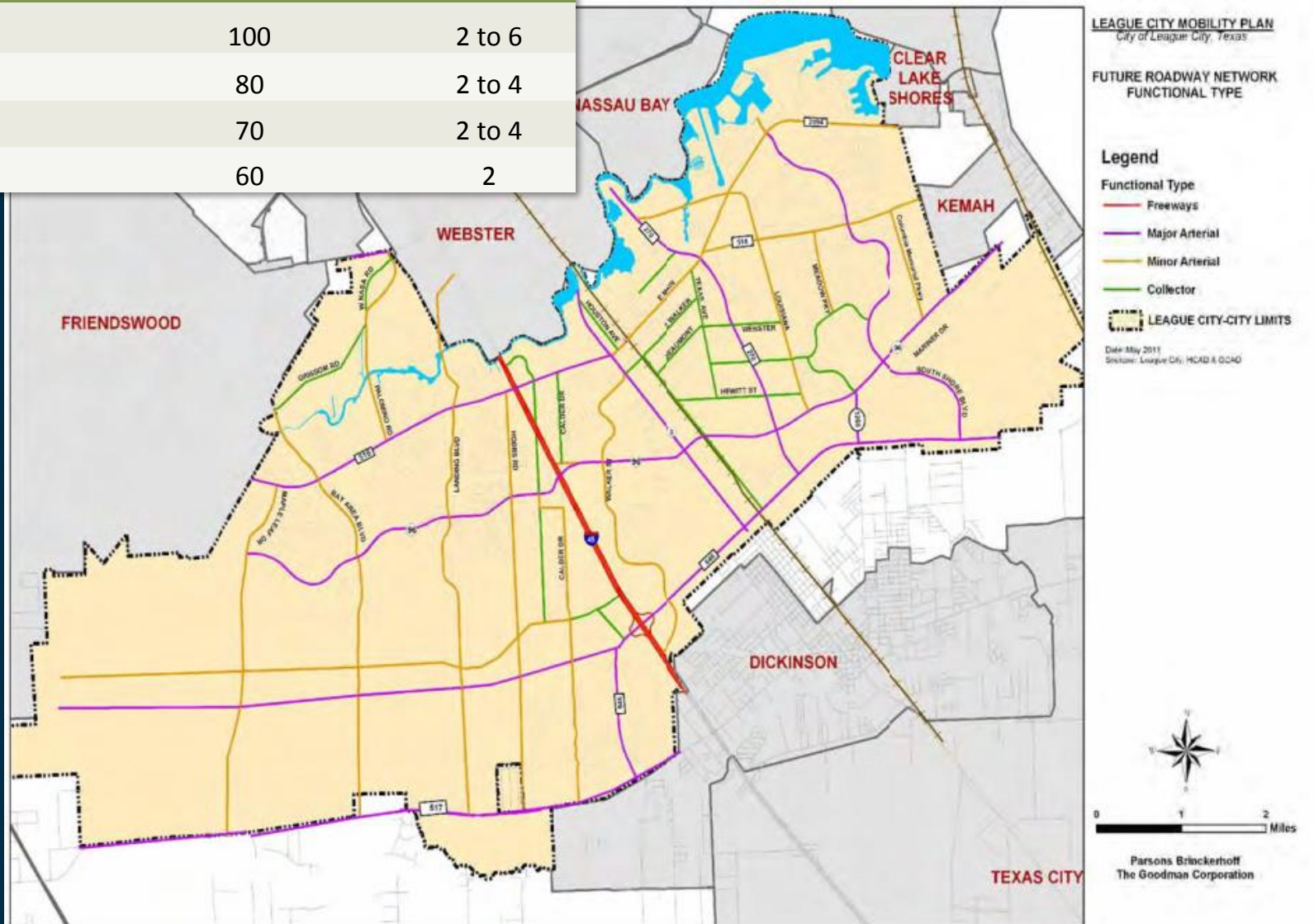
Reflects community priorities on **protecting quality of life and natural environment.**

League City Master Mobility Plan

Existing Thoroughfare Plan



Functional Classification	Minimum Right-of-Way *	Lanes
Major Arterial	100	2 to 6
Minor Arterial	80	2 to 4
Minor Collector	70	2 to 4
Residential Street	60	2



League City Master Mobility Plan

Travel Demand Modeling

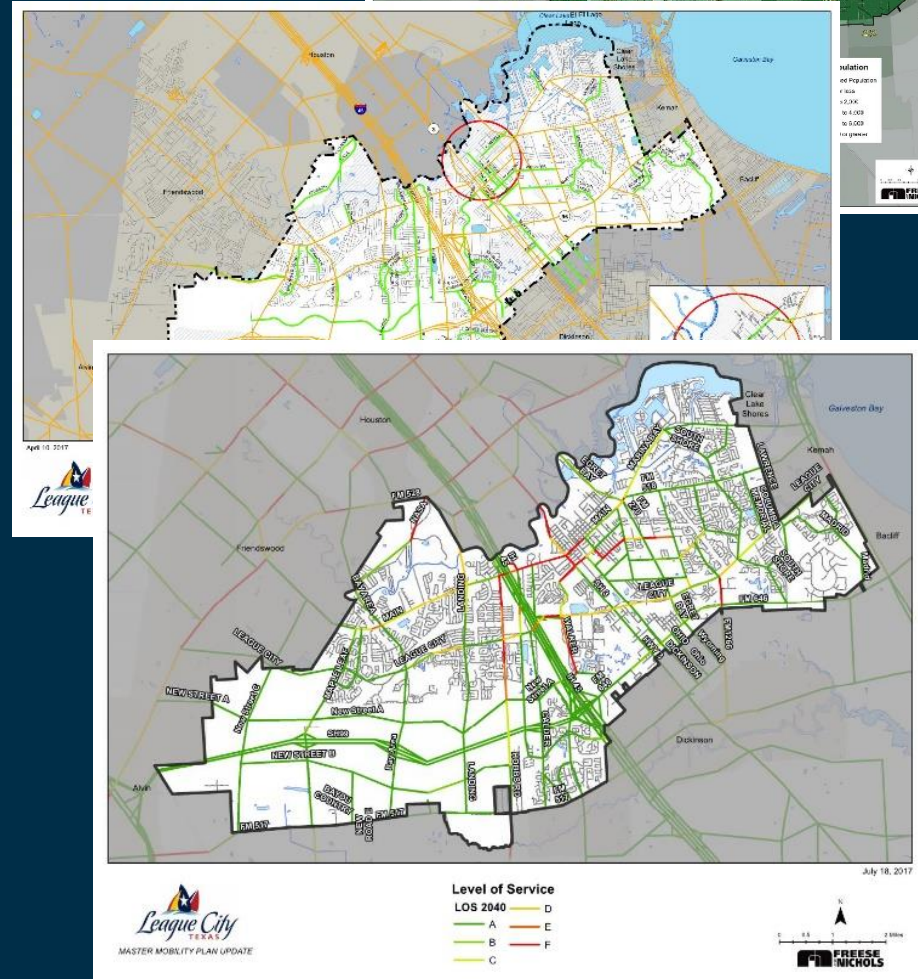


- **Update City Demographics**

- League City Staff input on population and employment growth
- Review of existing and planned developments
- Demographics collected for 2015, 2025, and 2040 forecast years
- Update Traffic Analysis Zones for H-GAC model run

- **Update of Thoroughfare Networks**

- Review of base H-GAC networks
- League City staff input on planned roadways and lane configurations
- Review of previous thoroughfare networks



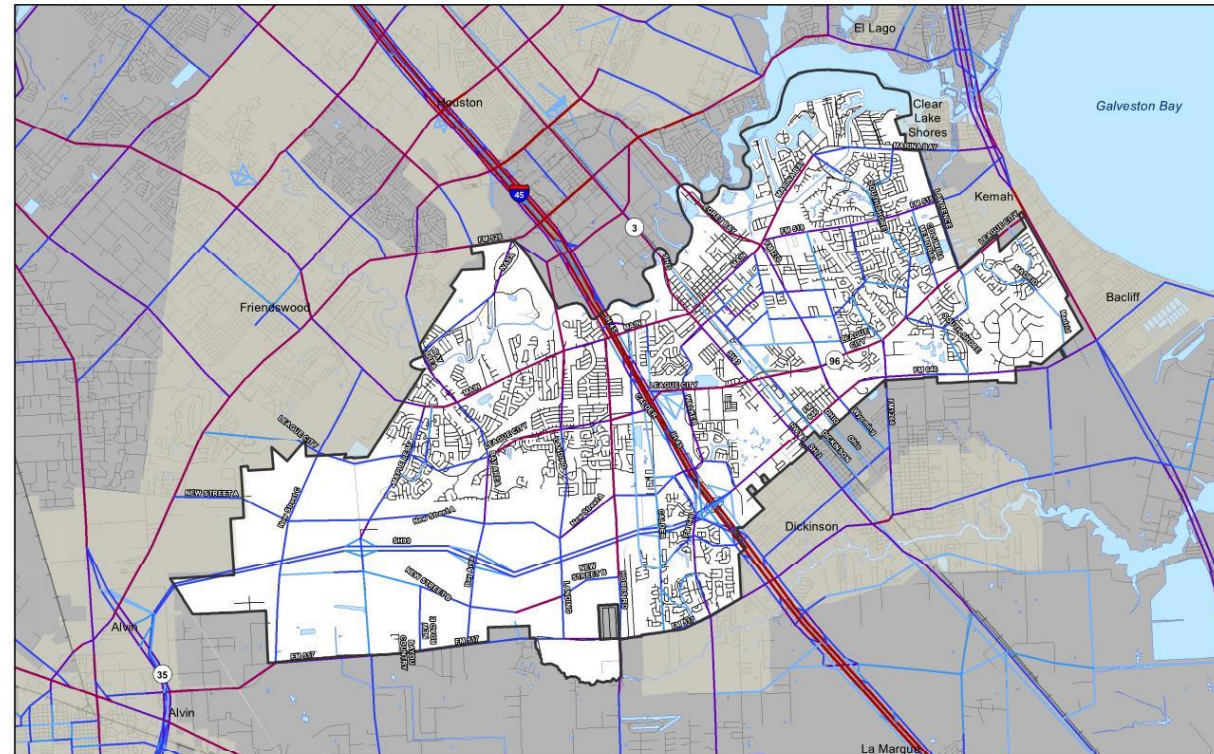
League City Master Mobility Plan

Travel Demand Modeling



Base 2040 Model Run

- Network Performance
 - Total 2015 Network VMT 1.6 Million
 - Total 2040 Network VMT 2.9 Million **50 percent increase**
- High Volume Corridors
 - FM 518: 65,700
 - Hobbs Rd: 44,700
 - SH 3: 40,500
 - League City Pkwy: 34,000



Volumes Map
2040 Daily Volumes



League City Master Mobility Plan

Travel Demand Modeling



Base 2040 Model Run Continued

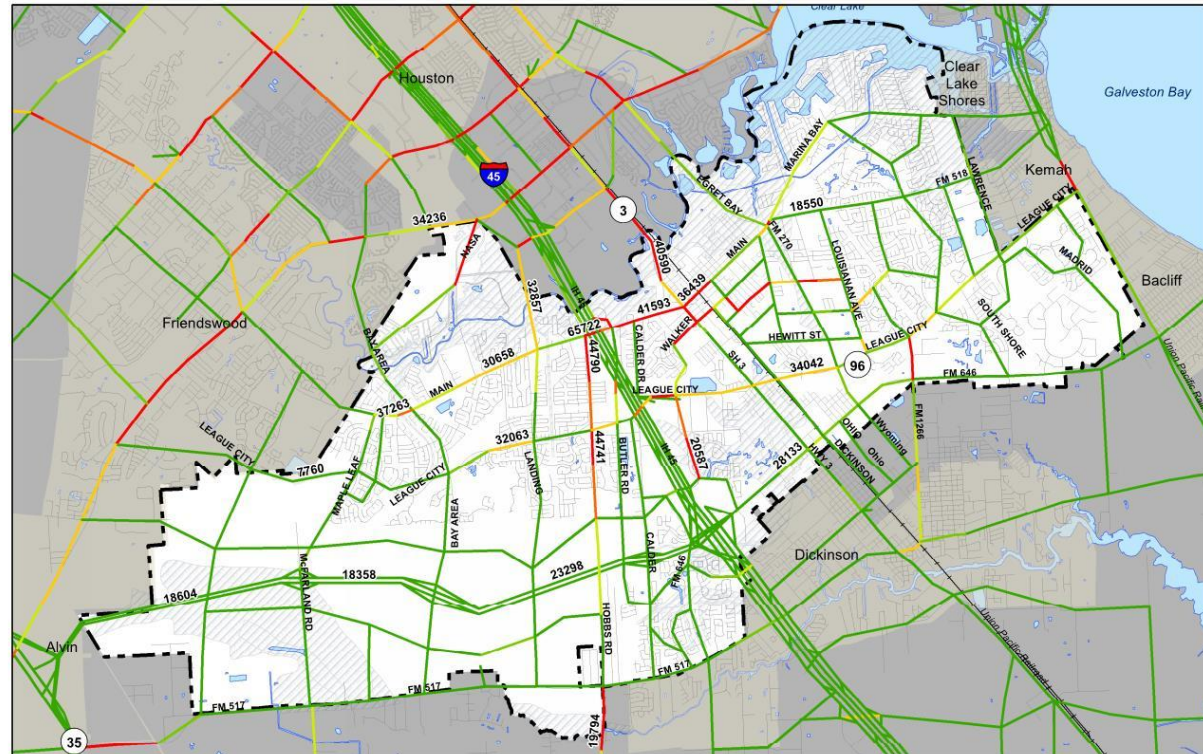
High Congestion Corridors

- FM 518
- Walker Street
- FM 1266
- Hobbs Road

Generally adequate lane capacity

- Two-Lanes (w/ left turn lane): 18,300
- Four-Lanes (w/ left turn lane): 36,800
- Four-Lanes (w/ left turn lane): 55,300

Operational deficiencies largely due to access management

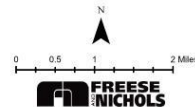


June 19, 2018

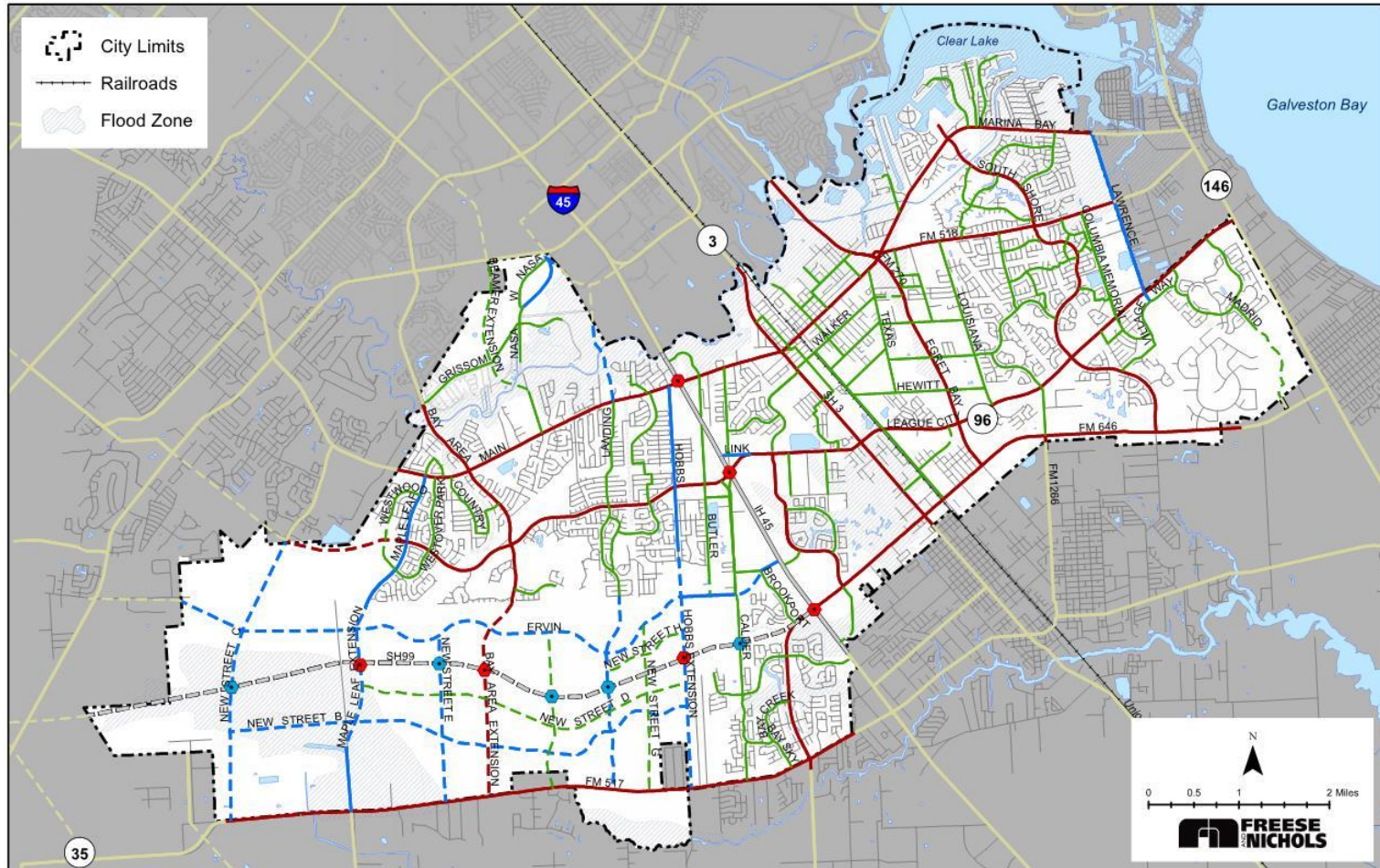


2040 Level of Service

— A	— C	— E	City Limits	Surrounding Cities
— B	— D	— F	Flood Zone	Railroads



League City Master Mobility Plan Recommended Thoroughfare Map



Draft Thoroughfare Map

October 3, 2018

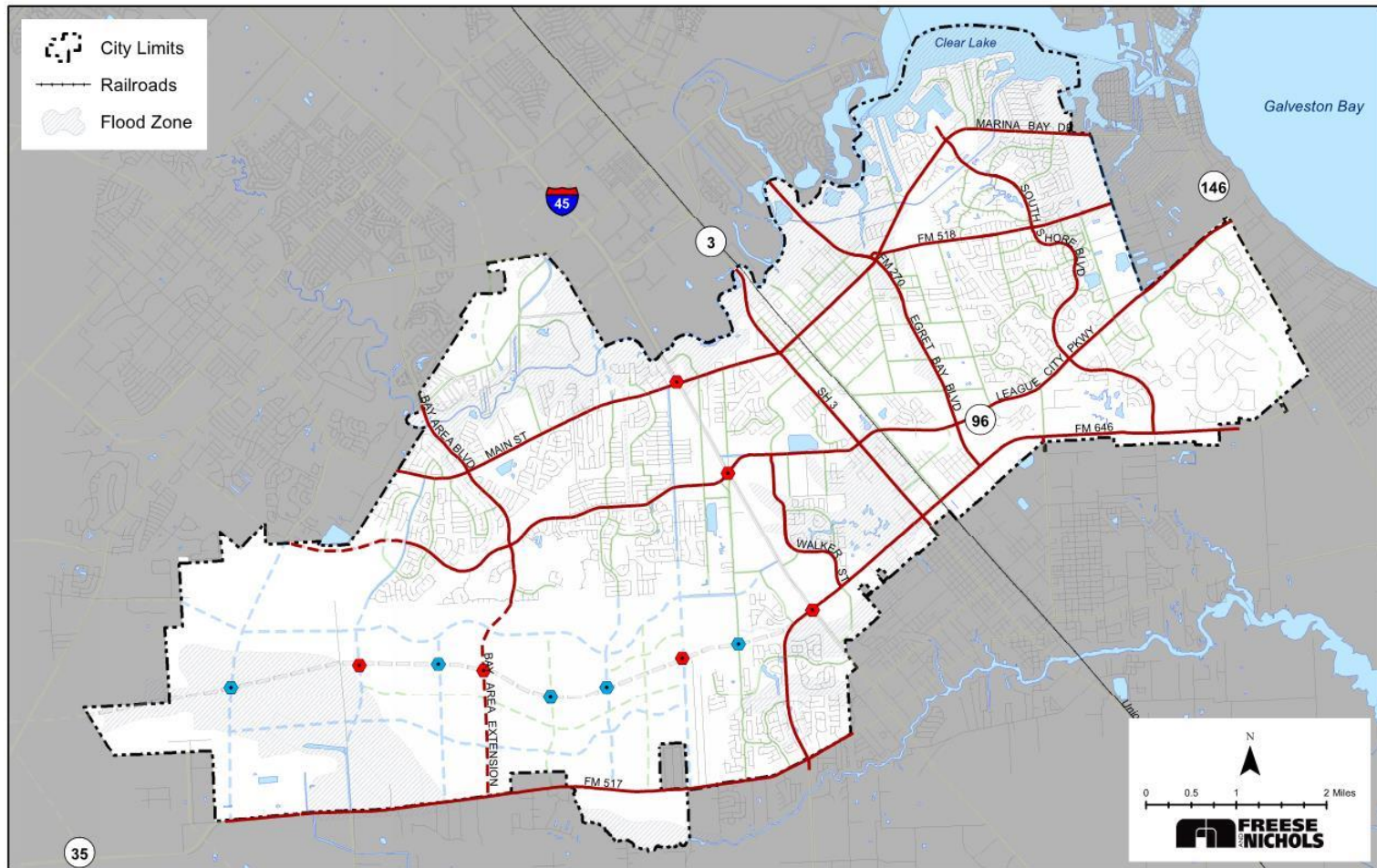


- Interchange
- Grade Separation
- Freeway
- Proposed Freeway
- Major Arterial (100'-120' ROW, 2 to 6 lanes)
- Proposed Major Arterial
- Minor Arterial (80'-100' ROW, 2 to 4 lanes)
- Proposed Minor Arterial
- Collector (80' ROW, 2 to 4 lanes)
- Proposed Collector
- Outside City Limits (existing)
- Outside City Limits (proposed)

Alignments for proposed roadways are only conceptual and serve to identify right-of-way for preservation. Specific alignments will be designed as development unfolds within the city.

League City Master Mobility Plan

Recommended Major Arterials



Major Arterials



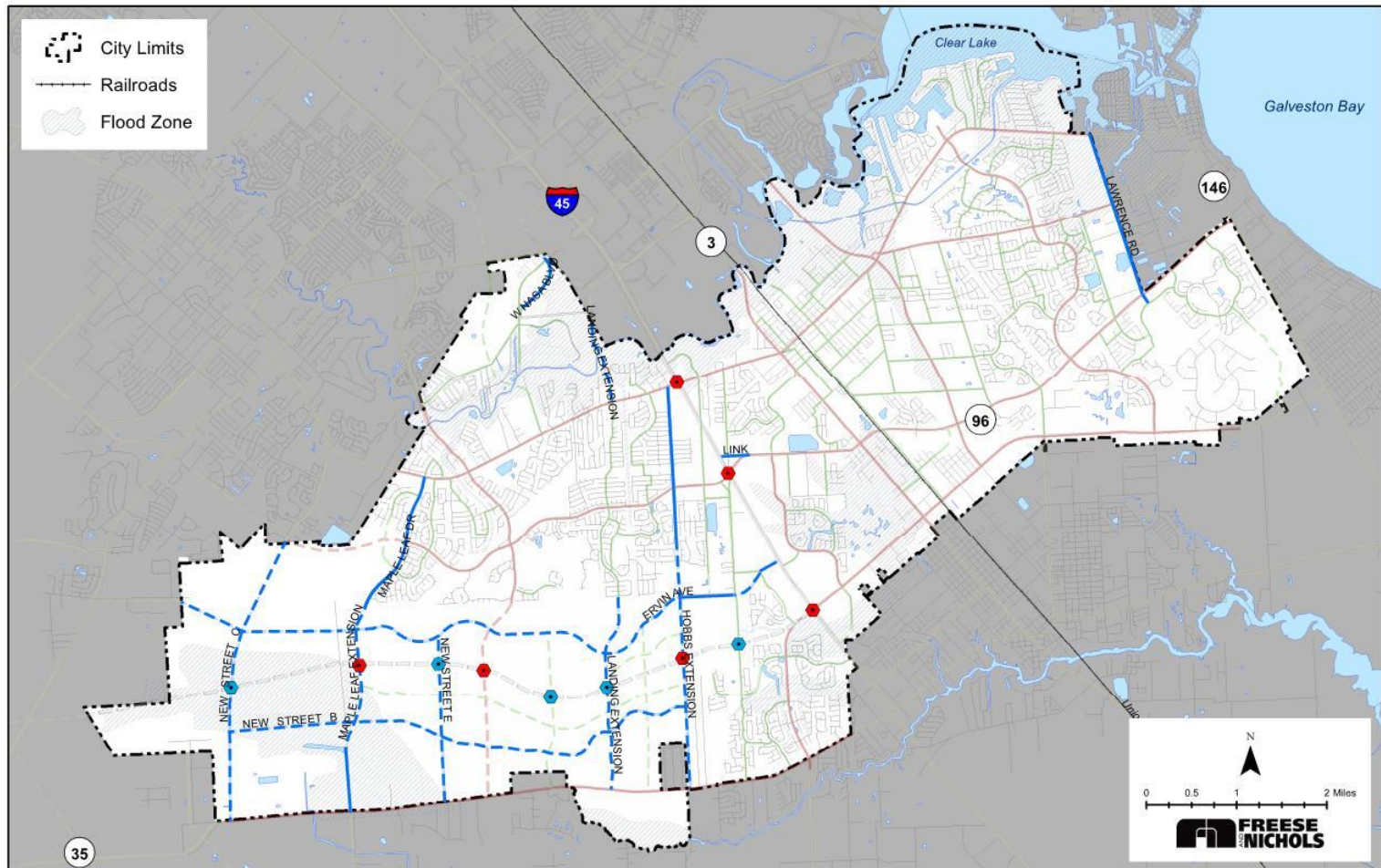
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|------------------------|--|--------------------------------------|
| ● Interchange | — Major Arterial (100'-120' ROW, 2 to 6 lanes) | — Collector (80' ROW, 2 to 4 lanes) |
| ● Grade Separation | - - - Proposed Major Arterial | - - - Proposed Collector |
| — Freeway | — Minor Arterial (80'-100' ROW, 2 to 4 lanes) | — Outside City Limits (existing) |
| - - - Proposed Freeway | - - - Proposed Minor Arterial | - - - Outside City Limits (proposed) |

October 11, 2018

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Recommended Minor Arterials



Minor Arterials

October 11, 2018

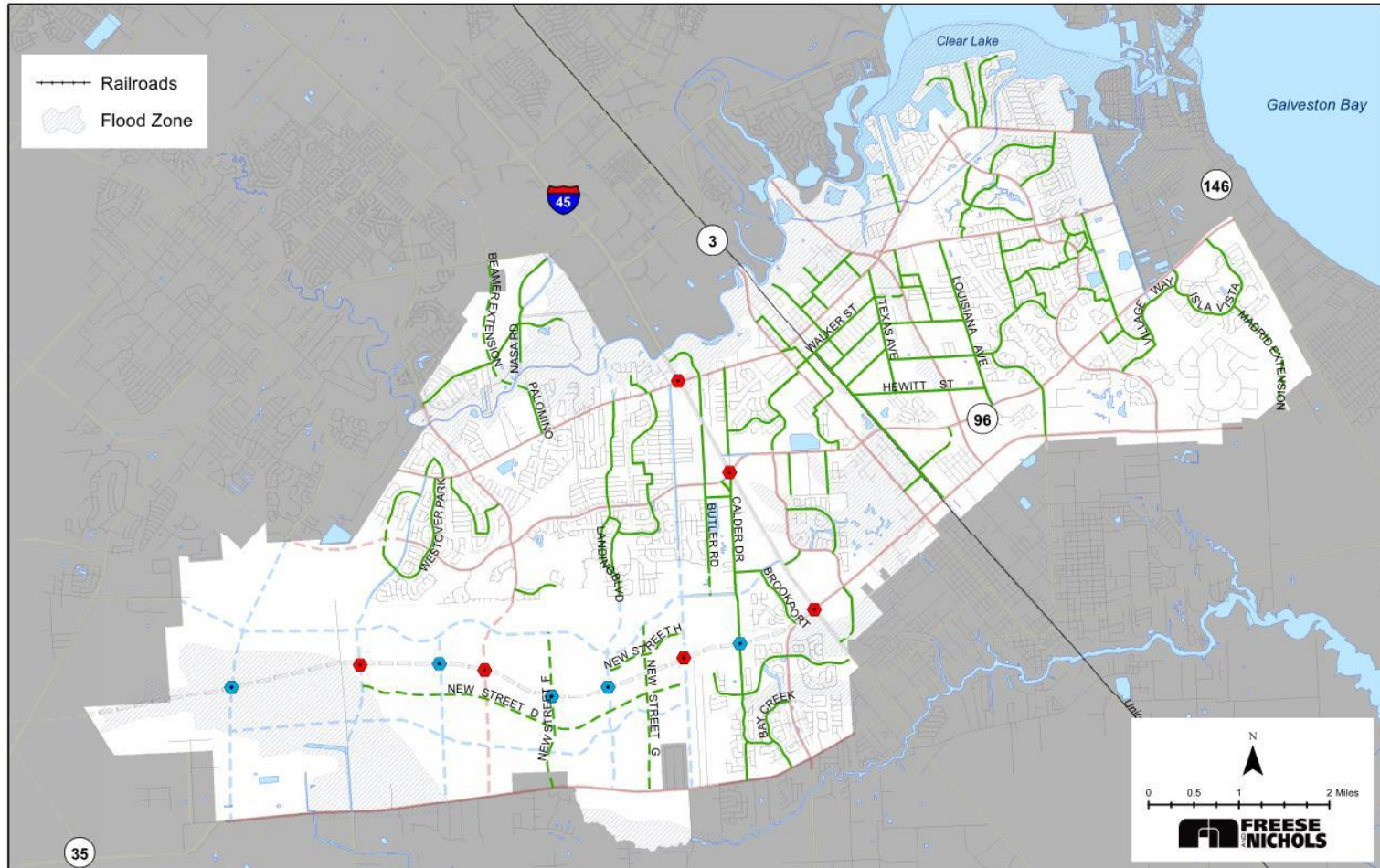


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| ● Interchange | — Major Arterial (100'-120' ROW, 2 to 6 lanes) | — Collector (80' ROW, 2 to 4 lanes) |
| ● Grade Separation | - - - Proposed Major Arterial | - - - Proposed Collector |
| — Freeway | — Minor Arterial (80'-100' ROW, 2 to 4 lanes) | — Outside City Limits (existing) |
| - - - Proposed Freeway | - - - Proposed Minor Arterial | - - - Outside City Limits (proposed) |

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League City Master Mobility Plan

Recommended Collectors



Collectors

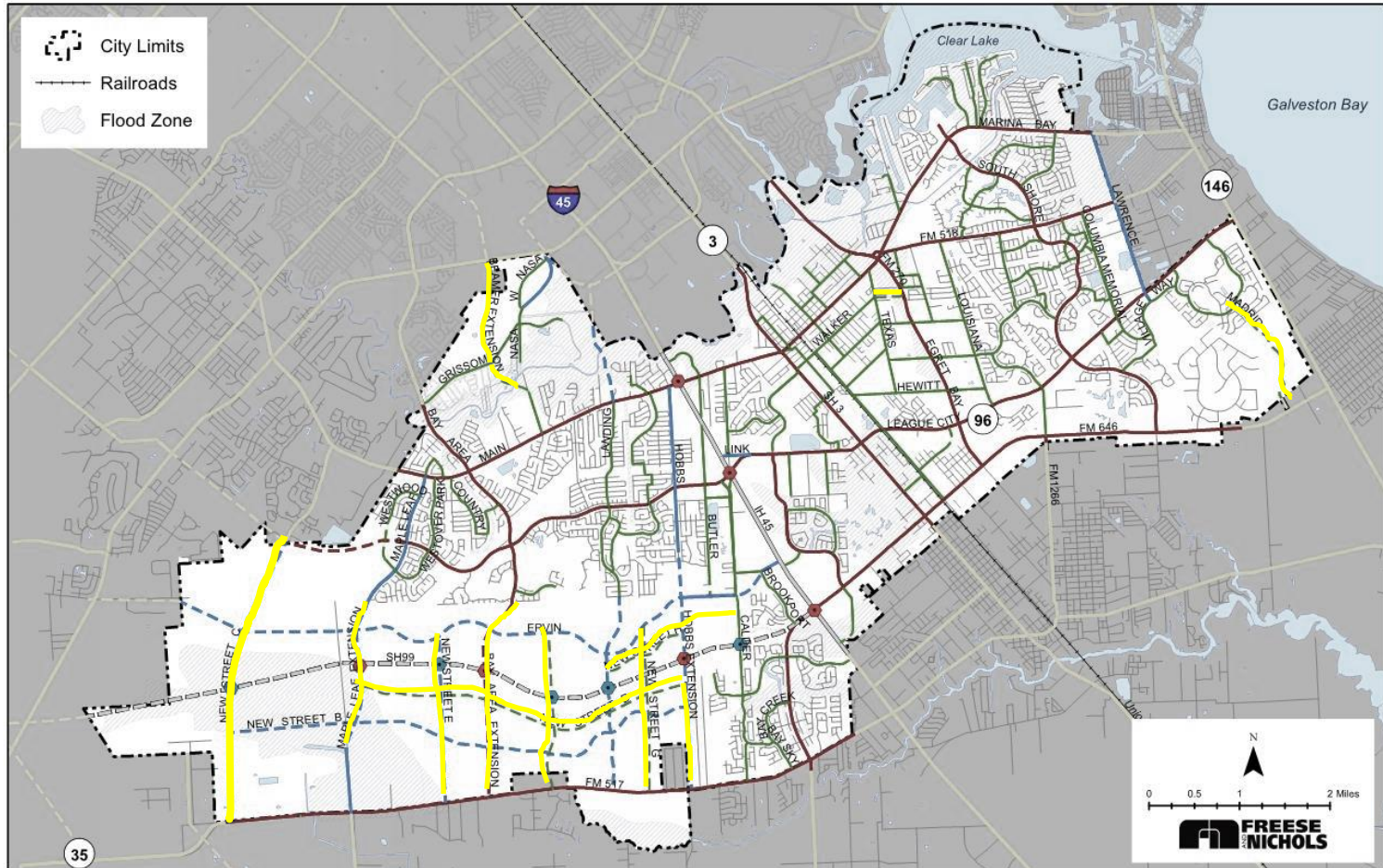


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| — Freeway | — Minor Arterial (80'-100' ROW, 2 to 4 lanes) | — Outside City Limits (existing) |
| - - - Proposed Freeway | - - - Proposed Minor Arterial | - - - Outside City Limits (proposed) |

October 11, 2018

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League City Master Mobility Plan Network Additions



Draft Thoroughfare Map

October 3, 2018



- | | | |
|------------------|--|-----------------------------------|
| Interchange | Major Arterial (100'-120' ROW, 2 to 6 lanes) | Collector (80' ROW, 2 to 4 lanes) |
| Grade Separation | Proposed Major Arterial | Proposed Collector |
| Freeway | Minor Arterial (80'-100' ROW, 2 to 4 lanes) | Outside City Limits (existing) |
| Proposed Freeway | Proposed Minor Arterial | Outside City Limits (proposed) |

Alignments for proposed roadways are only conceptual and serve to identify right-of-way for preservation. Specific alignments will be designed as development unfolds within the city.

League City Master Mobility Plan

Key Network Additions



Project Implementation Timing

Short Term (0 – 5 Years)

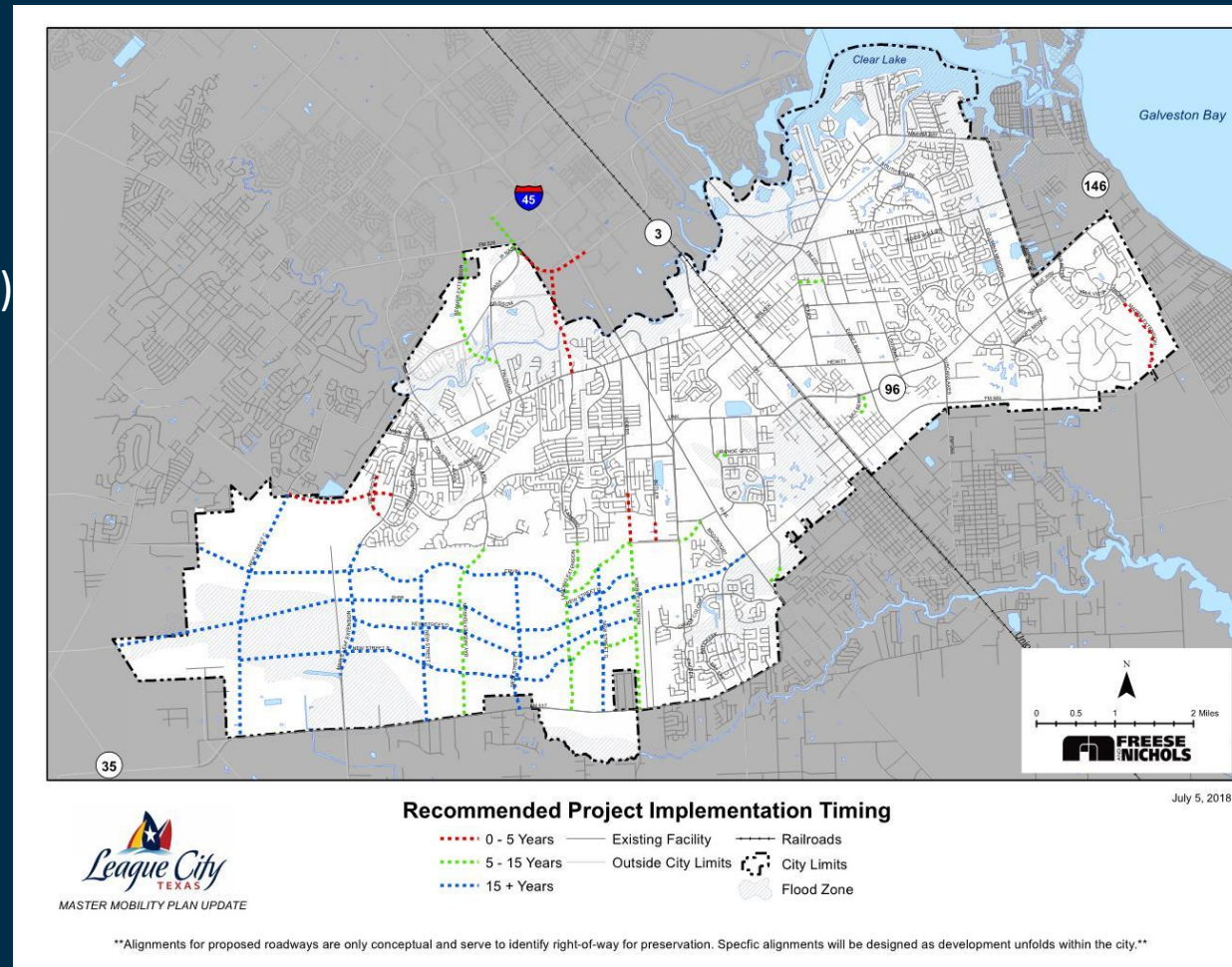
- League City Pkwy Extension
- Hobbs Rd Extension
- Madrid Ln Extension
- Landing Blvd Extension (North)

Mid-Term (5 – 15 Years)

- Bay Area Blvd Extension
- Landing Extension (South)
- Beamer Rd Extension

Long-Term (15 + Years)

- Grand Parkway (SH 99)
- Ervin Street Extension
- New Street C
- Maple Leaf Extension



League City Master Mobility Plan

Thoroughfare Recommendations



Recommended Functional Classifications

- Flexible ROW
- Variable Lane Configurations
- Includes urban and rural contexts

Functional Classification	Area Type	Lanes*	Spacing (Miles)	ROW	Pavement Width (feet)	Design Speed (mph)	Median
Freeway/ Highway		4 to 8		400' - 500'			Yes
Major Arterial	Urban	2D	1	100' - 120'	2 @ 13	40-50	Yes
	Urban	4D	1	100' - 120'	2 @ 25	40-50	Yes
	Urban	6D	1	100 - 120'	2 @ 37	40-50	Yes
Minor Arterial	Urban	2-4D	½	80'-100'	2 @ 25	40-50	Yes
	Urban	4D	½	120'	2 @ 25	40-50	Yes
Collector	Urban	2-4D	¼	90'	2 @ 25	35	Yes
	Urban	2U	¼	80'	42	35	No
	Rural*	2-4D	¼	100'	2 @ 25	35	Yes
	Rural*	2U	¼	90	42	35	No
	Rural	2	¼	70	28	25	No
Residential	Urban	2	¼	60	28	25	No
	Rural	2	¼	70	28	25	No

* Rural open ditch sections require 10 additional feet of ROW

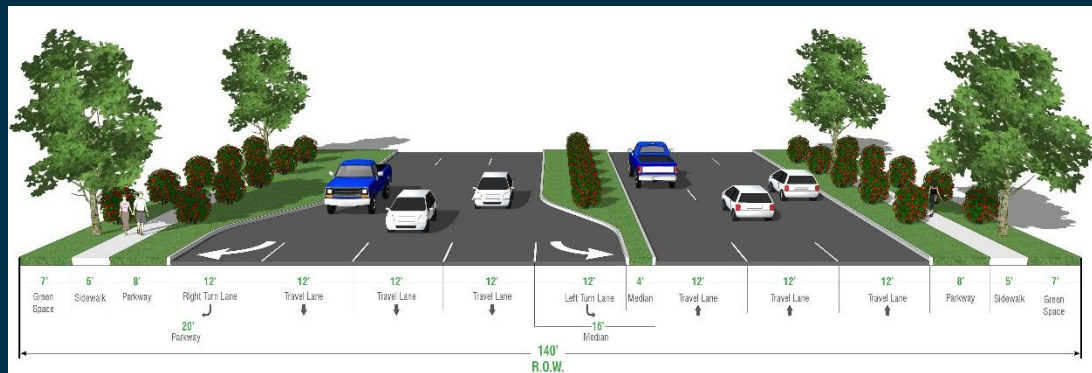
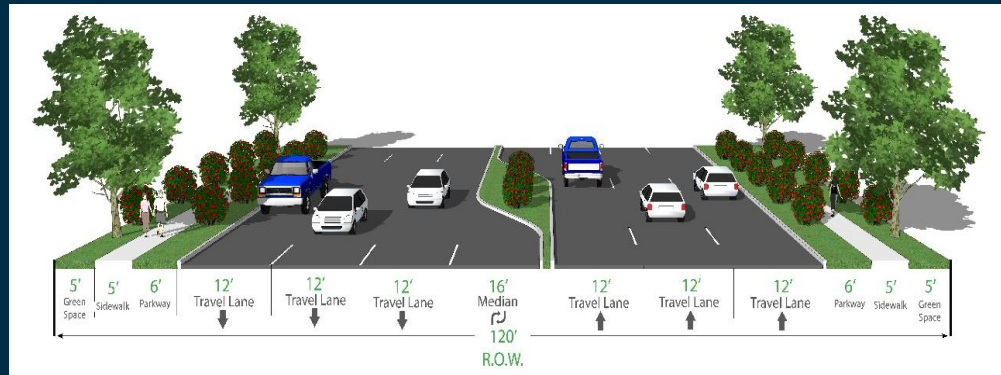
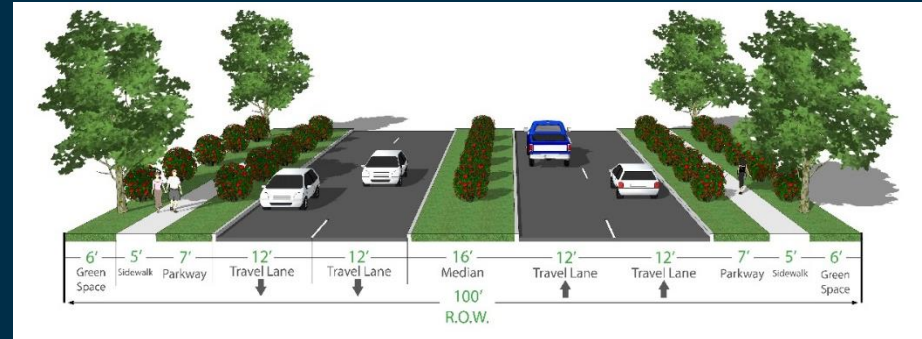
League City Master Mobility Plan

Thoroughfare Recommendations



Recommended Cross Sections

- Major Arterials
 - Major arterials are Ideal for long distance trips and handling large volumes of traffic at a high level of mobility.
 - Lane configurations include two (2) to six (6) 12-foot lanes within 100 to 120 feet of right-of-way.
 - Examples of major arterials include League City Parkway and Main Street.



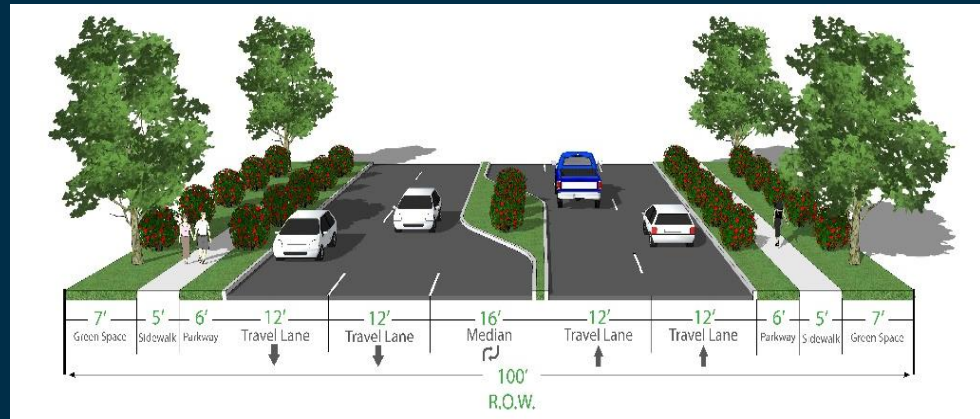
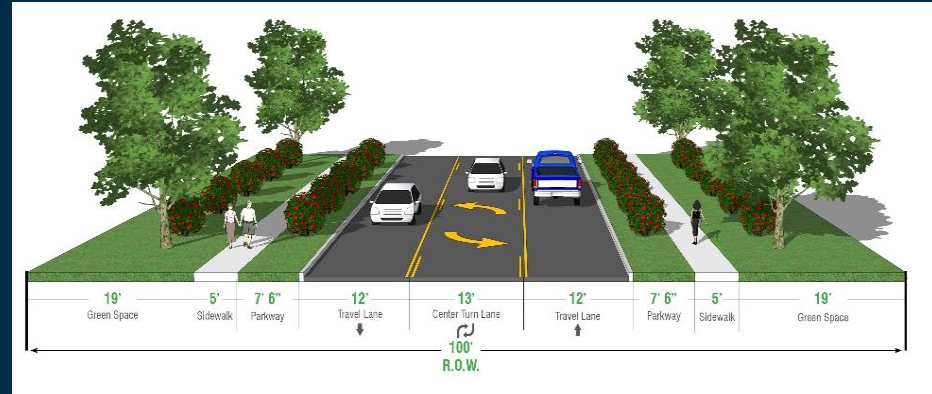
League City Master Mobility Plan

Thoroughfare Recommendations



Recommended Cross Sections

- Minor Arterials
 - Minor arterials accommodate moderate traffic volumes at relatively low speeds and provide a link between major arterials and collectors.
 - Lane configurations include two (2) to four (4) 12-foot lanes within 80 to 100 feet of right-of-way.
 - Examples of minor arterials include Ervin Avenue and Louisiana Avenue.



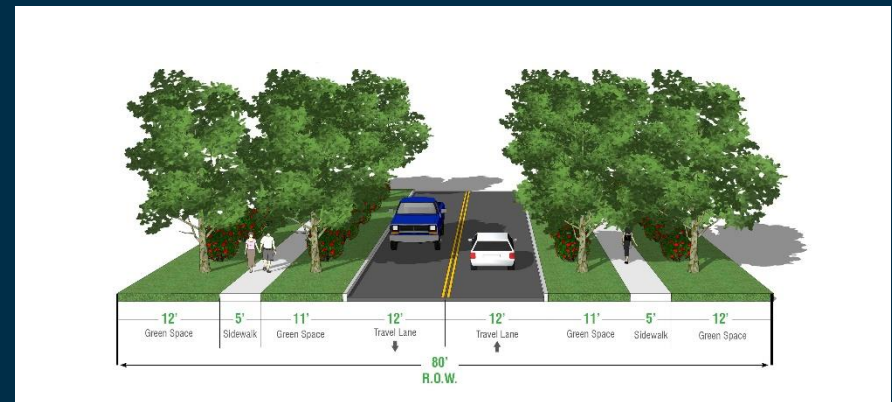
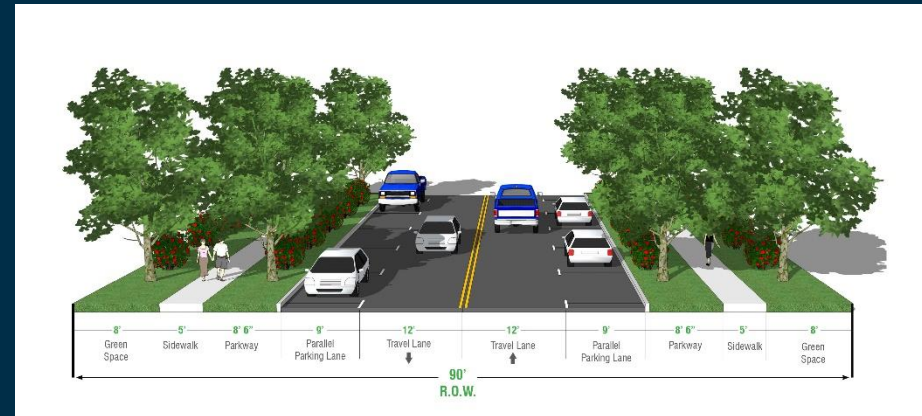
League City Master Mobility Plan

Thoroughfare Recommendations



Recommended Cross Sections

- Collectors
 - Collector facilitate short trips at low speeds with a high level of access, and primarily connect commuters to higher class facilities.
 - Lane configurations include two (2) to four (4) 12-foot lanes within 80 to 90 feet of right-of-way. An additional 10 feet of ROW added to rural collectors.
 - Examples include the northern segment of Landing Boulevard and Texas Avenue.

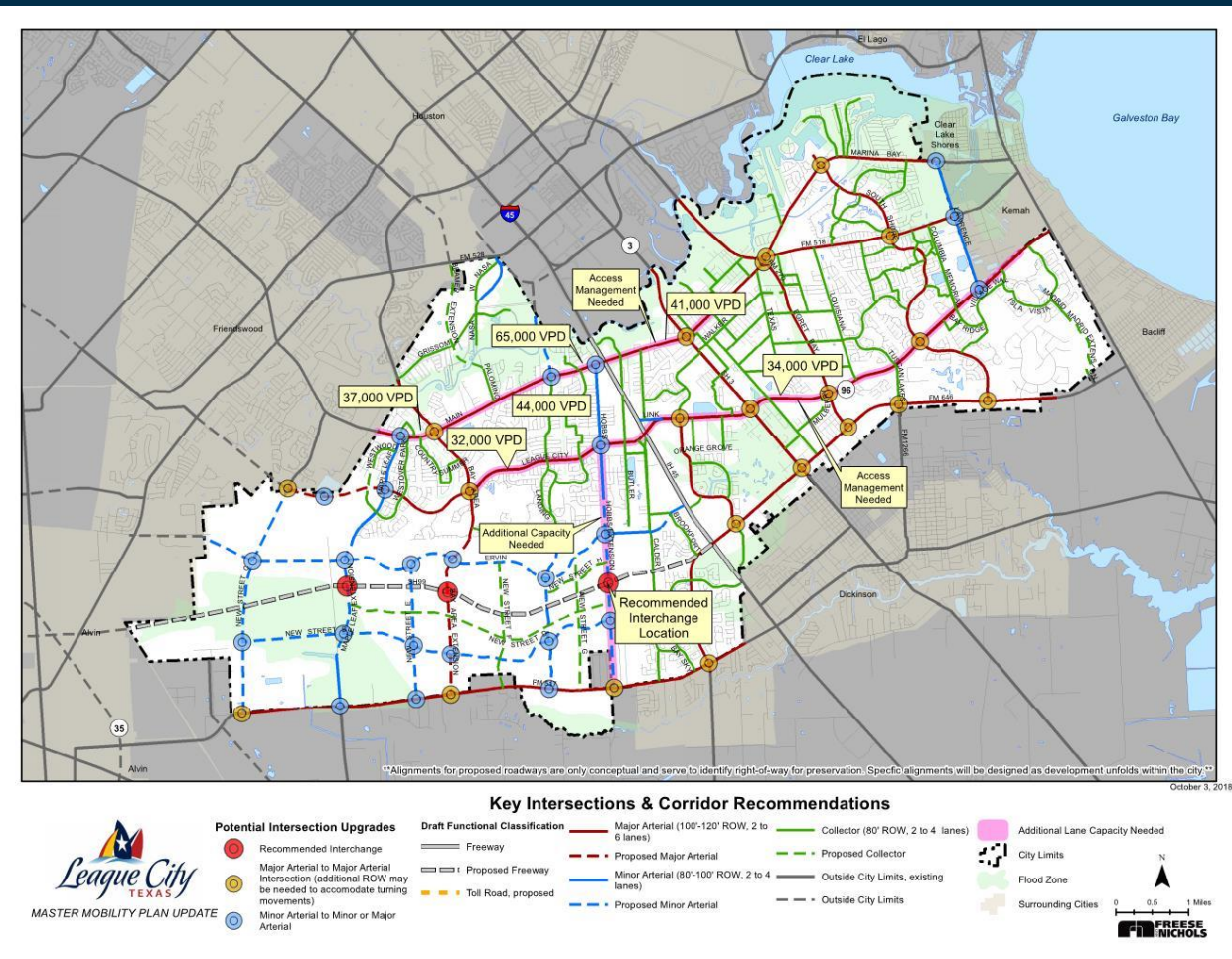


League City Master Mobility Plan Recommended Improvements



System Wide Improvements

- Many corridors congested due to overloaded intersections.
- Additional ROW should be preserved for:
 - Major arterial to major arterial intersections
 - Major arterial to minor arterial intersections
- Access management strategies are needed for high congestion corridors.
 - Right and Left-turn lanes
 - Driveway consolidation
 - Traffic signal synchronization
 - 100' minimum storage areas for left and right-turn bays



League City Master Mobility Plan Next Steps



- Plan Documentation
- Planning and Zoning Commission
- Transportation and Infrastructure Committee
- **City Council Public Hearing**
- Plan Approval and Adoption







Thank You!

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