

**LEAGUE CITY
MOBILITY PLAN UPDATE
REVISED SCOPE OF SERVICES**

The purpose of a thoroughfare plan is to provide a framework for implementation of transportation investments necessary to accommodate long-term growth and development within the city and its extraterritorial jurisdiction. This update will focus primarily on; 1) amending functional classification and sizing of the major street network to address 20-year vehicular demands, 2) review and update roadway cross-sections for consistency with the city subdivision ordinance, 3) integrate master planning initiatives of private sector developers in the southwestern sector of the city, and 4) provide planning design guidelines for network and intersection implementation. An analysis of specific intersections on key corridors will also be conducted to provide recommendations for long-term improvements. A travel demand forecasting process will incorporate demographics of land uses and intensity of uses per the city Master Land Use Plan. Modeling will be facilitated by the Houston-Galveston Area Council (H-GAC).

Plan recommendations will be coordinated through city staff and a Steering Committee comprised of members from the city Planning and Zoning Commission and other community leadership. Stakeholder and citizen input garnered from Town Hall meetings would support plan development prior towards a public hearing process at the conclusion of the study.

The scope of the update to the Mobility Plan includes the following.

Task 1.0 – Project Initiation, Issues identification and Plan Goals

FNI will solicit input to the identification of issues and needs with the current transportation system and current Mobility Plan document. Input will be sought from city staff, a project Steering Committee and key city stakeholders. Differing issues and needs from the current plan will be documented and used as a basis for thoroughfare system planning. Plan goals will be updated dependent upon issues as defined in this initial input. Key activities in this task will include:

Activities

- 1.1 *Project Initiation.* FNI will conduct a teleconference kick-off meeting with the city to discuss; project objectives, team coordination, project schedule, deliverables, current plans/data, and data needs. FNI will obtain input on issues affecting the transportation network, key needs for long-term implementation and update to the plan document. FNI will prepare meeting minutes.
- 1.2 *Issues Identification.* On the same date as Task 1.1, FNI will conduct a similar meeting with the Project Steering Committee to introduce transportation planning and benefits, solicit input on system issues and needs, and ideas for system implementation.

The city will lead to identify and appoint the project steering committee. A chair and vice-chair will be identified. Up to two (2) additional meetings are envisioned at the following points of the study: finalization of conceptual alternatives and plan recommendations. Meetings with the committee will be overlapped with other work activities/meetings to maximize project efficiencies. Additional meetings will be held on a time and expense basis.

- 1.3 *Stakeholder Interviews.* FNI will conduct face-to-face interviews with key public and private stakeholders, as identified by the city Project Manager and/or Steering Committee, to provide individual input of issues, ideas and potential alignments for consideration in the planning process. The interviews will occur over the course of one (1) business day. Interviews will last up to thirty (30) minutes and be set up by the Consultant Team to run consecutively throughout the day. The following groups are envisioned for interviews:

- Community Leaders
- Development Interests
- Key Neighborhood Associations
- Major Property Owners
- Major Employers

The city will assist to provide a contact information of key stakeholders, coordinate a meeting date, and provide a meeting venue for such interviews. FNI will: schedule selected stakeholders, develop and organize meeting materials, provide input documentation tools (sign in sheets, comment cards, signage), compile mapped data and provide summary meeting minutes. Stakeholder interviews are anticipated to occur at the outset of the study and overlap with other project meetings.

- 1.4 *Transportation Survey.* A non-statistical (attitudinal) survey will be conducted via the city website to solicit further input from the public regarding transportation issues/needs since the 2011 survey. FNI will prepare the survey for implementation by the city on the city website. The survey will remain open for a period of two (2) months. The city will support to provide FNI access to survey data at the conclusion of the survey period. The 2011 survey will serve as a basis from which updated questions will be prepared.
- 1.5 *Plan Goals.* Based on input, update thoroughfare plan goals relating to; system efficiency and safety, mobility and connectivity, regional coordination, transportation choice, roadway context and economic benefit.

Task Products:

Project initiation, identification of a project steering committee, issues identification for update of the thoroughfare plan and update of plan goals. Input gathered as part of this task will be documented for report purposes.

Task 2.0 – Assessment Update of Roadway Network

This task will update roadway network characteristics, operational (level-of-service) conditions of the major network and assess operational conditions of specific intersections. This analysis will enable an understanding of existing network influences as well as shifts in demand that resulted from growth and development since the 2011 assessment. Key activities include:

Activities

- 2.1 *Update Roadway Network Characteristics.* FNI will update the 2011 roadway network characteristics to reflect current conditions. Elements to be updated include: number of existing lanes, signalized signal locations, current speed limits and generalized current right-of-widths. Updated information will be documented via mapping. The city will provide electronic files (GIS shapefiles or CAD based) of data previously mapped. FNI will work with city staff and heads up aerial imagery to obtain/update data. This task assumes previous base data is provided but the city and not required to be rebuilt to FNI.
- 2.2 *Assess Network Operational Conditions.* FNI will coordinate and obtain travel demand modeling data from H-GAC for Year 2015 to assess peak hour link level operational conditions. Capacity thresholds per H-GAC will be used in the assessment. Traffic volume count data collected as part of the Capital Recovery Fee (CRF) and/or other available data from the city or TxDOT will be used to cross-check modeled data. Mapping depicting peak hour level-of-service (LOS) will be prepared.
- 2.3 *Assess Intersection Operational Conditions.* FNI will assess intersection operations at specific intersections, as defined by Staff, for the AM and PM peak periods. Analyses will be conducted with Synchro micro-simulation software to assess operational conditions. Analysis output will be compiled and included as an appendix item. The locations for analysis include:
 - “Five Corners” (FM270, FM518 and FM270)
 - Up to three (3) intersections with IH45

- Walker Street at FM646
- FM270 at FM96 (League City Parkway)

Turning movement count data collection for morning and afternoon peak periods will be conducted by GRAM Traffic Counts, Inc., a sub-contractor to FNI. To support analyses in proximity to the subject intersections, GRAM will collect data at a total of up to fifteen (15) locations. (Interchanges with IH-45 count as two intersections.)

2.4 *Agency Coordination.* FNI will obtain and summarize thoroughfare planning efforts from adjacent cities, the county, TxDOT, and the MPO to ensure that connectivity with other current and long-range regional system enhancements are considered. The Union Pacific Railroad will also be contacted to identify any system expansions and/or grade crossing improvements. Additionally, previous city planning initiatives and/or other departmental plans will be obtained for coordination purposes.

2.5 *Major Land Development Planning Initiatives.* FNI will coordinate with the city Planning Department to obtain data of major land developments within the city. FNI will reach out to up to eight (8) major land developers for the latest land use and transportation network plans of respective developments for incorporation into the transportation planning process. The city will assist to provide available contact information of area developers.

Task Products:

Update of existing roadway network characteristics, major roadway network operational conditions and intersection operations at designated locations. Plans of large scale master planning efforts will be obtained for consideration as part of the planning process. Chapter documentation and supporting appendix materials will be prepared.

Task 3 – Future Land Use and Travel Demand Modeling

Future land use serves as the basis from which the thoroughfare plan is based. The current Master Land Use Plan prepared as part of the recent Comprehensive Plan will be used to serve as a basis for travel forecast modeling to be performed by the H-GAC. FNI will coordinate with H-GAC to prepare a Year 2040 forecast that will be used for recommending street functional classification and roadway sizing. FNI will rely on the city Planning Department to assist with defining specific land use type and densities for incorporation into the travel demand modeling process.

Activities

3.1 – *Assessing and Preparing Travel Demand Model.* FNI will coordinate with H-GAC for the update of socio-demographics by Traffic Survey Zone (TAZ) within the city and roadway networks for use in travel demand modeling for a forecast year of 2040. Approved demographics and other existing plus committed network improvements (funded) external to the city will not be altered. Travel demand modeling parameters (trip generation, distribution, network functional class capacities, etc.) as established by H-GAC in their standard regional planning processes will not be altered. (This only changes to occur would be within League City for demographic and/or network adjustments for scenario building.) Other tasks to be addressed:

- Obtain and assess traffic analysis zones, to determine if alteration to centroid connections should be altered in order produce better trip assignments.
- Assess the current roadway networks for both base and the 2040 future year scenario and determine consistency with existing conditions and horizon year network and update accordingly. Provide comments for network refinements as appropriate for to reflect, at a minimum, the arterial network defined in the currently approved Mobility Plan to H-GAC for update. Review refinements to network coding.
- Coordinate with H-GAC staff to obtain its most recently approved TAZ data (i.e., households, population, and employment by sector (basic, retail, service, and possibly education) and network for the 2040 horizon year.

- Review demographics by TAZ with the city Planning Department for reasonableness. The City will prepare density mapping by TAZ for population, households and employment types for review by FNI. Supporting spreadsheet data will also be provided for use in reviewing population and employment totals for year 2040. Should there be discrepancies in total population or employment totals envisioned by the City in 2040, the city will provide target year population and employment totals based on trends of new development anticipated to occur by year 2040. The city will prepare reallocation of demographics data by TAZ to comport with the city's vision of year 2040 development. The City will amend revised demographic data for submission to H-GAC for use in modeling. Outside of the city, the regional portion of the TAZ data provided by H-GAC will be utilized. The City will provide updated socio-demographics by TAZ for use by H-GAC for base year and 2040 travel demand modeling.

3.2 - *Prepare Travel Demand Forecasts.* Using updated demographics and network refinements, FNI will coordinate with to H-GAC to conduct an initial travel demand forecast. Locally, the initial forecast will consider the Thoroughfare Plan as currently adopted by the city. Externally, the regional transportation network will consider the currently approved existing plus committed transportation network as approved in the MPO 2040 Regional Transportation Plan. Other tasks to be performed include;

- Obtain travel demand output to determine system operations and network deficiencies.
- Define potential improvements to address system issues and/or address needs defined from plan input obtained in Task 1. Prepare summary mapping for discussion with city staff and Steering Committee. Obtain feedback from discussions to consider network refinements. Submit refinements to H-GAC for a second travel forecast.
- Obtain results of refined travel forecast for operations analysis and network recommendations.

Forecasted traffic volumes and associated network data (number of lanes) will be mapped for documentation and presentation purposes.

3.3 – *Additional Travel Forecasts.* H-GAC has indicated their ability to provide alternative runs for scenario testing. Up to two additional runs with alternative system improvements are included as part of this scope. Additional forecasts will consider network changes only and not alterations to Year 2040 demographics. Simple changes that affect total number of dwelling units or increases to employment for up to four TAZs will be considered, however wholesale changes to land use and or intensity land uses will be treated as additional services. Demographic adjustments for simple changes will be provided by the city planning department. Each model run is anticipated to take two weeks before results can be presented to the city or steering committee.

3.4 – *Future Year Intersection Analyses.* Analyses of intersections identified in the Introduction (Page 1) will be evaluated using Year 2040 forecast data. Initial turning movement percentages will be based on count data collected as part of the same task. Any changes to turn movement percentages will be coordinated and approved by the city. Analysis of AM and PM peak hour conditions will be conducted with traffic signal optimization to serve as a basis for mitigation recommendations.

Task Products:

Development of travel demand forecasts for Year 2040 for use in roadway network testing and preparation of thoroughfare plan recommendations.

Task 4.0 –Thoroughfare Plan Update

Based on plan input, travel demand forecasting, and interpretation of modeling results, FNI will update the thoroughfare plan to address long-term mobility needs for growth and development of the city. The Thoroughfare Plan will address functional street classification, general roadway sizing, and also incorporate considerations for connectivity with adjacent city/agency plans. The plan will also incorporate non-motorized planning considerations for bicycle network enhancements and incorporation of the trail plan update. Recommendations for update of roadway cross-sections for consistency with the city subdivision ordinance as well as provision of general planning design guidelines will also be addressed. Key sub-tasks include:

- 4.1 - *Roadway Plan.* FNI will update roadway functional classifications and roadway sizing, as appropriate based on analyses conducted in previous tasks to accommodate long-term (Year 2040) growth. Plan recommendations will consider mobility needs, system connectivity with adjacent communities and incorporation of non-motorized elements. Recommended improvements will be listed in tabular form highlighting segment, limits and responsible agency. Associated Thoroughfare Plan mapping of the overall city will be provided. Short-term recommendations will also be prepared based on analysis of existing conditions conducted in Task 2.

City staff and the Steering Committee will provide initial input to draft plan recommendations. FNI will receive a set of consolidated comments from city staff. Meeting Minutes will be used to document comments from the Steering Committee. FNI will address comments, as appropriate, which will result in the formal “Draft Plan” for review and input by the public at large. One (1) Town Hall meeting will be held to present the draft plan, as well as to present the associated planning process towards the derivation of the draft. Comment from the public meeting will be documented and considered for the derivation of a “Draft Final Plan” for consideration as part of the public hearing process.

- 4.2 - *Roadway Design Standards.* Roadway cross-sections will be prepared for functional classes identified on the plan. FNI will review standards prepared as part of the city development code and provide recommendations as appropriate to correlate with roadway plan needs. The end result will be plan sections correlated between the plan and sub-division ordinance. Other general design standards relating to facility spacing, volume capacities, presence of medians, lane/median/parkway width, design speed, presence of bike lanes, on-street parking and sidewalks will be prepared. General design parameters for intersection crossings for major and minor arterial facilities.
- 4.3 - *Specific Intersections.* FNI will develop recommendations for intersections evaluated as part of Tasks 2.3/3.4. Long-term recommendations will be prepared that address respective needs and/or mitigation considerations. FNI will work with city staff to ascertain comfort of improvement needs as these intersections have implication to developed or developing areas within the community.
- 4.4 - *Capital Improvement Programming.* FNI will focus preparation of cost estimates to key intersection areas as defined above. FNI will provide initial cost estimates for city review and then will advance cost summaries to the Steering Committee. Preparation of high level costs for overall transportation improvements associated with implementation of long-term improvements is not included.
- 4.5 - *Thoroughfare Plan Document and Mapping.* Technical documentation will be summarized detailing; planning context, plan goals, updated assessment of existing systems, travel demand modeling, projected needs, and plan development. Plan documentation will be prepared on 8 1/2”x11” portrait format pages. Support mapping and illustrations will be incorporated as appropriate to support plan concepts and recommendations. Supporting appendices will be prepared and incorporated into document submittals.

The Thoroughfare Plan will be summarized on a single map and depicting roadway functional class throughout the study area. Both existing and future roadway segments will be identified. Supporting roadway sections will detail the composition of each functional class facility, number of travel lanes, and associated right-of-way. Thoroughfare Plan mapping will be prepared in a 11”x17” landscape format and include general base map information (such as city limits, ETJ, creeks, water features and floodplains), street labeling, roadway shields and easy to ready legends. Large scale maps will be prepared for presentation purposes.

FNI will furnish graphics depicting conceptual configurations of recommended standard lane arrangements, for example turn lanes, for the following intersection types. One scenario for each will be prepared.

- Arterial/arterial
- Arterial/collector

- Collector/collector

Task 5.0 Plan Document Submittal

Initial plan concepts and recommendations will be prepared and presented to the Steering Committee and consequently to the public in the form of an initial Town Hall input meeting. This will enable FNI to understand comments/concerns as it related to initial recommendations. Subject to input and supplemental analysis a draft final plan will be prepared. As part of this effort, the supporting 'draft' plan document will be submitted for initial review by the city and Steering Committee. Subject to one round of consolidated comments, a revised version of plan documents will be prepared and submitted to the city for initiation to the public hearing process. The Draft Plan will be presented to the Planning and Zoning Commission and based on comment feedback, final modifications to planning documentation prior to submittal for Council consideration for a public hearing.

To maximize cost efficiencies of materials reproduction, all draft materials submitted to the city for review and comment will be in electronic file (PDF) format. Subject to comments, FNI will amend the report for meetings with the Steering Committee. The city will provide copies of the draft final Thoroughfare Plan will be submitted for use in dissemination to Planning and Zoning Commission, and City Council, respectively. Subject to final comments from the public hearing, FNI will prepare one master electronic (PDF format) version for use by the city. At the conclusion of study, all files of the planning document will be turned over to the city for use as desired.

Project Meetings

For this study effort, up to nine (9) meetings have been budgeted and include:

- 1 – Project initiation meetings (1 teleconference with city staff;)
- 2 – City staff Meetings
- 2 – Steering Committee Meetings
- 2 – Public Input/Town Hall Meeting
- 1 - Meetings with the Planning and Zoning Commission
- 1- Meetings with the City Council

Additional meetings, if requested, will be charged on a time and expense basis. Depending on the number of FNI personnel, the general cost per additional meeting is \$1850.

Reports and Products

All documents will be prepared using Microsoft Word software. To ensure retention of proper formatting, submittals to the city will be made via PDF electronic file format. At the conclusion of the study, electronic files will be submitted to the city for use, as desired. All mapping will be created in ESRI ArcGIS software and copies of maps transmitted via PDF format.

Mapping

It is proposed that the city's existing base mapping will be used for this project (provided to the Consultant at no additional cost to the Consultant). The base map will be manipulated using ESRI's ArcGIS software for plan mapping. All municipal electronic GIS or CAD files relevant to the preparation of the Mobility Plan will be made available to the consultant.

Project Study Data

This scope assumes that the city will provide electronic files of all documentation and mapping of the previous 2011 Mobility Plan. Ideally, plan document files are in MS Word or InDesign format and mapping files are in ESRI GIS shapefile or CAD format. As this planning effort is aimed at updating the previous plan document, labor effort has not been included to recreate previous work.

Project Schedule

FNI will prepare and deliver the Mobility Plan Update within twelve (12) months of notice to proceed. If FNI's services are delayed through no fault of FNI, FNI shall be entitled to adjust contract schedule consistent with the number of days of delay. These delays may include but are not limited to delays by the city or regulatory reviews, delays on the flow of information to be provided to FNI, governmental approvals, etc. These delays will result in an adjustment to compensation. Delays beyond twelve (12) months, will result in changes to hourly rates for staff to rates current at the time changes are incurred.

Project Fee

The fee for the development of the study as described above will be a lump sum of \$121,750. A breakdown of project costing from the original to this revised scope of services is listed below.

Scope of Services Cost Breakdown

League City Mobility Plan Update Summary of Project Costs		
Task	Description	Cost
1	Project Initiation Issues Ident. and Plan Goals	\$11,762
2	Assessment Update of Roadway Network	\$19,607
3	Future Land Use and Travel Demand Modeling	\$24,318
4	Thoroughfare Plan Update	\$23,514
5	Document Submittal	\$18,146
6	Meetings	\$22,493
7	Project Administration	\$1,910
	Total	\$121,750

Proposed Project Schedule

