Houston-Galveston Area Council

Executive Summary

The Houston-Galveston Area Council (H-GAC), in partnership with Liberty County, began the Liberty County Mobility Study to address the county's mobility challenges. With the recent and future growth of the county, planning is required to address existing traffic and safety issues so that they are not exacerbated by this growth. A primary focus in development of the study was to engage the public and develop a plan for citizen input. The planning process coordinated with and included existing plans of the incorporated cities, as well as those of Liberty County and the Texas Department of Transportation (TxDOT). In developing the Liberty County Mobility Study, a public engagement process, an overarching vision and a corresponding set of goals guided its creation. Specific focus was given to the cities of Cleveland, Dayton, and Liberty.

0.1 VISION AND GOALS

The vision of the Liberty County Mobility Study is "to address County needs through multimodal transportation, development, and economic policy, while meeting H-GAC's goals of mobility, safety, and enabling economic opportunity."

The corresponding goals and objectives are used to ensure that the recommendations from this study help the subregion achieve the vision over time.

GOAL	OBJECTIVES
Mobility	Provide county-wide connections and travel options for all road users
Freight	Increase truck travel time reliability and reduce disruptions due to railroad activity
Efficiency	Increase operational efficiency and reliability of major intersections and roadways
Safety	Reduce crash rates and improve sense of comfort for all road users
Economic	Enhance opportunities for accommodating incoming growth

0.2 PLAN DEVELOPMENT

PUBLIC INVOLVEMENT

Input from daily users of the transportation system was an important part of the planning process. To ensure that the correct issues were being addressed, input was solicited from the community through public meetings, a project website, surveys, an online interactive commenting map, and comprehensive outreach using various outlets. A Steering Committee and two stakeholder groups were also formed to ensure that the planning process and final recommendations aligned with the county's goals and addressed pertinent issues.

EXISTING CONDITIONS

Data was collected for the county that included population, employment, environmental characteristics, and the transportation network.

POPULATION GROWTH

From 2010 to 2020, the county's population grew by 16,000 people, over 20% in 10 years. With a study area encompassing 1,176 square miles, this equates to about 79 people per square mile. Additionally, the county's population grew 9.5% from 2019 to 2020 alone.

CRASHES

The overall number of crashes in the county steadily increased between 2015 and 2019, by 7% overall. However, in 2019, there were still approximately 1,500 crashes total, with 1.0% of those crashes involving bicycles or pedestrians.

CONGESTION

The existing traffic level-of-service (a measure of congestion) for the study area shows that the majority of the transportation network is nearing capacity or will be by 2045. This indicates a need for improvements within the network to address future capacity.

PREVIOUS STUDIES

The areawide, corridor, and intersection improvements recommended in this study incorporate those recommended in studies previously conducted by H-GAC, Liberty County, and individual cities and entities. Plans that were incorporated into the creation of the Liberty County Mobility Study include:

- Liberty County Strategic Plan 2016-2036
- Cleveland ETJ Study (2009)
- City of Cleveland Zoning Map
- #Dayton Tomorrow 2035 Comprehensive Plan
- #Dayton Tomorrow 2035 Parks and Recreation Master Plan
- Downtown Dayton Revitalization Plan
- City of Liberty Comprehensive Plan 2014-2035

NETWORK, CORRIDOR, AND INTERSECTION ANALYSIS

Using a traffic analysis software, intersections were evaluated to determine how well they operate with current traffic levels; recommendations were made to address existing issues. To analyze future operations, anticipated future growth in the area was added to the traffic model, simulating conditions in 2045. Recommendations were then made to address issues identified for future years.

0.3 PROPOSED IMPROVEMENTS

Areawide improvements include **recommendations for freight, transit, active transportation, and policy.**

Some highlights include:

Widening designated freight corridors to accommodate more heavy traffic

84 miles *of new, repaired, or improved sidewalk*

A future Thoroughfare Plan to improve county-wide connectivity

Location-specific recommendations for study corridors and intersections vary according to needs and include the ***Improvements Toolbox on page viii***.

Individual summary sheets, which include existing condition data and recommended improvements, are provided for each intersection and corridor segment.

0.4 EVALUATION OF IMPROVEMENTS

Improvements were then evaluated to determine how effective they might be in advancing the goals and overall vision of the study. These improvements should be measured regularly in the future to determine their continued effectiveness. Some measurements include:

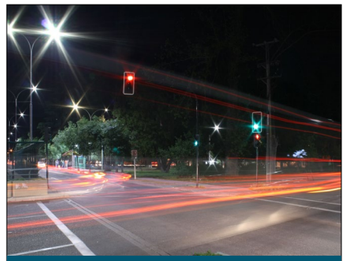
Crash reduction

Travel time delay

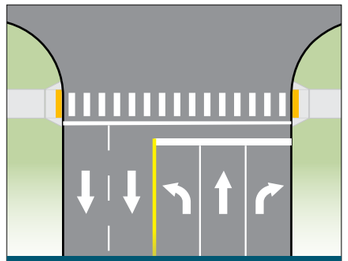
ROW acquisition cost

0.5 IMPLEMENTATION PLAN

A plan for implementing improvements recommended in this study was developed for each major city in the county and for Liberty County overall. Improvements were identified as short-term or long-term to provide a general timeline for jurisdictions to consider as they develop their Capital Improvement Plans. Additionally, local, state, and federal funding sources were identified to illuminate opportunities for jurisdictions.

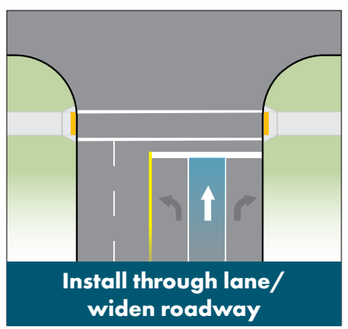


Install LED intersection lighting



Install/upgrade pavement markings

Install Dallas flashing yellow arrow turn signal



Install through lane/ widen roadway

ACTIVE MODES

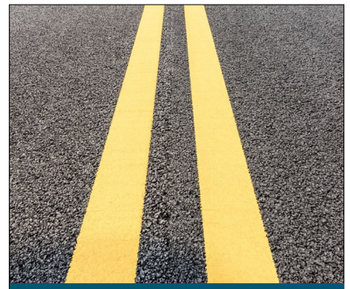
Recommendation	Intersection	Corridor	Timeline
Install pedestrian elements	✓	✓	Both
Install shared use path	✓	✓	Both
Install sidewalk	✓	✓	Long-Term

GEOMETRY

Recommendation	Intersection	Corridor	Timeline
Install left-turn lane	✓		Both
Install right-turn lane	✓		Both
Install through lane / widen road	✓	✓	Both
Realign intersection	✓	✓	Both
Construct roadway extension		✓	Long-Term
Improve drainage		✓	Long-Term
Construct grade separation		✓	Long-Term
Refine access management		✓	Long-Term
Proposed US 90 Bypass	✓	✓	Long-Term
Install / improve pavement markings	✓	✓	Short-Term
Install / improve pavement		✓	Short-Term

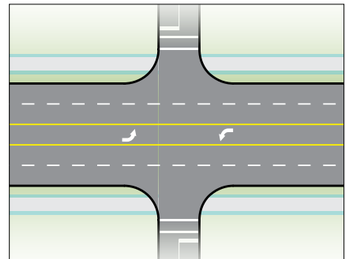
SIGNAL

Recommendation	Intersection	Corridor	Timeline
Optimize/coordinate signal	✓	✓	Both
Change left-turn phasing	✓		Both
Add right-turn overlap	✓		Both
Signalize	✓		Short-Term
Install Flashing Yellow Arrow signal	✓		Short-Term
Install intersection lighting	✓		Short-Term
Install stop signs	✓	✓	Short-Term

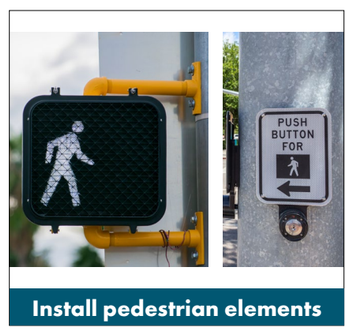


Upgrade pavement

Refine access management



Install sidewalks



Install pedestrian elements