

Appendix B Existing and Future Conditions

Webb County-City of Laredo Regional Mobility Authority March 2020

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Introduction

The first step in the North Laredo-Webb County Transportation Planning Study was to identify existing conditions in the study area and forecast future conditions, based on existing plans for the area. This appendix describes the existing and future transportation network and ports-of-entry, land uses, and population and employment estimates for the study area. The information developed as part of this step was used to support the development of the goals and objectives, strategies, and program of projects for evaluation.

Transportation System and Ports-of-Entry Characteristics

This section summarizes the existing and future transportation system characteristics in the study area, including the road network, ports-of-entry and public transit.

Existing and Future Transportation Network and Ports-of-Entry

The existing and future road network and ports-of-entry descriptions are based on several sources including the Laredo Metropolitan Transportation Plan, the Long-Range Strategies to Improve Traffic Conditions on FM 1472 (Mines Road), VIVA Laredo – City of Laredo Comprehensive Plan, the Laredo MPO travel demand model, and the El Metro Transit Development Plan.

Existing Roadway Network and Ports-of-Entry

The existing roadway network in the study area includes a combination of freeways, expressways, arterial streets and local streets. **Figure 1** presents the roadway facility type in the study area.

- There are currently two interstate highways (freeways) in the study area, IH-35 running northsouth on the eastern edge of the study area and IH-69W running east-west on the southern edge of the study area;
- Three expressways that include State Highway 255 on the northern edge of the study area, Farm-to-Market 1472 (Mines Road) and Ranch Road 3338 (Las Tiendas Road) in the western part of the study area;
- One principal arterial, Sara Road running north-south on the southern edge of the study area; and,
- One minor arterial that includes a combination of Killam Industrial Boulevard and River Bank Drive in the southern part of the study area.

There are currently two ports-of-entry in the study area, the World Trade Bridge located on the southwestern corner of the study area where IH-69W crosses the Rio Grande close to the intersection of IH-69 and FM 1472 and the Laredo-Colombia Solidarity Bridge located on the northwestern corner of the study area where FM 255 crosses the Rio Grande close to the intersection of FM 255 and FM 1472. The World Trade Bridge is an eight-lane bridge that is open to commercial vehicles only and the Laredo-Colombia Solidarity Bridge is an eight-lane bridge that handles commercial vehicles, non-commercial vehicles and pedestrian traffic.



Figure 1 – Existing Road Network, Number of Lanes and POE in Study Area

Source: HNTB, 2019

Future Roadway Network

Several roadway upgrades and new roadways are expected within or adjacent to the study area. **Figure 2** shows the likely future roadway network for the study area. This roadway network is the Future Thoroughfare Plan included in the City of Laredo Comprehensive Plan that was adopted in 2017. The network is expected to contain a reasonably dense network of continuous routes that include industrial collectors, collectors, minor arterials, principal arterials, multiway boulevards, and expressways.

Future Improvements to Ports-of-Entry

Laredo seeks to invest approximately \$10.3 million at the World Trade Bridge to relocate the Free and Secure Trade (FAST) lanes from their current location to an all-new site on the north side of the federal compound. Another complimentary project includes the expansion of the current 8 lane bridge span to 16 lanes, enlarging the import lot intake from 2 lanes to 8 lanes, adding a "fast lane" down the middle of the City of Laredo Toll Collections Facilities and US Customs inspections import lot, adding weight-in-motion scales to the existing 5 exit lanes and the new "fast lane", and adding booths for inbound cargo vehicles coming from Mexico into the US through the "fast lane". No future improvements are planned for the Laredo-Columbia Solidarity Bridge at the time of this study.



Source: City of Laredo Comprehensive Plan, 2017

Existing and Future Public Transit

The existing and future public transit descriptions are based on the *El Metro* 2016 *Transit Development Plan*.

Existing Public Transit

The study area currently has one fixed transit route. **Figure 3** presents the existing transit service in the study area. The fixed route (17- Mines Road) runs at a 60-minute frequency from 7:00 AM - 9:55 PM and a 75-minute frequency from 12:00 PM – 7:25 PM and provides service to stops along Mines Road, Milo Road, Sara Road, Killam Industrial Boulevard, River Bank Drive, and Red Cloud Circle. Killam Industrial Park is a major destination on the route. The study area also includes Paratransit service with ³/₄ of a mile of all bus stops that are located within the study area.

Future Public Transit

The *El Metro 2016 Transit Development Plan* includes a planned investment in a new North Transit Center to the south of the study area. The new transit center will help streamline service in North Laredo including Route 17 - Mines Road that provides access to the study area.



Figure 3 – Existing Public Transit in the Study Area

Source: HNTB, 2019

Existing Transportation and Ports-of-Entry Conditions

This section summarizes the current transportation conditions for the study area, including traffic volumes and roadway level of service. The material for this section is based on the Laredo MPO travel demand model.

Existing Traffic Volumes

Existing average daily traffic volumes at key locations within the study area are listed in **Table 1**. The highest freeway traffic volumes in the study area are on IH-69W west of Riverbank Drive at the southeastern end of the study area, the highest expressway traffic volumes are in the southern part of the study area on FM 1472 at Milo Road, and the highest arterial traffic volumes are on Sara Road at Milo Road in the southern part of the study area. The estimated 2018 traffic volumes at the World Trade Bridge (IH-69 port-of-entry) and Laredo-Colombia Solidarity Bridge (SH 255 port-of-entry) are approximately 63,000 and 16,000 respectively. The estimated 2018 average daily traffic volumes for the roadway network in the study area are presented in **Figure 4**.

Road	Cross Street/Boundary	Estimated Volume
IH-35	Killam Industrial Blvd	54,000
FM 1472	Killam Industrial Blvd	94,000
FM 1472	A.F. Muller Drive	84,000
FM 1472	Milo Road	109,000
FM 1472	FM 3338	32,000
Sara Road	Killam Industrial Blvd	7,000
Sara Road	Milo Road	34,000
SH 255 POE	US/Mexico Border	16,000
IH-69W POE (West of Riverbank Dr)	US/Mexico Border	63,000
		Courses UNTD 2010

Table 1 – Traffic Volumes at Key Locations in Study Area (2018)



Source: HNTB, 2019.

Source: HNTB, 2019

Existing Level of Service

A key indicator of roadway performance is Level of Service (LOS) which measures the degree of congestion on a roadway. LOS ranges from LOS A, representing free-flow traffic conditions with little or no delay experienced by motorists, to LOS F, describing congested conditions where traffic flows exceed design capacity, resulting in long queues and delays. LOS A, B, and C are generally considered to be satisfactory service levels, while the influence of congestion becomes more noticeable at LOS D. LOS E is undesirable and is considered by most agencies to be the limit of acceptable delay, and LOS F is unacceptable. LOS conditions provide a consistent tool for evaluating roadway performance. The LOS for an individual roadway segment is measured by comparing the actual traffic volumes to the capacity of the roadway segment. The Volume-to-Capacity (V/C) ratio thresholds and traffic flow characteristics for each LOS level are presented in **Table 2**.

LOS	Description	Max V/C Ratio
А	Free-flow operation	0.35
В	Reasonable free-flow; Ability to maneuver is only slightly restricted	0.50
С	Stable flow; At or near free-flow operations; Freedom to maneuver is noticeably restricted; Queues may form	0.65
D	Approaching unstable flow; Operation near or at capacity; Speeds decline slightly with increasing traffic volumes; Freedom to maneuver is much more limited; Longer delays and congestion noticeable	0.80
E	Unstable flow; Operation at capacity; No usable gap in the traffic stream to maneuver; Operations are extremely volatile	1.00
F	Forced or breakdown flow; Demand is greater than capacity; unacceptable delay; Stop-and-go conditions	Greater than 1.00

Table 2 – Level of Service Classifications in the Study Area

Source: Transportation Research Board, Highway Capacity Manual, 2000.

Figure 5 presents the resulting LOS ratings for roadway segments within the study area for 2018. The results are based on the Laredo MPO travel demand model. The LOS ratings are grouped in three categories: 1) below capacity (LOS A to D), 2) nearing capacity (LOS D and E), and 3) above capacity (LOS F). The freeways in the study area that include IH-35 and IH-69W are operating at or below capacity. The LOS for expressways and arterials in the study area are acceptable for the majority of the road segments, and traffic flow is stable or at free flow in most cases. Current traffic exceeds capacity at a few locations, including the following:

- FM 1472 between IH-69W and Peoples Blvd;
- Killam Industrial Boulevard between FM 1472 and Archer Drive;
- Killam Industrial Boulevard east of Sara Road to IH-35;
- Sara Road between IH-69W and El Gato Road;
- Milo Road between FM 1472 and IH-69W; and
- IH-69W east of FM 1472



Source: HNTB, 2019

Future Transportation and Ports-of-Entry Conditions

This section summarizes the future transportation conditions for the study area, including traffic volumes and roadway level of service. The material for this section is based on the Laredo MPO travel demand model that includes the future roadway network with all funded projects.

Future Traffic Volumes

The estimated 2040 average daily traffic volumes for the roadway network in the study area are listed in **Table 3**. Traffic volumes on the freeway, expressway, and arterial network are expected to grow substantially between 2018 and 2040. The highest freeway traffic volumes in the study area are on IH-35 on the eastern end of the study area, the highest expressway traffic volumes are at the southern end of the study area on FM 1472, and the highest arterial traffic volumes are on Sara Road in the southern part of the study area. The estimated 2018 average daily traffic volumes for the roadway network in the study area are presented in **Figure 7**.

Road	Cross Street/Boundary	Estimated Volume
IH-35	Killam Industrial Blvd	94,000
FM 1472	Killam Industrial Blvd	96,000
FM 1472	A.F Muller Drive	98,000
FM 1472	Milo Road	116,000
FM 1472	FM 3338	58,000
Sara Road	Killam Industrial Blvd	25,000
Sara Road	Milo Road	29,000
SH 255 POE	US/Mexico Border	19,000
IH-69W POE	US/Mexico Border	46,000

Table 3 – Traffic Volumes at Key Locations in Study Area (2040)

Source: HNTB, 2019.



Source: HNTB, 2019

Future Level of Service

Figure 8 presents the resulting LOS ratings for roadway segments within the study area for 2040. The results are based on the Laredo MPO travel demand model. The LOS ratings are grouped in three categories: 1) below capacity (LOS A to D), 2) nearing capacity (LOS D and E), and 3) above capacity (LOS F). The LOS for I-35 is forecasted to exceed capacity. The LOS for expressways and arterials in the study area are acceptable or nearing capacity for the majority of the road segments. Future traffic exceeds capacity at a few locations, including the following:

- IH-35 between IH-69W and SH 255
- IH-69W between east of the World Trade Bridge and IH-35
- FM 1472 between IH-69W and Copper Mine Road;
- FM 1472 between south of Phelps Road and SH 255;
- Sara Road north of Killam Industrial Boulevard
- Sara Road between IH-69W and El Gato Road;
- Milo Road between FM 1472 and IH-69W; and
- River Bank Drive between IH-69W and Aquero Boulevard
- Future arterial between IH-35 and Beltway Parkway in the eastern part of the study area



Figure 8 – Future Level of Capacity, 2040

Source: HNTB, 2019

Land Use and Socioeconomic Characteristics

This section summarizes existing and future land use and socioeconomic characteristics, including existing and future population and employment for the study area.

Existing and Future Land Use

Today, the land use in the northern part of the study area is primarily rural residential or undeveloped with pockets of oil activity. The southern part of the study area includes rural residential land uses, large concentrations of single-family land uses in the western part, large concentrations of industrial activity in the western, southern and eastern part, and small pockets of multifamily and commercial land uses. Figure 9 shows the existing zoning (2017) within Laredo's city limits and the areas located in unincorporated Webb County.



Figure 9 - Existing Zoning and Planned Development in the Study Area

Source: Laredo Comprehensive Plan, 2017

The primary driver of future growth in the study area will be the demand for suburban housing and industrial development to meet the demand of trade with the world in proximity to the World Trade Bridge and the Laredo-Colombia Solidarity Bridge. **Figure 10** shows the 2017 City of Laredo Comprehensive Plan Future Land Use map.



Figure 10 – Future Land Use in the Study Area

Source: Laredo Comprehensive Plan, 2017

The map guides the growth policy of the city and includes recommended future land uses for the undeveloped land in the Laredo city limits, the City of Laredo ETJ, and unincorporated Webb County. The map also features recommended new land uses along recommended thoroughfares included in the 2016 City of Laredo Future Thoroughfare Plan. As the areas within the Laredo city limits are built out, residential and industrial growth are expected the shift to the undeveloped parts of the study area outside of the Laredo City Limits and into the Laredo ETJ and unincorporated Webb County. The recommended land uses for the northern part of the study area are primarily low, medium, and high density residential with mixed-use centers, with a large concentration of light and heavy industrial uses in the northwestern part of the study area in proximity to the Laredo-Colombia Solidarity Bridge. The recommended land uses for the southern part of the study are primarily light industrial with low and medium residential land uses in proximity of Middle Pasture Lake. Institutional land uses, neighborhood parks and linear parks are recommended all throughout the study area.

Existing and Future Population

The population and employment statistics in the study area are based on the Laredo MPO travel demand model. The travel demand model was utilized to reflect a local understanding of population and employment distributions to specific zones used to estimate trips.





Source: HNTB, 2019

In 2018, over 10,000 people lived in the study area, with most of these people concentrated in the southern part of the study area. Approximately 250,000 people lived in the Laredo MPO area as a whole. **Figure 11** presents the 2018 population density in the study area.

The population of the Laredo MPO area is expected to grow rapidly over the next 20 years. According to the Laredo MPO travel demand model, the population of the Laredo MPO area is expected to grow to approximately 420,000 people by 2040. The study area is expected to grow to over 78,000 people by 2040, over seven times more people than lived in the study area in 2018.

This growth reflects the continued development of the southern part of the study area. The high growth in population will have a significant impact on the existing transportation system. In 2040, the highest population densities within the study area continues to be found in the southern part of the study area, though the northeastern part of the southern part of the study area has grown significantly (see **Figure 12**).



Figure 12 – Future Population Density in the Study Area

Source: HNTB, 2019

Existing and Future Employment

In 2018, the employment within the study area was estimated at approximately 28,700 jobs. Over 110,000 jobs were located in the Laredo MPO area as a whole. **Figure 13** presents the existing employment density for the study area. The large majority of these jobs is located in the southern part of the study area.



Figure 13 – Existing Employment Density in the Study Area

Source: HNTB, 2019

Employment in the study area is growing at a fast pace, though more slowly than population growth. The total employment within the study area for 2040 is estimated at over 62,000 jobs, an addition of over 30,000 jobs. The majority of these jobs would be industrial jobs and is forecasted to be located in the southern part of the study area, with a large job growth in the eastern part of the study area adjacent to IH-35. **Figure 14** presents the 2040 employment density for the study area. According to the Laredo MPO travel demand model, the employment of the Laredo MPO area is expected to grow to approximately 190,000 jobs by 2040.



Figure 14 – Future Employment Density in the Study Area

Source: HNTB, 2019