


EL METRO 2016 TRANSIT DEVELOPMENT PLAN

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TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

LIST OF FIGURES

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CHAPTER 1
INTRODUCTION

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Chapter 1. Introduction

Purpose and Importance of Transit Development Plan

The Laredo Metropolitan Planning Organization (MPO), in coordination with the City of Laredo Planning Department and Laredo Transit Management, Inc. (El Metro), retained CDM Smith to provide a new Comprehensive Five Year Transit Development Plan (TDP), which will evaluate existing El Metro fixed route services and provide practical recommendations for maximizing route efficiencies and service in the Laredo region. The 2016 TDP will provide recommendations for improvements for fiscal years (FY) 2017 through 2021, and identify additional considerations for improvements beyond that timeframe.

As times and dynamics have changed over the six years since the adoption of the 2009 Transit Development Plan, the MPO and El Metro recognize the importance of reviewing the fixed route infrastructure and making adjustments to reflect current community travel patterns. This TDP Update will provide a thorough analysis of the fixed route service and recommendations designed to improve productivity and service efficiency.

Public transit, like any business, can be efficient and effective only if it understands the market it serves, the needs of its customers, and how well it is doing in matching its products to its market. Unlike many retail operations, transit does not receive detailed information each time a purchase is made. While a transit operator can determine from farebox records how many people have boarded a bus in a day, those records do not reveal anything about the characteristics of the customer, the specific trip for which the bus was used (e.g. origin, destination, purpose) or the quality of service that was provided. While new technologies are gradually being adopted by the transit industry to better track both customer activity and the services provided (e.g. smart-card based fare collection, Automatic Vehicle Location, Automatic Passenger Counters), these systems are still not in wide use. Developing information about services provided and services used requires special studies to collect and process data.

The data collected and the analyses conducted through the development of TDPs provide transit agencies with objective information for use in business planning, including use of services provided and how those services meet the needs of the customers. Medium-sized transit agencies typically develop new TDPs approximately every five years, depending upon fluctuation in agency revenues and requests for service. A TDP can identify the strengths and weaknesses of agency operations, including those services that are the best performing and those that need attention. This, in turn, helps define actions that the agency can take to improve efficiency and effectiveness.

UNDERSTANDING THE DATA

As data is collected for the different market segments, El Metro can begin to assess if available resources are being correctly deployed, or if alternative strategies would result in more effective service. Transit is, by nature, a conservative industry. Over time, the residents of the community served by transit develop patterns of activity and travel based on the transit service provided. Decisions about where to live, purchase a car, medical facilities, favored shops, etc. may be made based on the transit operations.

People grow to depend on specific services. As markets shift over time, the transit operator may find that services that were once well-used are attracting fewer riders, and that needs are developing in other locations for services. Shifting resources to target the new markets may seem appropriate. However, instituting a change in services will almost always reduce the quality of service for some existing riders, though it improves service in areas where new riders are anticipated. The riders for whom service will change may be quite vocal in their objections, while the potential new riders will be silent. Undertaking changes in service patterns must therefore be done with recognition of this reality. Change must be introduced incrementally. When feasible, new services should be introduced and new markets established before older services are reduced or terminated. Change must not be seen as a zero-sum game in which new markets are served at the expense of old. Nonetheless, transit agencies cannot continue to provide inefficient services. Agencies must be willing to make changes when sound data has been collected and proper studies have been conducted to demonstrate that change is required to maintain the efficiency of the overall transit system.

This TDP update is a process developed in the transit industry to support the business planning function of transit agencies. Regular, periodic updates permit transit agencies

to not only understand the current use and performance of their system, but also to understand how the performance and use of the system is changing over time. Where necessary, corrective actions can then be identified and implemented that respond to changing conditions, that work to strengthen poorly performing services, and that target resources to developing markets.

PREVIOUS STUDIES

Within the Laredo region, many studies supporting multimodal transportation have been completed, some with stronger verbiage for public transportation and other modes. The data presented below identifies some of the previous plans with goals for public transit, infrastructure to support multimodal transportation, and future growth. However, to date, only small progress has been made throughout the Laredo region to increase densities, incorporate mixed use development, and financially support increased public transportation services.

2009 TRANSIT DEVELOPMENT PLAN

The 2009 TDP included an onboard survey and a boarding/alighting survey. Data was collected and analyzed for El Metro fixed route services. The overall findings from the 2009 study were that El Metro compared well to its peers for operating efficiency, including farebox recovery. In 2009, the agency estimated 45 percent of riders were making daily trips to or from Mexico. Approximately 30 percent of the trips were for work purposes. El Metro reported over 80 percent of its riders did not own a vehicle.

A summary of recommendations from the previous study include:

- Refine bus schedules for maximum efficiencies.
- Minimize bus congestion caused by all routes using the Downtown Transit Center by staggering the arrival times of the routes that have the most frequent service.
- Review route alignments/assignments along the San Bernardo Avenue corridor.
- Implement Downtown circulation system.
- Complete a route re-structuring study to further advance the San Bernardo Avenue project.
- Reduce paratransit expenditures.
- Improve marketing and passenger information.
- Implement new design for bus stops/shelters.
- Resolve bus delays at track crossings.

The recommendations from the 2009 TDP will be reviewed and analyzed through this TDP update process.

2011 BUS RAPID TRANSIT FEASIBILITY STUDY

The 2011 Bus Rapid Transit (BRT) Feasibility Study considered routes and strategies for implementing BRT in Laredo. The study's preferred scenario featured four BRT routes (I-35, East-West, Loop 20, and Loop South) with three potential new transit centers, modifications to 10 existing routes, and one new route. The preferred scenario from the BRT Feasibility Study is shown in **Figure 1-1** and is planned for three phases over an approximately 20-year timeframe. Improvements are currently in the planning stage only and have not yet been implemented.

PHASE 1

- Acquire land and build the proposed North Transit Center
- Modify Route 2A and consolidate the common portions of routes 2A and 2B
- Consolidate the common segments of routes 12A, 12B, 16, and 17 and implement an express bus along I-35
- Acquire a suitable site for the South Transit Center

PHASE 2

- Build the proposed South Transit Center
- Consolidate common portions of routes 9, 14, and 20 along US 83 (Guadalupe/Chihuahua Streets/Zapata Highway) as the south BRT
- Explore options for enhancing the I-35 BRT, such as running buses on the shoulders during peak hours or partnering with other agencies to build HOV/transit lanes on I-35
- Implement signal priority at critical intersections along the south BRT
- Begin acquiring right of way and building queue jumper lanes at critical intersections along the south BRT
- Explore making one lane of US 83 (Chihuahua/Guadalupe Streets) bus only during peak hours when MTP projects R05 (add one lane to Chihuahua Street) and R06 (add one lane to Guadalupe Street) are completed
- Implement increased service further out FM 1472 (Mines Road) to serve growth areas in the northern areas of the City of Laredo
- Acquire a suitable site for the East-West Transit Center

Figure 1-1: Proposed Laredo BRT Network

PHASE 3

- Build the East-West Transit Center
- Implement the Loop 20 (Bob Bullock Loop) BRT
- Build a dedicated BRT lane or managed lane to better accommodate buses on I-35
- Explore adding dedicated BRT lanes on US-83
- Begin working on the BRT Loop South (future) that continues south on US 83 (South Zapata Highway) from the proposed Southwest Transit Center and returns along Cuatro Vientos

This proposed long-range phasing of a BRT system correlates well with the purpose of a short-range TDP. While a BRT itself imposes dramatic changes on the system, through phasing it can be implemented in smaller, incremental steps that would cause less disruption to captive riders, can allow the system to grow to support the individual elements, and can be more easily budgeted. The context of a BRT system is therefore an important consideration for this update of the TDP.

LAREDO 2040 METROPOLITAN TRANSPORTATION PLAN (MTP)

The Laredo 2040 Metropolitan Transportation Plan (MTP), completed in 2014, is a long-range plan for allocating federal funding for all modes of transportation in the region, including public transportation. The 2040 MTP defined three performance measures for transit which provide insight on the operational status of the system.

- **Service Effectiveness** - annual passenger trips compared to vehicle revenue miles and vehicle revenue hours.
- **Service Efficiency** - annual operating expenses compared to vehicle revenue miles and vehicle revenue hours.
- **Cost Effectiveness** - operating expenses compared to annual passenger trip and passenger miles traveled.

The MTP programmed a set of transit projects to allocate federal funds and local funds for the short term and through the year 2040 The 2040 MTP identifies currently identifies the following capital investments for public transportation through the time horizon for this TDP: purchasing paratransit and fixed-route vehicles, implementation of a new North Transit Hub (recommended for Phase I implementation in the BRT Feasibility Study), implementation of a South Transit Hub (recommended for Phase II implementation in the BRT Feasibility Study), and implementation of a new Operational Facility. These capital projects will be reviewed and updated as needed during the recommendations phase of this TDP Update.

REPORT CONTENTS

This TDP Update is a thorough assessment of how well El Metro is operating, what changes are recommended to address unmet needs, operational issues, and planned growth in the community. Recommendations will be developed, with input from the Laredo community. These recommendations will provide El Metro a roadmap for a five-year improvement plan. Report contents by chapter include:

- **Chapter 2: Community Assessment** – identification of socio-demographics within the City and Laredo MPO region and evaluation of how well existing services meet those needs.
- **Chapter 3: Mission, Vision and Community Outreach** – an articulation of the goals and objectives of the TDP and a summary of the public and stakeholder outreach process conducted in developing the TDP
- **Chapter 4: Existing Services** – an overview of existing public transportation services, including information on existing services and characteristics, as well as information on the fare structure, infrastructure and vehicle fleet, and a summary of how existing public transportation is funded
- **Chapter 5: Service Performance** – an evaluation of El Metro performance compared with transit agencies that offer similar services, and route by route performance compared to system-wide performance measures.
- **Chapter 6: Onboard Survey Results** – a summary of the results of the on-board survey questionnaires provided to El Metro riders, including rider demographics and needs and desires for public transportation improvements
- **Chapter 7: Ride Check Review** – a summary of findings from counts of riders boarding and alighting (getting on and off) existing bus routes, including information on ridership by time of day and day of the week.
- **Chapter 8: Transit Needs Identified** – a detailed assessment of potential options for short-term improvements based on the public involvement and technical analysis conducted.
- **Chapter 9: Finance and Implementation Plan** – a summary of finance needs for recommended improvements over the next five years and potential funding sources for improvements, along with next steps and a potential timeline for implementation.

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CHAPTER 2
COMMUNITY ASSESSMENT

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Chapter 2. Community Assessment

Socio-demographic factors are essential to understanding a region's context and transportation needs. Tracking community characteristics such as population, youth population, elderly population, and low-income population helps planners to recognize areas where there is potential transit dependence. This determination helps to identify priority areas for improvements. In addition, public transit services tend to be more efficient and effective if the target populations are large enough and have enough density to support transit investments, generating ridership increases, and offsetting the costs of new or improved transit services.

Employment also plays an important role in understanding a region's transit needs. Identifying major employment centers helps the transit provider understand where major trip destinations are located. Considering both the distribution of population and employment helps to identify travel patterns and satisfy the traveling needs of potential transit users. The following sections further describe these socio-demographic factors.

Study Area

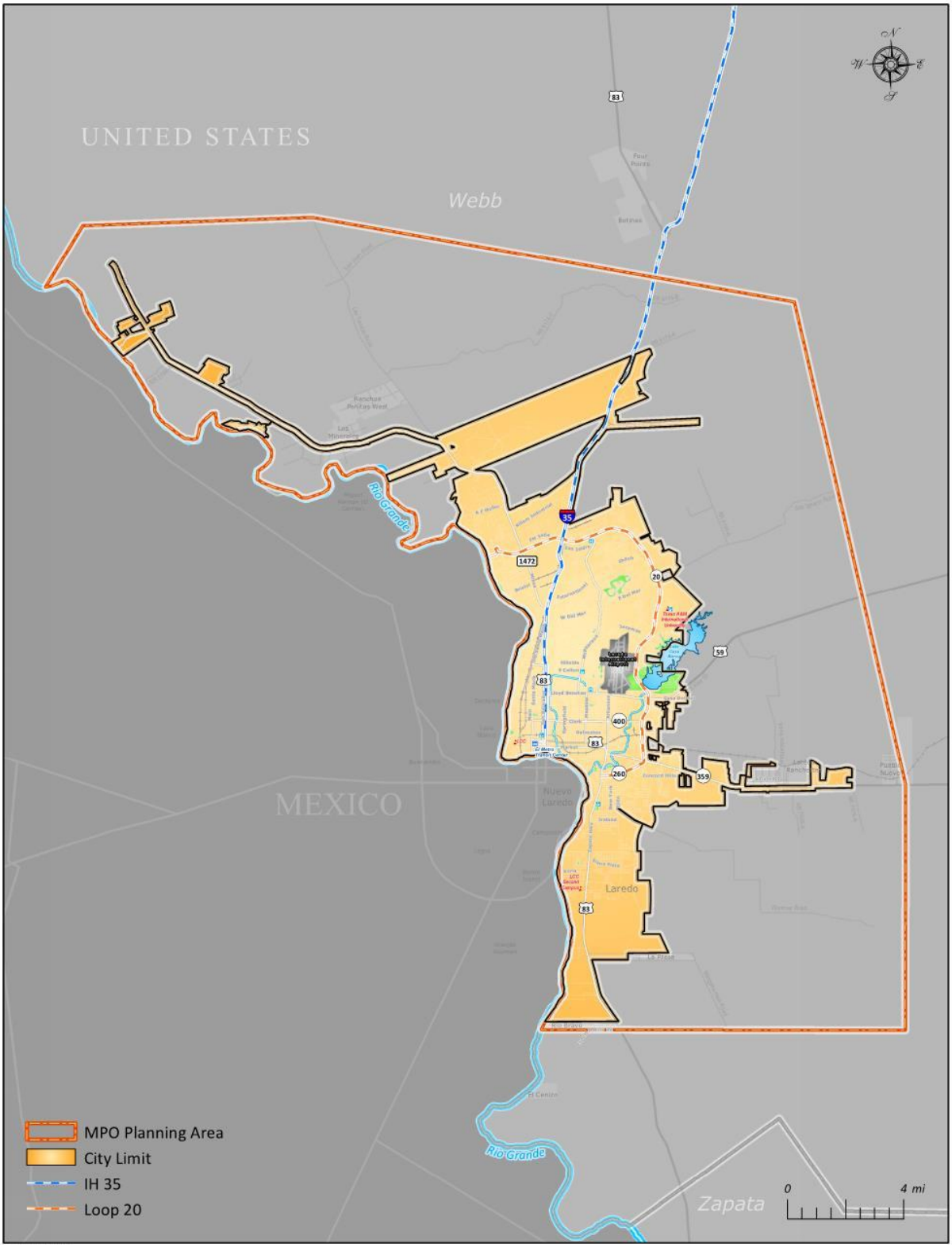
The Laredo region, shown in **Figure 2-1**, is located on the north side of the Rio Grande River along the border between the U.S. and Mexico, about 150 miles southwest of San Antonio and 135 miles west of Corpus Christi. It is a gateway between the U.S. and Mexico, and is the largest inland port in the nation.

The Laredo Metropolitan Planning Organization (MPO), which serves as the overall transportation planning agency for the region within Laredo, encompasses all the cities of Laredo and Rio Bravo and additional rural areas within Webb County. The area of the MPO is approximately 418 square miles.

The land area for the City of Laredo, which is the existing service area boundary for the El Metro transit system, is approximately 89 square miles. Several major roadways run through the city, including I 35, US 59, US 83, and SH 359. The City of Laredo is the county seat of Webb County as well as the county's largest city. About 90 percent of the Webb County population resides in the City of Laredo.

The geographic focus for the analysis in this chapter is the City of Laredo as this is the existing service area for providing El Metro fixed-route service; however, additional data at the county level was also reviewed to identify any additional developing transit dependent markets outside of the existing transit service boundary.

Figure 2-1: Study Area



Within the City of Laredo, residential areas are primarily located between the Rio Grande River and Loop 20; there are also smaller clusters of housing along Mines Road, US 83, and SH 359. Commercial and retail development is distributed along major thoroughfares such as I 35. Industrial facilities are mostly concentrated along I 35, Mines Road, and Loop 20. Public or institutional and parks or recreational uses are interspersed throughout the city.

POPULATION CHARACTERISTICS

Table 2-1 shows the total population for Webb County and City of Laredo in 2000, 2010, and 2013, with comparative statistics for the State of Texas and the U.S. based on the data from U.S. Census Bureau, Texas State Data Center, and Texas Transportation Institute. Population in Webb County grew from 193,117 in 2000 to 276,656 in 2013, and City of Laredo grew from 176,576 in 2000 to 249,085 in 2013. The growth of both Webb County and City of Laredo between 2000 and 2010 and between 2010 and 2013 outpaced that of the state and nation as a whole.

Table 2-1: Population in Webb County, Texas, and United States

	2000	2010	2013	Annual Growth Rate (2000-2010)	Annual Growth Rate (2010-2013)
Webb County	193,117[a]	250,304[b]	276,656[c]	2.63%	3.39%
City of Laredo	176,576[a]	236,091[b]	249,085[d]	2.95%	1.80%
Texas	20,851,820[a]	25,145,561[b]	26,448,193[d]	1.89%	1.70%
United States	281,421,906[a]	308,745,538[b]	316,128,839[d]	0.93%	0.79%

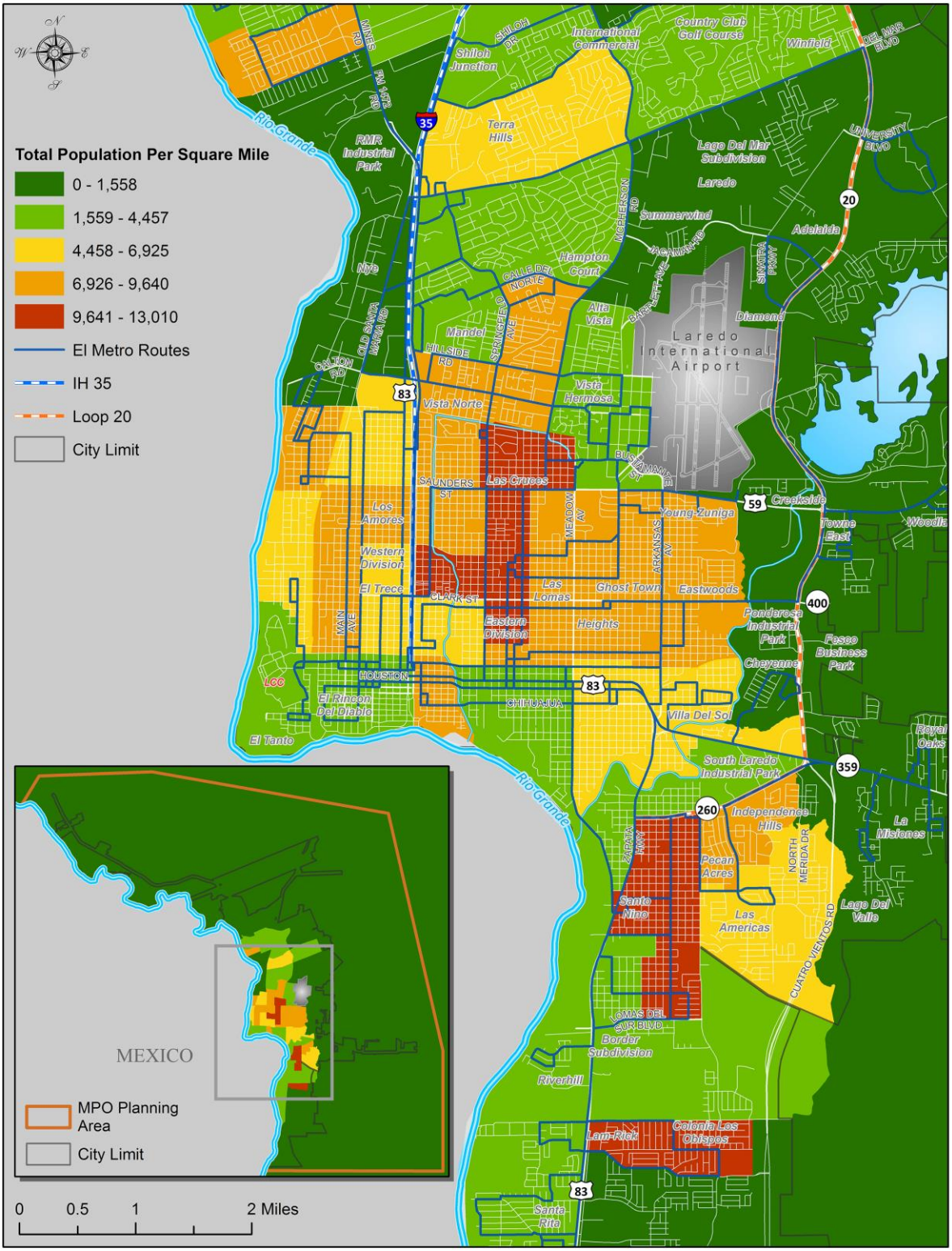
(a) U.S. Census 2000 (b) U.S. Census 2010 (c) Texas State Data Center and Texas Transportation Institute (d) U.S. Census 2013 American Community Survey (ACS) 1-Year Estimates

POPULATION DENSITY

Population density is defined as the number of people per acre. This is an important measure for transit service planning because fixed-route transit service requires certain levels of people choosing to ride transit to get to their destinations. Population density is crucial in determining the scope and frequency of transit service.

Based on the 2013 U.S. Census American Community Survey (ACS) 5-Year Estimates data, the population densities at the Census tract level in the Laredo region are shown in **Figure 2-2**. The map shows that population is densest primarily in the center of the City of Laredo. Concentrations of population are also found along I 35, along Mines Rd north of the city center, and along US 83 south of Spur 260.

Figure 2-2: Population Density



TRANSIT DEPENDENT POPULATIONS

Generally, there are certain transit dependent population groups that are more likely to be unable to drive and rely on transit or other ridesharing alternatives as their sole means of meeting travel needs. The source of the data for identifying transit dependent populations is the 2013 ACS 5-year estimates from the U.S. Census Bureau. The geographical unit for analysis is Census tract. Several population groups were analyzed to understand geographical concentrations of transit dependent people in the study area:

- Youth Populations
- Elderly Populations
- Low-Income Populations
- Households with No Vehicle
- Mobility-Limited Populations

YOUTH POPULATION

Youths typically rely on public transit or other peoples' vehicles to meet their daily travel needs. Per the 2013 ACS 5-Year Estimates data, there are 88,905 persons under the age of 18 (0-18 years) in Webb County, which accounts for approximately 35 percent of total population. **Figure 2-3** shows the density of the youth population for Webb County and the City of Laredo.

The areas with highest youth densities are generally located between US 83 and Cuatro Vientos Boulevard south of Spur 260, and in the area, east of I-35 between US 59 and US 83.

ELDERLY POPULATION

As people age, physical conditions may bring about more transportation challenges. It is therefore critical to provide traveling opportunities for elderly people to meet their daily shopping, socializing, or medical trip needs. According to the 2013 ACS 5-Year Estimates data, elderly people make up approximately eight percent of the total population in Webb County. **Figure 2-4** illustrates the elderly population density for Webb County and City of Laredo.

The areas with higher densities of elderly population are concentrated around the center of the City of Laredo, particularly the area between US 59 and US 83. There are also higher densities of elderly population southeast of the intersection of US 83 and Spur 260.

Figure 2-3: Density of the Youth Population

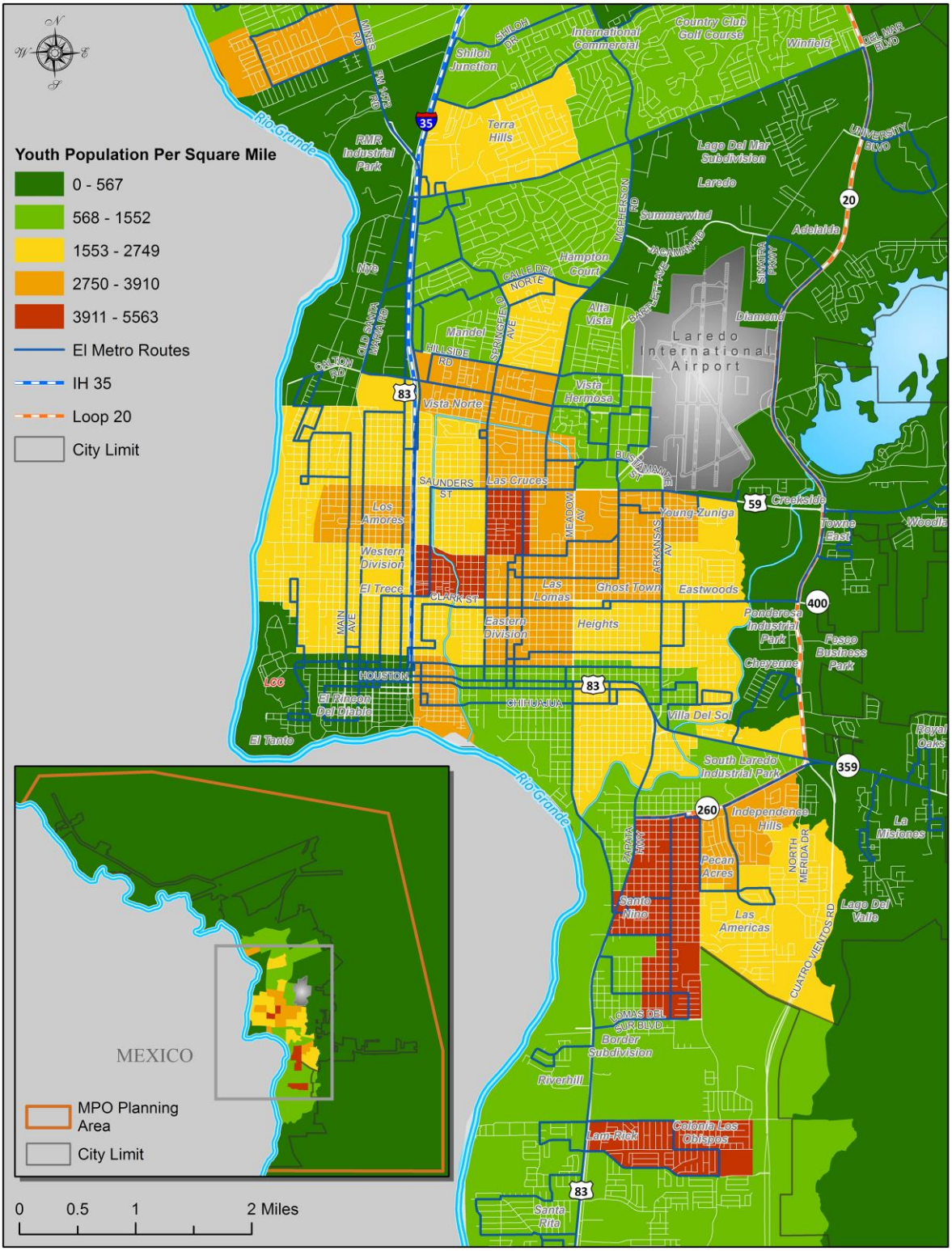
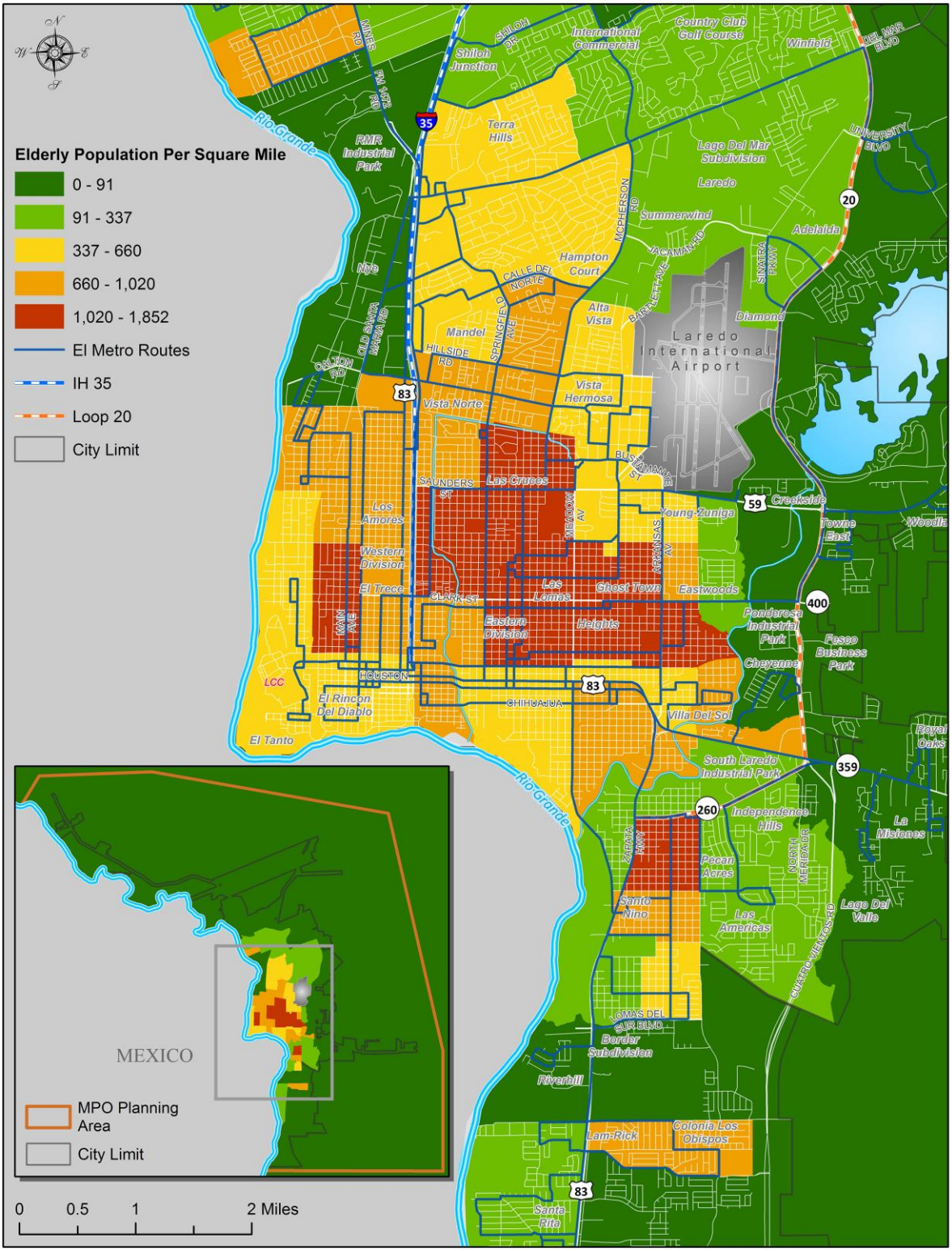


Figure 2-4: Density of the Elderly Population



LOW-INCOME POPULATION

Low-income people tend to have mobility challenges because they may not be able to afford a vehicle, upkeep of a vehicle, or may choose not to spend their limited income on keeping a vehicle. Per 2013 ACS 5-Year Estimates data, people below the poverty line threshold account for approximately eight percent of the total population of Webb County. **Figure 2-5** shows the population densities for the low-income population in the Laredo region. The areas with higher low-income population densities are concentrated around the center of City of Laredo and along US 83 south of Spur 260.

HOUSEHOLDS WITH NO VEHICLE

Households without vehicles are directly dependent on public transit service to meet their daily mobility needs. **Figure 2-6** illustrates the density of areas in the Laredo MPO region of households without vehicles. In a geographic pattern, similar to elderly population and low-income population, the areas with higher densities of households without a vehicle are mostly concentrated around the center of City of Laredo and US 83 south of Spur 260.

MOBILITY-LIMITED POPULATION

The mobility-limited population also represents a portion of the transit dependent population. Approximately ten percent of the population in the Laredo MPO region has some form of mobility impairment or disability.

This transit study defines mobility limitation using the 2013 US Census ACS criteria of persons with disabilities, from age 18-64 years. The analysis does not include persons aged over 65 due to likely double counting of the senior population. Under age 18 is also not included in the analysis, since most persons in this age category would travel with a parent or guardian. **Figure 2-7** illustrates the highest densities of the mobility limited population within the Laredo region. The highest area, with a density of 1,304 persons per square mile, is near the intersection of I-35 and US 83/HWY 359.

Figure 2-5: Density of the Low-Income Population

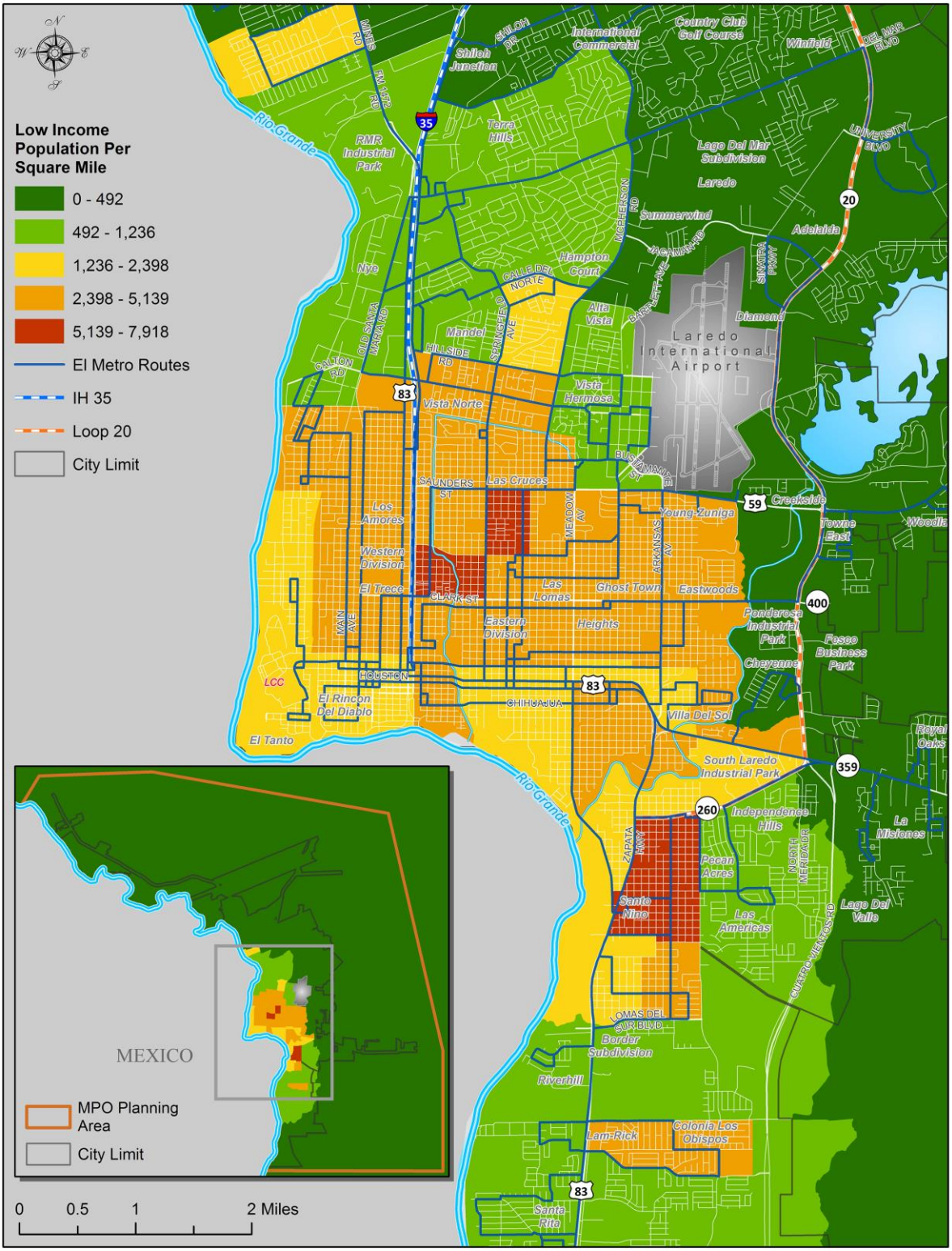


Figure 2-6: Density of Households with No Vehicle

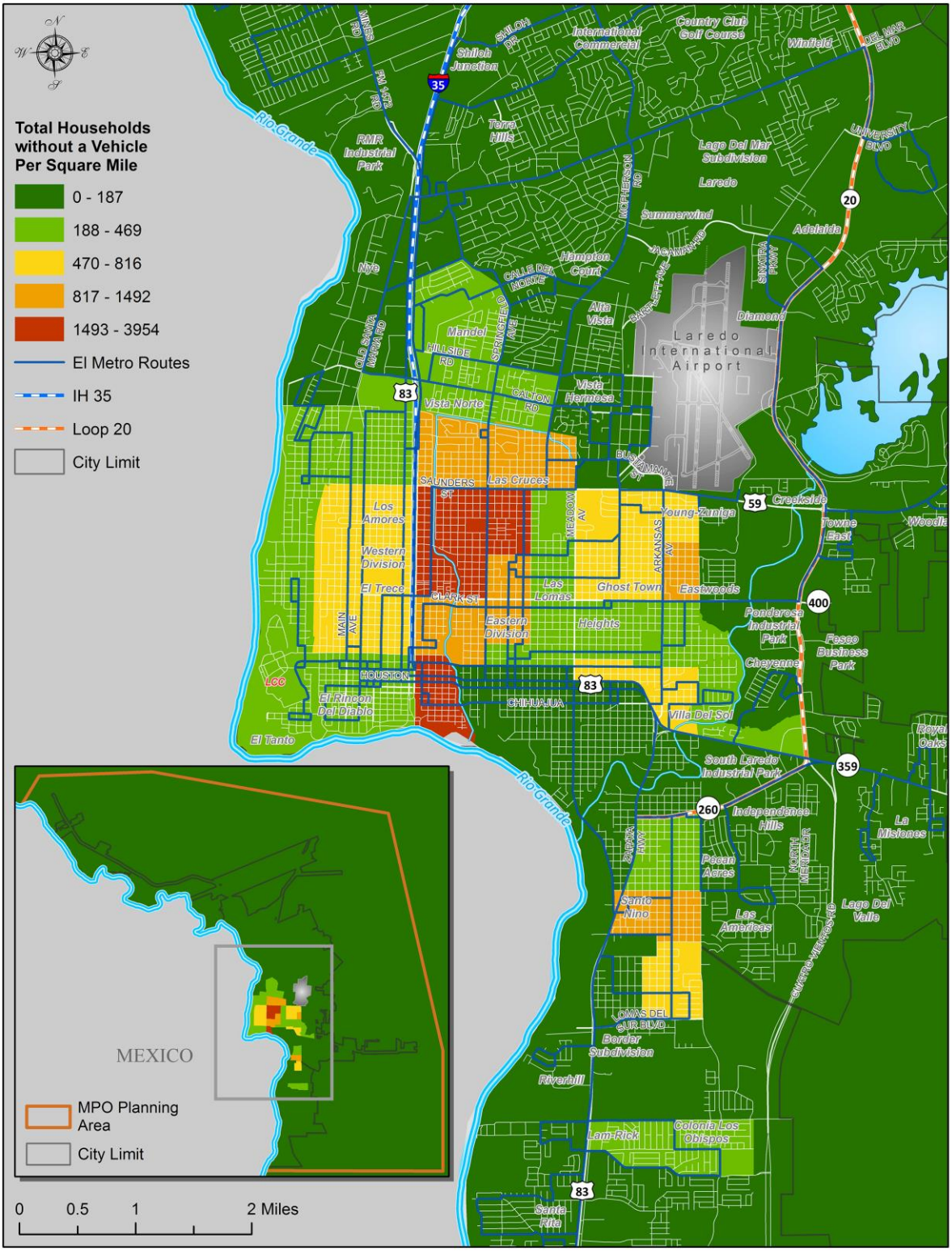
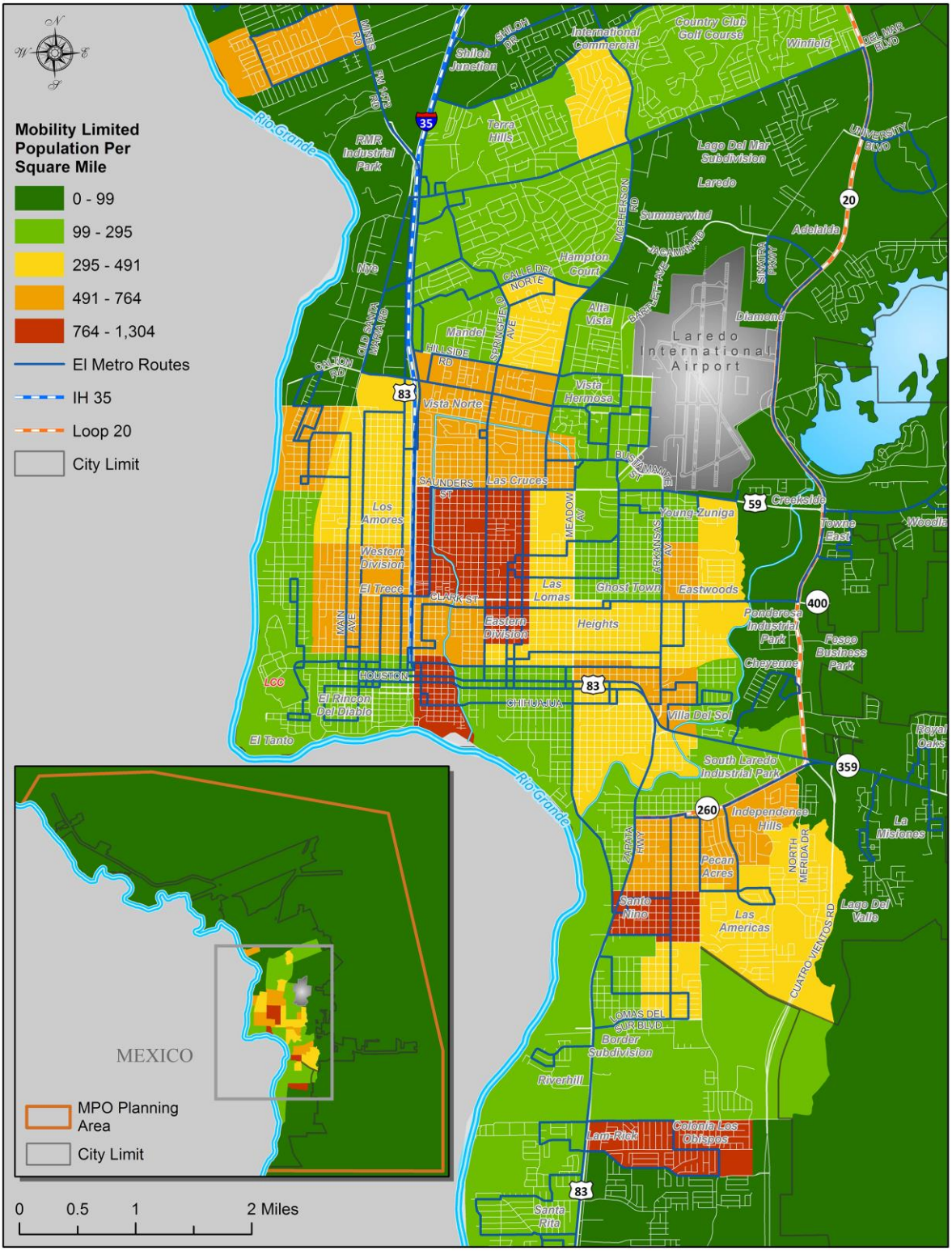


Figure 2-7: Density of the Mobility-Limited Population



OVERALL TRANSIT PROPENSITY

A Transit Propensity map identifies areas with highest propensity to use transit, based on US Census demographic categories. Said demographic categories for transit dependent populations include youth, elderly, and low-income populations, households with no vehicle, and mobility limited populations.

The US Census reports data for each category by Census tract. The percentages of each category were calculated considering Census tract area size to calculate the density of each of these population groups. A cumulative total density was calculated as the total of each of these population group densities to develop an overall transit propensity score, and rankings were developed by Census tract based on overall scores. **Appendix A** presents all the ranked scores by Census tract for the Laredo region.

Table 2-2 presents the top 25 Census tracts with the highest need for public transit, out of 60 total Census tracts analyzed within the City limits. **Figure 2-8** illustrates the areas with highest propensity for transit service (map IDs correspond to the ranking order identified in Table 2-2); the top 25 Census tracts in overall scoring are identified as well. These are areas with a concentration of persons needing public transportation. By identifying areas with a high need, the study team will use this data to develop recommendations which ensure service is provided to those areas.

The areas with the highest transit propensity are primarily located:

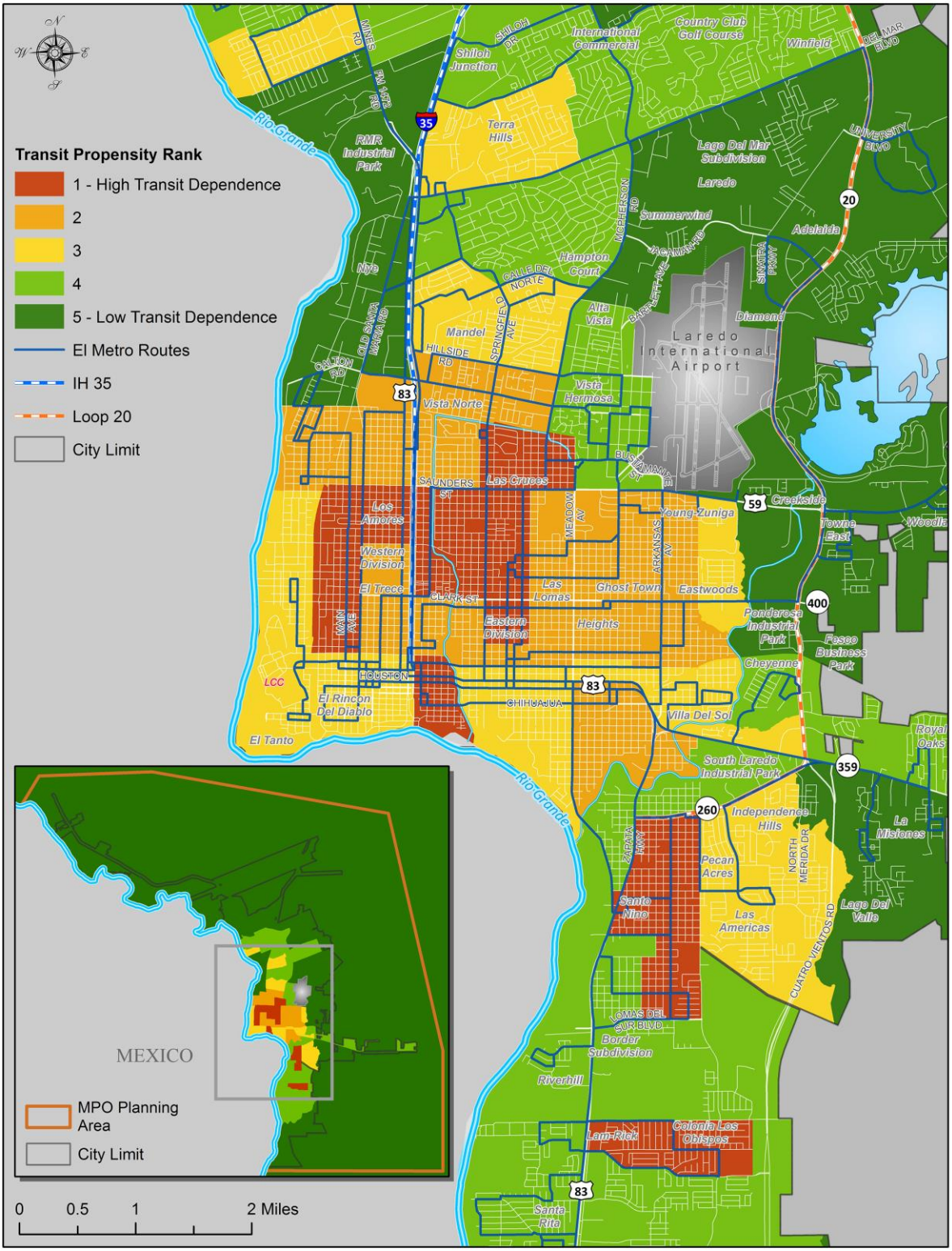
- In downtown Laredo, east and west of I 35 between US 59 on the north and US 83/SH 359 on the south
- South of downtown, between Loop 20 and I 83 on the east and west, and between Spur 260 on the north and Lomas Del Sur Boulevard on the south
- In the southern part of Laredo, between Loop 20 and I 83 on the east and west, and between la Pita Mangana Road on the north and Sierra Vista Boulevard on the south.

The El Metro fixed-route system provides service to these highest-need areas. Highest concentrations of transit dependence/propensity in the downtown are primarily within 1 to 3 miles of the Downtown Transit Center. South of downtown and between Spur 260 and Lomas Del Sur Boulevard, there are 5 routes that directly serve this area: El Metro Routes 9, 10, 11, 12, and 19. In the southern portion of Laredo, Route 20 serves high transit dependency needs east of I 83 between la Pita Mangana Boulevard and Sierra Vista Boulevard.

Table 2-2: Census Tracts with the Highest Need for Public Transit

Rank	Tract ID	Youth Density	Elderly Density	Low-Income Density	Zero Car Density	Mobility Limited Density
1	9.03	5,563	1,275	7,918	3,301	946
2	12.02	3,910	1,852	6,686	2,965	813
3	1.07	4,713	985	6,695	2,052	934
4	1.06	4,707	1,166	6,409	802	764
5	3.00	3,307	923	4,775	2,577	1,304
6	9.04	3,402	1,205	4,846	1,406	975
7	18.08	4,316	731	4,274	1,161	857
8	13.00	3,418	953	5,139	1,160	456
9	1.08	5,049	472	3,665	1,003	408
10	15.02	3,005	1,457	3,356	1,912	738
11	12.01	1,881	1,674	2,877	2,339	1,157
12	6.01	2,749	1,145	4,029	1,226	639
13	9.01	2,815	1,305	3,557	940	448
14	15.01	2,685	784	3,576	1,332	520
15	17.06	2,884	698	3,818	850	558
16	8.00	2,359	747	3,242	1,346	624
17	14.01	2,300	710	4,150	816	334
18	14.02	2,455	809	3,805	424	571
19	11.01	3,466	487	2,927	904	269
20	10.01	2,479	1,020	2,940	1,089	386
21	11.04	3,070	1,252	2,398	737	274
22	7.00	2,194	894	2,834	1,110	491
23	11.03	2,381	754	3,223	503	611
24	1.01	2,092	898	3,017	520	471
25	10.03	2,323	686	2,994	640	295

Figure 2-8: Transit Propensity Rank



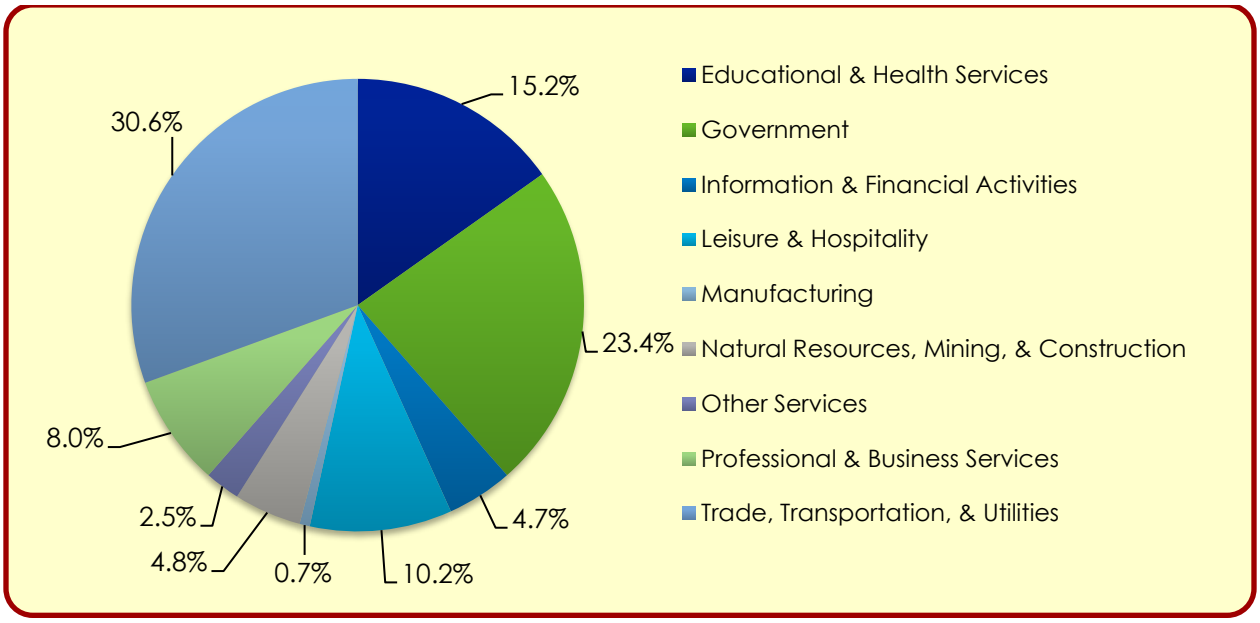
EMPLOYMENT TRENDS

This section discusses the major employers, employment composition, and employment density in the Laredo region. This type of information provides an overall picture of the status of employment and the locations that attract trips, and helps the transit agency serve travelers' needs.

EMPLOYMENT COMPOSITION

Assessing how different industrial sectors make up employment allows us to gain a general understanding of the labor force in a region. **Figure 2-9** shows the distribution of employment by industry sector. Based on data from the Texas Workforce Commission, the top three sectors in the Laredo region are Trade, Transportation, & Utilities; Government; and Educational & Health Services, which account for approximately 31 percent, 23 percent, and 15 percent of total employment, respectively.

Figure 2-9: Distribution of Employment by Industry Sector

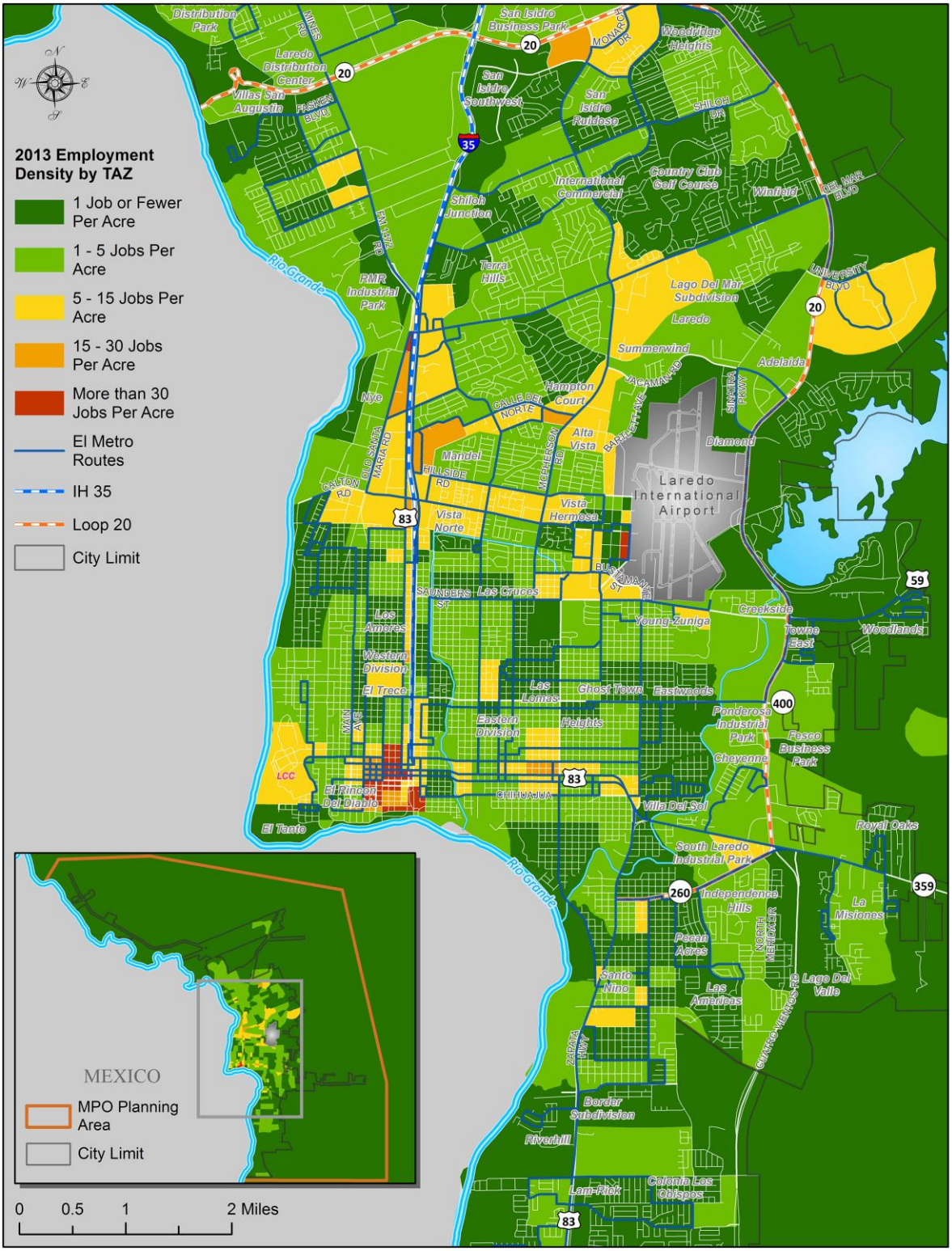


Source: Texas Workforce Commission, 2013

EMPLOYMENT DENSITY

In addition to identifying the major employers and the composition of employment, it is also important to know the distribution of all employment in a region. **Figure 2-10** presents the employment density per acre for the Laredo region. Identifying concentrations of employment helps us know the relative locations of major travel destinations and therefore plan transit services to meet travelers' needs. Employment in the Laredo region is mainly located within the City of Laredo boundary and along major roadway corridors.

Figure 2-10: Employment Density by TAZ



Source: U.S. Census Bureau and Texas State Data Center

INFLOW/OUTFLOW PATTERNS

Inflow and outflow employment patterns provide key information on how many employees work and live in the region versus those that either live or work outside of Webb County. The data set of Longitudinal Origin-Destination Employment Statistics (LODES) from the U.S. Census 2013 Longitudinal Employer-Household Dynamics information (LEHD) for Webb County was used to identify inflow and outflow patterns, as shown in **Figure 2-11**and **Table 2-3**.

Figure 2-11: Inflow/Outflow Employment Patterns

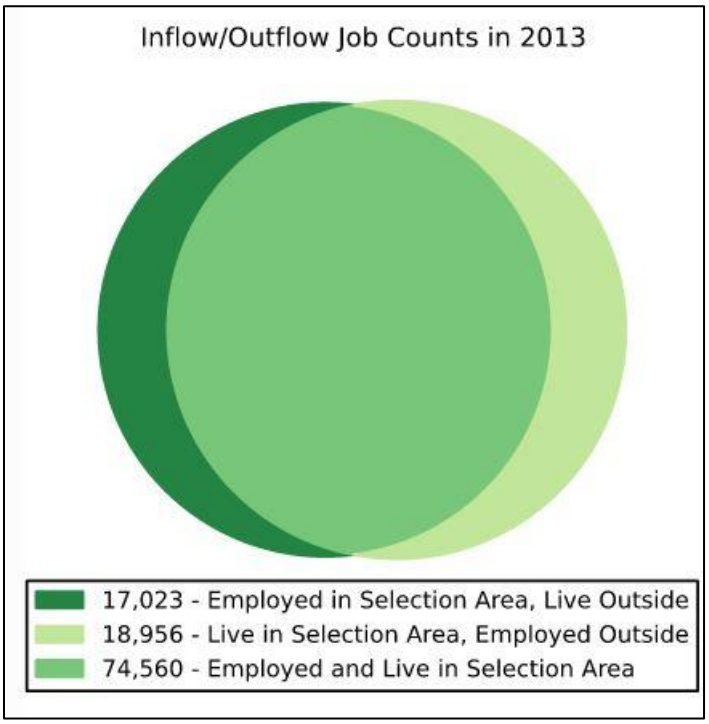


Table 2-3: Inflow/Outflow Jobs Counts Webb County

	Count	Share
Employed in the Selection Area	91,583	100.0%
Employed in the Selection Area but Living Outside	17,023	18.6%
Employed and Living in the Selection Area	74,560	81.4%
Living in the Selection Area	93,516	100.0%
Living in the Selection Area but Employed Outside	18,956	20.3%
Living and Employed in the Selection Area	74,560	79.7%

The information derived from the U.S. Census indicates that overwhelmingly employment is made up of employees who both live and work in the Laredo Region. Approximately 81 percent of those working in Webb County live within the Webb County boundary and roughly 80 percent of those living in Webb County are employed within the Webb County boundary.

WORKER ORIGINS AND DESTINATIONS

The same 2013 US Census LEHD data provides details on where workers live and work in the region, and are shown in **Figure 2-12** and **Figure 2-13**. Said figures demonstrate that workers live widely distributed throughout the region, while work locations are concentrated more in certain employment centers, including those in downtown Laredo, along I 35 and Loop 20, the industrial facilities, and near the intersection of McPherson Road and Del Mar Boulevard.

It should be noted that the LEHD data tracks information for US workers only. Workers who live in Mexico and work in Webb County, or who live in Webb County and work in Mexico, are not tracked in this dataset.

MAJOR EMPLOYERS

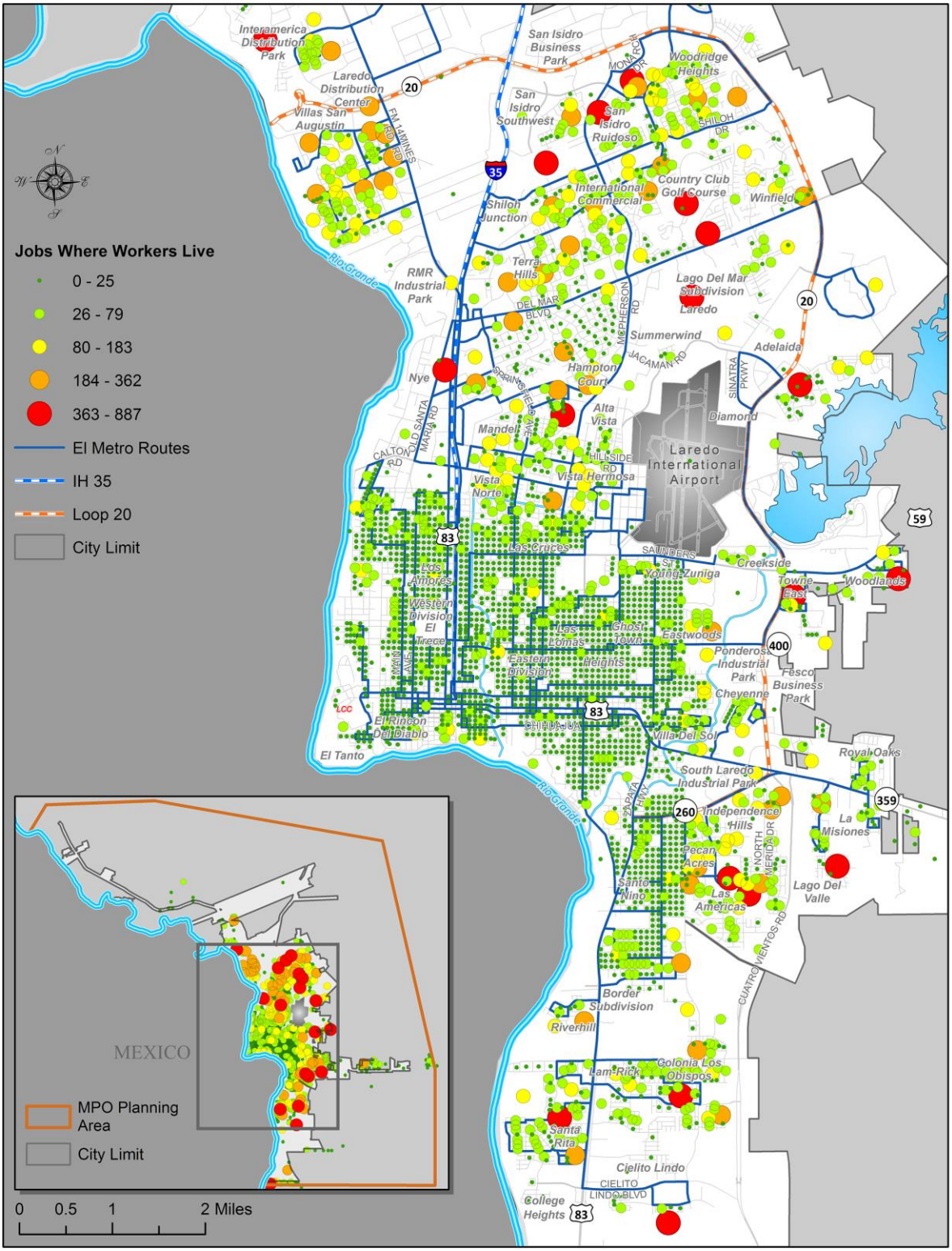
Based on the data from the Laredo Development Foundation, **Table 2-4** shows the top 20 employers in the Laredo region. The employers with over 2,000 employees include the City of Laredo, the Laredo Independent School District, the Laredo Sector of the US Border Patrol, and the United Independent School District. While some of these employers are located at a single site, others have multiple locations throughout the Laredo area.

Table 2-4: Major Employers

Number of Employees	Employer	Sector	Type
Over 2,000	City of Laredo	Public	Municipal
	Laredo Independent School District	Public	Education
	Laredo Sector Border Patrol	Public	Immigration
	United Independent School District	Public	Education
1,500 to 1,999	H-E-B Grocery	Private	Grocery
	Laredo Medical Center	Private	Medical
	McDonald's Restaurant	Private	Fast Food
	US CBP-Customs Field Officers	Public	Federal
	Webb County	Public	County
1,000 to 1,499	Texas A&M International University	Public	Education
	Wal-Mart	Private	Retail
500 to 999	Convergys	Private	Call Center
	Doctor's Hospital	Private	Medical
	International Bank of Commerce	Private	Financial
	Laredo Community College	Public	Education
200 to 499	Border Region Behavioral Health	Public	Health
	Gateway Community Health Clinic	Private	Health
	Laredo Energy Arena	Private	Arena
	Stripes Convenience Stores	Private	Retail
	Target Greatland	Private	Retail

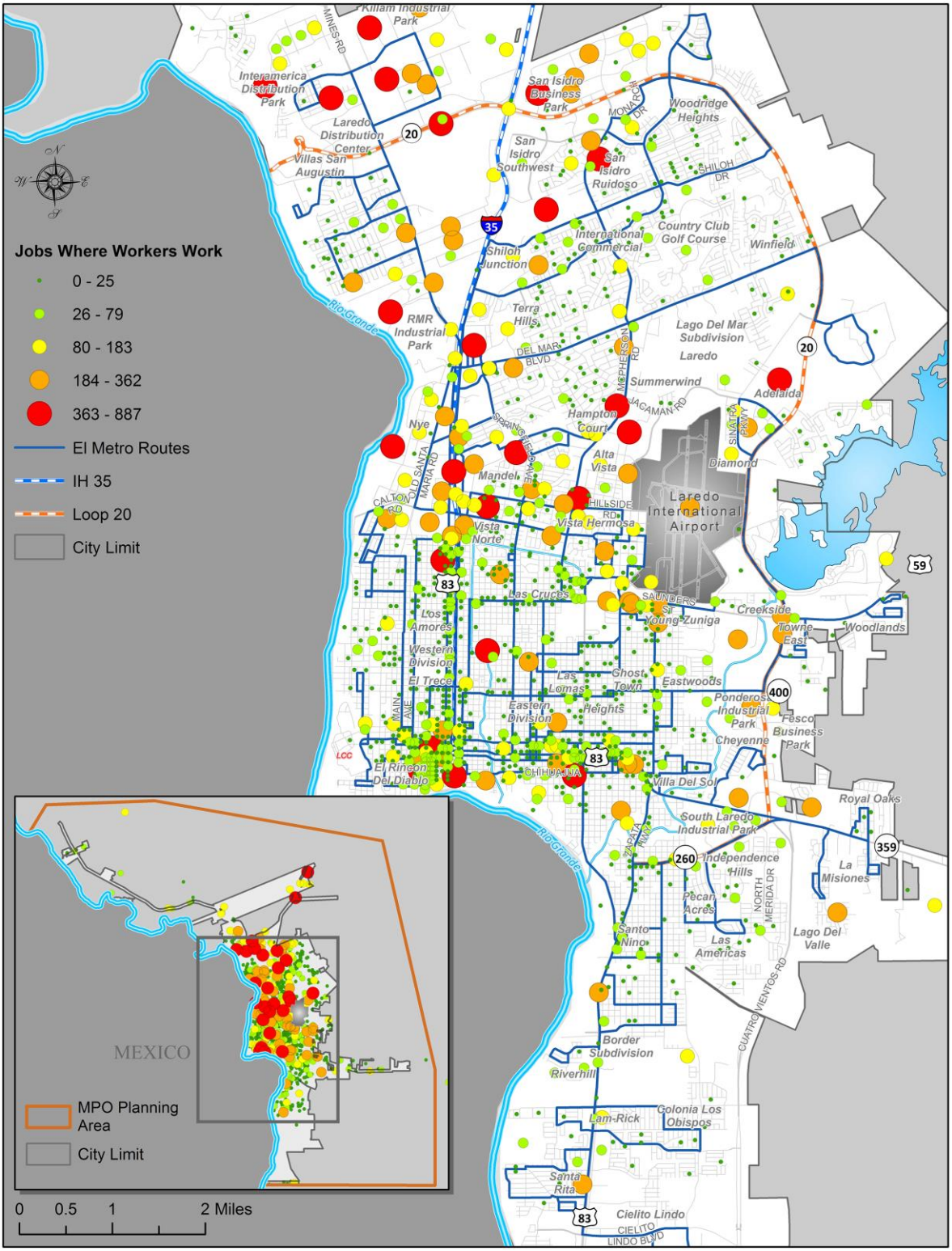
Source: Laredo Development Foundation, 2014

Figure 2-12: Where Workers Live



Source: U.S. Census 2013 Longitudinal Employer-Household Dynamics information (LEHD)

Figure 2-13: Where Workers Work



Source: U.S. Census 2013 Longitudinal Employer-Household Dynamics information (LEHD)

MAJOR ACTIVITY CENTERS

In transit planning, it is important to identify major activity centers such as public facilities, hospitals, universities, shopping centers, and transportation facilities because they put special demands on the transportation system. Due to the international trade activity that generates truck traffic, industrial parks in Laredo region are a particularly important major destination. **Table 2-5** lists these major traffic generators, and **Figure 2-14** shows their locations.

PUBLIC FACILITIES

In the Laredo region, most public facilities, such as City Hall and the Webb County Courthouse, are located in the downtown area. These public facilities are in proximity to one another and generate traffic in the downtown area. Entertainment/sports-related public facilities, such as Laredo Civic Center, Laredo Energy Arena, and Uni-Trade Stadium are located north of the downtown area along major roadway corridors.

Major transportation-related facilities in the Laredo region include Laredo International Airport, the airport, and the El Metro Transit Center. The airport, located on Loop 20 just north of US 59, provides freight and passenger flight services. The El Metro Transit Center, located in downtown Laredo near Salinas Avenue and Farragut Street, is the main transfer hub for Laredo's transit system and inter-city bus lines.

HOSPITALS

Two large general medical facilities are in the Laredo region. The Laredo Medical Center, located on Saunders Street, is about halfway between I 35 and Loop 20. It is the largest medical facility in the region. Doctors Hospital is the second largest medical facility in Laredo, and is located at the intersection of McPherson Road and Loop 20.

INDUSTRIAL FACILITIES

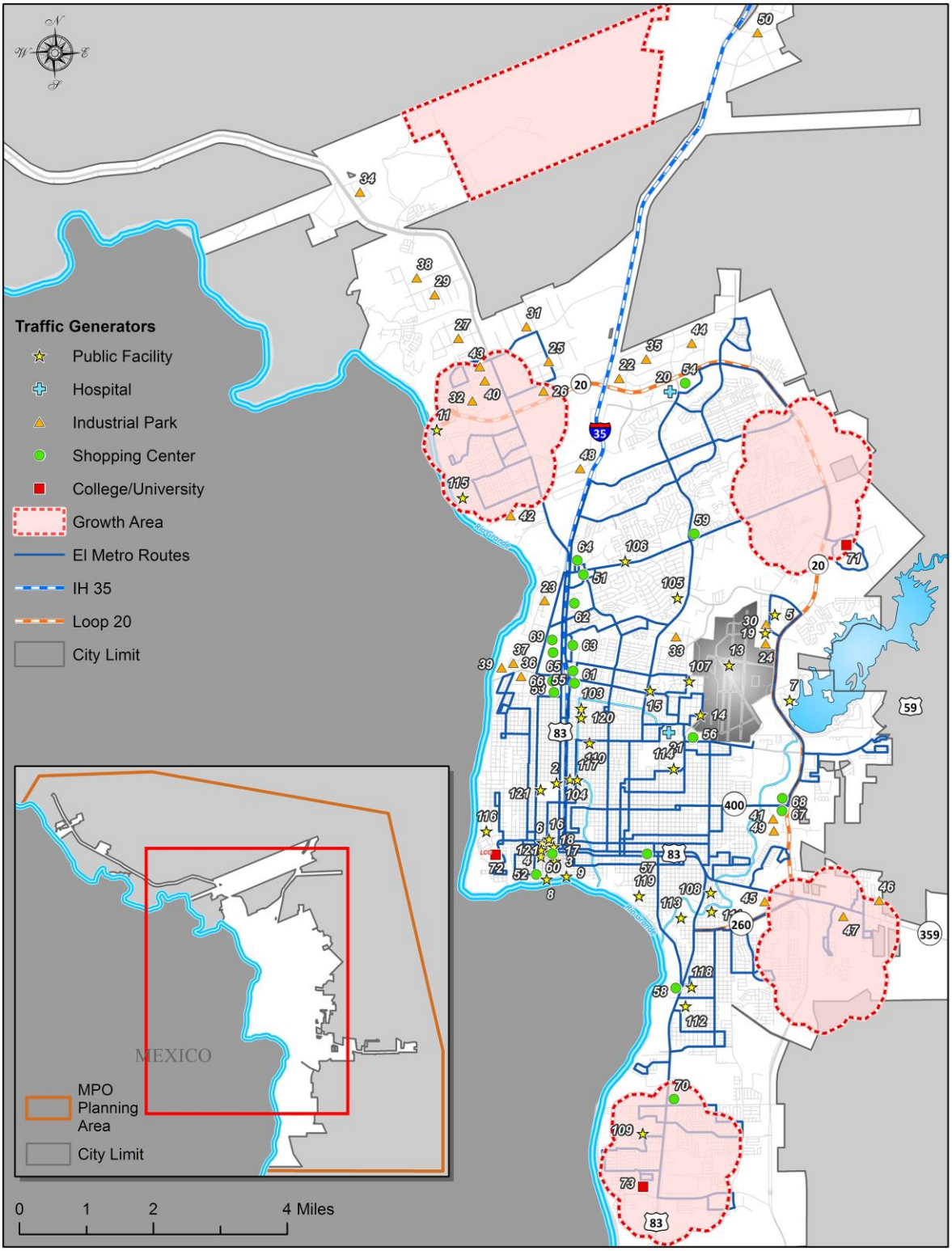
Laredo is the largest inland port on the US/Mexico border and is an important gateway for international trade activity. Industrial facilities in the Laredo region generate high volumes of truck traffic and put special demands on the transportation system.

Several clusters of industrial facilities, including industrial parks and distribution centers, are in the outer areas surrounding the city. Most of these clusters are located along Mines Road (FM 1472) just north of Loop 20, along I 35 north of Loop 20, and along Loop 20 between I 35 and Mines Road. This area north of Loop 20 is convenient for commercial truck traffic coming from or going to the World Trade Bridge.

Table 2-5: Major Traffic Generators

Public Facilities	
1. City Hall	11. World Trade Bridge
2. Civic Center (LISD facility)	12. Federal Court/Post Office
3. Convention & Visitors Bureau	13. Laredo International Airport
4. El Metro Transit Center	14. Municipal Courthouse
5. Laredo Energy Arena	15. Public Library
6. Federal Courthouse	16. Webb County Administrative Building
7. Lake Casa Blanca Int'l State Park	17. Webb County Courthouse
8. Gateway to the Americas Bridge	18. Webb County Justice Center
9. Juarez-Lincoln Bridge	19. Uni-Trade Stadium
10. Laredo-Colombia Solidarity Bridge	
Hospitals	
20. Doctors Hospital of Laredo	21. Laredo Medical Center
Industrial Parks	
22. Cross Roads Industrial Park	37. Octavio Salinas Industrial Park
23. Del Mar Industrial Park	38. Pan American Industrial Park
24. Diamond Industrial Park	39. Paso del Norte Industrial Park
25. El Portal Industrial Park	40. Pellegrino Industrial Park
26. Embarcadero	41. Ponderosa Industrial Park
27. Inter-American Distribution Park	42. R.M.R Industrial Park
28. International Commerce Center	43. Roadway Express, Inc.
29. International Trade Center	44. San Isidro East Point Center
30. Jacaman Ranch Industrial Park	45. South Laredo Industrial Park
31. Killam Industrial Park	46. South Texas Oil and Gas Industrial Park
32. Laredo Distribution Center	47. Southern Development Industrial Park
33. McPherson Acres Industrial Park	48. Tejas Industrial Park
34. Millennium Park	49. Tex-Mex Industrial Park
35. Milo Distribution Center	50. Unitec Industrial Park
36. Modern Industrial Park	
Shopping Centers	
51. Del Mar Plaza	63. Mall Del Norte
52. The Outlet Shoppes (River Drive Mall)	64. North Creek Plaza, including HEB
53. Gateway Shopping Center	65. Rio Norte Shopping Center
54-60. HEB Food Store	66. Sam's Club
61. K-Mart	67. Target
62. Lowe's	68-70. Walmart
Colleges and Universities	
71. Texas A&M Int'l University	72-73. Laredo Community College
High Schools	
74. Cigarroa High School	82. Premier High School of Laredo
75. Laredo Early College High School	83. Martin High School
76. Francisco S. Lara Academy	84. St. Augustine Catholic High School
77. Gateway Academy	85. United High School 9th Grade
78. Gateway Academy – Townlake Charter High School	86. United High School
79. Joseph W. Nixon High School	87. United South High School
80. John B. Alexander High School	88. Vidal M. Trevino School of Communications /Fine Arts
81. Lyndon B. Johnson High School	
Middle Schools	
89. Clark Middle School	96. Mirabeau B. Lamar Middle School
90. Dr. Joaquin G. Cigarroa Middle School	97. Memorial Middle School
91. George Washington Middle School	98. Salvador Garcia Middle School
92. Gonzalez Middle School	99. Trautman Middle School – 6th Grade Campus
93. Louis J. Christen Middle School	100. Trautman Middle School
94. Lamar Bruni Vergara Middle School	101. United Middle School
95. Los Obispos Middle School	102. United South Middle School

Figure 2-14: Major Traffic Generators



Other areas with a concentration of industrial land uses include:

- The Uni-tec Industrial Park on the east side of I 35, north of the Union Pacific terminal, about six miles north of Loop 20
- West side of the Union Pacific railroad, north of downtown
- West of the airport along McPherson Road
- Along the Kansas City Southern rail line and near the intersection of Loop 20 and SH 359
- Near the intersection of the Camino Colombia Toll Road and Mines Road

SHOPPING CENTERS

Shopping centers are major traffic generators because they generate traffic during certain peak times, especially on weekends and in the evenings. Mall del Norte is the largest mall in the Laredo region and located along I 35 at Hillside Drive. Other shopping centers and major stores are also located near Mall del Norte along the I 35 frontage roads. Other regional shopping centers include Del Mar Plaza and North Creek Plaza near the intersection of I-35 and Del Mar Boulevard. Several large grocery stores such as H-E-B, Wal-Mart, and Target are distributed throughout the region and attract daily shopping trips for groceries and other goods.

The 358,507 square-foot Outlet Shoppes at Laredo, located just northwest of Gateway to the Americas Bridge, is scheduled to open in 2016 with a wide variety of designer brands. It is expected to attract traffic from within the Laredo region and from Mexico.

SCHOOLS

Universities and colleges put special demand on the transportation system because they generate traffic from students and employees at different time periods of the day. Further, many students do not own a vehicle and must rely on public transportation to serve their daily mobility needs. Therefore, public transportation is especially important for these facilities.

There are three major university and college campuses in Laredo. Texas A&M International University is located on Loop 20 between Del Mar Boulevard and Jacaman Road. The University has approximately 7,400 students and 1,200 faculty and staff. The Laredo Community College has two campuses – the main campus just west of the downtown area at the old Fort McIntosh, and the new campus in South Laredo on US 83 at Don Camilo Boulevard. There are approximately 8,700 students and 1,000 faculty and staff between the two campuses.

High schools operate in a different pattern, with traffic generated mostly in the morning and afternoon peak hours. There are 14 high schools in the Laredo region, including special campuses such as the Trevino School of Communications, the Perez Engineering

High School, the Gateway Academy, the STEP Academy, and the Early College High School on the TAMIU campus.

INTERNATIONAL BORDER CROSSINGS

The 2015 El Metro Ridership Survey conducted for this Transit Development Plan tallied a total of 527 surveys. Of this total, 93, or about 18 percent of all riders, had an origin or destination in Mexico. Anecdotal information from El Metro riders pertaining to instances when all international crossings were closed, indicates that as much as 40 percent of total system ridership may be from people crossing the border. Border crossings therefore form an important component of El Metro ridership, and must be considered in this updated Transit Development Plan.

The four international bridges are:

- The Gateway to the Americas on Convent St, also known as Bridge 1. This bridge carries autos and pedestrian traffic, and is an important contributor to transit patronage from Mexico.
- The Juarez-Lincoln Bridge on I 35, also known as Bridge 2. This bridge also carries autos and pedestrian traffic. Like Bridge 1, it is close to downtown and the Laredo Transit Center, and so is an important source of Mexicans using El Metro.
- The Laredo-Colombia Solidarity Bridge is locally known as Bridge 3. It is open to all traffic, with facilities for trucks, autos, and pedestrians. However, since this bridge is about 25 miles north of downtown and essentially serves as a truck bypass of Laredo, it is not a significant contributor to El Metro ridership.
- The World Trade Bridge, commonly known as Bridge 4. This bridge is open exclusively for truck traffic, and so has no contribution to El Metro ridership.

The border crossing data for 2014 shows a total traffic entering the United States from Mexico for all bridges of 5,250,567 personal vehicles and 41,230 buses. The definition of buses includes long-distance service carriers such as El Conejo and El Tornado. Said data also shows that in 2014, 10,335,481 passengers in personal vehicles and 1,020,567 passengers in buses entered the U.S. through Laredo. Pedestrian traffic for all crossings was 3,447,437. Because of the distance to Bridge 3 and the truck-only restrictions on Bridge 4, vehicle and pedestrian crossing traffic can be assumed to be focused on Bridges 1 and 2 in downtown Laredo.

The monthly data is fairly stable for personal vehicles and pedestrians. Average monthly rate of personal vehicle passengers is 861,290, with a standard deviation of only 9 percent. July, and August, and December were the months with highest personal vehicle passenger crossings. Pedestrian crossings to the United States averaged 287,286 per month, with an 8 percent variation. The months with highest pedestrian crossings were August, October, and December. Bus passengers showed a much higher

variability, with a monthly average of 85,047 and a standard deviation of 25 percent. The months with highest bus passenger crossings were April, July, and August.

Initial data from the 2015 El Metro Ridership Survey shows separate ridership characteristics of riders who had both an origin and a destination in the United States, and riders who had either an origin or a destination in Mexico. A summary of the results, shown in **Table 2-6**, shows a distinct difference between US and Mexican El Metro riders in almost every category, including: mode used to access transit, destination type, mode to destination after using transit, vehicle availability, and frequency of transit use.

Table 2-6: Summary of US and Mexican El Metro Ride Characteristics

Comparison of U.S. and Mexican El Metro Rider Characteristics Access Mode to Transit	U.S.	Mexican
Percent Walk Access	79.3%	68.8%
Average Walk Time in Minutes	2	16
Percent Shared Ride Access	12.2%	26.9%
Percent Transferred from Another Bus	7.4%	0.0%
Percent Access at the El Metro Station	41.0%	69.9%
Destination Type	**U.S.**	**Mexican**
Home	30.7%	28.0%
Work	23.3%	16.1%
School or College	7.9%	3.2%
Medical	3.0%	4.3%
Shopping	19.3%	21.5%
Recreational	2.8%	5.4%
Personal Business	5.6%	4.3%
Visiting Friend or Relative	6.5%	16.1%
Other	0.9%	1.1%
Mode to Destination After Using Transit	**U.S.**	**Mexican**
Percent Walk Access	85.9%	83.1%
Average Walk Time in Minutes	10	6
Percent Shared Ride Access	6.1%	16.9%
Percent Transferred to Another Bus	8.0%	0.0%
Percent with a Vehicle Available	**U.S.**	**Mexican**
Vehicle Available	9.8%	24.7%
Vehicle not Available	90.2%	75.3%
Frequency of Transit Use	**U.S.**	**Mexican**
1 Day per Week	4.0%	18.4%
2 Days per Week	11.7%	28.7%
3 Days per Week	24.5%	19.5%
4 Days per Week	19.5%	12.6%
5 or More Days per Week	40.3%	20.7%

COMMUNITY ASSESSMENT CONCLUSIONS SUMMARY

This chapter provided background community information for the Laredo region. This data will be used in the assessment of strategies for enhancing the transit network and service over the next five years.

The socioeconomic analysis for Laredo shows population densities concentrated downtown and in the residential area between US 83 and the Zapata Highway. The traditional transit-dependent populations of youth population, elderly population, low-income population, households with no vehicles, and the mobility-limited population are in these denser areas, giving them high tendency toward transit propensity.

Employment in the Laredo area is concentrated within the City of Laredo and in discrete industrial corridors. Major traffic generators are distributed throughout the city, with public-sector generators particularly concentrated in the downtown area.

An initial review of the 2015 El Metro Ridership Survey conducted for this Transit Development Plan revealed that riders with either an origin or a destination in Mexico make up a distinct sub-group in the system. The access, routes used, trip types, and trip frequencies for these riders have distinct characteristics. Anecdotal information from El Metro staff indicates that passengers from Mexico frequently cross the border at the beginning of the week and stay in Laredo for the rest of the week. This pattern means that many internal trips taken during the week may come from Mexican nationals, so the survey's distinction between trips origins and destinations solely in Laredo and those with one trip end in Mexico is less distinct.

The overall service quality as rated by the 2015 El Metro Ridership Survey and the latest system-wide operating data show that the El Metro system is well-run, efficient, effective, and well-regarded by its clients. This indicates that, on a system-wide basis, radical or significant changes to operations or facilities are not necessary to improve the system; only minor tweaks are required to fine-tune the system to changing conditions over the next five years. However, since the 2015 Ridership Survey did reveal a distinct difference between US and Mexican ridership characteristics, some smaller-scale enhancements to address specific portions of the El Metro system as they affect the two distinct markets may be considered. This will help refine the El Metro system to provide excellent transit service to all its riders.

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CHAPTER3

MISSION, VISION, AND COMMUNITY OUTREACH

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Chapter 3. Mission, Vision, and Community Outreach

A clear vision statement and well-defined project goals and objectives are important for identifying and analyzing reasonable short-range service improvements. They serve as the primary criteria used to develop, evaluate, select, and prioritize service improvements. A strong mission and vision statement with clear study goals and objectives is essential to gaining community support and advancing public transportation service improvements.

As the existing service analysis and surveys are completed and a range of potential service improvements are identified, these goals and objectives will help decision makers and the public compare different service improvements against associated impacts. The following presents El Metro's mission statement and proposed vision for El Metro, as defined for this TDP Update.

El METRO PUBLIC TRANSIT MISSION
to promote and provide high quality, cost-effective public transportation services that address the needs and demands of the citizens of Laredo, Texas.

Proposed El Metro Public Transportation Vision

By operating efficiently and effectively, El Metro will become an integral, safe, and reliable mode of transportation that contributes to the economic and social growth of the Laredo region.

TDP Goals and Objectives

Project focus areas, goals, and objectives for this short-term improvements analysis have been identified based on the overall vision and mission for the El Metro system, as well as from input from the review of previously adopted documents within the community. Six targeted focus areas were identified to guide the analysis and development of a range of potential El Metro short-term improvements:

- Providing service to transit dependent populations, defined for Laredo as the youth population, elderly population, low-income population, households with no vehicles, and the mobility-limited (disabled) population;
- Providing service to important market segmentations among riders, such as students, work trips, or US and Mexican riders;
- Ability to access employment opportunities;
- Ability to make efficient (direct) connections;

- Reducing delays and improving service reliability; and
- Providing safe, attractive, and easy-to-use services.

The following proposed goal statements and objectives were developed s. Development and approval of these goals and objectives provided the project team with a quantitative process for evaluating and prioritizing short-term improvements in the TDP.

GOAL 1: IDENTIFY PRIORITY PROBLEMS AND SHORT-TERM NEEDS.

- Objective 1A – Solicit public input to understand a full array of transit service needs.
- Objective 1B – Solicit input from El Metro drivers and riders to identify major issues.
- Objective 1C – Collect a comprehensive set of customer, land use, employment, and demographic data.
- Objective 1D – Collect a comprehensive set of future transit demand information.

GOAL 2: IDENTIFY CURRENT AND FUTURE TRANSIT SERVICE OPPORTUNITIES.

- Objective 2A – Identify gaps in existing and future transit service.
- Objective 2B – Identify efficiencies in route timing, scheduling, and headways.
- Objective 2C – Build upon previous studies to review and identify major hubs and transfer areas to streamline connectivity.
- Objective 2D – Determine the main corridors to serve the highest number of riders efficiently.
- Objective 2E – Determine circulator or other flexible service options and locations to optimize service, considering the results of past studies, land use, planned developments, and available funding.

GOAL 3: ANALYZE EL METRO'S SERVICE TO MAXIMIZE THE USE OF PUBLIC FUNDS.

- Objective 3A – Identify the potential to deliver the same or additional transit service for lower cost.
- Objective 3B – Identify service standards and performance measures for ongoing monitoring of the efficiency of El Metro service.
- Objective 3C – Identify a realistic service plan and funding recommendations for El Metro.
- Objective 3D – Implement the preferred service plan.

PUBLIC AND STAKEHOLDER OUTREACH PROCESS

A key part of any planning process is public outreach within the community. This section presents a brief summary of the public and stakeholder outreach activities conducted for this TDP Update. Additional information on public and stakeholder involvement activities conducted and input received are provided in **Appendix B**.

Throughout development of the TDP, the project team closely coordinated with key staff from El Metro, the City of Laredo, and the Laredo Metropolitan Planning Organization (MPO). This process was essential to ensuring that the elements of the TDP meet the needs of staff that are responsible for implementation of short-term improvements to El Metro services. An initial "Kick-off Conference Call Meeting" was held in August 2015 with the project team, El Metro, and the Laredo MPO staff. Project team status conference calls were held approximately every two weeks during the development of the TDP.

Obtaining meaningful information from existing bus riders is one of the most important elements in developing and prioritizing short-term improvement needs for El Metro services. To collect information on current rider needs, the study process included an onboard survey questionnaire and a boarding and alighting ride count to understand rider needs and existing travel patterns by route and time of day. In addition, in January 2016, the project team met with drivers, operators, dispatch and supervisory staff to obtain additional input on rider needs. Bus drivers and operations personnel are often the first and most direct point of contact that riders have with El Metro services, and their input was essential in further understanding existing conditions and potential service improvements. Additional field work was conducted to understand and verify input received on existing rider needs.

Obtaining community input from stakeholder groups and the general public was also important in obtaining community input on the goals, objectives, and short-term improvement options. At the start of the project, the Laredo MPO identified a total of 317 stakeholder contacts which the project team engaged at key milestones of the development of the TDP. These stakeholders included local organizations, local industry groups such as freight forwarders and major employers, and Mexican stakeholders. Stakeholder groups were encouraged to provide input into the process and invited to attend all public meetings. Their input was further solicited through focused outreach efforts in developing potential short-term improvement options.

Two public open house meetings were held where citizens were encouraged to comment on transit services in the Laredo region. The first of these meetings was held in late February 2016 to review existing services, goals and objectives of the plan, and to receive input from the community on desirable short-term improvements. The second public open house meeting was held in late August 2016, and allowed the public to review, comment and help the project team prioritize options for short-term improvements.

Combined with the technical analysis in this TDP, the extensive outreach efforts conducted with El Metro and MPO staff, current riders, stakeholder groups and the public played an essential role in developing a set of potential alternatives for El Metro service and prioritizing improvements over the next five years in this TDP.

CHAPTER 4

EXISTING EL METRO SERVICES

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Chapter 4. Existing El Metro Services

Understanding the context of the existing public transportation system, including the available services, fare structure, infrastructure, and fleet levels required for operating the service are an important first step in evaluating the existing system and fixed-route services. In addition, understanding the existing financial characteristics of the system and the different sources for funding the system provide the necessary background information that can be used in evaluating both the cost effectiveness of the fixed-route system and the existing resources available for providing effective public transportation options over the next five years.

Overview

The El Metro system includes two distinct transit services: El Metro and El Lift. While the focus of this TDP is specific to the El Metro service, it is nevertheless important to understand these complementary services.

The fixed-route service for the public is generally known as El Metro. All El Metro buses have bike racks. To assist passengers with mobility impairments, all buses have ramps or lifts that can accommodate wheelchairs, and feature priority seating areas with an easier-to-reach stop call bell and securement belts for wheelchairs. El Metro buses are also equipped with larger, lit destination signs inside and outside, and have lit stop request signs and accessible signage at major stops to accommodate passengers with visual or hearing impairments.

Complementing the El Metro service, the El Lift paratransit service focuses on providing door to door transit service to people who are unable to use the El Metro fixed-route service. El Lift services use transit vans which are all wheelchair accessible. El Lift ridership is restricted to the city limits of Laredo, and riders must have been verified for eligibility by El Metro. Because the service is shared-ride, El Lift recommends that passengers make reservations at least 7 days in advance of their trip to allow them to schedule for the requested trip time, however all requests are honored up to the day before a trip.

It is generally accepted in the transit industry that there are two main models for establishing a transit system: a **centralized hub and spoke system** where routes are arranged radially (like a bike wheel) around a centralized hub, and a **decentralized point to point system** where there are multiple hubs that connect to routes in a more grid-like way. El Metro fixed-route service operates as a hub-and-spoke system, anchored at the downtown Transit Center; each of the 22 routes have their origin and

terminal points at the center. Secondary transfer points are dispersed throughout the city in locations where several routes conveniently come together, such as at the Target on Del Mar Boulevard on Routes 1, 4, 12A, and 16; the Mall del Norte on Routes 1, 2A, 12A, and 17; and the Laredo Medical Center on routes 3 and 8A. Several other locations in the system provide opportunities for transfers by running 2 or more routes along the same portion of road, such as McPherson Road from Calle del Norte to International Boulevard, served by Routes 3 and 12A; Clark Boulevard from the Laredo Transit Center to Saunders Street, served by Routes 11 and 13; and US 83 from Bartlett Avenue to the Ross store, which is served by Routes 9, 14, 19, and 20.

The El Metro service area is approximately 90 miles and serves a population of approximately 236,000 residents. All El Metro fixed routes lie completely within the city limits of Laredo. El Metro currently provides over 3.2 million one-way trips per year**. Figure 4-1** presents the El Metro fixed-route system map.

SYSTEM CHARACTERISTICS

SPAN OF SERVICE

El Metro runs 22 fixed routes within the Laredo region. The service operates seven days per week, generally from 6:00 a.m. to 10:30 p.m., Monday through Saturday, and 7:00 a.m. to 8:30 p.m. on Sundays. Service hours may change or may run on the Sunday schedule on the holidays observed by El Metro, which are:

- New Year's Day, January 1st
- Martin Luther King's Birthday, observed on the 3rd Monday in January
- Memorial Day, observed on the last Monday in May
- Independence Day, July 4th
- Labor Day, observed on the 1st Monday in September
- Veteran's Day, November 11th
- Thanksgiving Day, observed on the 4th Thursday in November
- Christmas Day, December 25th

The service frequencies for the fixed route system vary from 20 to 90 minutes, depending upon the route. **Table 4-1** shows the frequencies and span of service for each El Metro route. Each route will be discussed individually in the plan section, entitled El Metro Route Descriptions.

Figure 4-1: System Map

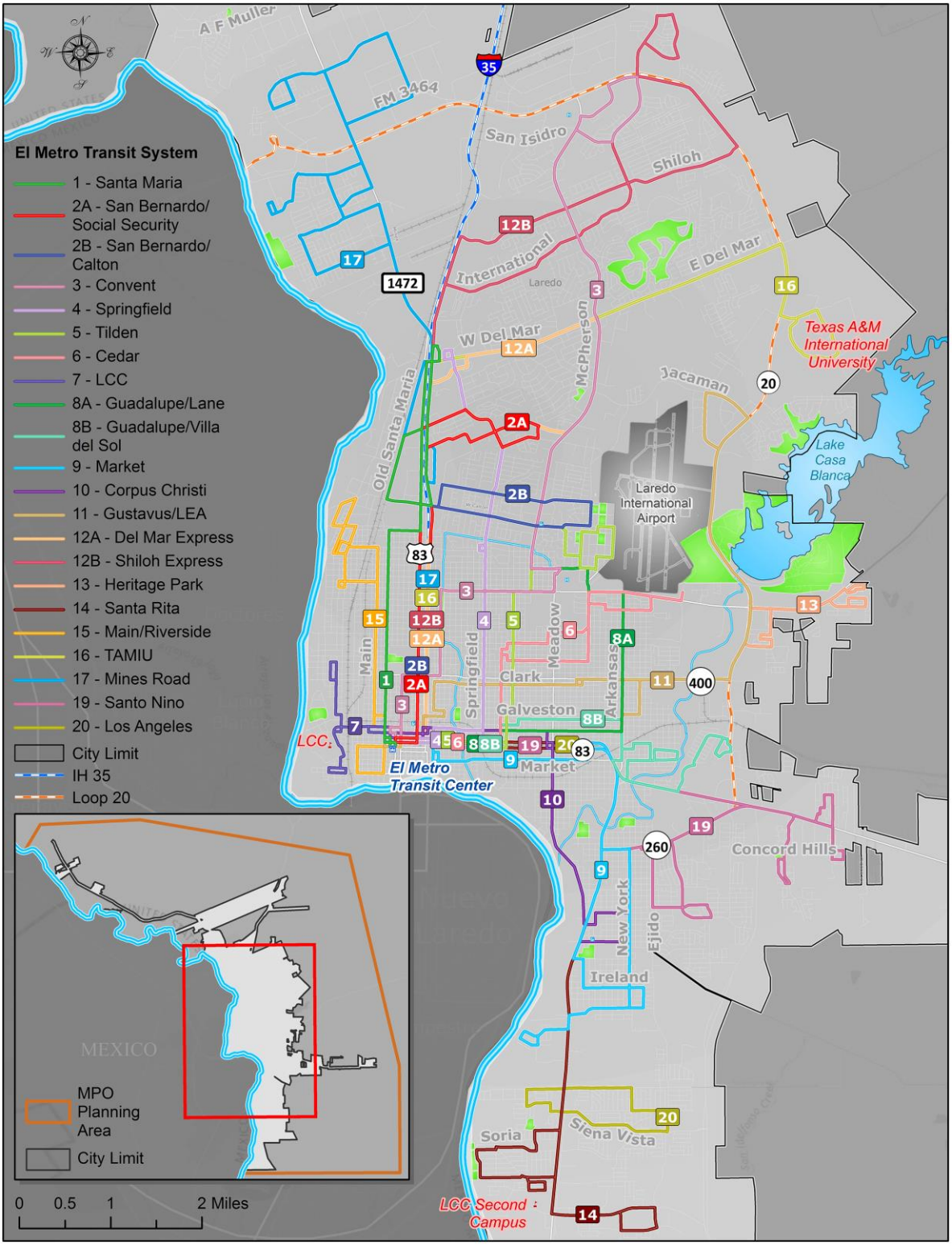


Table 4-1: El Metro Route Characteristics

Route Name	Route Number	Monday - Saturday		Sunday	
		Frequency	Span	Frequency	Span
Santa Maria/Target	1	25 min	6:25 AM - 9:45 PM	35-90 min	8:35 AM - 8:22 PM
San Bernardo/Social Security	2A	35 min	6:00 AM - 9:40 PM	70 min	7:25 AM - 8:10 PM
San Bernardo/Calton Road.	2B	35 min	6:15 AM - 9:55 PM	70 min	8:00 AM - 7:35 PM
Convent	3	60 min	6:30 AM - 10:20 PM	120 min	8:30 AM - 8:25 PM
Springfield	4	37 min	6:05 AM - 9:37 PM	75 min	8:35 AM - 8:22 PM
Tilden	5	70 min	6:00 AM - 9:40 PM	140 min	8:20 AM - 8:30 PM
Cedar	6	70 min	6:30 AM - 8:25 PM	140 min	9:30 AM - 7:55 PM
L.C.C. Main Campus	7	30 min	6:45 AM - 9:10 PM	30 min	7:45 AM - 7:40 PM
1Guadalupe/Lane	8A	70 min	7:00 AM - 8:55 PM	70 min	8:45 AM - 6:35 PM
Guadalupe/Villa del Sol	8B	70 min	7:30 AM - 7:05 PM	no service	no service
Market	9	45 min	6:30 AM - 10:10 PM	90 min	7:15 AM - 8:40 PM
Corpus Christi	10	30 min	6:30 AM - 9:55 PM	60 min	8:00 AM - 8:25 PM
Gustavus/Lea	11	85 min	7:00 AM - 10:00 PM	85 min	7:45 AM - 7:00 PM
Del Mar Express	12A	30-45 min	7:30 AM - 7:55 PM	75 min	11:15 AM - 7:20 PM
Express/Shiloh	12B	Mon-Fri 40 min/ Sat 70 min	7:00 AM - 8:15 PM	no service	no service
Heritage Park	13	85 min	7:00 AM - 7:00 PM	no service	no service
Santa Rita/LCC South	14	90 min	6:10 AM - 9:55 PM	90 min	7:00 AM - 8:25 PM
Main/Riverside	15	60 min	6:30 AM - 8:55 PM	120 min	11:00 AM - 5:55 PM
Texas A&M International Univ.	16	20-60 min	7:00 AM - 9:55 PM	120 min	12:00 AM - 6:55 PM
Mines Road	17	60 min	7:00 AM - 9:55 PM	75 min	12:00 PM - 7:25 PM
Santo Niño	19	80 min	6:25 AM - 8:30 PM	80 min	10:25 AM - 7:10 PM
Los Angeles	20	80 min	6:05 AM - 9:05 PM	90 min	7:00 AM - 8:25 PM

Source: El Metro website, December 2015.

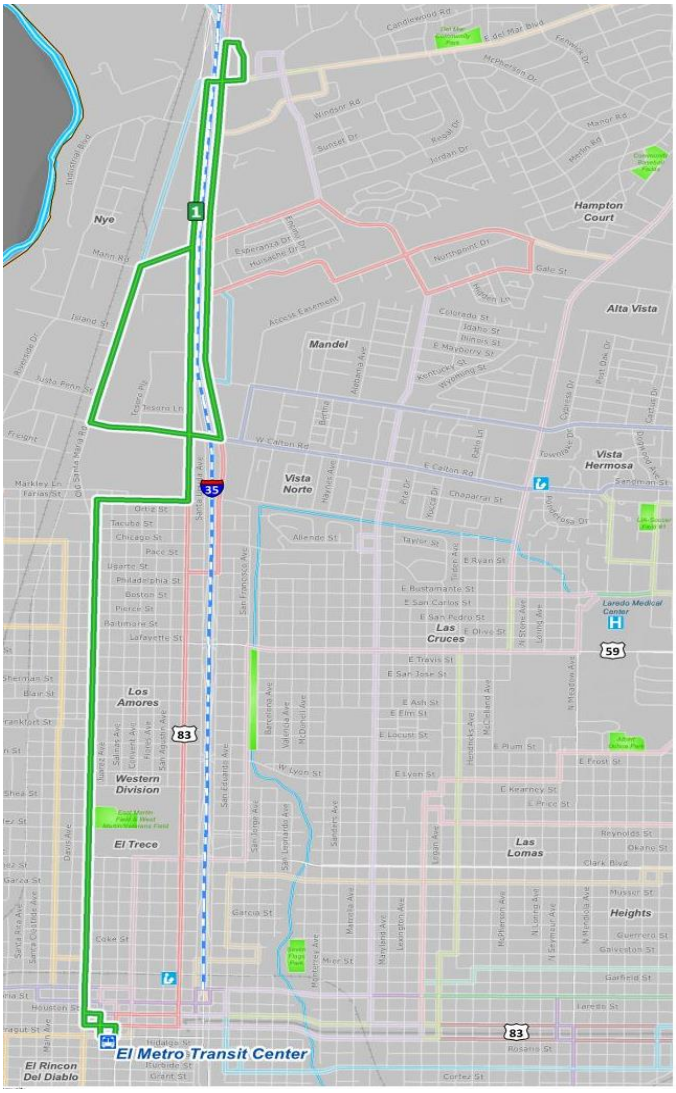
EL METRO ROUTE DESCRIPTIONS

A detailed description of each El Metro route is provided in this section.

ROUTE 1: SANTA MARIA/TARGET

Route 1: Santa Maria/Target runs from the downtown Transit Center north to the Target on Del Mar Blvd. After running to Calton Road, the route is slightly different for outbound and inbound runs. On the outbound leg the route runs north up Old Santa Maria Road and Santa Ursula Avenue, while on the inbound leg it runs south on San Dario Avenue. Route mileage is 7.1 miles outbound and 5.2 miles inbound.

Figure 4-2: Route 1 Santa Maria/Target



Major destinations on Route 1 include several schools, Job Corps on Old Santa Maria Road, Walmart, the Mall del Norte, and Target.

Route 1 has 35 stops on the outbound leg and 30 stops inbound. Benches are provided for 58 percent of stops, and 23 percent of stops have some form of shelter. Forty-two percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent with Routes 2A, 2B, 12A, and 17 for portions of its run, and where it is concurrent with Routes 1, 12A, and 16 at the Target.

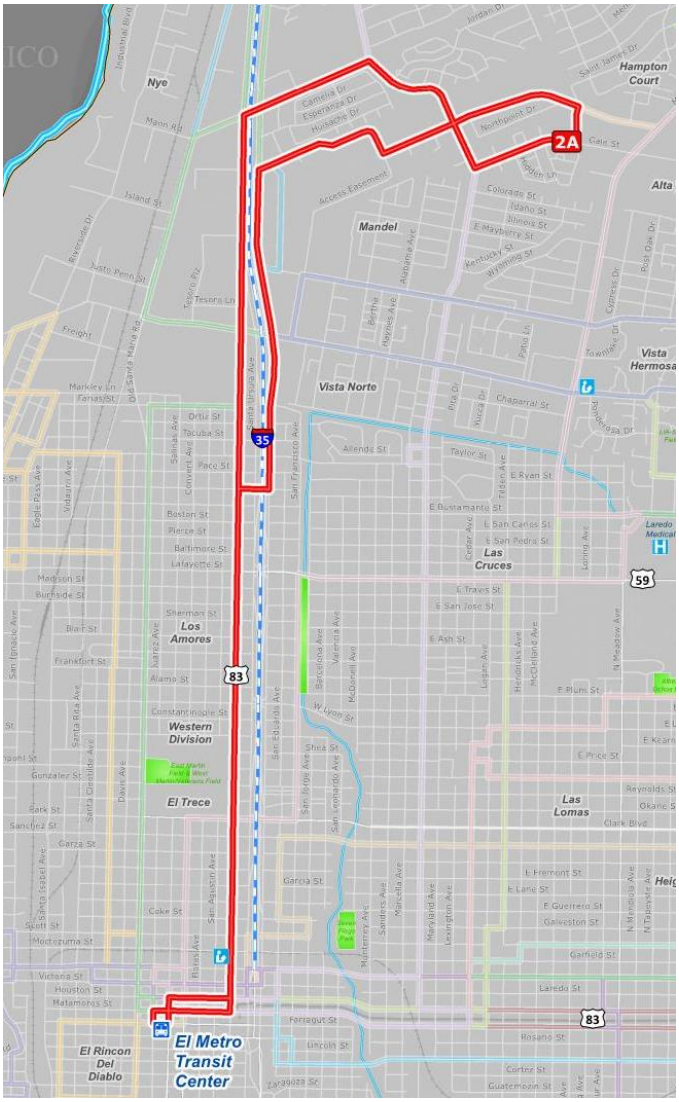
Service hours for Route 1 are from 6:25 AM to 9:45 PM Monday through Saturday (15 hours and 20 minutes daily) and 8:35 AM through 8:22 PM on Sundays (11 hours and 47 minutes daily). Headways are 25 minutes Monday through Saturday and 35 to 90 minutes on Sundays. The route runs 33 round-trips per day Monday through Saturday and 15 round-trips on Sundays.

Annual ridership data from 2014 identified Route 1 with 439,853 trips or 13.7 percent of total ridership, ranking it the #1 route out of 22 in the system.

ROUTE 2A: SAN BERNARDO/SOCIAL SECURITY

Route 2A: San Bernardo/Social Security runs from the downtown Transit Center north to Old Doctors Hospital near Mann Road. After running to Ugarte Street, its routing is slightly different for outbound and inbound runs. On the outbound leg the route runs north up San Dario Avenue past the Mall del Norte and Social Security Office, then runs up Springfield Avenue to Mann Road. On the inbound leg, it runs down Mann Road to San Bernardo Avenue. Route mileage is 6.4 miles outbound and 4.0 miles inbound.

Figure 4-3: Route 2A
San Bernardo/Social Security



Major destinations on Route 2A include the Laredo Civic Center, the Mall del Norte, the Social Security Office, and the Trevino Fine Arts Building.

Route 2A has 36 stops on the outbound leg and 24 stops inbound. Benches are provided for 58 percent of stops, and 22 percent of stops have some form of shelter. Forty-two percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent with Routes 1, 2B, 4, 12A, and 17 for portions of its run.

Service hours for Route 2A are 6:00 AM to 9:40 PM Monday through Saturday (15 hours and 40 minutes daily) and 7:25 AM through 8:10 PM on Sunday (12 hours and 45 minutes daily). Headways are 35 minutes Monday through Saturday and 70 minutes on Sunday. The route runs 24 round-trips per day Monday through Saturday and 11 round-trips on Sunday.

Annual ridership data from 2014 identified Route 2A with 294,815 trips or 9.2 percent of total ridership, ranking it the #2 route out of 22 in the system.

ROUTE 2B: SAN BERNARDO/CALTON RD.

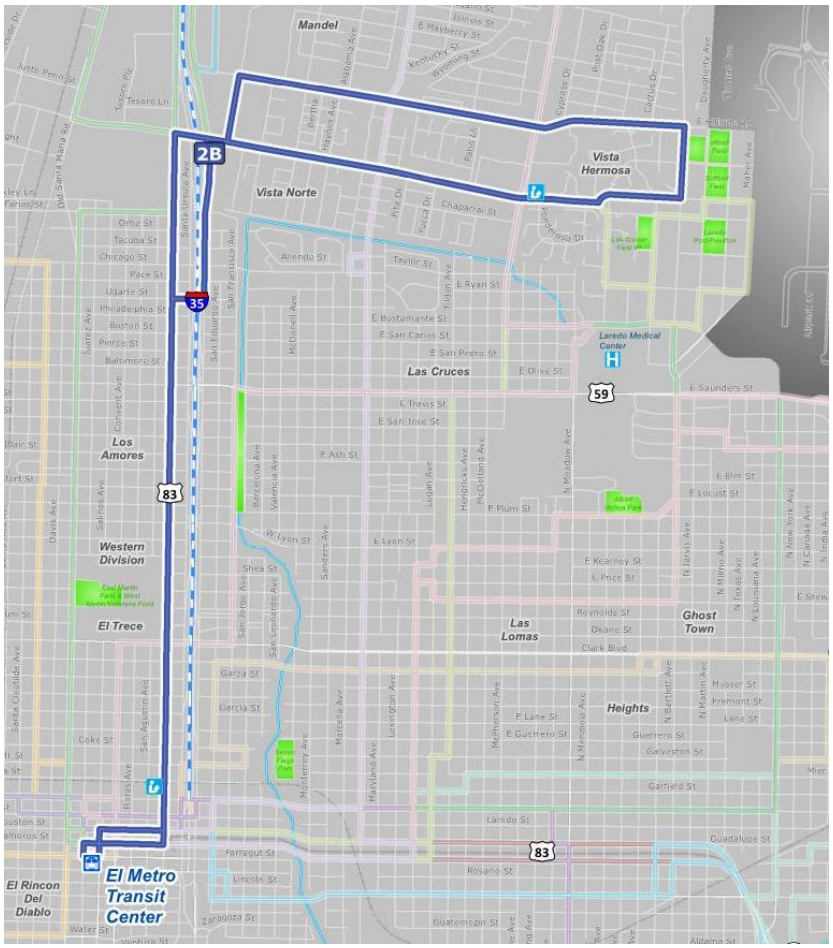
Route 2B San Bernardo/Calton runs from the downtown Transit Center north to Calton Road and then east to Bartlett. After running to Ugarte Street, its routing is slightly different for outbound and inbound runs: on the outbound leg, it runs up San Dario Avenue and then east on Calton Road and Sandman Street to Bartlett Avenue. On the inbound leg, it runs up Bartlett Avenue and then returns west on Hillside Terrace to Calton Road, and then has a short run on Ugarte Street. Route mileage is 5.8 miles outbound and 4.2 miles inbound.

Major destinations on Route 2B include the Mall del Norte.

Route 2B has 36 stops on the outbound leg and 24 stops inbound. Benches are provided for 58 percent of stops, and 17 percent of stops have some form of shelter. Forty-two percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 2A, 3, 4, 5, and 17 for portions of its run.

Figure 4-4: Route 2B San Bernardo/Calton



Service hours for Route 2B are 6:15 AM to 9:55 PM Monday through Saturday (15 hours and 40 minutes daily) and 8:00 AM through 7:35 PM on Sunday (11 hours and 35 minutes daily). Headways are 35 minutes Monday through Saturday and 70 minutes on Sunday. The route runs 24 round-trips per day Monday through Saturday and 10 round-trips on Sunday.

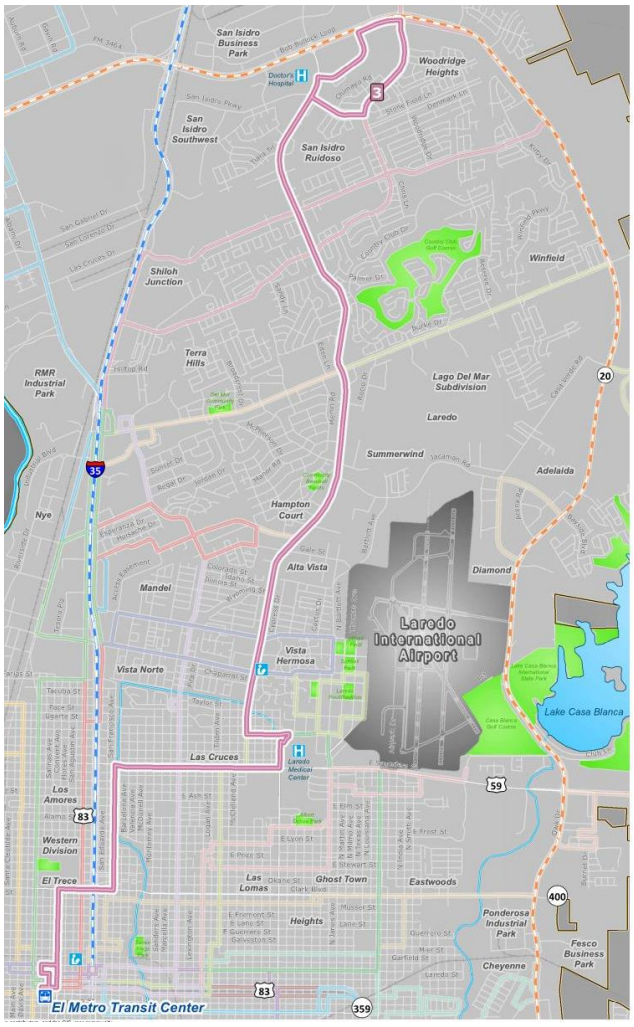
Annual ridership data from 2014 identified Route 2B with191,518 trips or 6 percent of total ridership, ranking it the #5 route out of 22 in the system.

ROUTE 3: CONVENT

Route 3 operates between El Metro Transit Center downtown north to Doctors Hospital and Loop 20 and International Boulevard. Route 3 provides 16 round-trips per day on weekdays and Saturdays. Other destinations for Route 3 include the Laredo Civic Center, Laredo Medical Center, Main Library, and the United 9th Grade Campus.

Route 3 Convent runs from the downtown Transit Center north on San Francisco Avenue and McPherson Road on the east side of I 35. Its route has small 1-way loops at the south end along Salinas and Juarez Avenues, and on its north end along Monarch Drive and San Isidro Parkway. It runs concurrently with route 12A from Calle del Norte to International Boulevard. Route mileage is 12.0 miles outbound and 9.6 miles inbound.

Figure 4-5: Route 3 Convent



Major destinations on Route 3 include the Laredo Civic Center, the Laredo Medical Center, the Main Library, and the United ISD 9th Grade Campus.

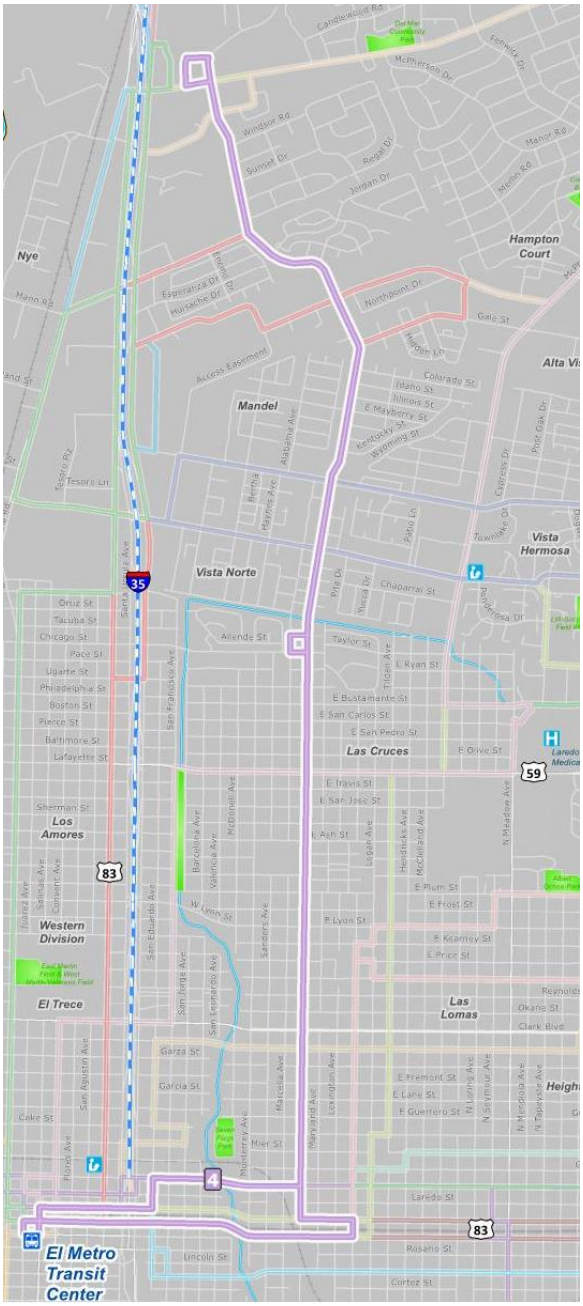
Route 3 has 57 stops on the outbound leg and 45 stops inbound. Benches are provided for 34 percent of stops, and 23 percent of stops have some form of shelter. Sixty-six percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 2A, 2B, 4, 5, 8A,12A, 12B, and 16 for portions of its run. Service hours for Route 3 are 6:30 AM to 10:20 PM Monday through Saturday (15 hours and 50 minutes daily) and 8:30 AM through 8:25 PM on Sunday (11 hours and 55 minutes daily). Headways are 35 minutes Monday through Saturday and 70 minutes on Sunday. The route runs 15 round-trips per day Monday through Saturday and 6 round-trips on Sunday. Annual ridership data from 2014 identified Route 3 with 220,220 trips or 6.9 percent of total ridership, ranking it the #3 route out of 22 in the system.

ROUTE 4: SPRINGFIELD

Route 4 Springfield runs from the downtown Transit Center up Springfield to the Target on Del Mar Avenue. The south end of the route has a section on the Chihuahua/Guadalupe Streets one-way pair with a deviation to Corpus Christi Street westbound. There is a small out-of-route deviation at Allende, Street Marcella Avenue, and Taylor Road. Route mileage is 6.4 miles outbound and 5.8 miles inbound.

Figure 4-6: Route 4 Springfield



Major destinations on Route 4 include the several elementary and middle schools.

Route 4 has 34 stops on the outbound leg and 33 stops inbound. Benches are provided for 24 percent of stops, and 15 percent of stops have some form of shelter. Seventy-six percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 1, 2A, 2B, 3, 8A, 11, 12A, 13, and 16 for portions of its run. This long route crosses some other routes several times.

Service hours for Route 4 are 6:05 AM to 9:37 PM Monday through Saturday (15 hours and 32 minutes daily) and 8:35 AM through 8:22 PM on Sunday (11 hours and 47 minutes daily). Headways are 37 minutes Monday through Saturday and 75 minutes on Sunday. The route runs 23 round-trips per day Monday through Saturday and 9 round-trips on Sunday.

Annual ridership data from 2014 identified Route 4 with 190,824 trips or 6 percent of total ridership, ranking it the #6 route out of 22 in the system.

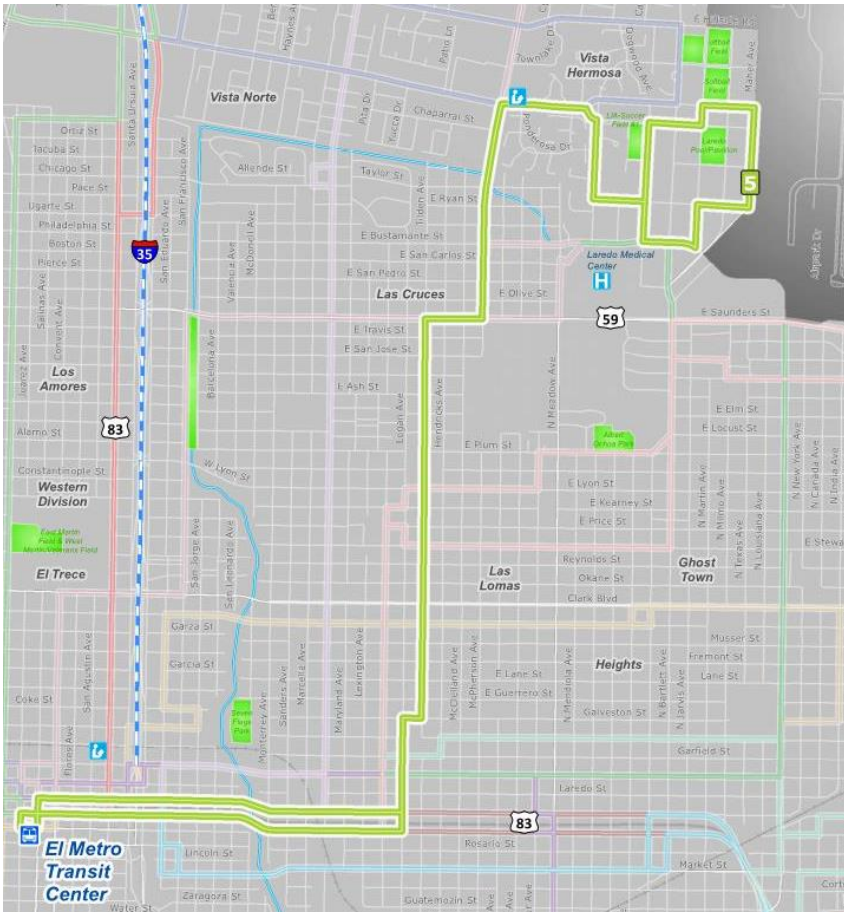
ROUTE 5: TILDEN

Route 5 Tilden runs from the downtown Transit Center north on Logan Avenue, Tilden Avenue, and McPherson Road to loop on the west side of the airport. The south end of the route has a section on the Chihuahua/Guadalupe Streets one-way pair. Route mileage is 7.0 miles outbound and 4.2 miles inbound.

Major destinations on Route 5 include the Gateway Community Center, the Mental Health/Mental Retardation Border Region, and the Laredo Veterans Outpatient Clinic.

Route 5 has 36 stops on the outbound leg and 22 stops inbound. Benches are provided for 28 percent of stops, and 12 percent of stops have some form of shelter. Seventy-two percent of the stops on this route are identified only with pole signage.

Figure 4-7: Route 5 Tilden



Transfer opportunities are available where it is concurrent or intersecting with Routes 2B, 3, 6, 8A, 8B, 10, 11, 13, for portions of its run. It intersects some routes several times.

Service hours for Route 5 are 6:00 AM to 9:40 PM Monday through Saturday (15 hours and 40 minutes daily) and 8:20 AM through 8:30 PM on Sunday (12 hours and 10 minutes daily). Headways are 70 minutes Monday through Saturday and 140 minutes on Sunday. The route runs 13 round-trips per day Monday through Saturday and 6 round-trips on Sunday.

Annual ridership data from 2014 identified Route 5 with 63,275 trips or 2 percent of total ridership, ranking it the #20 route out of 22 in the system.

ROUTE 6: CEDAR

Route 6 Cedar runs from the downtown Transit Center to the east side of I 35 between US 359 and Saunders Street. The south end of the route has a section on the Chihuahua/Guadalupe Streets one-way pair, and it has two other sections where the eastbound and the westbound routes are different. Route mileage is 5.3 miles outbound and 5.3 miles inbound.

Major destinations on route 6 include the Cedar Clinic and Nixon High School.

Route 6 has 33 stops on the outbound leg and 25 stops inbound. Benches are provided for 38 percent of stops, and 17 percent of stops have some form of shelter. Sixty-two percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 5, 8A, 10, 11, and 13 for portions of its run. It intersects some routes several times, and runs concurrent with Route 8A for part of its northern loop.

Figure 4-8: Route 6 Cedar

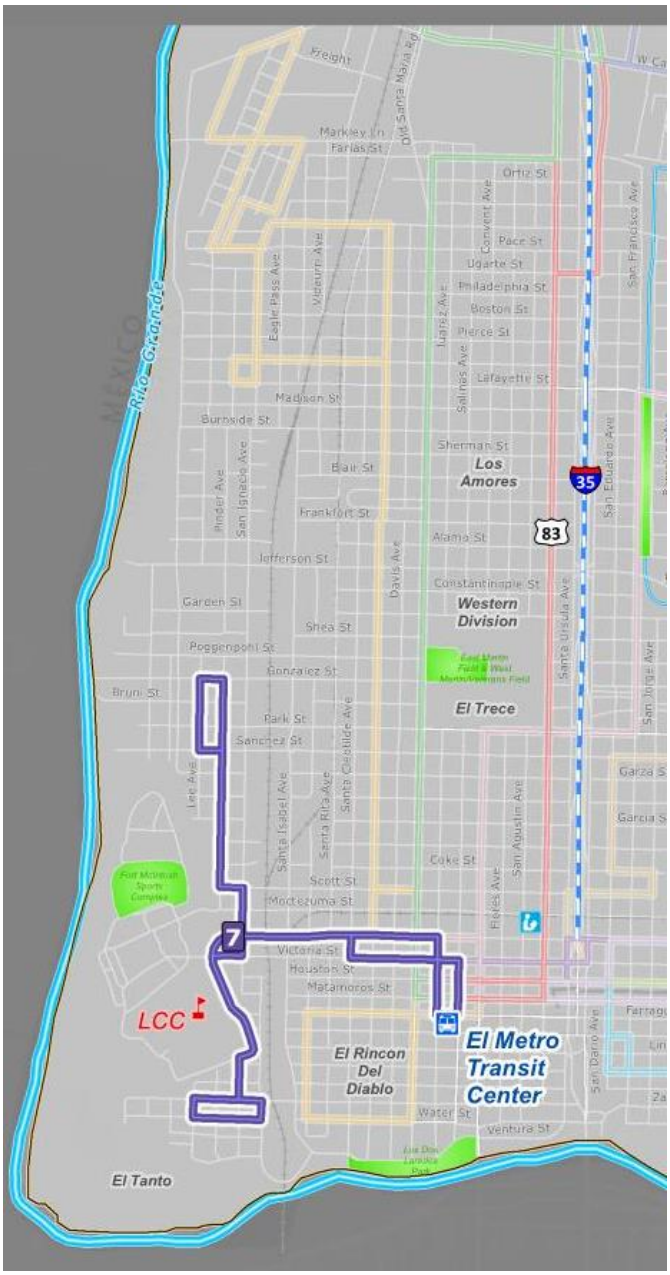
Service hours for Route 6 are 6:30 AM to 8:25 PM Monday through Saturday (13 hours and 55 minutes daily) and 9:30 AM through 7:55 PM on Sunday (10 hours and 25 minutes daily). Headways are 70 minutes Monday through Saturday and 140 minutes on Sunday. The route runs 12 round-trips per day Monday through Saturday and 5 round-trips on Sunday.

Annual ridership data from 2014 identified Route 6 with 122,428 trips or 3.8 percent of total ridership, ranking it the #11 route out of 22 in the system.

ROUTE 7: LCC MAIN CAMPUS

Route 7 LCC runs from the downtown Transit Center west to the Laredo Community College (LCC) main campus. This route has several one-way loops at its origin and at the northern and southern ends of the campus. Every other round-trips provides service to either the northern or southern loop of the route Monday through Sunday. Route mileage is 3.6 miles outbound and 3.5 miles inbound.

Figure 4-9: Route 7 LCC



Major destinations on Route 7 include the LCC main campus.

Route 7 has 16 stops on the outbound leg and 16 stops inbound. Benches are provided for 29 percent of stops, and 19 percent of stops have some form of shelter. Seventy-one percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 1 and 15 for portions of its run.

Service hours for Route 7 are 6:45 AM to 9:15 PM Monday through Saturday (14 hours and 25 minutes daily) and 7:45 AM through 7:40 PM on Sunday (11 hours and 55 minutes daily). Headways are 30 minutes Monday through Saturday and 30 minutes on Sunday. The route runs 29 round-trips per day Monday through Saturday and 24 round-trips on Sunday.

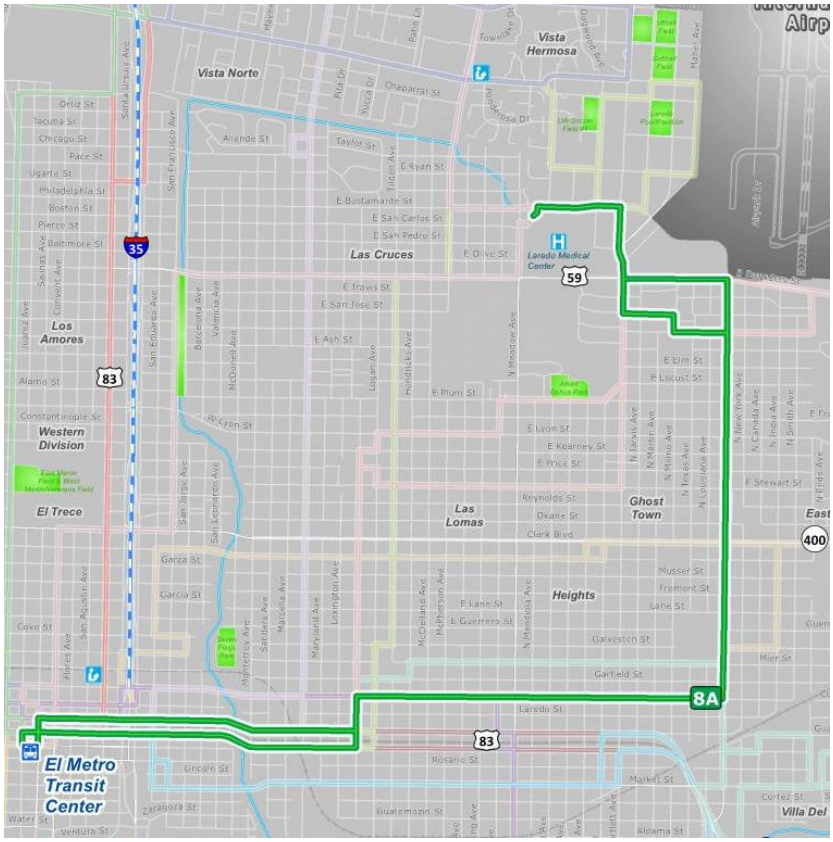
Annual ridership data from 2014 identified Route 7 with 94,348 trips or 2.9 percent of total ridership, ranking it the #17 route out of 22 in the system.

ROUTE 8A: GUADALUPE/LANE

Route 8A Guadalupe/Lane runs from the downtown Transit Center east and north to the Laredo Medical Center. The south end of the route has a section on the Chihuahua/Guadalupe one-way pair, and there is a loop at Saunders and Montgomery. Route mileage is 5.2 miles outbound and 5.2 miles inbound.

Major destinations on route 8A include the HEB grocery store on Saunders Street and the Laredo Medical Center.

Figure 4-10: Route 8A Guadalupe/Lane



Route 8A has 22 stops on the outbound leg and 20 stops inbound. Benches are provided for 40 percent of stops, and 14 percent of stops have some form of shelter. Sixty percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 3, 5, 6, 8B, 10, 11, and 13 for portions of its run. In runs concurrently with Routes 3, 6, 10, 11, and 13 in some places.

Service hours for Route 8A are 7:00 AM to 8:55 PM Monday through Saturday (13 hours and 55 minutes daily) and 8:45 AM through 6:35 PM on Sunday (9 hours and 50 minutes daily). Headways are 70 minutes Monday through Saturday and 70 minutes on Sunday. The route runs 12 round-trips per day Monday through Saturday and 8 round-trips on Sunday.

Annual ridership data from 2014 identified Route 8A with 106,443 trips or 3.3 percent of total ridership, ranking it the #15 route out of 22 in the system.

ROUTE 8B: GUADALUPE/VILLA DEL SOL

Route 8B Guadalupe/Villa del Sol runs from the downtown Transit Center east in the area above US 359. The west end of the route has a section on the Chihuahua/ Guadalupe Streets one-way pair, and there is one loop in the middle and one at the eastern end. Route mileage is 5.7 miles outbound and 6.8 miles inbound.

Major destinations on route 8B include the City Hall Annex.

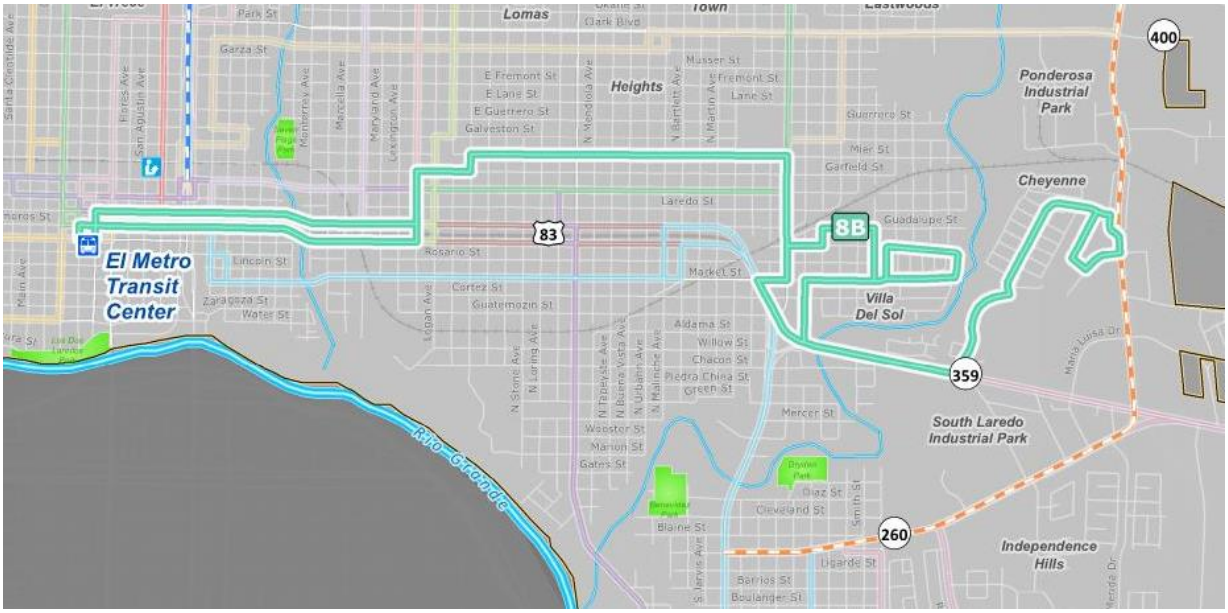
Route 8B has 25 stops on the outbound leg and 36 stops inbound. Benches are provided for 10 percent of stops, and 5 percent of stops have some form of shelter. Ninety percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 5, 6, 8A, 9, 14, 19, and 20 for portions of its run. It runs concurrently with Route 19 from US 83 to Dorel Drive.

Service hours for Route 8B are 7:30 AM to 7:05 PM Monday through Saturday (11 hours and 35 minutes daily). Headways are 70 minutes Monday through Saturday, and the route runs 10 round-trips per day Monday through Saturday. There is no service on Sunday.

Annual ridership data from 2014 identified Route 8B with 41,798 trips or 1.3 percent of total ridership, ranking it the #22 route out of 22 in the system.

Figure 4-11: Route 8B Guadalupe/Villa del Sol



ROUTE 9: MARKET

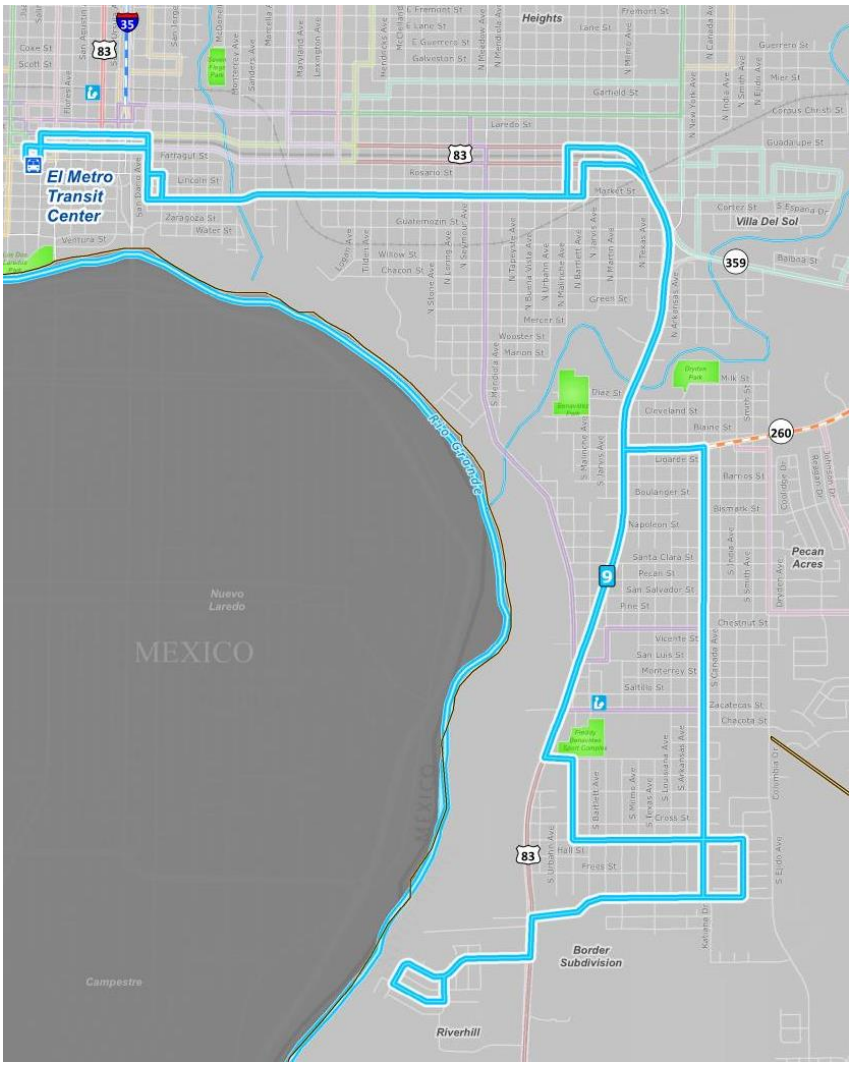
Route 9 Market runs from the downtown Transit Center east on Market Street to the neighborhoods along US 83 and New York Avenue. Its route has two small one-way loops at the south end, and it runs south on New York Avenue and north on US 83 in that area. Route mileage is 7.8 miles outbound and 8.0 miles inbound.

Major destinations close to Route 9 include several elementary and middle schools and Cigarroa High School.

Route 9 has 43 stops on the outbound leg and 34 stops inbound. Benches are provided for 39 percent of stops, and 14 percent of stops have some form of shelter. Sixty-one percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 10, 14, 19, and 20 for portions of its run. It intersects some routes more than once, and runs concurrently with Routes 10, 14, 19, and 20 for portions of the route.

Figure 4-12: Route 9 Market



Service hours for Route 9 are 6:30 AM to 10:10 PM Monday through Saturday (15 hours and 40 minutes daily) and 7:15 AM through 8:40 PM on Sunday (13 hours and 25 minutes daily). Headways are 45 minutes Monday through Saturday and 90 minutes on Sunday. The route runs 19 round-trips per day Monday through Saturday and 9 round-trips on Sunday. Annual ridership data from 2014 identified Route 9 with 147,078 trips or 4.6 percent of total ridership, ranking it the #8 route out of 22 in the system.

ROUTE 10: CORPUS CHRISTI

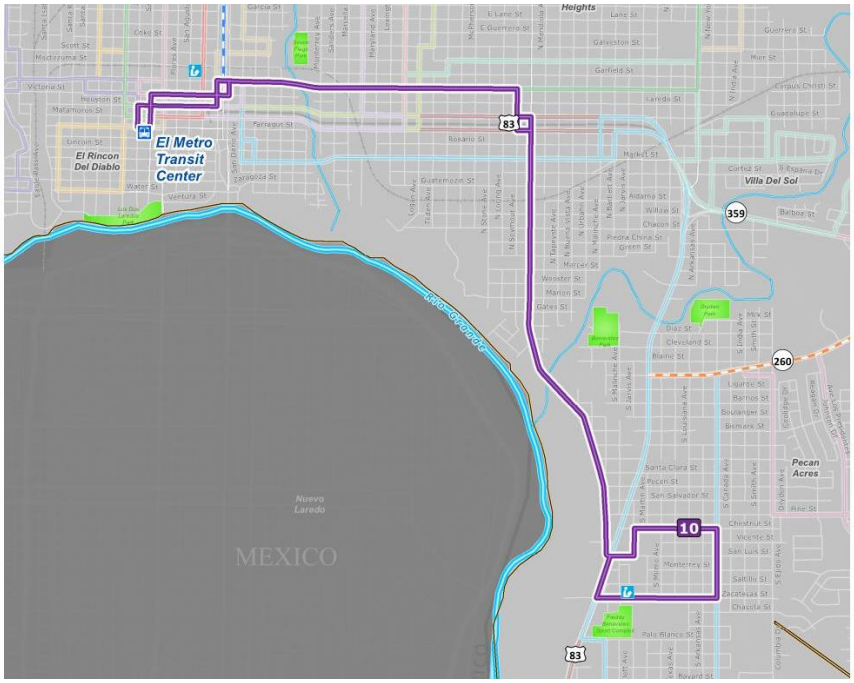
Route 10 Corpus Christi runs from the downtown Transit Center east on Corpus Christi Street and down Meadow Avenue to loop around Tijerina Park. Its route has a one-way loop at the west end accessing the Transit Center. Route mileage is 5.6 miles outbound and 4.3 miles inbound.

Major destinations on Route 10 include a number of residential communities and the Santo Nino branch library.

Route 10 has 29 stops on the outbound leg and 24 stops inbound. Benches are provided for 53 percent of stops, and 25 percent of stops have some form of shelter. Forty-seven percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 4, 5, 6, 8A, 9, 14, 19, and 20 for portions of its run. It runs concurrently with Routes 4, 9, 14, 19, and 20 for parts of its route.

Figure 4-13: Route 10 Corpus Christi



Service hours for Route 10 are 6:30 AM to 9:55 PM Monday through Saturday (15hours and 25 minutes daily) and 8:00 AM through 8:25 PM on Sunday (12 hours and 25 minutes daily). Headways are 30 minutes Monday through Saturday and 60 minutes on Sunday. The route runs 30 round-trips per day Monday through Saturday and 13 round-trips on Sunday.

Annual ridership data from 2014 identified Route 10 with 193,028 trips or 6 percent of total ridership, ranking it the #4 route out of 22 in the system.

ROUTE 11: GUSTAVUS/LEA

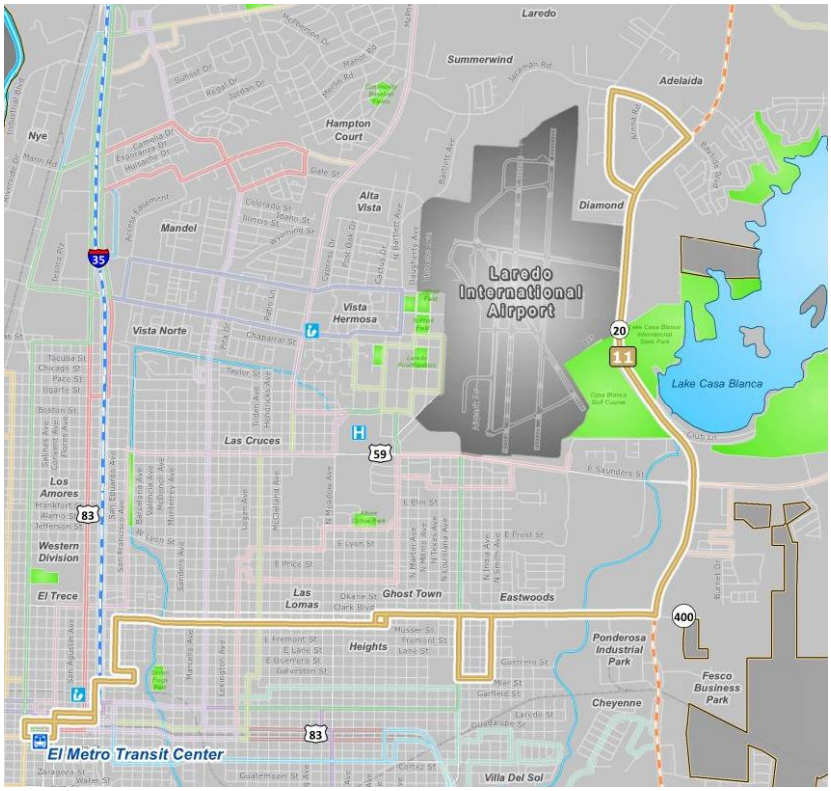
Route11 Gustavus/Lea runs from the downtown Transit Center east on Gustavus Street and Clark Boulevard to Loop 20, where it turns north to loop around the Laredo Energy Arena. Its route has small one-way loops to Galveston Street and around the arena. Route mileage is 8.4 miles outbound and 9.4 miles inbound.

Major destinations on Route 11 include the Laredo Energy Arena, Uni-Trade Stadium, the airport, and the Texas Department of Public Safety.

Route 11 has 31 stops on the outbound leg and 29 stops inbound. Benches are provided for 27 percent of stops, and 10 percent of stops have some form of shelter. Seventy-three percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 4, 5, 6, 8A, and 13 for portions of its run. Route 11 runs concurrent with Route 13 for much of its route; the routes split apart at Loop 20 and Saunders.

Figure 4-14: Route 11 Gustavus/Lea



Service hours for Route 11 are 7:00 AM to 10:00 PM Monday through Saturday (15 hours daily) and 7:45 AM through 7:00 PM on Sunday (11 hours and 15 minutes daily). Headways are 85 minutes Monday through Saturday and 85 minutes on Sunday. The route runs 11 round-trips per day Monday through Saturday and 8 round-trips on Sunday.

Annual ridership data from 2014 identified Route 11 with 90,847 trips or 2.8 percent of total ridership, ranking it the #18 route out of 22 in the system.

ROUTE 12A DEL MAR EXPRESS

Route 12A Del Mar Express runs from the downtown Transit Center north on I 35 to Calle del Norte up McPherson Road to International Boulevard, and returns along Del Mar Avenue. Route mileage is 7.9 miles outbound and 8.4 miles inbound.

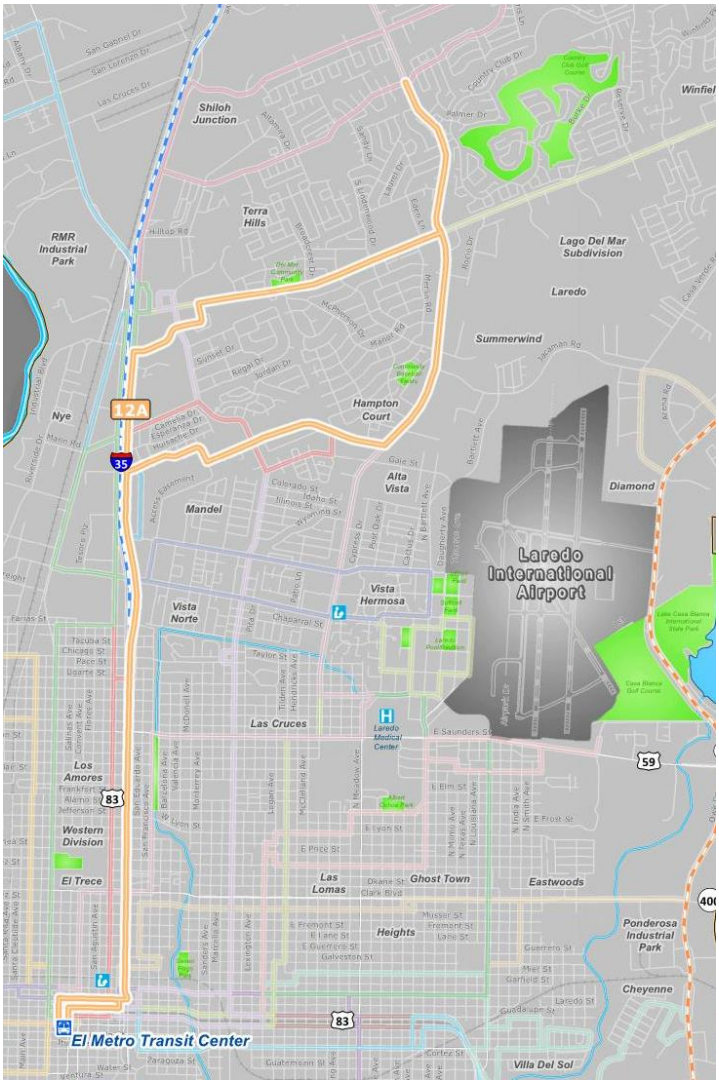
Major destinations on Route 12A include the Mall del Norte, the United Independent School District Engineering campus, and several middle schools.

Route 12A has 17 stops on the outbound leg and 13 stops inbound. Benches are provided for 57 percent of stops, and 37 percent of stops have some form of shelter. Forty-three percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 2A, 3, 4, 12B, 16, and 17 for portions of its run. Route 12A runs concurrently with Route 2A on Calle del Norte, with Route 3 on McPherson Road, Route 12B on International Boulevard, and Route 16 on Del Mar Avenue.

Service hours for Route 12A are 7:30 AM to 7:55 PM Monday through Saturday (12 hours and 25 minutes daily) and 11:15 AM through 7:20 PM on Sunday (8 hours and 5 minutes daily). Headways are 30 - 45 minutes Monday through Saturday and 75 minutes on Sunday. The route runs 16 round-trips per day Monday through Saturday and 6 round-trips on Sunday.

Figure 4-15: Route 12A Del Mar Express



Annual ridership data from 2014 identified Route 12A with 129,618 trips or 4 percent of total ridership, ranking it the #10 route out of 22 in the system.

ROUTE 12B SHILOH EXPRESS

Route 12B Shiloh Express runs from the downtown Transit Center north on I 35 to International Boulevard and loops past the Laredo Medical Center, and returns along Shiloh Drive. Route mileage is 11.2 miles outbound and 12.2 miles inbound.

Major destinations on Route 12B include the Mall del Norte and other shopping along San Dario Avenue, the United High School Freshman Annex, and the Walmart on Loop 20.

Route 12B has 22 stops on the outbound leg and 19 stops inbound. Benches are provided for 29 percent of stops, and 5 percent of stops have some form of shelter. Seventy-one percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 3 and 12A for portions of its run. It runs concurrently with Route 12A on the southern part and with route 3 on the northern part of International Blvd.

Service hours for Route 12B are 7:00 AM to 8:15 PM Monday through Saturday (13 hours and 15 minutes daily. Headways are 40 minutes Monday through Friday, and 70 minutes on Saturday. The route runs 15 round-trips per day Monday through Saturday. Route 12B does not run on Sunday.

Annual ridership data from 2014 identified Route 12B with 119,210 trips or 3.7 percent of total ridership, ranking it the #12 route out of 22 in the system.

Figure 4-16: Route 12B Shiloh Express

ROUTE 13: HERITAGE PARK

Route13 Heritage Park runs from the downtown Transit Center east on Gustavus Street and Clark Boulevard to the neighborhoods off Saunders Street east of Loop 20. Its route has small one-way loops at the east end, and a loop to Galveston Street in the middle of the route. Route mileage is 7.9 miles outbound and 7.9 miles inbound.

Major destinations on route 13 include the Target and Walmart on Bob Bullock Loop.

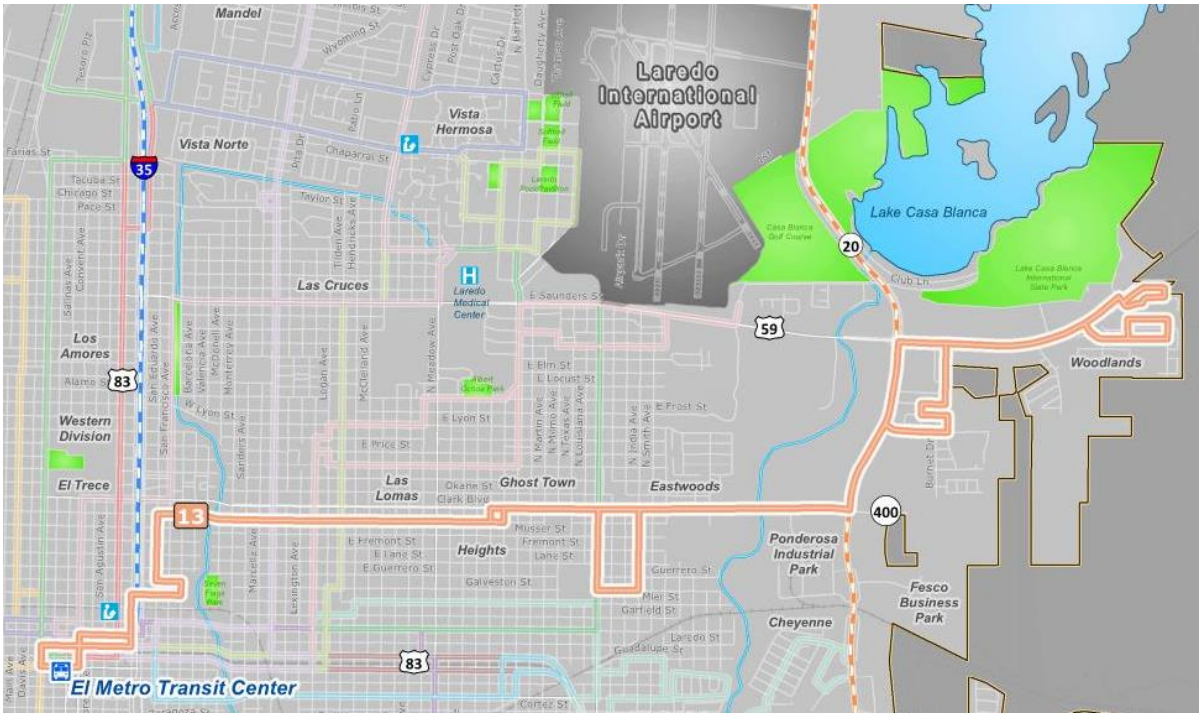
Route 13 has 36 stops on the outbound leg and 32 stops inbound. Benches are provided for 25 percent of stops, and 10 percent of stops have some form of shelter. Seventy-five percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 4, 5, 6, 8A, and 11 for portions of its run. Route 13 runs concurrent with Route 11 for much of its route; the routes split apart at Loop 20 and Saunders Street.

Service hours for Route 13 are 7:00 AM to 7:00 PM Monday through Saturday (12 hours daily). Headways are 85 minutes Monday through Saturday, and the route runs 8 round-trips per day Monday through Saturday. Route 13 does not run on Sunday.

Annual ridership data from 2014 identified Route 13 with 67,271 trips or 2.1 percent of total ridership, ranking it the #19 route out of 22 in the system.

Figure 4-17: Route 13 Heritage Park

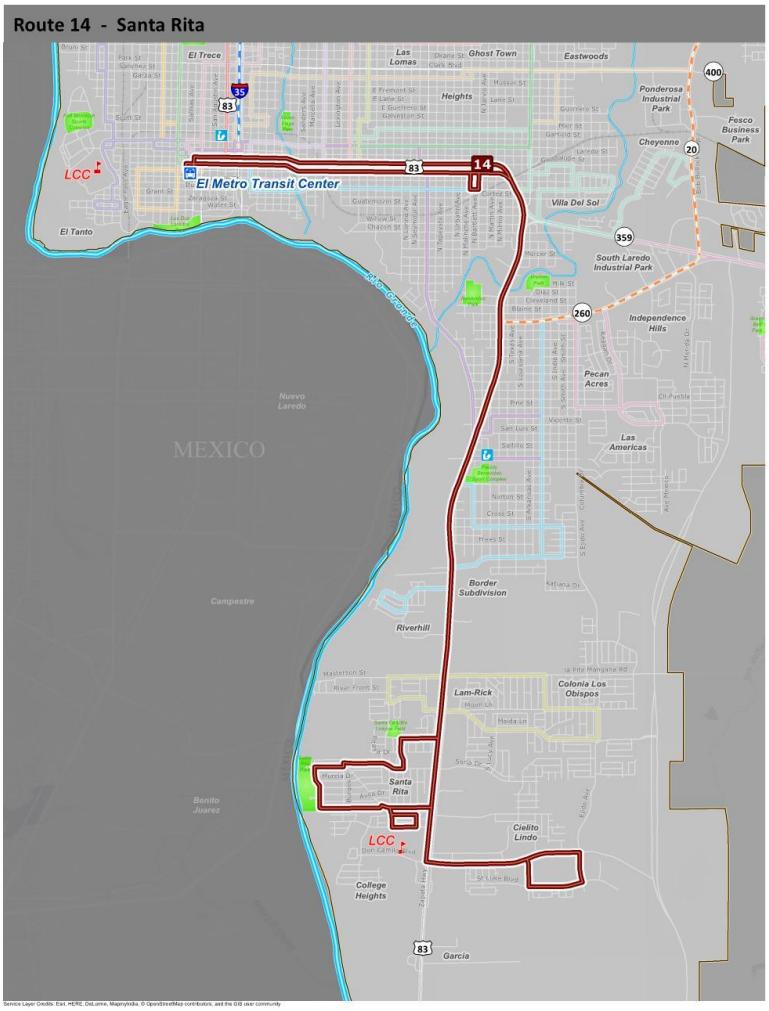


ROUTE 14: SANTA RITA/LCC SOUTH

Route 4 Santa Rita/LCC South runs from the downtown Transit Center east on Guadalupe and Chihuahua Streets to US 83, where it runs south to Cielito Lindo Boulevard. The route has small one-way loops at the south end in the LCC area and along Cielito Lindo Boulevard to Ejido Avenue. Route mileage is 11.2 miles outbound and 9.2 miles inbound.

Major destinations on Route 4 include the LCC south campus, the Santo Nino Library, and several elementary schools.

Figure 4-18: Route 14 Santa Rita/LCC South



Route14 has 33 stops on the outbound leg and 33 stops inbound. Benches are provided for 38 percent of stops, and 11 percent of stops have some form of shelter. Sixty-two percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 4, 5, 6, 9, 10, 19, and 20 for portions of its run. It crosses routes 9 and 10 several times, and runs concurrently with Routes 9, 10, 19, and 20 along portions of Guadalupe and Chihuahua Streets and along US 83.

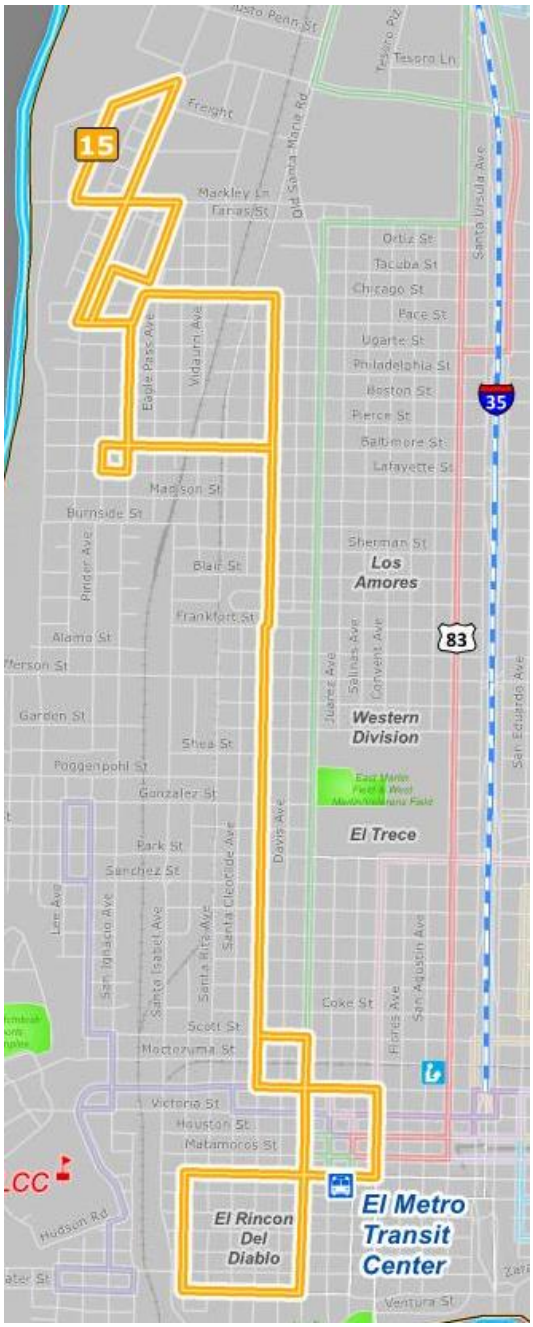
Service hours for Route 14 are 6:10 AM to 9:55 PM Monday through Saturday (15 hours and 45 minutes daily) and 7:00 AM through 8:25 PM on Sunday (13 hours and 25 minutes daily). Headways are 90 minutes Monday through Saturday and 90 minutes on Sunday. The route runs 10 round-trips per day Monday through Saturday and 9 round-trips on Sunday.

Annual ridership data from 2014 identified Route 14 with 108,202 trips or 3.4 percent of total ridership, ranking it the #14 route out of 22 in the system.

ROUTE 15: MAIN/RIVERSIDE

Route 15 Main/Riverside runs from the downtown Transit Center on the west side of Laredo, running to Water Street and then up Main Street to Calton Street. The route has small one-way loops at the north end, and one loop on its south end along on Water Street and Vidaurri Avenue. Route mileage is 5.7 miles outbound and 4.5 miles inbound.

Figure 4-19: Route 15 Main/Riverside



Major destinations on Route 15 include the southern downtown area, which will include the new outlet center when it is established, and the neighborhoods and industrial areas straddling the railroad tracks on the near northwest side south of Calton Street.

Route 15 has 26 stops on the outbound leg and 29 stops inbound. Benches are provided for 15 percent of stops, and 5 percent of stops have some form of shelter. Eighty-five percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with routes in the downtown area. The route does not intersect with any other routes after Washington and Main Streets outbound and Scott and Santa Maria Avenue inbound.

Service hours for route 15 are 6:30 AM to 8:55 PM Monday through Saturday (14 hours and 25 minutes daily) and 11:00 AM through 5:55 PM on Sunday (6 hours and 55 minutes daily). Headways are 60 minutes Monday through Saturday and 120 minutes on Sunday. The route runs 14 round-trips per day Monday through Saturday and 4 round-trips on Sunday.

Annual ridership data from 2014 identified Route 15 with 60,121 trips or 1.9 percent of total ridership, ranking it the #21 route out of 22 in the system.

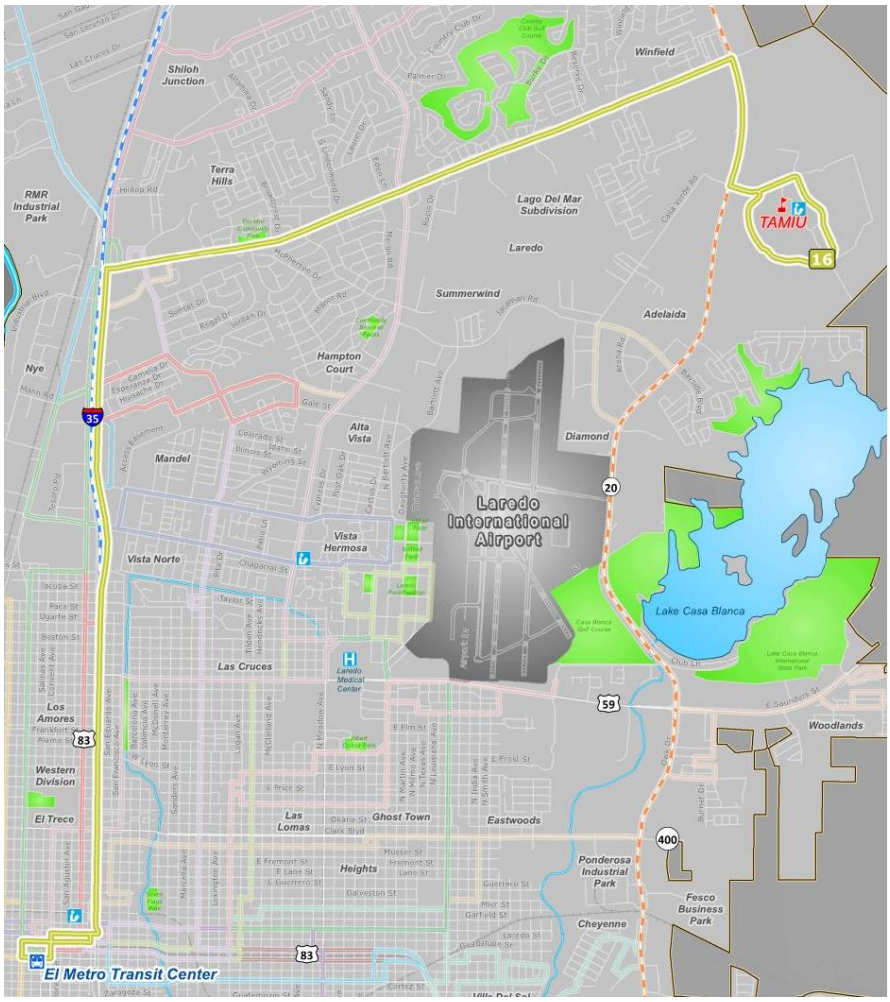
ROUTE 16: TEXAS A&M INTERNATIONAL UNIVERSITY

Route16 Texas A&M International University (TAMIU) runs from the downtown Transit Center north along I 35 to Del Mar Avenue, and then east to Loop 20 and TAMIU. Route mileage is 10.0 miles outbound and 11.3 miles inbound.

Major destinations on route 16 include the TAMIU campus, Alexander High School, and the Target on Del Mar Boulevard.

Route16 has 13 stops on the outbound leg and 11 stops inbound. Benches are provided for 21 percent of stops, and 21 percent of stops have some form of shelter. Seventy-nine percent of the stops on this route are identified only with pole signage.

Figure 4-20: Route 16 Texas A&M University



Transfer opportunities are available where it is concurrent or intersecting with Routes 1, 3, 4, and 12A for portions of its run, and at the Target on Del Mar Avenue.

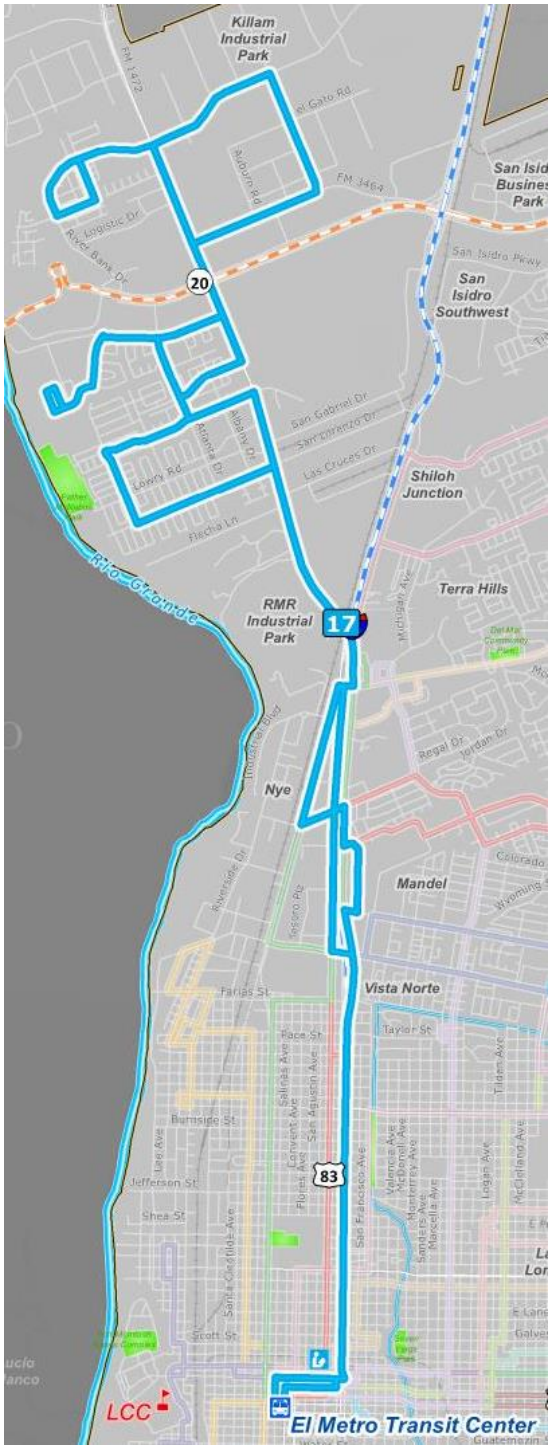
Service hours for Route 16 are 7:00 AM to 9:55 PM Monday through Saturday (14 hours and 55 minutes daily) and 12:00 AM through 6:55 PM on Sunday (6 hours and 55 minutes daily). Headways are 20 - 60 minutes Monday through Saturday and 120 minutes on Sunday. The route runs 19 round-trips per day Monday through Friday, 10 round-trips on Saturday, and 4 round-trips on Sunday.

Annual ridership data from 2014 identified Route 16 with 174,536 trips or 5.4 percent of total ridership, ranking it the #7 route out of 22 in the system.

ROUTE 17: MINES ROAD

Route 17 Mines Road runs from the downtown Transit Center north on I 35 to Calton Road, where it runs along San Dario Avenue, Santa Ursula Avenue, and Old Santa Maria Avenue to Mines Road. The route runs up Mines Road as far as Riverbank Drive, and makes several loops into the industrial and residential areas on either side on Mines Road. Route mileage is 18.3 miles outbound and 6.4 miles inbound.

Figure 4-21: Route 17 Mines Rd



Major destinations on Route 17 include the Fasken Community Center, Killam Industrial Park, and several elementary schools.

Route17 has 48 stops on the outbound leg and 8 stops inbound. Benches are provided for 30 percent of stops, and 16 percent of stops have some form of shelter. Seventy percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 1, 2A, 2B, and 12A for portions of its run. Once the route reaches Mines Road, it does not intersect with any other routes.

Service hours for Route 17 are 7:00 AM to 9:55 PM Monday through Saturday (14 hours and 55 minutes daily) and 12:00 PM through 7:25 PM on Sunday (7 hours and 25 minutes daily). Headways are 60 minutes Monday through Saturday and 75 minutes on Sunday. The route runs 14 round-trips per day Monday through Friday, 11 round-trips on Saturday, and 6 round-trips on Sunday.

Annual ridership data from 2014 identified Route 17 with 134,475 trips or 4.2 percent of total ridership, ranking it the #9 route out of 22 in the system.

ROUTE 19 SANTO NINO

Route 19 Santo Nino runs from the downtown Transit Center east on Guadalupe and Chihuahua Streets to a large loop on the Zapata Highway, Ross Street and the Bob Bullock Loop, and SH 359. The route loops south as far as Avenida los Presidentes to serve United South High School, and has small one-way loops at the east end on both sides of SH 359. Route mileage is 12.1 miles outbound and 5.0 miles inbound.

Major destinations on Route 19 include the United South High School and several elementary and middle schools.

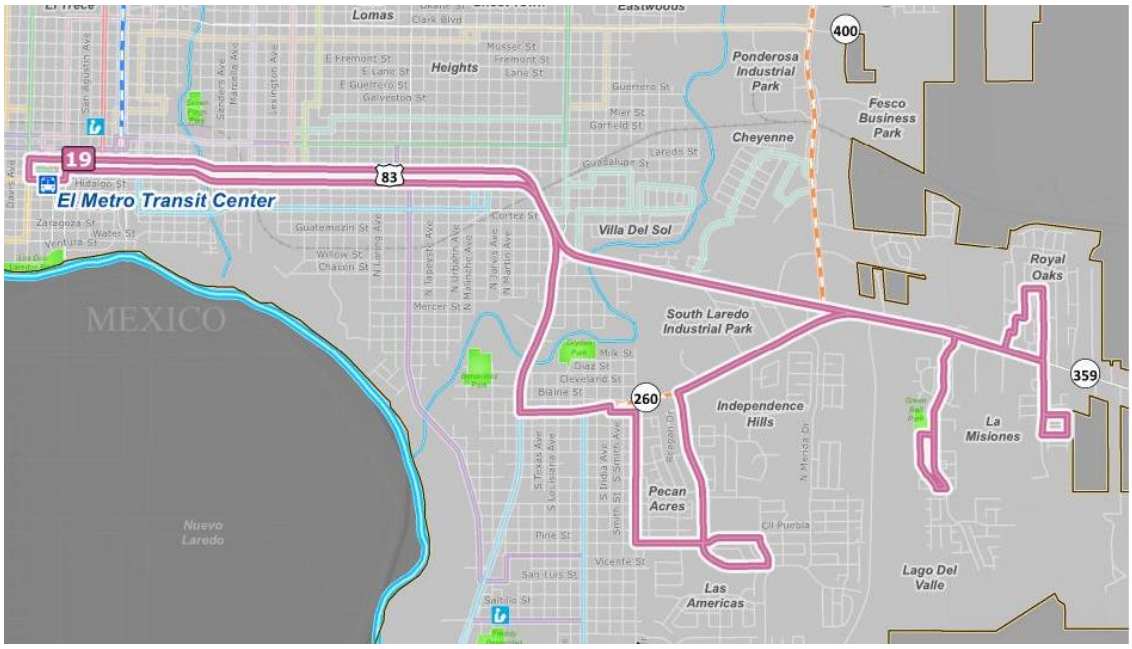
Route19 has 42 stops on the outbound leg and 14 stops inbound. Benches are provided for 21 percent of stops, and 11 percent of stops have some form of shelter. Seventy-nine percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 4, 5, 6, 8B, 9, 10, 14, and 20 for portions of its run. It runs concurrently with Routes 9, 14, and 20 on a portion of US 83, and with route 8B on a portion of SH 359.

Service hours for Route 19 are 6:25 AM to 8:30 PM Monday through Saturday (14 hours and 5 minutes daily) and 10:25 AM through 7:10 PM on Sunday (8 hours and 45 minutes daily). Headways are 80 minutes Monday through Saturday and 80 minutes on Sunday. The route runs 11 round-trips per day Monday through Saturday and 6 round-trips on Sunday.

Annual ridership data from 2014 identified Route 19 with 99,736 trips or 3.4 percent of total ridership, ranking it the #16 route out of 22 in the system.

Figure 4-22: Route 19 Santo Nino



ROUTE 20 LOS ANGELES

Route 20 Los Angeles runs from the downtown Transit Center east on Guadalupe and Chihuahua Streets to US 83, where it runs south as far as Moon Lane. The route has small one-way loops at the south end reaching to Brazos Road and to Ejido Avenue on either side of US 83. Route mileage is 9.2 miles outbound and 7.6 miles inbound.

Figure 4-23: Route 20 Los Angeles

Major destinations on route 20 include the Santa Nino Library and several elementary schools.

Route 20 has 37 stops on the outbound leg and 24 stops inbound. Benches are provided for 39 percent of stops, and 16 percent of stops have some form of shelter. Sixty-one percent of the stops on this route are identified only with pole signage.

Transfer opportunities are available where it is concurrent or intersecting with Routes 4, 5, 6, 8B, 9, 10, 14, and 19 for portions of its run. It crosses Routes 9 and 10 several times, and runs concurrently with Routes 9, 10, 14, and 19 along portions of US 83.

Service hours for Route 20 are 6:05 AM to 9:05 PM Monday through Saturday (15 hours daily) and 7:00 AM through 8:25 PM on Sunday (13 hours and 25 minutes daily). Headways are 80 minutes Monday through Saturday and 90 minutes on Sunday. The route runs 10 round-trips per day Monday through Saturday and 9 round-trips on Sunday.

Annual ridership data from 2014 identified Route 20 with 113,451 trips or 3.5 percent of total ridership, ranking it the #13 route out of 22 in the system.

RIDERSHIP TRENDS

Figure 4-24 shows ridership trends for the transit service for the past five years. As shown in the figure, ridership has been stable with approximately 3.2 million annual trips for fixed-route services.

Figure 4-24: Metro Ridership Trends – Annual One-way Trips

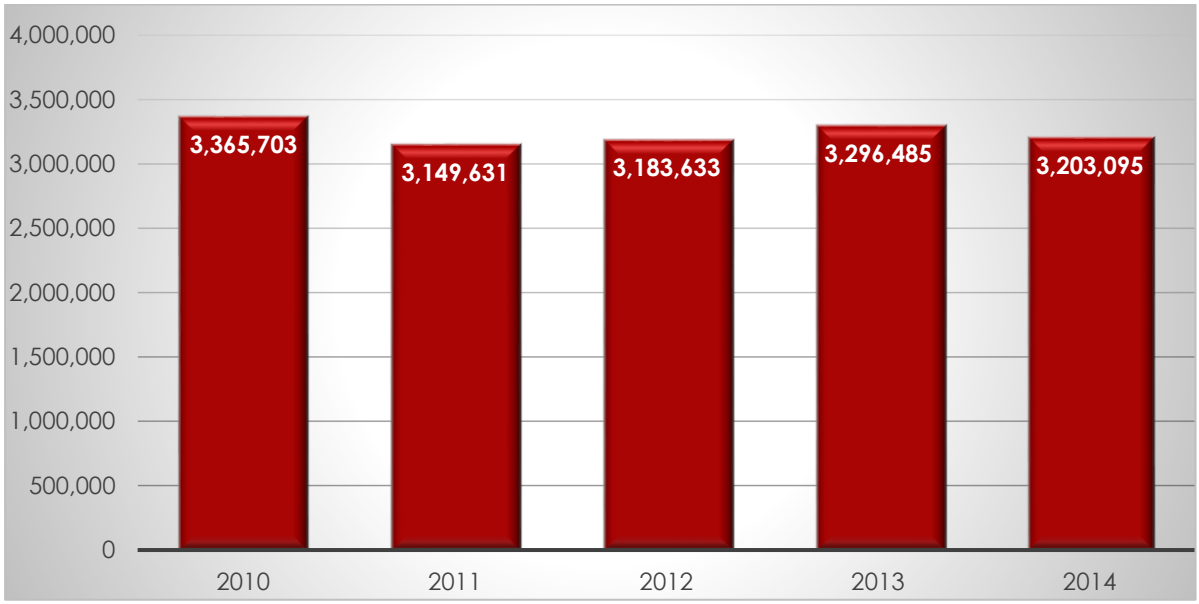
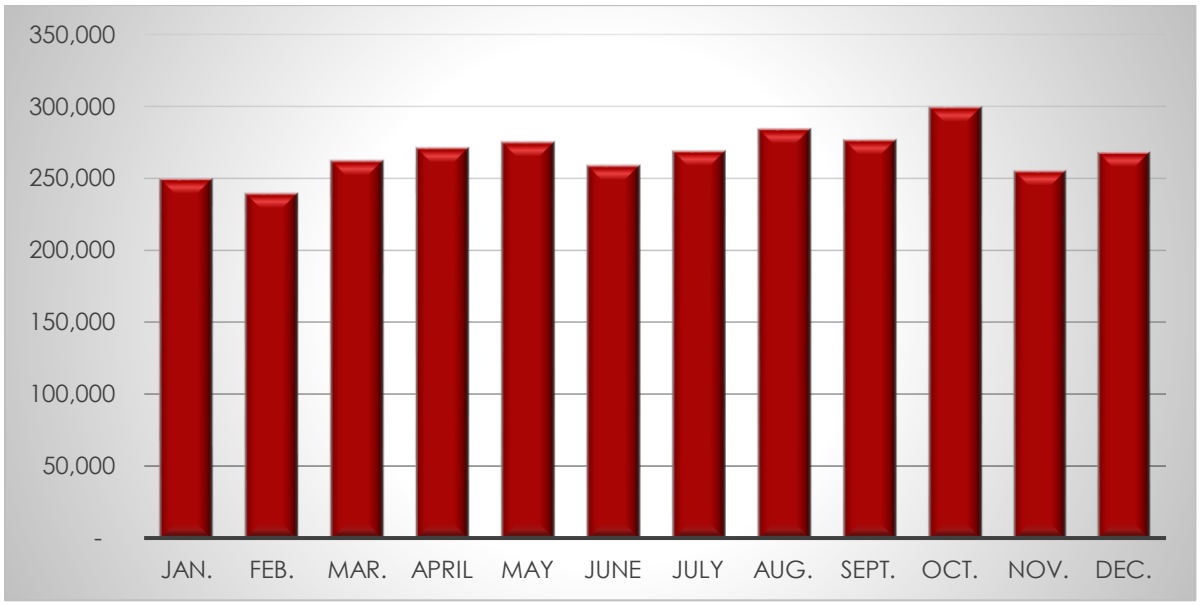


Figure 4-25 shows El Metro ridership by month for 2014. As shown, ridership is stable throughout the year, with approximately 250,000 one-way trips per month. The highest month for 2014 was October, and the lowest was February.

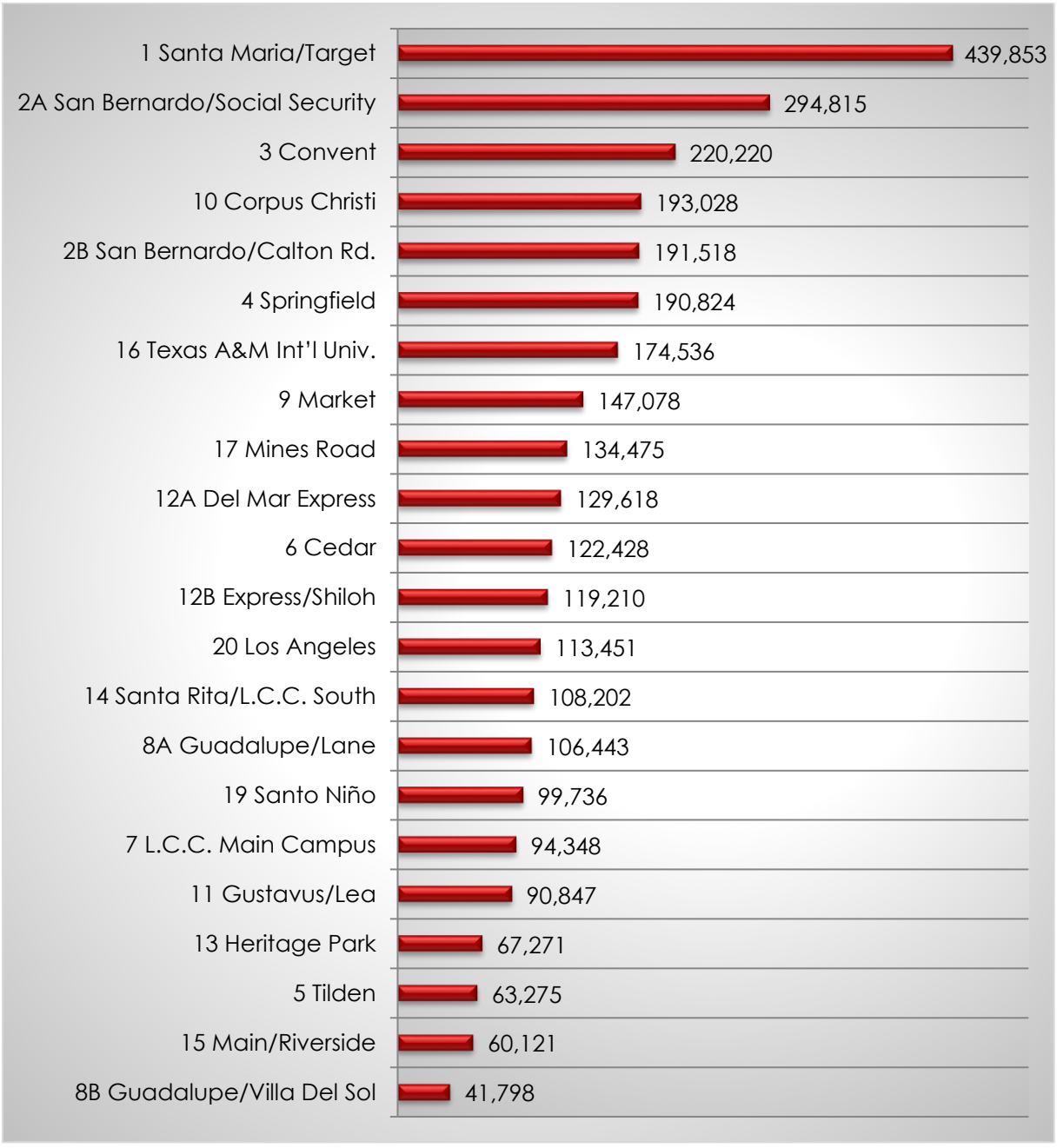
Figure 4-25: 2014 El Metro Ridership by Month



RIDERSHIP BY ROUTE

Ridership for each El Metro route for 2014 is presented in **Figure 4-26.** Route 1 Santa Maria has the most riders with approximately 440,000 passenger-trips each year, which is 14 percent of the total ridership for the system. Route 2A San Bernardo/Social Security and Route 3 Convent carry the second and third highest ridership with approximately 295,000 (9 percent) and 220,000 (7 percent) annual passenger trips respectively for each route.

Figure 4-26: 2014 El Metro Ridership by Route



EL METRO FARE STRUCTURE

El Metro uses different fare rates within its fare structure for the fixed-route bus service. Fares can differ depending on the time of day.

- Peak hours are defined as:
  - 6:00 AM – 8:59 AM
  - 3:00 PM – 5:59 PM
- Off peak hours are defined as:
  - 9:00 AM – 2:59 PM
  - 6:00 PM – 9:59 PM
  - Saturdays, Sundays, and Holidays

El Metro does not currently sell monthly, weekly, or daily passes. Fares are collected for each trip, and transfers are valid for only one direction of travel, either inbound or outbound. The cost for transfers between routes is an additional $0.25. **Table 4-2** shows the El Metro fare structure, showing how fares vary for certain classes of passenger (student, senior citizen, disabled) and by time of day.

Table 4-2: El Metro Fare Structure

Category	Fare
Adults	$1.50
Students with I.D.	$1.25
Children 5 - 11 years of age	$0.50
Children under 5 years of age	Free
Senior Citizens (62+) / Disabled w/ Metro I.D. (Peak Hours)	$0.35
Senior Citizens (62+) / Disabled w/ Metro I.D. (Off-Peak Hours)	$0.25
Disabled (Peak Hours with El Metro ID)	$0.35
Disabled (Off Peak Hours with El Metro ID)	$0.25
Medicare Card Holder w/picture I.D.	$0.70
Transfers	$0.25
El Lift Paratransit (eligible riders and guests)	$1.00
El Lift Paratransit (personal care attendants)	Free

EL METRO INFRASTRUCTURE

System operations are focused on the Laredo Transit Center, located downtown at 1301 Farragut Street, across from Jarvis Plaza. The five-story transit center is a multimodal transportation terminal for the Laredo region and is the main point of transfer for El Aguila (covering rural Webb County and the communities of Aguilares, Mirando, Oilton, Bruni, Rio Bravo, and El Cenizo), inter-city services like Valley Transit (serving south central Texas and northern Mexico), and

Greyhound (covering most of the United States, Mexico, and Canada). It also houses El Metro's administrative offices and a public parking garage for downtown visitors. The Laredo Transit Center also serves as the primary transfer point for El Metro, and is an origin point for all 22 fixed routes.

Maintenance of the El Metro fleet is conducted at the Operations & Maintenance Facility at 401 Scott Street, on the east side of I 35. This facility houses a garage, fueling stations, and some bus parking. It is located just 6 blocks north and 8 blocks east of the Downtown Transit Center, and is served by I 35 overpasses on Scott and Washington Streets. It is well suited to provide close connectivity between maintenance and the operations functions.

The El Metro system is served by a total of about 945 bus stops, which are shared between the inbound and outbound legs of the 22 fixed routes. As is common in all transit systems, there are a range of amenities at stops, including stops which just have signs and no other infrastructure, and stops with combinations of benches, some form of shelter, and/or other amenities.

For the overall system, 63.7 percent of stops have signs and no other infrastructure, 36.3 percent have a bench (with or without a shelter), and 15.8 percent have a shelter (all shelters have benches). The mix of amenities at stops varies slightly for the outbound and inbound legs of the routes. For outbound routes, 72 percent of stops have just a sign, 28 percent have a bench, and 10.2 percent have a shelter. In comparison, inbound routes have signs only at 55.8 percent of stops, benches at 44.2 percent, and shelters at 21.1 percent of the stops.

EL METRO VEHICLE FLEET

El Metro currently has 48 revenue vehicles for the fixed-route services and one rubber-tire trolley. The fixed-route service has 35 vehicles operating during the peak hours, equating to a system spare ratio of approximately 27 percent.

All buses are equipped with bicycle racks and with a ramp or lift to accommodate wheelchairs. All buses have two priority seating areas with securement points for wheelchairs. Route descriptive signs in all buses are lit and designed to be highly visible, and major stops are announced on all routes.

A listing of the vehicles used in El Metro fixed-route service is shown in **Table 4-3**.

Table 4-3: Fixed-Route Vehicle Inventory (FY 2015-2016)

Bus #	Manufacture	Model	Length	Seating Capacity	Date In Service	Proposed Replacement Year	Years In Service at Replacement
1	NovaBUS	T8020VN	40'	43	9/11/2001	2017	16
2	NovaBUS	T8020VN	40'	43	9/11/2001	2017	16
3	Blue Bird	102 Xcel	35'	36	7/30/2003	2018	15
4	Blue Bird	102 Xcel	35'	36	7/30/2003	2018	15
5	Blue Bird	102 Xcel	35'	36	9/16/2003	2018	15
6	Blue Bird	102 Xcel	35'	36	1/15/2004	2018	14
7	Blue Bird	102 Xcel	35'	36	7/30/2003	2018	15
8	Blue Bird	102 Xcel	35'	36	7/1/2006	2018	14
9	Blue Bird	102 Xcel	35'	36	6/30/2006	2020	14
10	Blue Bird	102 Xcel	35'	36	7/14/2006	2020	14
11	Blue Bird	102 Xcel	35'	36	6/29/2006	2021	15
12	Blue Bird	102 Xcel	35'	36	7/3/2006	2021	15
13	Blue Bird	102 Xcel	35'	36	7/10/2006	2021	15
14	Blue Bird	102 Xcel	35'	36	7/10/2006	2021	15
15	Champion	CHP20679	30'	32	8/31/2011	2023	12
16	Champion	CHP20679	30'	32	8/31/2011	2023	12
17	Gillig	G27D102N4	35'	32	1/13/2009	2025	17
18	Gillig	G27D102N4	35'	32	2/13/2009	2025	16
19	Gillig	G27D102N4	35'	32	2/20/2009	2025	16
20	Gillig	G27D102N4	35'	32	2/20/2009	2025	16
21	Gillig	G27D102N4	35'	32	2/20/2009	2025	16
22	Gillig	G27D102N4	35'	32	2/20/2009	2025	16
23	Gillig	G27D102N4	35'	32	2/20/2009	2025	16
24	Gillig	G27D102N4	35'	32	2/20/2009	2025	16
25	Gillig	G27D102N4	35'	32	2/27/2009	2025	16
26	Gillig	G27D102N4	35'	32	3/3/2009	2025	16
27	Gillig (Trolley)	627E102N2	30'	26	1/15/2010	2026	17
28	Gillig	G27D102N4	40'	38	4/21/2011	2026	15
29	Gillig	G27D102N4	40'	38	4/21/2011	2026	15
30	Gillig	G27D102N4	40'	38	4/21/2011	2026	15
31	Gillig	G27D102N4	40'	38	4/21/2011	2026	15
32	Gillig	G27D102N4	40'	38	4/21/2011	2026	15
33	Gillig	G27D102N4	40'	38	4/21/2011	2026	15
34	Gillig	G27B102N4	35'	32	4/21/2011	2026	15
35	Gillig	G27B102N4	35'	32	4/21/2011	2026	15
36	Gillig	G27B102N4	35'	32	4/21/2011	2026	15
37	Gillig	G27B102N4	35'	32	4/21/2011	2026	15
38	Gillig	G27B102N4	35'	32	4/19/2011	2026	15
39	Gillig	G27B102N4	35'	32	4/21/2011	2026	15
40	Gillig LLC	G27D102N4	40'	38	7/8/2015	2031	16
41	Gillig LLC	G27D102N4	40'	38	7/8/2015	2031	16
42	Gillig LLC	G27D102N4	40'	38	7/8/2015	2031	16
43	Gillig LLC	G27D102N4	40'	38	7/8/2015	2031	16
44	Gillig LLC	G27D102N4	40'	38	7/8/2015	2031	16
45	Gillig LLC	G27D102N4	40'	38	7/8/2015	2031	16
46	Gillig LLC	G27D102N4	40'	38	7/8/2015	2031	16
47	Gillig LLC	G27D102N4	40'	38	7/8/2015	2031	16
48	Gillig LLC	G27D102N4	40'	38	7/8/2015	2031	16

Based on Fiscal Year (FY) 2015-2016 vehicle fleet information, the average amount of time in service for all vehicles in the fixed-route fleet is approximately 6 years, although vehicle age varies and the oldest vehicles are now 17 years in service. Those vehicles are expected to be replaced in FYs 2017 and 2018. The average vehicle life is 15 years for the purposes of replacement planning, however given funding anticipation, El Metro staff has several vehicles planned for replacement beyond this 15-year life span. In addition, it is important to note that the timeframe for replacement of vehicles from the time of order to when buses arrive and can be placed into service is roughly 18 months. As such, while the table above notes the anticipated date for replacement, orders must be placed almost two years ahead of when buses are anticipated to be replaced to maintain the proposed fleet replacement schedule.

ORGANIZATIONAL AND FINANCIAL SUMMARY

El Metro employs approximately 185 people for the operation and administration of the El Metro fixed-route and the El Lift paratransit services through Laredo Transit Management, Inc, (LTMI), which is a non-profit corporation operated by the City of Laredo. LTMI is responsible for planning, and managing the system. Its contract operator, First Transit, is responsible for daily operations and facilities.

The revenue required to operate and support El Metro comes from a mix of funding sources, including fares, local funds, state and federal funds. The 2013 expenditures for El Metro fixed-route services (the latest year of National Transit Database financial reporting year information) was $11.9M, which is shown in **Table 4-4.** The farebox recovery rate is 28 percent for fixed-route services, which is approximately $3.4M annually.

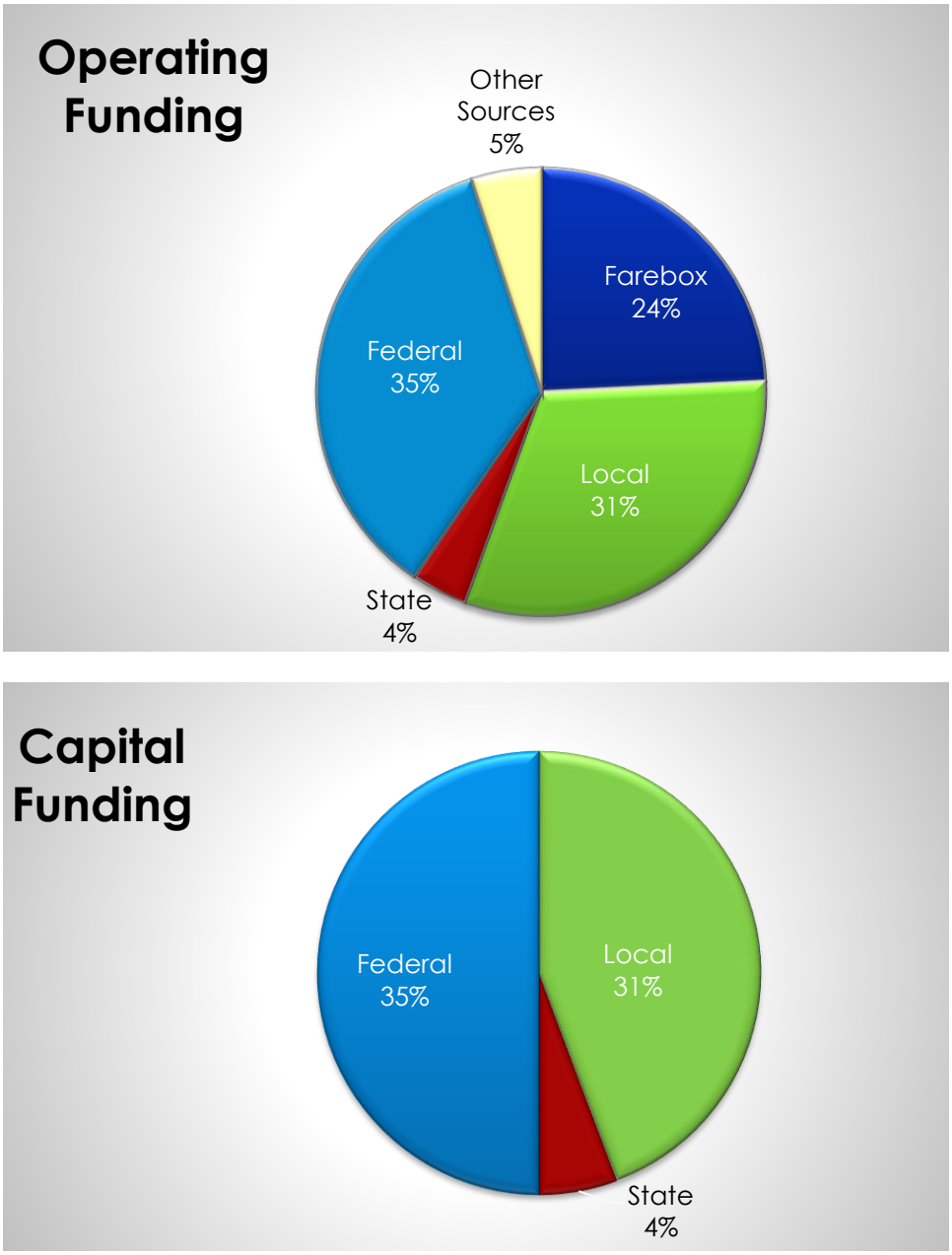
Table 4-4: Financial Summary, El Metro Fixed-Route Service

	2010	2011	2012	2013
Fixed-Route Operating Costs	$10,753,039	$10,440,404	$11,172,846	$11,925,274
Farebox Revenue	$3,139,792	$3,244,131	$3,298,484	$3,367,797
Farebox Recovery	29%	31%	30%	28%

Source: National Transit Database, 2010-2013.

The National Transit Database collects data on operating and capital revenues by funding source for the overall system. For El Metro, this includes tabulations of revenue for both the fixed-route and El Lift paratransit services. **Figure 4-27** provides additional information on the breakdown of funding for operating and capital expenses by funding type. Because this reporting does not separate farebox recovery by each type of service offered, the farebox recovery for the entire system includes both fixed route and paratransit services, and is 24 percent.

Figure 4-27: Sources of Operational and Capital Funding



Source: National Transit Database, 2013.

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CHAPTER 5

SERVICE PERFORMANCE

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Chapter 5. Service Performance

This chapter provides an evaluation of the El Metro system as whole compared to other similar transit systems within Texas using standard performance measures. An evaluation of each fixed-route within the El Metro system compared to system wide averages and performance targets is also provided. Collectively, these performance measures provide valuable insights into how well service is provided today and how existing services can be improved to best meet public transportation needs in the future. Combined with findings from the onboard customer surveys (**Chapter 6**) and system and stop-level ridership data (**Chapter 7**), this data is used to identify a series of potential options (**Chapter 8**) for enhancing the El Metro system over the next five years and beyond.

System Wide Performance

Overview

All public transportation agencies in the United States report annually on a number of standardized performance measures on efficiency and effectiveness of a public transportation system.

For this TDP, most recent year 2014 National Transit Database (NTD) information was collected and analyzed to better understand El Metro system performance compared to other similar agencies. The three performance measures utilized in this analysis are standard industry measures, and are consistent with Laredo's 2040 Metropolitan Transportation Plan recommendations to continually evaluate and improve the public transportation system. These three standard performance measures are: service effectiveness, service efficiency, and cost effectiveness. Additional details on these measures are provided in the sections that follow.

For this analysis, 13 peer transit agencies within the state of Texas were identified for comparative purposes, as shown on **Figure 5-1**. They included:

- Abilene
- Amarillo
- Beaumont
- Brownsville
- Denton County
- El Paso
- Golden Crescent
- Hill Country
- Lower Rio Grande
- Lubbock
- Midland Odessa
- San Angelo
- Waco

Figure 5-1: Identified Peer Agencies

These 13 agencies were also used in the last TDP developed for El Metro, and provide a useful comparison of performance. Like El Metro, these agencies are also small urban systems and costs for fuel and other operational variations were determined to be similar. The size of service areas as well as the population and service available vary between these agencies, with some agencies operating in service areas with larger or smaller populations and geographies than El Metro. To provide reasonable comparison, an average of these peer agencies was used as a benchmark to evaluate performance of the El Metro system.

Additionally, as part of the analysis other systems across the United States located near border crossings were reviewed for peer relevance. No locations outside of Texas were similar enough in population size, geography or service modes and it was determined that focusing on peer agencies within the state of Texas provide the most relevant comparison in system performance.

Table 5-1and **Table 5-2** provide summary information on peer service characteristics.

Table 5-1: Peer Agency General Service Characteristics

Agency	Svc Area Pop	Svc Area (Sq. Mi)	Rev Fleet	#Fixed Routes	Base Fare	Op Days
Abilene	110,421	55	57	13	$1.25	M-Sat
Amarillo City Transit (ACT)	190,695	74	20	8	$0.75	M-Sat
Beaumont	82,731	41	29	10	$1.50	M-Sat
Brownsville (Bmetro)	181,860	164	27	16	$1.00	M-Sat
Denton County (DCTA)	234,552	157	84	12	$1.50	M-Sat
El Paso (Sun Metro)	803,086	251	183	65	$1.50	M-Sun
Golden Crescent (Victoria Transit)	60,603	30	67	7	$1.50	M-F
Hill Country	395,300	8,426	112	14	$1.00	M-Sat
Lower Rio Grande	728,825	314	30	18	$1.00	M-Sat
Lubbock (Citibus)	237,356	75	102	9	$1.75	M-Sat
Midland Odessa	99,940	37	27	13	$1.25	M-Sat
San Angelo/Concho Valley	88,128	56	56	6	$1.00	M-Sat
Waco (WTS)	117,241	58	63	10	$1.50	M-Sat
Laredo	236,091	66	69	22	$1.50	M-Sun

Table 5-2: Peer Agency Summary of Revenue Miles, Hours, and Passenger Trips

Agency	Rev Mi	Rev Hr	Pass Trips
Abilene	419,438	30,145	504,310
Amarillo City Transit (ACT)	651,438	39,334	365,748
Beaumont	706,495	52,128	535,262
Brownsville (Bmetro)	782,318	66,136	1,660,931
Denton County (DCTA)	1,223,746	104,932	2,226,623
El Paso (Sun Metro)	7,410,981	577,362	12,226,961
Golden Crescent (Victoria Transit)	407,958	25,607	227,985
Hill Country	702,432	46,360	653,996
Lower Rio Grande	813,639	42,167	271,197
Lubbock (Citibus)	1,831,465	142,202	3,968,653
Midland Odessa	628,903	38,894	379,508
San Angelo/Concho Valley	319,277	22,162	222,660
Waco (WTS)	802,953	49,775	1,059,164
Laredo	1,617,175	148,764	3,184,119

SERVICE EFFECTIVENESS

Service effectiveness is a measure of how well a system performs, in terms of riders served, compared to the service area and frequency of service provided. Evaluating this performance measure provides insight into any changes needed to service coverage areas, service span, or frequency of service.

Service effectiveness is measured by dividing annual passenger trips by vehicle revenue miles and vehicle revenue hours. Annual passenger trips represent the number of passengers who board all buses in the system in a year. Passengers are counted each time they board a bus, regardless of how many buses they board for a full trip. Vehicle revenue miles and hours represent the total miles and hours all buses in the system operate when they are in active service to the general public. Higher numbers of this measure mean better service effectiveness.

Service Effectiveness is measured by:

- Passenger trips per revenue hour
- Passenger trips per revenue mile

Higher numbers of this measure equate to better service effectiveness

Passenger trips per revenue mile provides an indication of how well El Metro is providing service compared to the coverage of miles in the system during service operations.

Figure 5-2 provides a comparison of El Metro to peer agencies for passenger trips served per revenue mile. The average for all peer agencies, including El Metro, for this measure is 1.19. Compared to peer agencies, El Metro has a higher than average ranking for service effectiveness (1.97) for passenger trips per revenue mile. El Metro's two closest peers in terms of population served and passenger trips provided are Denton County and the City of Lubbock; the City of Lubbock is also El Metro's closest peer in terms of service land area covered by fixed-route service. El Metro is performing similarly to both of these agencies.

Figure 5-3 provides a comparison of El Metro to peer agencies for passenger trips served per revenue hour. The average for all peer agencies, including El Metro, for this measure is 15.35 passenger trips per revenue hour. Comparative to peer agencies, El Metro also has a higher than average ranking for service effectiveness (21.4) for passenger trips per revenue hour. El Metro is competitive with its closest peers, Denton County and Lubbock, in terms of service population and passenger trips provided.

Figure 5-2: Passenger Trips per Revenue Mile

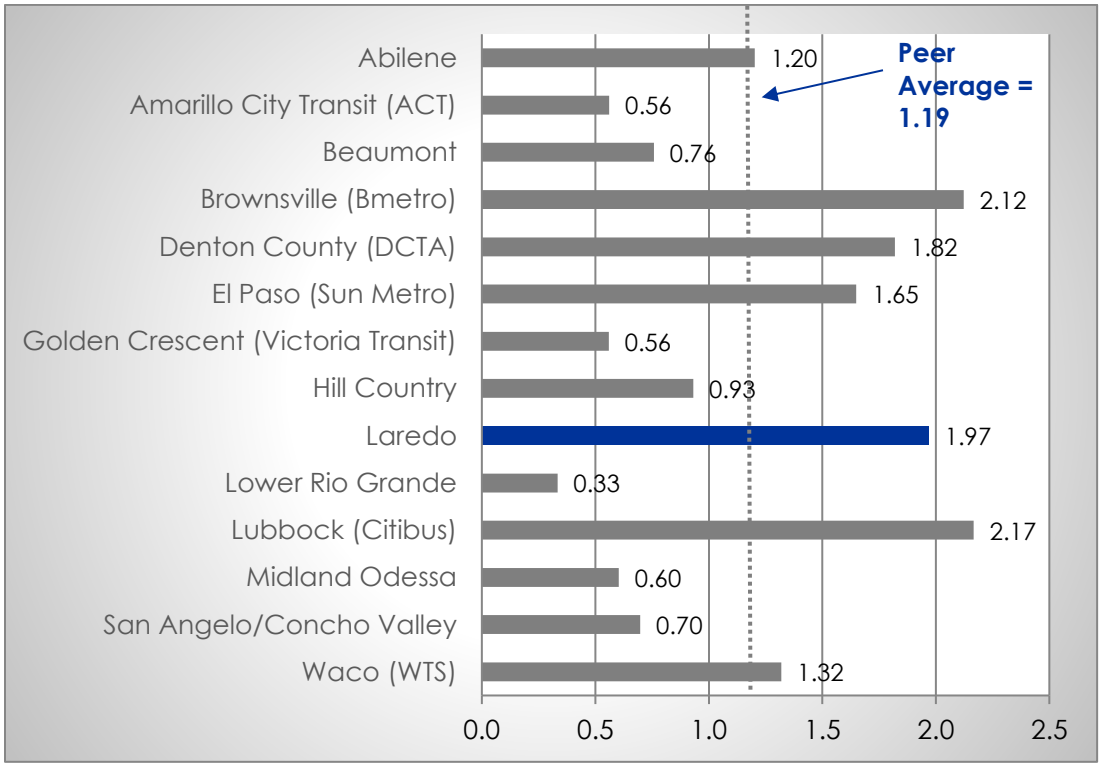
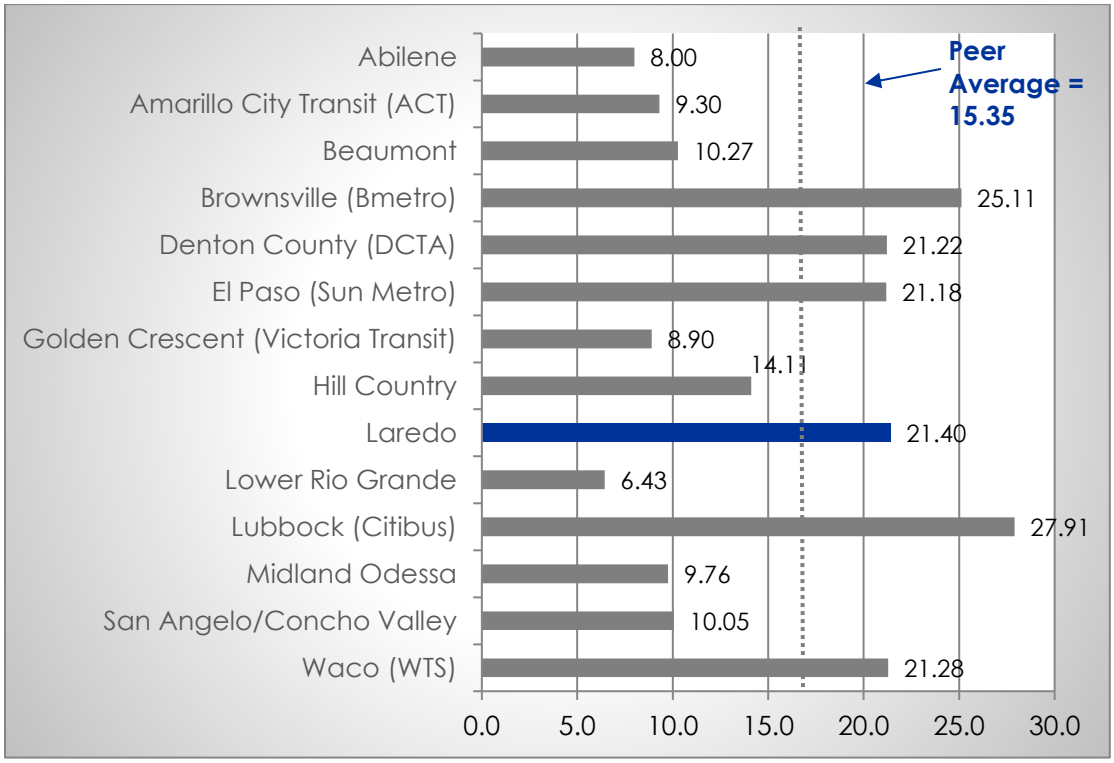


Figure 5-3: Passenger Trips per Revenue Hour



Compared to peer agencies analyzed, it is worth noting that El Metro's service effectiveness is correlated to the greater amount of service provided (in terms of number of routes provided) and longer service hours and weekend services than its peers.

SERVICE EFFICIENCY

Evaluating service efficiency provides an indication of how economically the service operates compared to the costs for the service area covered and frequency or span of service.

Service efficiency is measured by dividing the annual operating costs for the system by the number of miles and hours of all the buses in service over the course of a year. *Lower numbers* of these measures translate to greater service efficiency.

Service Efficiency is measured by:

- Operating cost per revenue mile
- Operating cost per revenue hour

Lower numbers of this measure equate to better service efficiency

Figure 5-4 shows cost per revenue mile for Laredo and the peer agencies. The average for cost per revenue mile for all agencies is $5.05. While El Metro continues to perform better than some of its peers in this measure ($7.42), costs per revenue hour are higher than the average for all peers. The other agencies that are performing less efficiently than the average are in areas with larger service areas, which contribute to a higher level of revenue miles traveled. For El Metro, revenue miles are comparable to many peers, however operational costs are higher, thus contributing to its relative underperformance regarding this measure.

Figure 5-5 shows cost per revenue-hour of service for Laredo and the peer agencies. The average for cost per revenue-hour for all agencies is $71.99. A number of these peer agencies are under performing compared with the average for this measure. Compared to its closest two peers (Denton County and Lubbock), revenue-hour totals for El Metro ($80.64) are very similar; however, operational costs are substantially higher for El Metro.

Figure 5-4: Cost per Revenue Mile

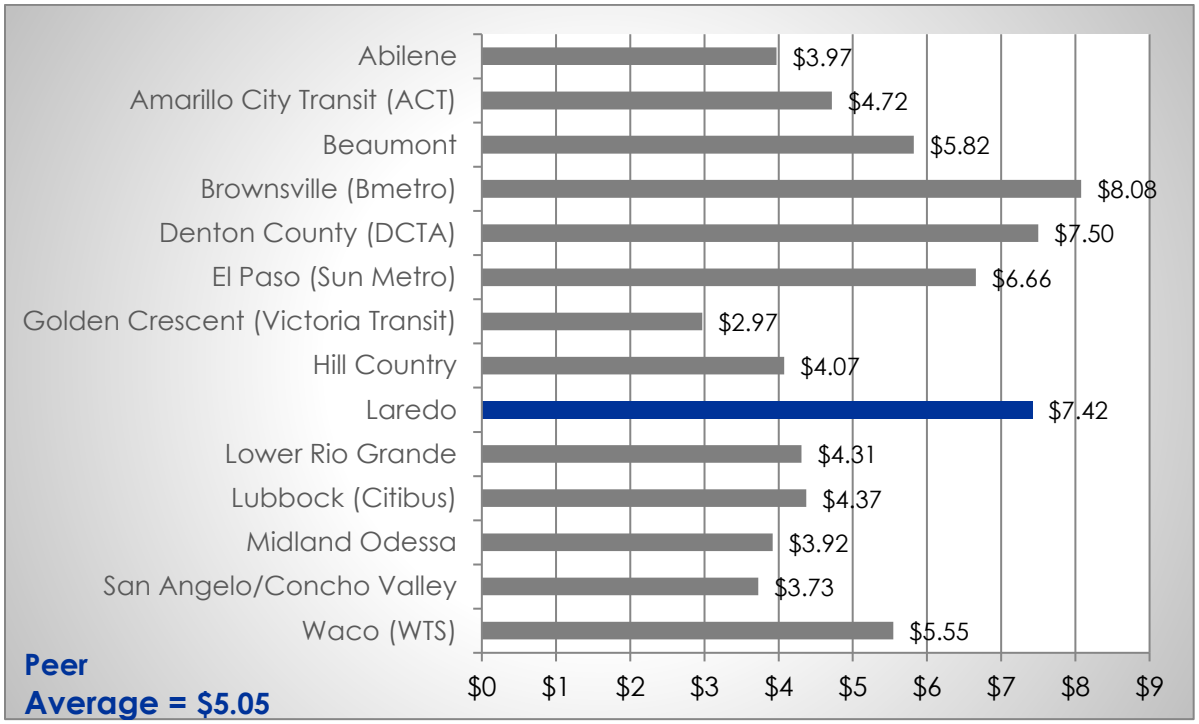
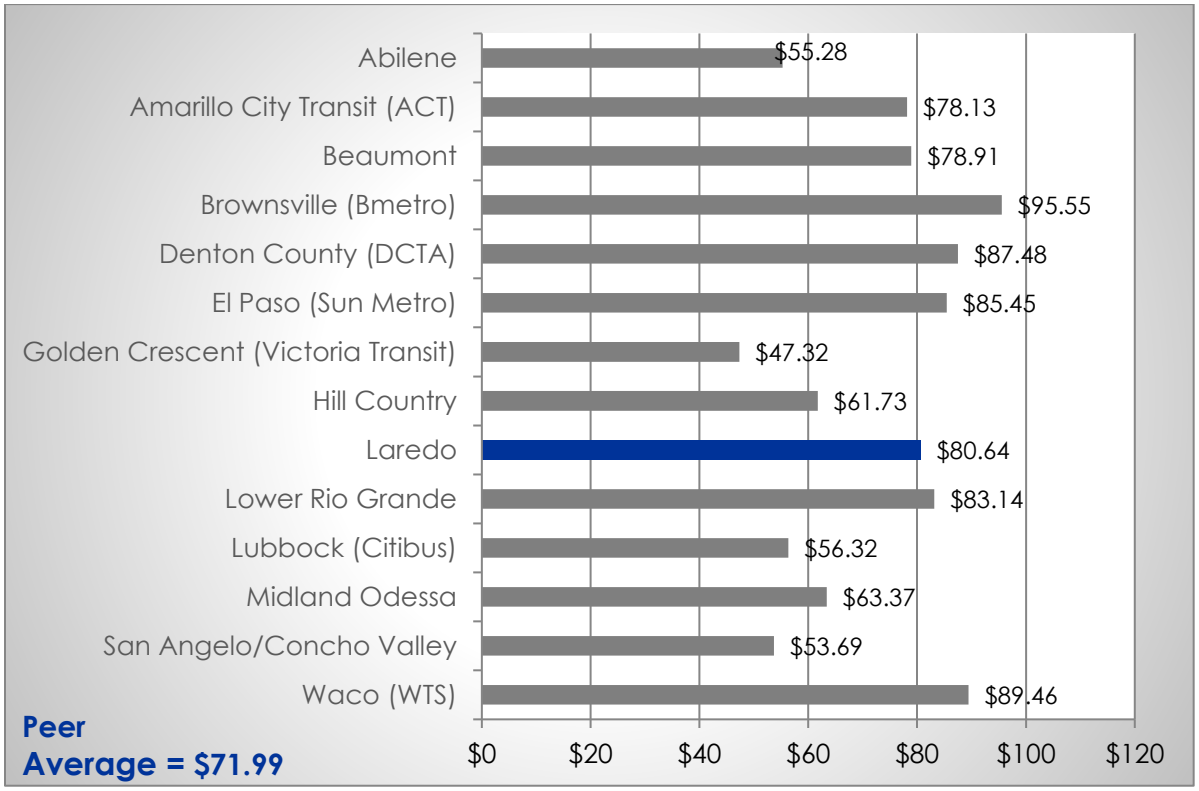


Figure 5-5: Cost per Revenue Hour



Further review of operational costs for El Metro and its closest transit peers was conducted to better understand service efficiency (See **Table 5-3**). While the ratio of standard operations (e.g., vehicle operations costs and administrative costs) and vehicle maintenance costs were similar between peers, the magnitude of maintenance costs for El Metro are substantially higher. This is most likely due to the age and condition of the vehicle fleet, which requires greater levels of maintenance to maintain good condition and can contribute to higher fuel and other costs.

Table 5-3: Comparative Peer Agency Maintenance Costs

Agency	Vehicle Maintenance Costs (2014)
Laredo	$2.5 M
Lubbock	$1.7 M
Waco	$1 M
Denton	$1.1 M

COST EFFECTIVENESS

Cost effectiveness relates to the annual operational cost of service when compared to the number of passengers utilizing the service as well as the cumulative distances passengers travel using public transportation over the course of a year. *Lower numbers* of these measures mean greater cost effectiveness.

Figure 5-6 shows cost per passenger trip for El Metro and peer agencies. The average for this measure for all peers is $5.41. El Metro is performing substantially better ($3.77) than the average of all transit agency peers regarding cost per passenger trip, demonstrating the overall cost effectiveness of the system. Comparative to Denton County and Lubbock, El Metro service is more cost effective than Denton County but less cost effective than Lubbock in terms of cost per passenger trip.

Cost Effectiveness is measured by:

- Operating cost per passenger trip
- Operating cost per passenger mile

Lower numbers of this measure equate to better cost effectiveness

Figure 5-7 shows cost per passenger mile for El Metro and peer agencies. The average for this measure for all peers is $1.83. El Metro is performing substantially better ($1.16) than the average of all transit agency peers regarding cost per passenger mile, demonstrating the overall cost effectiveness of the system in meeting the diverse travel destinations of passengers in and around the City of Laredo.

Figure 5-6: Cost per Passenger Trip

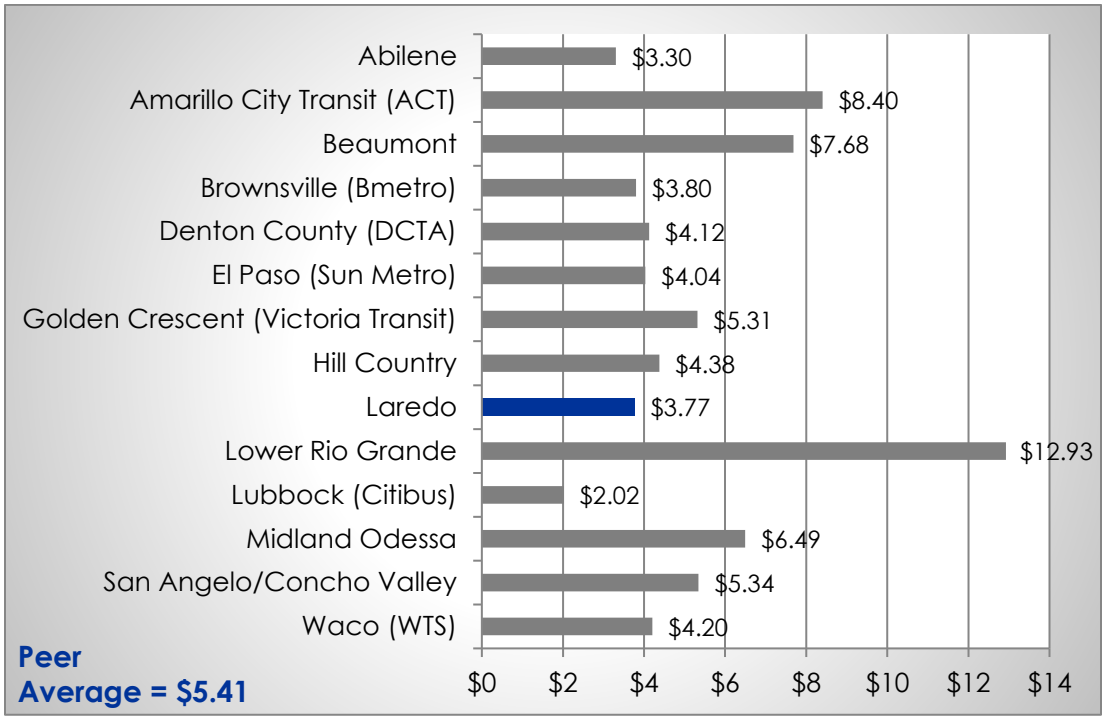
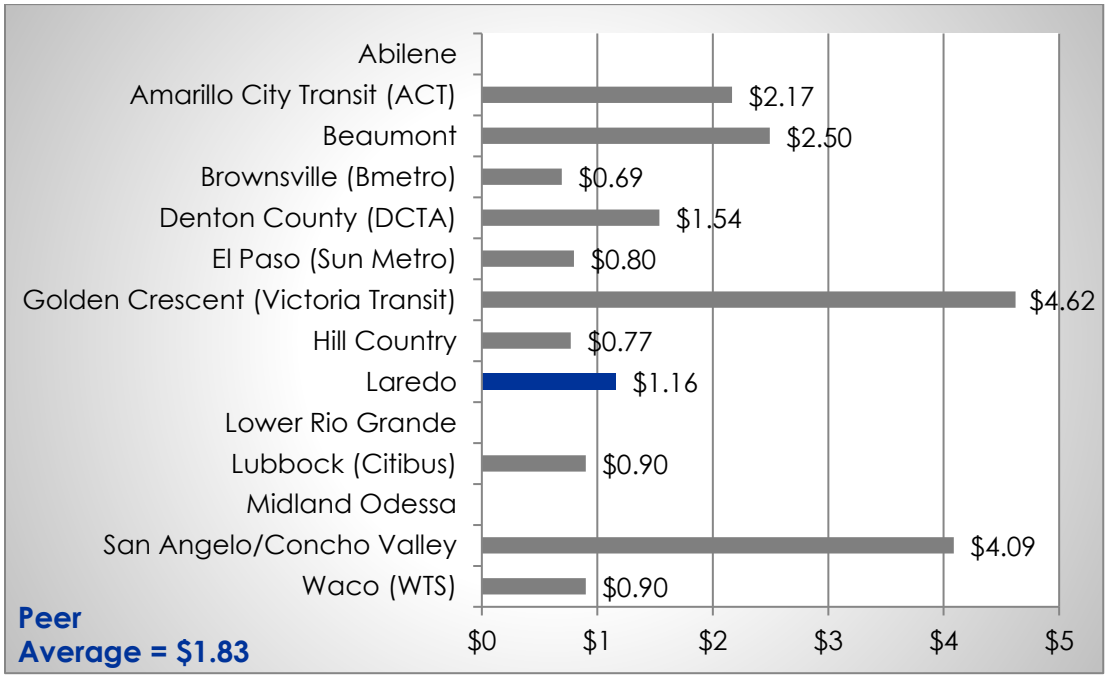


Figure 5-7: Cost per Passenger Mile



Note: 2014 National Transit Database (NTD) information for total annual passenger miles for Midland Odessa, Lower Rio Grande, and the City of Abilene were not available at the time of this analysis.

Comparative to Denton County and Lubbock, El Metro is performing more cost effectively than Denton County but less cost effectively than Lubbock in terms of cost per passenger mile. Lubbock has a similar service area coverage to El Metro, but operational costs are lower which contributes to Lubbock's better cost effectiveness performance.

Overall, El Metro may consider ways to further reduce operational costs and strategies to enhance ridership on the system for even greater cost effectiveness. Reductions to vehicle maintenance costs through upgrading the vehicle fleet can help to further reduce costs even with minor changes in ridership. In addition, strategies to increase ridership, such as providing bus passes, streamlining services, and/or provision of enhanced frequency of service to capture a greater share of the travel market in the city, may serve to improve the number of passenger trips. Combined ridership enhancement strategies with more efficient operational costs can assist in providing additional gains to cost effectiveness over time.

ROUTE PERFORMANCE

In addition to a review of system-wide performance compared to peer transit agencies, it is also important to analyze and understand the performance of routes within the system. This route performance analysis focuses on service effectiveness of routes compared to averages for the El Metro system as a whole, and is measured in terms of passengers per revenue hour. Providing this information can help El Metro to set performance targets for routes and a continual monitoring mechanism for needed changes to routes that best meet passenger demands.

This analysis reviewed latest available full year 2014 ridership and revenue hours and miles for each route compared to system-wide averages. This provided a review of service effectiveness by route. A standard rule of thumb used by many transit agencies to identify routes that may be over or under performing and may need potential modification is to identify and monitor routes performing at least one standard deviation above or below system-wide averages (or approximately 75% under or over the system-wide average).

In addition, similar to the peer review analysis, it is useful to understand service efficiency and cost effectiveness of routes. While costs per route are not provided through the contract for service (the City contracts First Metro to provide services at a total cost), reviewing high and low performing routes comparative to the frequency of service provided additional insight into route level service efficiency, cost effectiveness, and potential areas for modification of service.

The following subsections provide further information on the results of this analysis. This technical information, combined with peer analyses above and public input received in development of the TDP, help to identify improvement needs for the system and routes. The route analysis, provides El Metro with an ability to regularly monitor route performance and make route adjustments as passenger demands change.

ROUTE LEVEL SERVICE EFFECTIVENESS

Passengers per revenue hour and per revenue mile were reviewed for service effectiveness evaluation of routes.

PASSENGERS PER REVENUE HOUR

Based on 2014 ridership and revenue hours provided, the system-wide average for passengers per revenue hour is 20.9 passengers per hour. **Table 5-4** provides annual passenger per revenue hour for each route, in order from highest performing routes to lowest performing routes.

Table 5-4: Passengers per Revenue Hour by El Metro Route

Rank	Route Number/Name	2014 Total Ridership	2014 Revenue Hours	Pass/ Rev Hour	Finding
1	2A: SAN BERNARDO/SOCIAL SECURITY	294,815	9,443	31.2	Highest Performers: Candidates for Improvement
2	: SANTA MARIA/TARGET	439,853	14,308	30.7	
3	17: MINES ROAD	134,475	4,946	27.2	
4	6: CEDAR	122,428	4,631	26.4	
5	16: TEXAS A&M INTERNATIONAL UNIV.	174,536	6,717	26.0	
6	20: LOS ANGELES	113,451	4,635	24.5	Mid-Level Performers: Continue to Monitor
7	8A: GUADALUPE/LANE	106,443	4,832	22.0	
8	3: CONVENT	220,220	10,428	21.1	
9	19: SANTO NIÑO	99,736	4,824	20.7	
10	12A: DEL MAR EXPRESS	129,618	6,295	20.6	
11	12B: EXPRESS/SHILOH	119,210	5,807	20.5	
12	2B: SAN BERNARDO/CALTON RD.	191,518	9,380	20.4	
13	4: SPRINGFIELD	190,824	9,659	19.8	
14	10: CORPUS CHRISTI	193,028	9,916	19.5	
15	14: SANTA RITA/L.C.C. SOUTH	108,202	5,591	19.4	
16	7: L.C.C. MAIN CAMPUS	94,348	5,098	18.5	
17	13: HERITAGE PARK	67,271	3,708	18.1	
18	11: GUSTAVUS/LEA	90,847	5,243	17.3	
19	9: MARKET	147,078	8,863	16.6	
20	5: TILDEN	63,275	4,554	13.9	Low Performers: Candidates for Service Modification
21	15: MAIN/RIVERSIDE	60,121	4,669	12.9	
22	8B: GUADALUPE/VILLA DEL SOL	41,798	3,579	11.7	

Routes 1, 2A, 6, 16, and 17 operate above one standard deviation of the average (standard deviation = 5.2), equivalent to over 26 passengers per hour and are the highest performing routes.

Routes 5, 8B, and 15 operate below one standard deviation of the average (under 16 passengers per hour) and are the lowest performing routes.

Routes operating substantially above or below system-wide averages are candidates for further evaluation of service modification. For higher performing routes, this might include increases to the frequency of service provided or to extend the hours of service provided. For lower performing routes, modifications might include reductions in frequency, route modifications or combinations with other routes, or reducing hours of service.

PASSENGERS PER REVENUE MILE

Based on 2014 ridership and revenue miles provided, the system-wide average for passengers per revenue mile is 2.1 passengers per mile. **Table 5-5** provides annual passenger per revenue mile for each route, in order from highest performing routes to lowest performing routes.

Routes 1, 2A, and 6 operate above one standard deviation of the average (standard deviation = 0.8), equivalent to 2.9 passengers per mile and are the highest performing routes. Route 8A is just below the standard deviation threshold, but also performs highly.

Routes 11, 12B, and 8B operate below one standard deviation of the average (under 1.3 passengers per mile) and are the lowest performing routes for this measure.

Routes operating substantially above or below system-wide averages are candidates for further evaluation of service modification. For higher performing routes, this might include increases to the frequency of service provided or to extend the hours of service provided. For lower performing routes, modifications might include reductions in frequency, route modifications or combinations with other routes, or reducing hours of service.

Table 5-5: Passengers per Revenue Mile by El Metro Route

Rank	Route Number/Name	2014 Total Ridership	2014 Revenue Miles	Pass/ Rev Mile	Finding
1	2A: SAN BERNARDO/SOCIAL SECURITY	294,815	72,907	4.0	Highest Performers: Candidates for Improvement
2	1: SANTA MARIA/TARGET	439,853	123,347	3.6	
3	6: CEDAR	122,428	36,873	3.3	
4	8A: GUADALUPE/LANE	106,443	38,324	2.8	Mid-Level Performers: Continue to Monitor
5	7: L.C.C. MAIN CAMPUS	94,348	36,243	2.6	
6	2B: SAN BERNARDO/CALTON RD.	191,518	9,380	2.4	
7	4: SPRINGFIELD	190,824	86,516	2.2	
8	10: CORPUS CHRISTI	193,028	88,123	2.2	
9	3: CONVENT	220,220	101,729	2.2	
10	20: LOS ANGELES	113,451	53,826	2.1	
11	19: SANTO NIÑO	99,736	51,078	2.0	
12	12A: DEL MAR EXPRESS	129,618	71,751	1.8	
13	16: TEXAS A&M INTERNATIONAL UNIV.	174,536	102,603	1.7	
14	14: SANTA RITA/L.C.C. SOUTH	108,202	64,851	1.7	
15	9: MARKET	147,078	88,816	1.7	
16	17: MINES ROAD	134,475	85,497	1.6	
17	5: TILDEN	63,275	42,572	1.5	
18	13: HERITAGE PARK	67,271	45,992	1.5	
19	15: MAIN/RIVERSIDE	60,121	42,634	1.4	
20	11: GUSTAVUS/LEA	90,847	68,533	1.3	Low Performers: Candidates for Modification
21	12B: EXPRESS/SHILOH	119,210	101,676	1.2	
22	8B: GUADALUPE/VILLA DEL SOL	41,798	39,142	1.1	

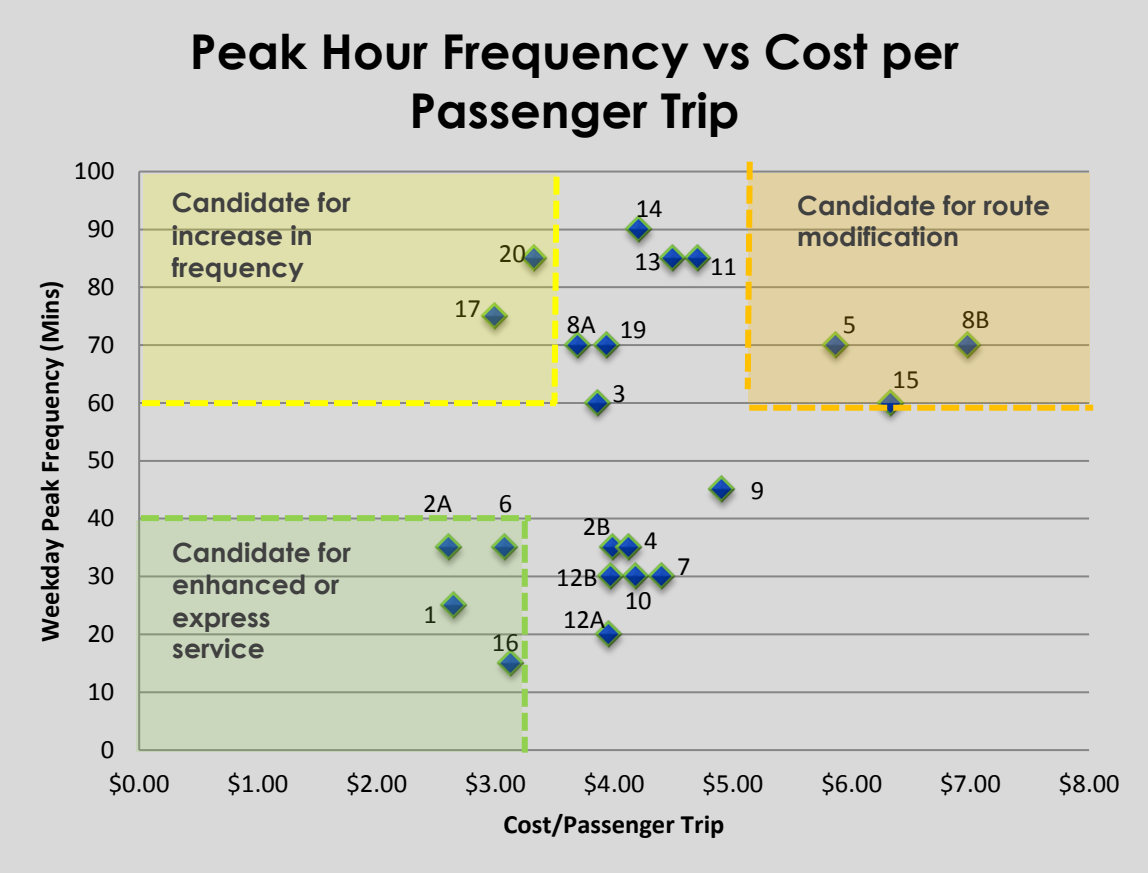
ROUTE LEVEL SERVICE EFFICIENCY AND COST EFFECTIVENESS

In addition to a review of passengers per revenue hour rankings, it is also useful to review routes in terms of service efficiency and cost effectiveness. Information on costs per route were not available for the analysis, so additional system-wide information was utilized for a more generalized analysis of route performance regarding costs.

Based on 2014 system data of operating costs per revenue mile for each route and ridership by route, a generalized cost for routes was calculated. This provides a sense of the cost per passenger trip based on productivity of each route. Comparing this to peak hours of weekday frequency of service for each route provides insight into routes with highest potential for modification to service frequency assuming relatively consistent ridership on each route.

Figure 5-8 shows a scatter plot of costs versus frequency. Particular quadrants of the scatter plot identify areas where potential modifications to service may be further considered.

Figure 5-8: Weekday Peak Hour Frequency vs Cost per Passenger Trip



Note: Point labels on scatter plot refer to route numbers in the El Metro system.

When comparing frequency and costs to overall service effectiveness (passengers per revenue hour), the routes with already low frequencies of service which require a higher than average cost per passenger trip are the same: Routes 5, 8B, and 15 are the lowest performers for both metrics. Additional consideration to modify service may be considered for these routes. In reviewing these routes further, it was noted that Route 5 provides service for passengers to essential medical and other social service provision. While performance is lower on this route, and modifications may be considered, these destinations provide essential services for transit dependent riders that should not be compromised. Routes 8B and 15 are also lower performers, and combining with other routes may be considered to improve performance. In addition, a closer examination of service provision by day of week and hours of service may be another alternative to reductions in service frequency.

Routes 17 and 20 are the highest performers in terms of both cost productivity and number of passengers served per revenue hour but operate at very low weekday peak frequencies of service (over one hour wait between buses). While Route 20, which provides service for transit-dependent populations in southern Laredo to the downtown transfer center and other destinations in the city, is operating at slightly lower number of passengers per revenue hour, with a weekday peak frequency of over 80 minutes between buses, this route may be further considered for frequency increases over time. Route 17, which serves a high employment population in an industrial district, is performing at extremely high levels for passengers per revenue hour of service as well as in overall cost productivity. With a peak weekday frequency of over 70 minutes, increases to service frequency on this route may also be further considered.

In addition to Routes 17 and 20, which are performing substantially above system wide averages, Routes 1, 2A, 6, and 16 already operate at peak weekday frequencies under 40 minutes and additional increases to service frequency may be warranted. Routes 2A and 6 operate at peak weekday frequencies just over 30 minutes and may warrant further priority examination for increases to service frequencies.

SUMMARY OF FINDINGS

Key takeaways from this service performance analysis that will serve to provide recommendations for improvements to the El Metro system and routes include:

- El Metro is performing well compared to its peers in terms of system service effectiveness and cost efficiency. Compared to many of the peer agencies reviewed within the state, El Metro provides longer service hours and more weekend services than other peer agencies.
- El Metro system service efficiency performance is lower than that of peer agencies reviewed. This is largely due to higher operational costs than other peer agencies. Within operational costs, costs to maintain El Metro's aging fleet are considerably higher than other similar transit agencies.
- Routes 5, 8B and 15 service and cost effectiveness are much lower than system-wide performance targets. These routes should be further examined for route modifications to improve performance.
- Routes 17 and 20 are high performing routes in terms of both service and cost effectiveness and currently operate at headways of over 60 minutes between buses. Priority should be given to these routes for improvements to service frequency.
- Routes 1, 2A, 6, and 16 are the highest performers for service and cost effectiveness and commonly operate at headways of less than 40 minutes. These routes are secondary priority routes for improvements to service frequency.

- Route performance data by weekday and weekend services could not be reconciled by City staff for use in this analysis. As performance continues to be monitored and adjusted, this additional data should be collected and reconciled so that more detailed benchmarks can be established for weekday and weekend service monitoring and adjusting. This more detailed analysis can provide greater insight into route modifications that may be appropriate to address differences in passenger needs on these routes by day of week.

CHAPTER 6

ONBOARD SURVEY RESULTS

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Chapter 6. Onboard Survey Results

This chapter provides information and results from the customer onboard survey conducted in fall 2015 for this TDP update. A full technical memorandum detailing the customer onboard survey and ride check analysis methodology and results is provided in **Appendix C**. Customer surveys provide important information on customer demographics, public transportation uses and needs, as well as customer satisfaction with existing services from the people who use these services today. These insights, combined with technical analysis performed for the TDP, provide more detailed information to identify desirable service improvements.

Survey Methodology

Based on existing ridership levels of the system, at the start of this project it was determined that obtaining a total of 375 weekday survey responses would provide a statistically significant sample of customer characteristics. A sampling plan was designed at the route level to provide a sample size adequate for analysis for all routes weekday bus service based on developing an average weekday ridership comprised from March 2014, April 2014, and October 2014 monthly route ridership data. The sampling goals for each route and collection results, which exceeded the response target, are provided in **Table 6-1**.

Table 6-1: Onboard Survey Weekday Sampling Plan and Collection Summary

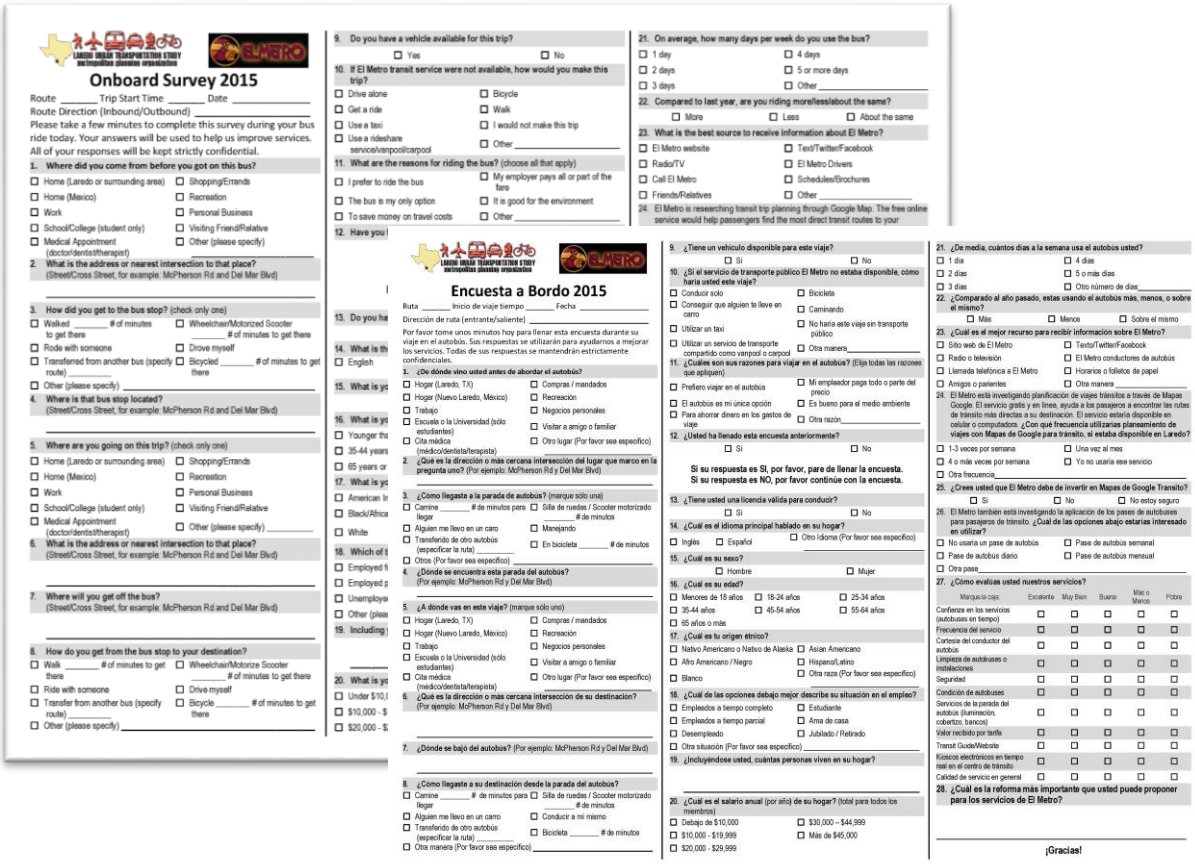
Route	Weekday Riders	% of Total	Sample Goal	Completed Surveys	% Completed Surveys
1	1,213	13%	50	32	64%
2A/2B	1,353	15%	56	58	104%
3	624	7%	26	29	112%
4	536	6%	22	27	123%
5	180	2%	7	9	129%
6	349	4%	15	9	60%
7	298	3%	12	21	175%
8A/8B	420	5%	17	16	94%
9	413	5%	17	18	106%
10	546	6%	23	25	109%
11	252	3%	10	12	120%
12A/12B	697	8%	29	30	103%
13	187	2%	8	9	113%
14	309	3%	13	16	123%
15	170	2%	9	12	133%
16	522	6%	22	37	168%
17	373	4%	15	17	113%
19	275	3%	11	13	118%
20	320	4%	13	24	185%
TOTAL	**9,036**	**100%**	**375**	**414**	**110%**

Despite efforts to collection 100 percent of the target sample for each route, some routes were difficult to obtain full participation from respondents to meet targets. Additional samples were possible to collect on several other routes to meet and exceed system-wide sample targets.

SURVEY INSTRUMENT

On-board survey cards were developed to be easy to administer, easy to comprehend, and, above all, to collect data to enhance knowledge of transit riders and travel needs for the TDP. All survey cards were made available in English and Spanish, as shown in **Figure 6-1**. The full-size surveys are provided in **Appendix C**. Each survey had a unique sample number to allow for tracking of responses by route, trip and location. Surveyors completed basic information on language used for survey completion, bus route number associated with the survey respondent, as well as start time, direction and date of survey for tracking purposes before engaging participants. Participants were encouraged but not required to answer all questions.

Figure 6-1: Sample Customer Survey (English and Spanish)

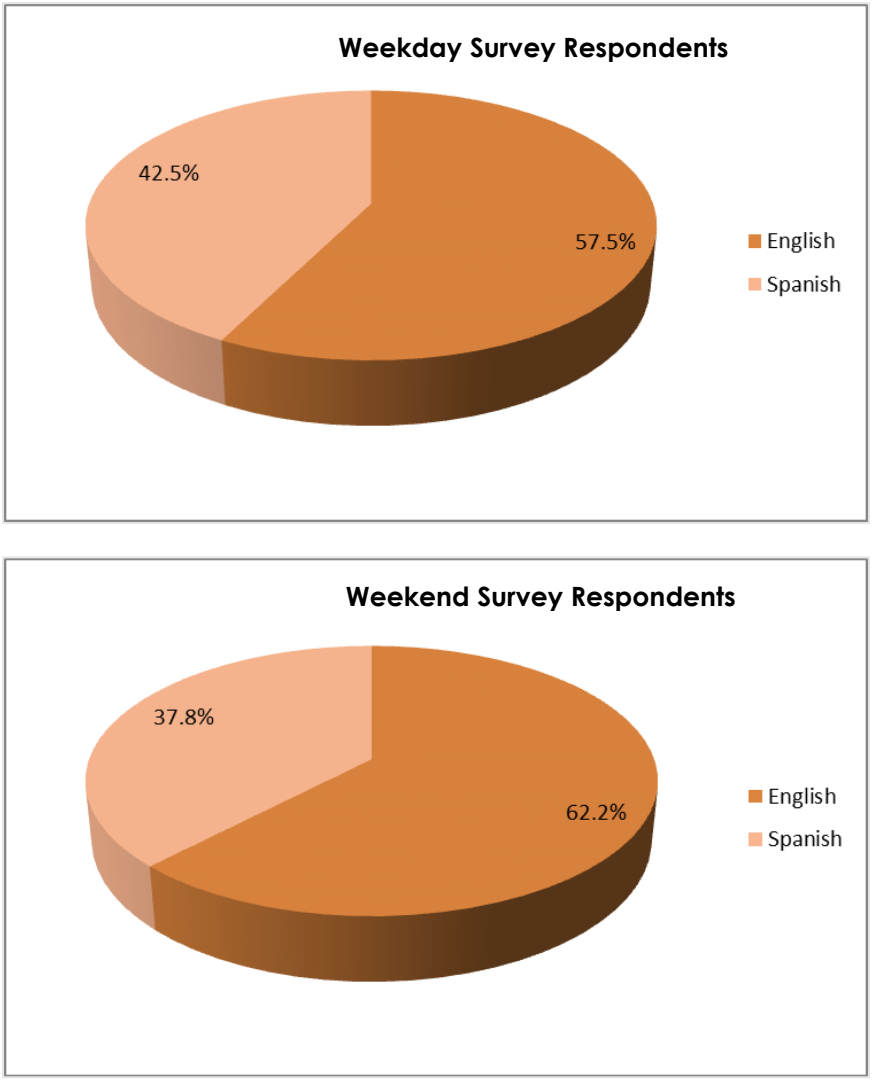


Survey questionnaires were designed in a tri-fold format and printed on heavy card stock for easy distribution and completion. A total of 28 questions were provided on the survey. Questions focused on passenger origin and destination trip purpose, use and accessibility of the service, demographic information, customer satisfaction with a variety of aspects of service, as well as suggestions for priority improvements.

SURVEY RESULTS

As noted, the survey questionnaire was printed in both English and Spanish to reflect the characteristics of the El Metro ridership. For weekday riders surveyed, 58 percent of riders took the survey in English while 43 percent completed the survey in Spanish. For weekend riders surveyed, 62 percent of riders took the survey in English while 38 percent completed the survey in Spanish. (**Figure 6-2**)

Figure 6-2: Survey Completion Language



Survey results are summarized below for the following main categories of questions: demographic characteristics of existing riders, trip origins and destinations, use and accessibility to and from the system, and customer satisfaction and views on improvements.

DEMOGRAPHIC CHARACTERISTICS

Demographic characteristics in the survey questionnaire included information on gender, age, ethnicity, household and employment makeup, and vehicle ownership and accessibility. Key findings are noted below:

- A quarter of weekday passengers are between the ages of 18 and 24 with half of El Metro weekend passengers identifying as 35 to 54.
- Overwhelmingly, 97 percent passengers reported their ethnicity as Hispanic.
- Nearly half of El Metro passengers are employed either full or part-time.
- Two-thirds of El Metro passengers are from households with an annual income of less than $20,000.
- Three-quarters of El Metro passengers do not possess a valid driver's license.
- Approximately 89 percent of weekday respondents and 90 percent of weekend respondents indicated they are transit-dependent riders (i.e., they do not have access to a vehicle to make their trip)

TRIP PURPOSES (ORIGINS AND DESTINATIONS)

Several survey questions asked about passenger trip origins destinations, including information on trip purposes and how passengers get to and from bus stops to destinations.

Figure 6-3 and **Figure 6-4** depict origins for weekday and weekend trips, respectively. The survey results showed that weekday and weekend passengers differed somewhat in trip origins – where they were coming from before they got on the bus.

Approximately half of all weekday riders indicated their origin as home within the Laredo region with another approximately 8 percent indicating their origin as home in Mexico. For weekend riders, approximately 38 percent indicated their origin as home within the Laredo region and another 13 percent indicated their origin as home in Mexico. Other than home origins, weekday passengers indicated their most frequent other trip origin as work, school, or shopping/errands. Notably, work or school trips combined are the major trip origins for weekday riders. For weekend passengers, shopping constituted over 20 percent of rider origins and combined with recreation, constituted over 33 percent of rider origins.

Figure 6-3: Origin Trip Purpose (Weekday)

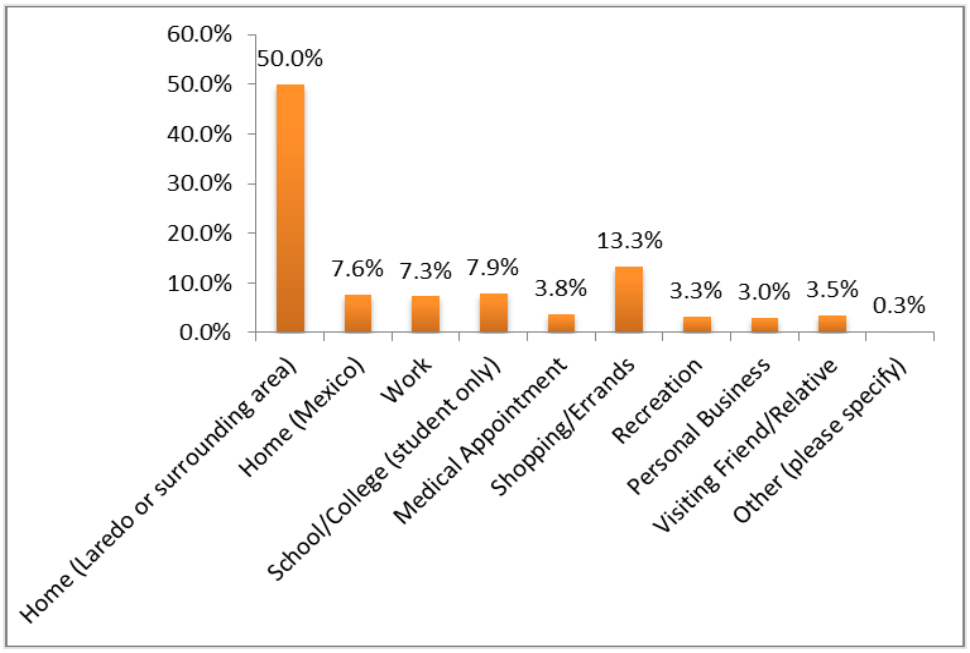


Figure 6-4: Origin Trip Purpose (Weekend)

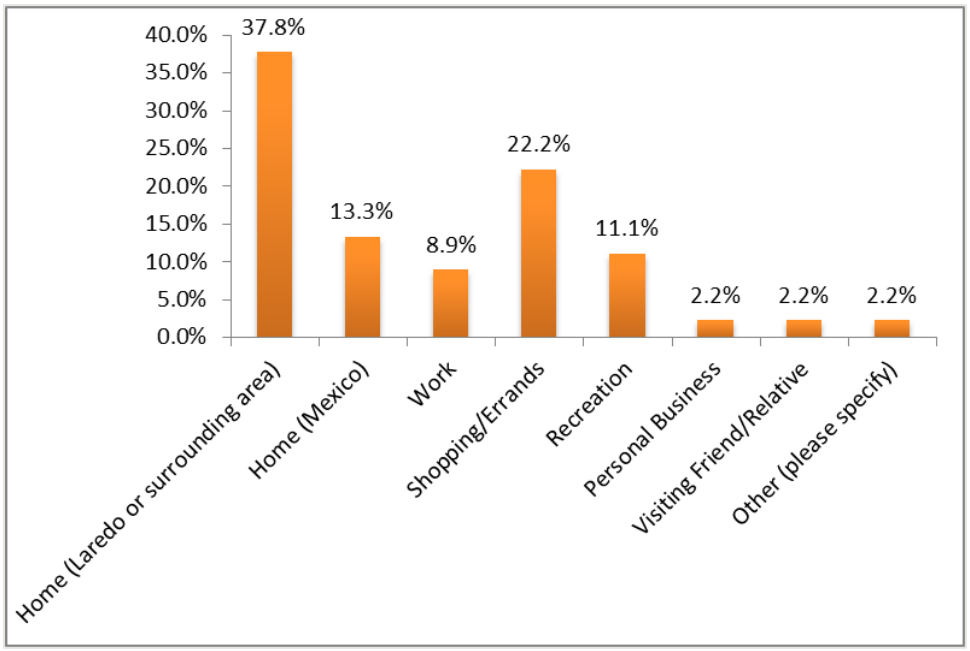


Figure 6-5 and **Figure 6-6** depict destinations for weekday and weekend trips, respectively. The survey results showed that weekday and weekend passengers differed somewhat in trip destinations– where they were going to on the trip.

Figure 6-5: Destination Trip Purpose (Weekday)

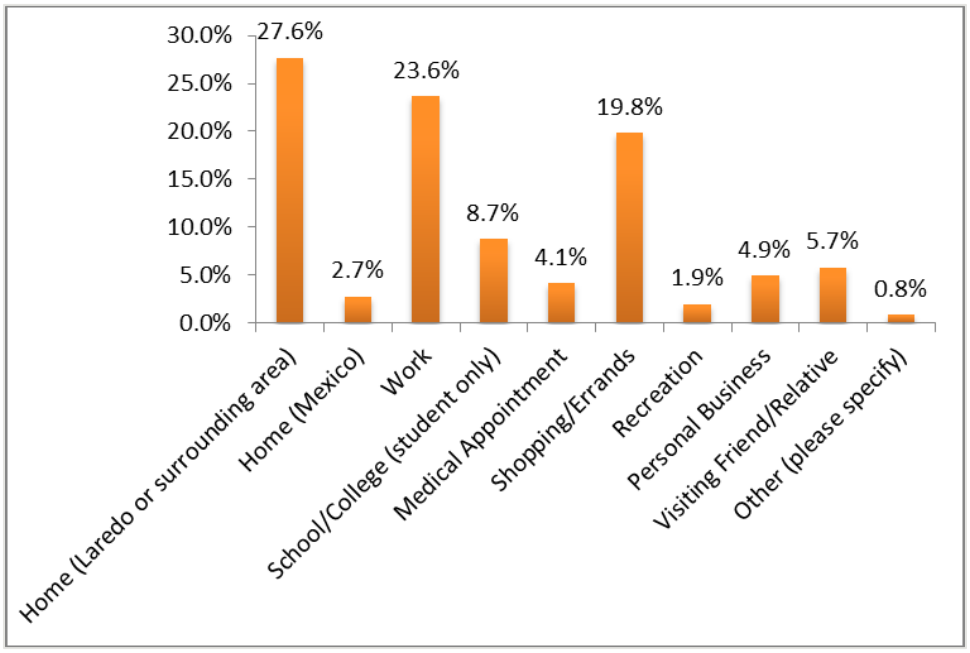
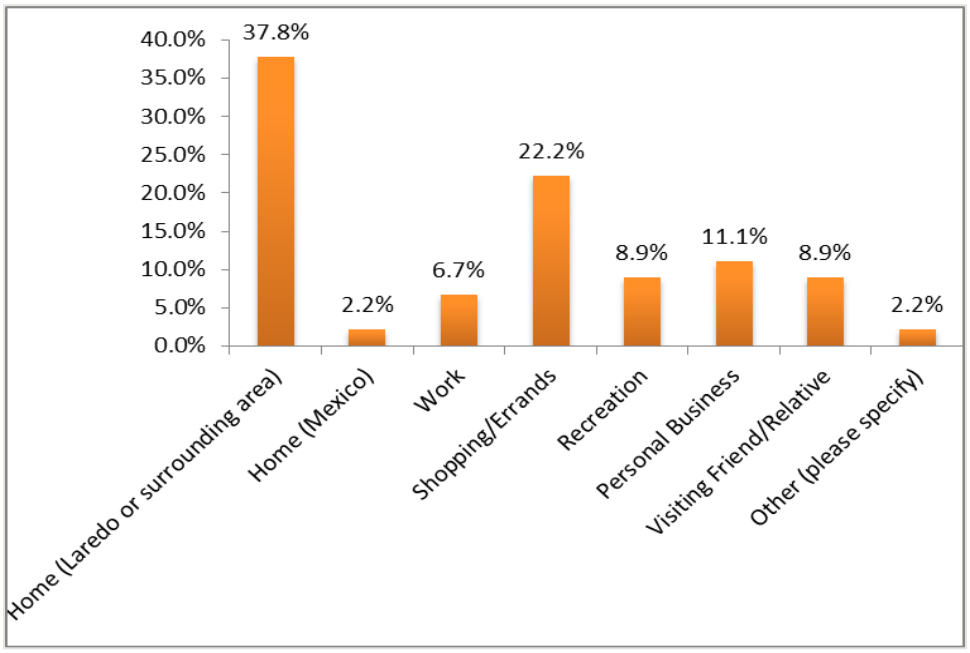


Figure 6-6: Destination Trip Purpose (Weekend)



Approximately 28 percent of weekday riders specified *home Laredo or surrounding area)* as their destination, while 24 percent used El Metro to travel to *work. In addition, roughly 20* percent reported using El Metro to conduct *shopping or errands.* Comparatively, nearly 40 percent of weekend riders used the bus to get to their home destination (Laredo or surrounding area), and nearly 40 percent indicated their trip destination as shopping/errands, recreation, or personal business.

Additional survey questions were provided to identify how passengers typically get to and from the bus to complete their full trips.

Overwhelmingly, passengers walk to and from bus stops in the El Metro system. Both weekday (79 percent) and weekend riders (87 percent) indicated that they most often walk to get to a bus stop. To get from a bus stop to trip destinations, 85 percent of weekday riders and 93 percent of weekend riders walk from the bus to their destinations.

Overwhelmingly, passengers walk to and from bus stops in the El Metro system. Both weekday (79 percent) and weekend riders (87 percent) indicated that they most often walk to get to a bus stop to access the bus trip. To get from a bus stop to trip destinations, 85 percent of weekday riders and 93 percent of weekend riders walk from the bus to their destinations.

Of those that walked to access the bus, nearly 80 percent of weekday riders and 74 percent of weekend riders indicated that they walked 5 minutes or less to the bus stop. Of those who walk from the bus to access trip destinations, approximately 87 percent of weekday passengers walk less than 5 minutes to reach their destination from the bus. Weekend riders averaged slightly higher than 5 minutes of walking time to destinations, likely due to provision of more limited bus service hours and frequencies on the weekend. Weekday and weekend riders who did not walk to or from their origins or destinations indicated that they either rode with someone (11.6 percent of weekday riders and 11.1 percent of weekend riders) to the bus stop or transferred from another bus (7.5 percent of weekday riders and 2.2 percent of weekend riders).

PUBLIC TRANSPORTATION USE AND ACCESSIBILITY

Survey questions were also developed to understand passenger uses and needs for public transportation. This included assessing transit dependency - why they currently use the bus and how they might make a trip if bus service were not available – as well as to understand how often they use El Metro services and whether their use of the service has changed in recent years.

Figure 6-7 and **Figure 6-8** provide a summary of responses on the reasons riders use the bus. When asked about reasons for riding the bus, weekday and weekend riders answered similarly. Over half (54 percent) of weekday riders and 44 percent weekend riders indicated that the bus is their only option, consistent with findings of other survey questions that determined the majority of riders do not have access to a vehicle. Additionally, roughly 32 percent of weekday riders and 36 percent of weekend riders indicated that they prefer to ride the bus. Riders also indicated that saving money on travel costs were another reason they rode the bus, with nearly 16 percent indicating this cost saving reason for their weekend trips.

Figure 6-7: Reasons for using El Metro (Weekday)

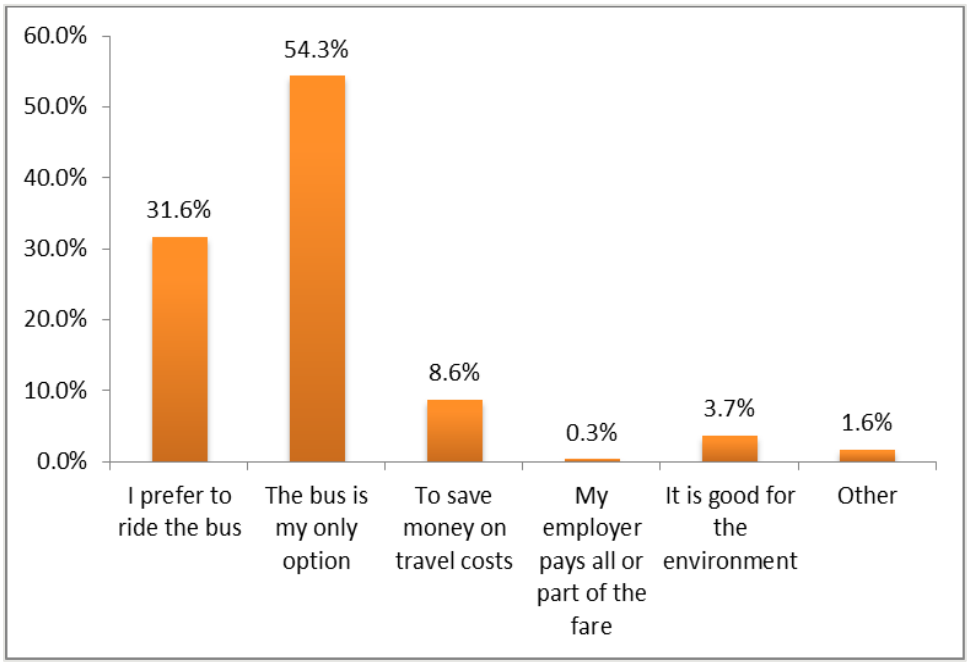
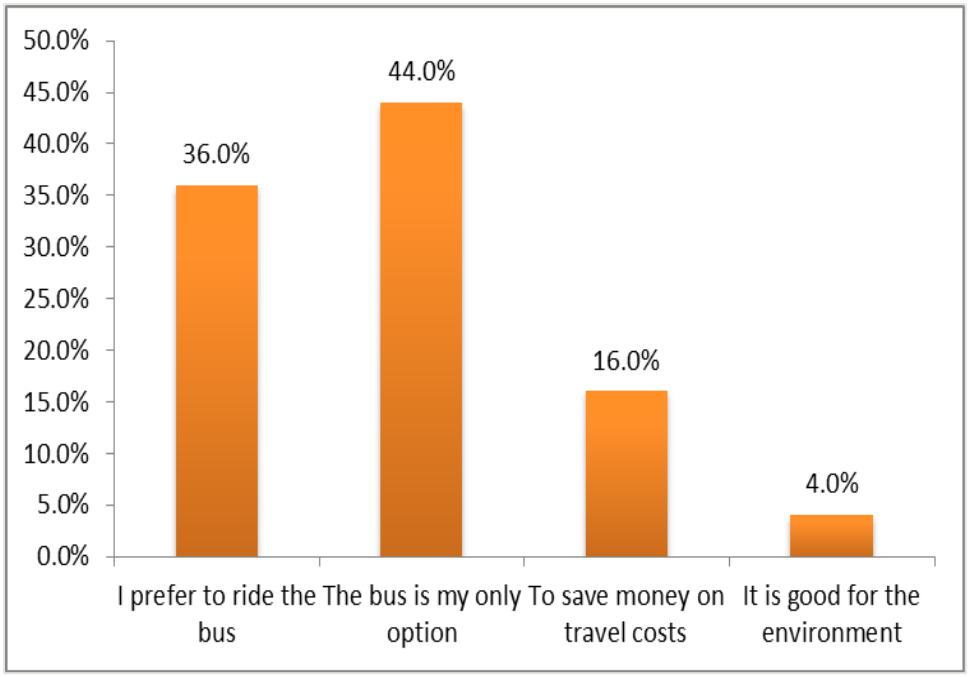


Figure 6-8: Reasons for using El Metro (Weekend)



If El Metro services were not available, approximately half of weekday riders and 38 percent of weekend riders surveyed indicated they would get a ride. Roughly 18 percent of weekday riders and 24 percent of weekend riders indicated they would have to walk if bus service were not available. Of note, 13 percent of weekday riders and 13 percent of weekend riders noted they would not make the trip if bus service

were not available. These findings confirm that transit dependency is high for El Metro riders.

The survey questionnaire also assessed how often riders use El Metro services, as shown in **Figure 6-9** and **Figure 6-10**.

Figure 6-9: El Metro Frequency (Weekday)

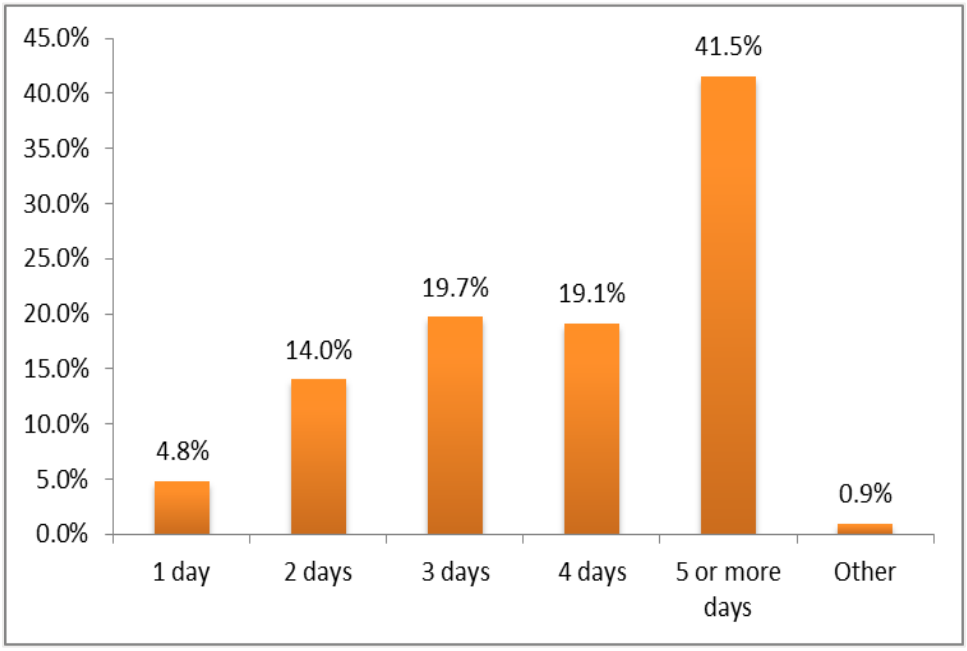
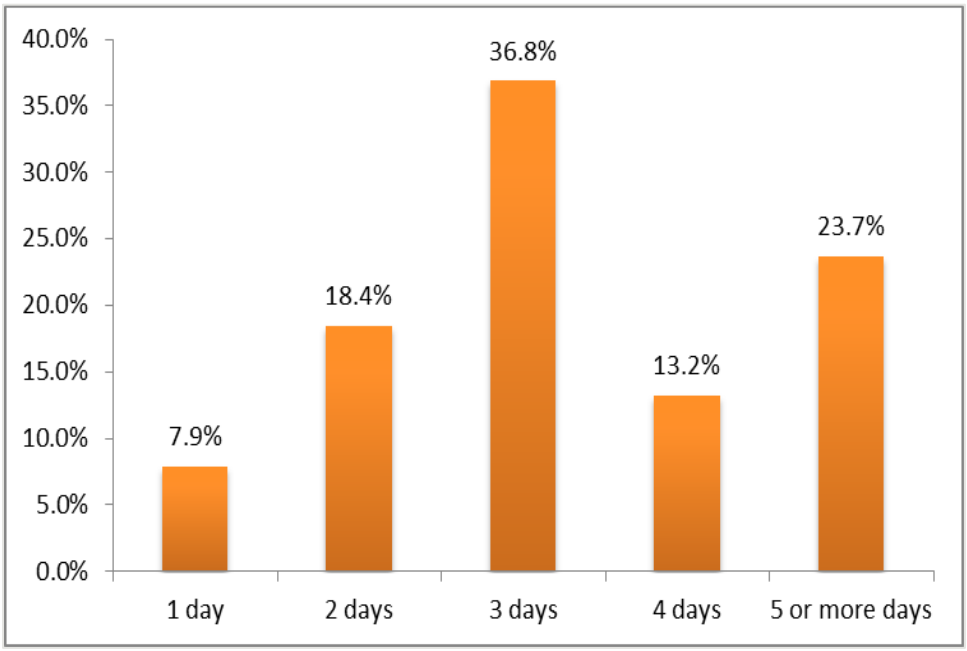


Figure 6-10: El Metro Frequency (Weekend)



Nearly 42 percent of weekday riders and 24 percent of weekend riders surveyed reported using El Metro five or more days per week. Approximately 40 percent of both weekday and weekend riders surveyed indicated that they used El Metro 3-4 times per week. The survey results indicate that riders of both weekday and weekend services are frequent riders of the El Metro system, using it 4 to 5 days per week.

Riders were also questioned as to whether they rode the bus more or less than they had last year. Approximately 57 percent of El Metro weekday riders and 49 percent of weekend riders surveyed reported using the service *about* the same as last year. In addition, 31 percent of weekday riders and 27 percent of weekend riders surveyed reported using the service more than last year. While only 12 percent of weekday riders indicated that they are using the service less than last year, 24 percent of weekend riders indicate they are using the service less than last year. This change to less ridership may be attributed to limited service availability during weekends.

IMPROVEMENT OPINIONS AND CUSTOMER SATISFACTION

The survey questionnaire also assessed customer views on potential improvements to El Metro services, such as potential implementation of bus passes and Google maps applications, as well as overall customer satisfaction on a variety of elements of existing services.

Based on survey results, slightly over one-third (36 percent) of weekday riders and roughly one quarter (25 percent) of weekend riders surveyed would be interested in a weekly bus pass. Approximately 28 percent of weekday riders and 42 percent of weekend riders would be interested in a daily bus pass. A small percentage of weekday and weekend riders (14 percent and 11 percent, respectively) stated that they would not use a bus pass if it were available. Questions on interest in bus passes did not indicate any potential savings if using bus passes, but based on other questions within the survey (e.g., bus riders that use El Metro services to save money) it would be expected that an even higher percentage would utilize bus passes if there were additional costs savings associated with bus passes.

The survey also assessed how current riders obtain information on El Metro routes and services, and overwhelmingly riders indicated that they use brochures and posted schedules (46.3 percent of weekday riders, 51.4 percent of weekend riders) while some riders also use the El Metro website for this information (17.36 percent of weekday riders and 18.9 percent of weekend riders). Other ways respondents obtain information through drivers or friends and relatives. When asked whether riders would use free online services, such as Google Map Transit, to assist them in finding more direct transit routes to reach destinations, nearly 40 percent of weekday riders and 42 percent of weekend riders indicated they would use this service once or more per week.

Finally, survey respondents were asked how well they rated elements of El Metro services, including reliability, frequency, driver courtesy, safety, and overall service

quality. Customer satisfaction ratings for weekday and weekend riders survey are provided in **Table 6-2** and **Table 6-3**.

Table 6-2: Customer Satisfaction (Weekday)

Weekday Service	Excellent	Very Good	Good	Fair	Poor
Reliability of services (buses on time)	44.9%	28.7%	12.3%	5.7%	8.4%
Frequency of service	42.1%	32.4%	15.2%	5.2%	5.2%
Driver courtesy	44.5%	35.4%	13.1%	4.6%	2.4%
Cleanliness of buses and facilities	46.4%	33.0%	15.5%	3.6%	1.5%
Safety/Security	48.3%	33.6%	13.8%	3.7%	0.6%
Condition of Buses	44.2%	32.0%	16.5%	4.6%	2.7%
Bus stop amenities (lighting, shelters, benches)	40.6%	31.5%	14.2%	5.5%	8.2%
Value Received for Fare	40.0%	32.6%	15.4%	6.2%	5.8%
Transit Guide/Website	48.1%	32.7%	14.2%	3.8%	1.3%
Electronic Real-time Kiosks at Transit Center	46.3%	31.7%	16.8%	3.7%	1.6%
Overall Service Quality	43.9%	31.9%	14.1%	6.4%	3.7%

Table 6-3: Customer Satisfaction (Weekend)

Weekend Service	Excellent	Very Good	Good	Fair	Poor
Reliability of services (buses on time)	57.9%	15.8%	7.9%	0.0%	18.4%
Frequency of service	60.5%	26.3%	0.0%	7.9%	5.3%
Driver courtesy	76.3%	15.8%	7.9%	0.0%	0.0%
Cleanliness of buses and facilities	71.1%	21.1%	2.6%	0.0%	5.3%
Safety/Security	71.1%	23.7%	0.0%	2.6%	2.6%
Condition of Buses	73.7%	18.4%	5.3%	2.6%	0.0%
Bus stop amenities (lighting, shelters, benches)	73.7%	21.1%	5.3%	0.0%	0.0%
Value Received for Fare	72.2%	27.8%	0.0%	0.0%	0.0%
Transit Guide/Website	71.4%	22.9%	5.7%	0.0%	0.0%
Electronic Real-time Kiosks at Transit Center	68.6%	22.9%	8.6%	0.0%	0.0%
Overall Service Quality	69.4%	25.0%	2.8%	2.8%	0.0%

Approximately 76 percent of weekday riders and 94 percent of weekend riders surveyed rated El Metro's overall service quality as excellent or very good. Bus stop amenities such as lighting, shelters and benches were noted by weekday riders as an area in need of improvement. Reliability of weekend services is an area noted for improvement for weekend services.

CONCLUSIONS

Survey results confirm results of the technical analysis conducted for this TDP update which indicate that riders of the El Metro system do not have access to a vehicle to make their trip (approximately 89 percent of weekday riders and 90 percent of weekend riders) and rely upon this bus service for their travel needs. Other findings of note indicate that:

- Weekday riders are most reliant on services to take riders from their home to work or school, while weekend riders use the service for a greater variety of travel needs. Shopping and errands are main trip destinations for weekend riders.

- Most riders walk to and from bus stops to access their origins and destinations. Walking distance between origins and destinations for riders is typically less than 5 minutes, with slightly higher walking times for riders on the weekend. Given that weekend service frequency and hours are more limited may explain why weekend walking distances are slightly higher. Overall, this indicates that services are generally well distributed throughout the service area for riders wishing to access El Metro services.

- Approximately 81 percent of weekday riders and 74 percent of weekend riders surveyed use El Metro services 3 to 5 times per week. In addition, 64 percent of weekday riders and 67 percent of weekend riders surveyed indicated that they would use a daily or weekly bus pass if it were made available. Based on these results, daily and weekly bus passes present an opportunity for improvements given the number of repeated users on the system. While the survey did not indicate any cost savings to be obtained by purchasing bus passes, if additional discounts were made available, it can be assumed that an even higher percentage of riders would be likely to use these passes.

- A little less than half of weekday (47 percent) and weekend (50 percent) riders thought that investment in Google Map Transit applications was a wide investment.

- Overwhelmingly, 76 percent of weekday riders and 94 percent of weekend riders surveyed rated El Metro's overall service quality as excellent or very good. Driver courtesy and safety were also highly rated. Approximately 80 percent of weekday riders and 92 percent of weekend riders rated driver courtesy as excellent to very good. Approximately 82 percent of weekday riders and 95 percent of weekend riders rated safety and security as excellent to very good. Respondents on weekday services indicated travel time reliability of buses and bus stop amenities are in need in improvement. Respondents for weekend services indicated that reliability of weekend services might be improved.

CHAPTER 7

RIDE CHECK REVIEW

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Chapter 7. Ride Check Review

This chapter provides information from the ride check analysis conducted for this TDP update. The purpose of this ride check analysis was to observe actual operating conditions on routes and confirm ridership data and technical analysis findings. In addition, ride check information for this TDP provides more detailed insights into top boarding and alighting locations throughout the system and on each route. As improvements to services are considered, this information can serve to support specific improvement recommendations on provision of more direct connections to better serve passenger travel needs and priorities for stop/station level improvements to meet passenger demands and provide more seamless transfer connectivity.

The following sections summarize the ride check methodology and significant system level findings from this analysis. A technical memorandum for the onboard survey and ride check analysis conducted may be found in **Appendix C.**

Ride Check Methodology

A ride check survey was conducted during the fall of 2015 to sample boarding and alighting by transit users for reporting. The Ride Check survey was system-wide study to permit an appropriate level of sampling to reflect weekday, Saturday, and Sunday fixed route service operated by El Metro.

A sampling plan was then developed based on daily ridership to randomly select a series of trip runs on each route to meet the statistical requirement at the prescribed 95 percent confidence interval ± 5 percent. Trip runs were randomly selected to ensure data was collected from each route over the course of the week and to include trip runs for morning peak travel periods, during the mid-day, and for evening peak travel periods on each route. Morning and evening peak periods were determined consistent with El Metro service requirements, from 6:00 am to 9:00 am for morning peak periods and from 3:00 pm to 6:00 pm for evening peak periods.

Sampling ride check counts of El Metro trips were conducted from November 6, 2015 through April 29, 2015. Surveyors were employed to count each boarding and alighting passenger and record all boarding and alightings at the stop level.

Sampling ride check counts of El Metro trips were conducted from November 6, 2015 through April 29, 2015. Surveyors were employed to count each boarding and alighting passenger and record all boardings and alightings at the stop level. A GPS enabled mobile device recorded the location and time (arrival and departure) at each bus stop to ensure accuracy and efficiency in data collection. The data were uploaded daily into a web-based field management system designed to manage surveyor assignments. As assignments were

handed out to surveyors, information was updated by a data collection manager in the web-based field management system. When surveyors returned from an assignment, the data collection manager checked the assignment results for any errors in the data and downloaded the passenger count data from the mobile devices.

Grid density maps were then developed system-wide and by route using boarding and alighting sample data for both weekday and weekend services by route and included all data collection from morning, midday, and evening runs.

WEEKDAY BOARDINGS AND ALIGHTINGS

Figure 7-1 and **Figure 7-2** show grid density maps of system-wide weekday boardings and alightings. As expected, the Downtown Transit Center, which provides direct transfer to all routes, has the highest number of both weekday passenger boardings and alightings in the system. In addition to the Downtown Transit Center, **Table 7-1** and **Table 7-2** shows the next 20 top boarding and alighting locations in the system from observed sample boarding counts.

Table 7-1: Top Weekday Boarding Locations

Rank	Stop Name	Routes Served
1	Downtown Transit Center	All
2	San Bernardo Avenue @ Walmart	1, 2A, 17
3	LCC Main Campus	7
4	San Dario Avenue @ Mall (Logan's Restaurant)	1, 2A, 2B, 12A, 12B, 17
5	San Dario Avenue @ Kmart	1, 2A, 2B, 12A, 12B, 17
6	Mines Road @ Bristol	17
7	Clark Boulevard @ Walmart	11, 13
8	Terminal @ Doctor's Hospital	3
9	Social Security Office	2A, 2B
10	San Bernardo Avenue @ Lafayette Street	2A, 2B
11	E Del Mar Boulevard @ Bartlett Avenue	16
12	Jacaman Road @ Lancer Road	11
13	San Isidro Parkway @ Ann Miller Boulevard	3
14	E Mann Road @ Old Doctor's Hospital	2A, 2B
15	Sierra Vista Blvd @ Corrada	20
16	International Boulevard @ Sauza Street	3, 12B
17	LMC Hospital	8A, 8B
18	E Saunders Street @ HEB Grocery Store	6, 8A
19	Riverside Drive @ Calton Road	15
20	San Francisco Avenue @ Bruni	3
21	S Meadow Avenue @ Boulanger Street	10

Figure 7-1: System-wide Weekday Boardings Grid Density Map

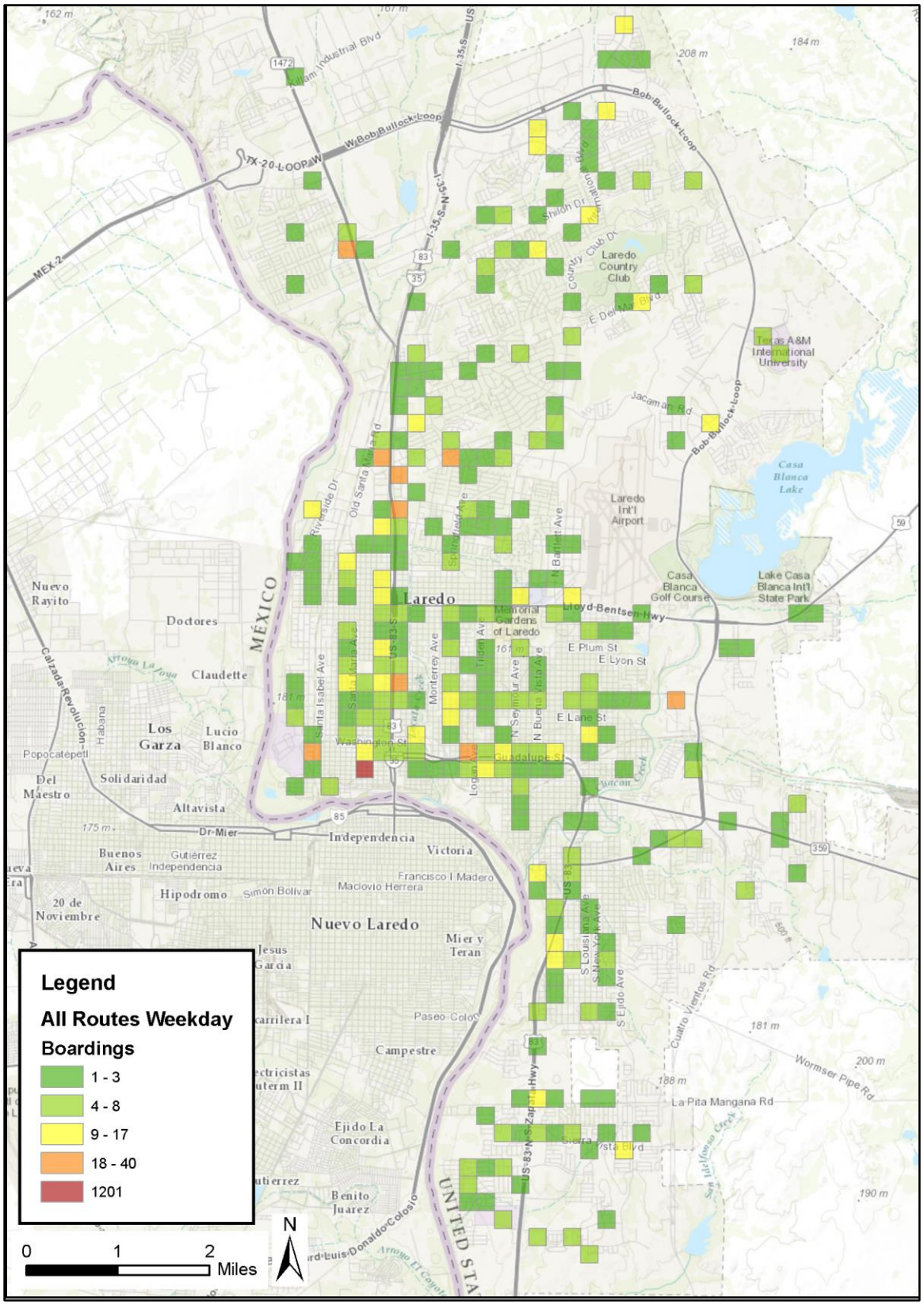

Figure 7-2: System-wide Weekday Alightings Grid Density Map

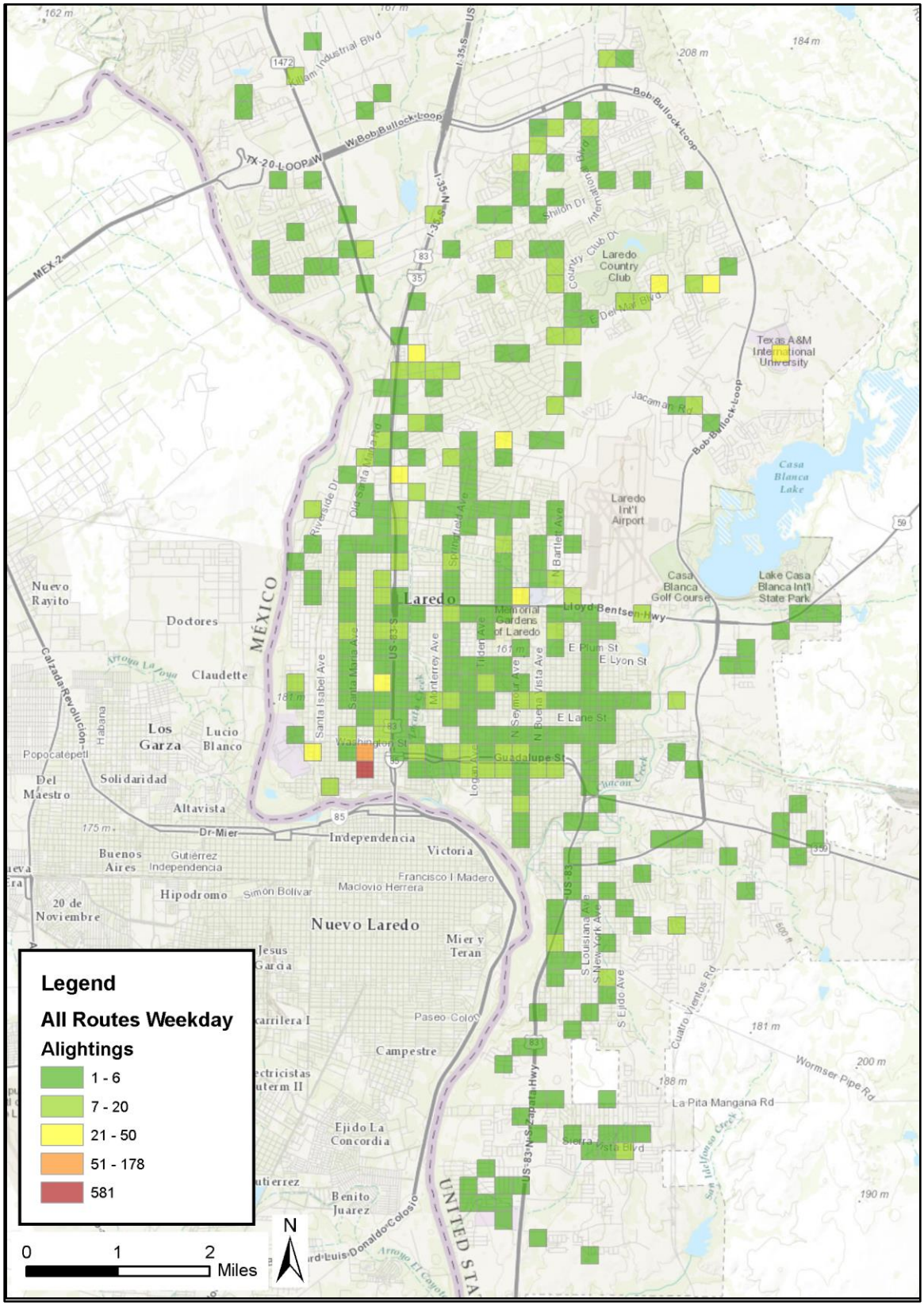

Table 7-2: Top Weekday Alighting Locations

Rank	Stop Name	Routes Served
1	Downtown Transit Center	All
2	Houston Street @ Flores	2A, 2B, 4, 5, 6, 8A, 8B, 9, 10, 11, 12A, 12B, 13, 14, 16, 17, 19, 20
3	Terminal @ Texas A&M Student Center	16
4	San Dario Avenue @ Mall (Logan's Restaurant)	1, 2A, 2B, 12A, 12B, 17
5	LCC Main Campus	7
6	E Del Mar Boulevard @ J.B. Alexander High School	16
7	San Bernardo Avenue @ Bruni	2A, 2B
8	E Del Mar Blvd @ Kind Arthurs Court	16
9	Calle Del Norte Drive @ Northpoint Drive	2B, 12A
10	LMC Hospital	8A, 8B
11	Terminal @ Target (Del Mar Boulevard)	1, 4
12	Jacaman Road @ Arena Boulevard	11
13	McPherson Road @ Sonterra Drive	3
14	San Dario Avenue @ Kmart	1, 2A, 2B, 12A, 12B, 17
15	San Dario Avenue @ Chicago Street	2A, 2B, 12A, 12B
16	Clark Boulevard @ Target	11, 13
17	N Meadow Avenue @ LMC Hospital	3
18	San Dario Avenue @ HEB Grocery Store	2A, 2B
19	San Bernardo Avenue @ Ugarte	2A, 2B
20	E Del Mar Boulevard @ Laguna Del Mar	16
21	W Del Mar Boulevard @ W Village Boulevard	12A, 16

Consistent with findings from onboard survey data, top locations for both boardings and alightings include major retail areas serving both job and shopping needs, other major employment corridors such as Mines Road, and schools. Additionally, social services and hospitals are also key boarding locations identified. These boarding and alighting locations are distributed throughout all routes on the system with greatest concentrations along stops provided for Routes 2A and 2B. System-wide alighting locations are generally similar to boarding locations but slightly more distributed across routes in the system.

Table 7-3 shows the Downtown Transit Center and top 25 other total weekday boarding and alighting locations. The top 25 other boarding and alighting locations were identified to ensure an ability to pick up all major origin and destination locations in the system and provide additional insight into major locations that serve passenger needs.

Table 7-3: Top Weekday Boarding and Alighting Locations (Combined)

Rank	Stop Name	Routes Served
1	Downtown Transit Center	All
2	Houston Street @ Flores	2A, 2B, 4, 5, 6, 8A, 8B, 9, 10, 11, 12A, 12B, 13, 14, 16, 17, 19, 20
3	LCC Main Campus	7
4	San Dario Avenue @ Mall (Logan's Restaurant)	1, 2A, 2B, 12A, 12B, 17
5	Terminal @ Texas A&M Student Center	16
6	San Bernardo Avenue @ Walmart	1, 2A, 17
7	San Dario Avenue @ Kmart	1, 2A, 2B, 12A, 12B, 17
8	San Bernardo Avenue @ Bruni	2A, 2B
9	E Del Mar Boulevard @ J.B. Alexander High School	16
10	LMC Hospital	8A, 8B
11	E Del Mar Blvd @ Kind Arthurs Court	16
12	Calle Del Norte Drive @ Northpoint Drive	2B, 12A
13	San Bernardo Avenue @ Lafayette Street	2A, 2B
14	Social Security Office	2A, 2B
15	E Mann Road @ Old Doctor's Hospital	2A, 2B
16	Terminal @ Target (Del Mar Boulevard)	1, 4
17	Sierra Vista Boulevard @ Corrada	20
18	E Del Mar Boulevard @ Bartlett Avenue	16
19	Mines Road @ Bristol	17
20	N Meadow Avenue @ LMC Hospital	3
21	Clark Boulevard @ Walmart	11, 13
22	San Dario Avenue @ HEB Grocery Store	2A, 2B
23	S Jarvis Avenue @ San Luis Street	10
24	E Saunders Street @ HEB Grocery Store	6, 8A
25	Riverside Drive @ Calton Road	15
26	Terminal @ Doctor's Hospital	3

Houston Street at Flores contains the highest number of total boardings and alightings. This location is where many city services are provided, including City Hall, and totals are particularly high at this location given the number of routes that serve this destination. Other top stop locations include the LCC Main Campus and Texas A&M University, which serves student populations, and shopping near Mall Del Norte.

While many these locations are consistent with individual boarding and alighting top locations identified in the sample counts, there is one location in south Laredo near Zapata Highway (S Jarvis Avenue @ San Luis Street) which did not individually rank as a top boarding or alighting location but is an additional major location for passenger travel. This location is near Kawas Elementary school as well as surrounding residential neighborhoods. Service to this surrounding neighborhood is provided through Route 10,

and covers a perimeter of the surrounding neighborhood. As such, it may be a location where passengers are boarding or alighting to walk to and from home origins that are not directly served by this route.

WEEKEND BOARDING AND ALIGHTING LOCATIONS

In addition to weekday boardings and alightings, the ride check analysis also provided a sampling of all routes providing Saturday and Sunday services. These samples were used to identify similarities and differences in service use patterns between weekday and weekend services.

Grid density maps of system-wide weekend boarding and alighting locations are shown on **Figure 7-3** and **Figure 7-4**. Consistent with weekday findings, the Downtown Transit Center has the highest number of both weekend boardings and alightings in the system.

In addition to the Downtown Transit Center, **Table 7-4** and **Table 7-5** shows the next top 20 weekend boarding and alighting locations in the system from observed sample boarding counts.

Table 7-4: Top Weekend Boarding Locations

Rank	Stop Name	Routes Served
1	Downtown Transit Center	All
2	San Dario @ Mall (Logan's Restaurant)	1, 2A, 2B, 12A, 12B, 17
3	E Gustavus Street @ N Seymour Avenue	11, 13
4	Terminal @ Target (Del Mar Boulevard)	1, 4
5	San Bernardo Avenue @ Walmart	1, 2A, 17
6	Convent Avenue @ Coke Street	3
7	San Bernardo Avenue @ Lafayette Street	2A, 2B
8	San Dario Avenue @ Kmart	1, 2A, 2B, 12A, 12B, 17
9	Guadalupe Street @ Malinche Avenue	14, 19, 20
10	Santa Maria Avenue @ Bruni	1
11	Sierra Vista Boulevard @ Corrada	20
12	Springfield Avenue @ Stewart Street	4
13	Clark Boulevard @ Walmart	11, 13
14	Saunders Street @ Tilden Avenue	3
15	S Zapata Highway @ Frees Street	14, 20
16	S Zapata Highway @ Cleveland Street	9, 14
17	San Bernardo Avenue @ Calton Road	1, 2A, 2B
18	San Bernardo Avenue @ Ugarte	2A, 2B
19	Sierra Vista Boulevard @ S Lucy Avenue	20
20	Terminal @ Doctor's Hospital	3

Figure 7-3: System-wide Weekend Boardings Grid Density Map

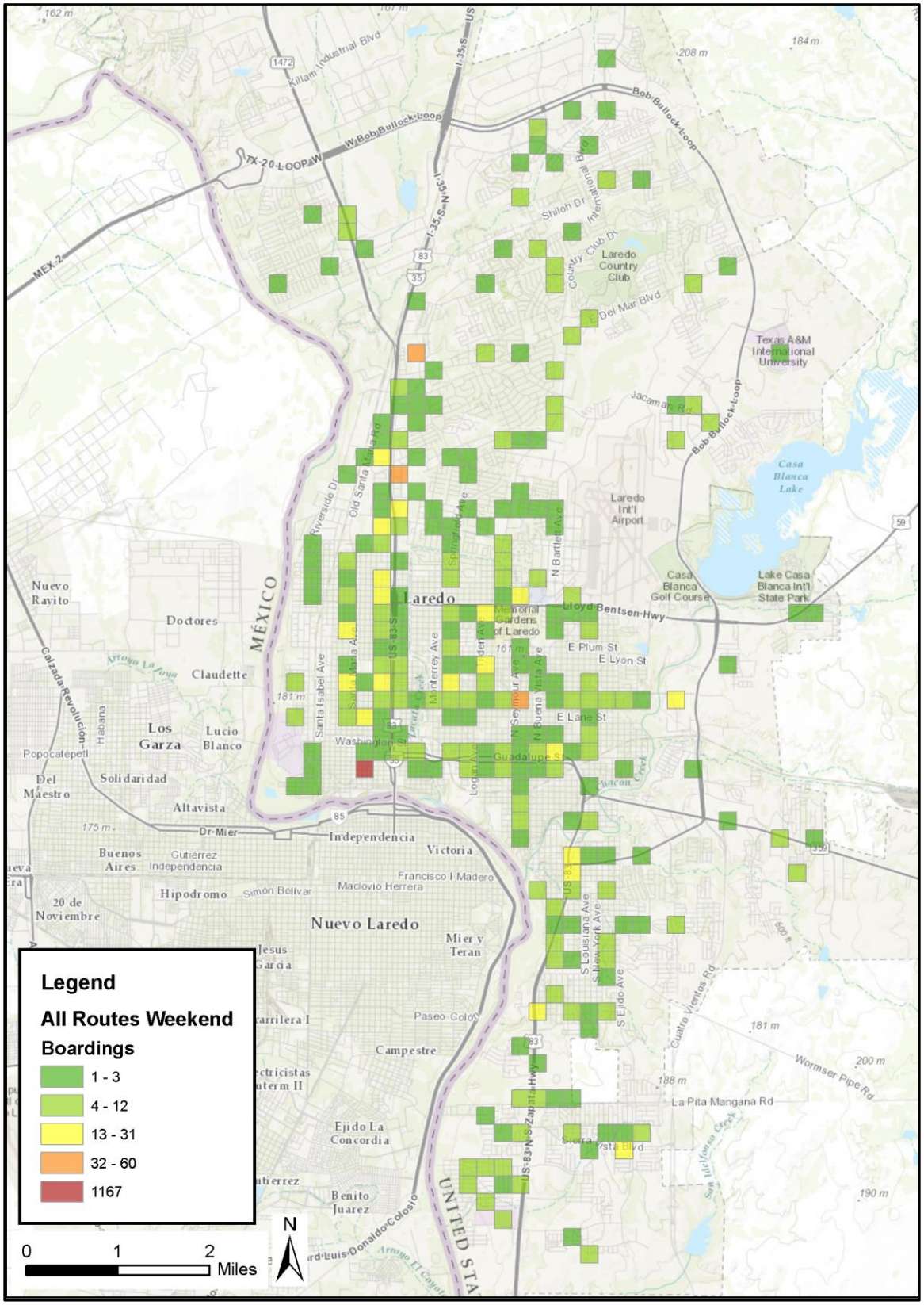

Figure 7-4: System-wide Weekend Alightings Grid Density Map

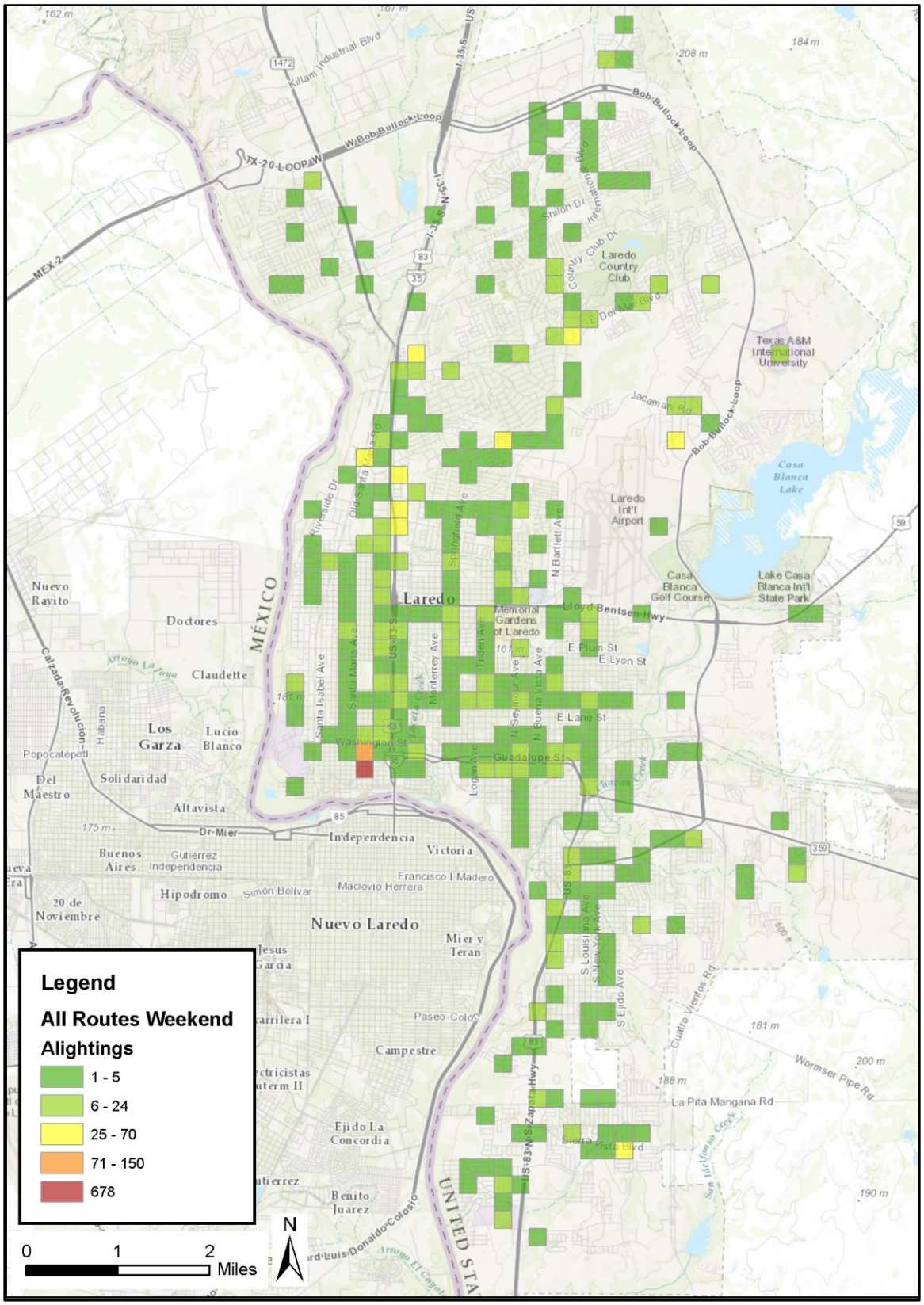

Table 7-5: Top Weekend Alighting Locations

Rank	Stop Name	Routes Served
1	Downtown Transit Center	All
2	Houston Street @ Flores	2A, 2B, 4, 5, 6, 8A, 8B, 9, 10, 11, 12A, 12B, 13, 14, 16, 17, 19, 20
3	San Dario @ Mall (Logan's Restaurant)	1, 2A, 2B, 12A, 12B, 17
4	Terminal @ Target (Del Mar Boulevard)	1, 4
5	Sinatra Parkway @ Laredo Energy Arena	11
6	Calle Del Norte Avenue @ Northpoint	2A, 12A
7	San Dario Avenue @ Kmart	1, 2A, 2B, 12A, 12B, 17
8	Sierra Vista Boulevard @ Corrada	20
9	W Mann Road @ Home Depot	1
10	San Dario Avenue @ HEB Grocery Store	2A, 2B
11	E Del Mar Boulevard @ J.B. Alexander High School	16
12	Sinatra Parkway @ Endeavor Drive	11
13	San Bernardo Avenue @ Ugarte	2A, 2B
14	W Hillside Road @ Yeary Street	2B
15	Jacaman Road @ Arena Boulevard	11
16	San Bernardo Avenue @ Jefferson	2A, 2B
17	San Bernardo Avenue @ Lafayette Street	2A, 2B
18	McPherson @ Country Club Drive	3, 12A
19	Matamoros Street @ San Enrique	5, 6, 8A
20	San Bernardo Avenue @ Park	2A, 2B
21	Guadalupe Street @ Malinche Avenue	14, 19, 20

While many top boarding and alighting locations are similar to those found in weekday counts, weekend trip destinations are more directly associated with home and shopping trips. In addition, the sampled boarding and alighting data indicate more southern and south western Laredo boarding and alighting locations as top bus stop locations. While all routes offer less frequent services and reduced hours of operation during weekends compared to weekdays, southern Laredo and southwest Laredo routes (such as Routes 11, 14, 19 and 20) contain some of the highest boardings and alightings for the system during weekend hours. These results are consistent with the identification of areas with heaviest transit dependent populations within the city.

Table 7-6 shows the Downtown Transit Center top 25 other total weekend boarding and alighting locations and provides additional insight into major locations that serve passenger needs.

Table 7-6: Top Weekend Boarding and Alighting Locations (Combined)

Rank	Stop Name	Routes Served
1	Downtown Transit Center	All
2	Houston Street @ Flores	2A, 2B, 4, 5, 6, 8A, 8B, 9, 10, 11, 12A, 12B, 13, 14, 16, 17, 19, 20
3	San Dario Avenue @ Mall (Logan's Restaurant)	1, 2A, 2B, 12A, 12B, 17
4	Terminal @ Target (Del Mar Boulevard)	1, 4
5	E Gustavus Street@ N Seymour Avenue	11, 13
6	San Dario Avenue @ Kmart	1, 2A, 2B, 12A, 12B, 17
7	Sinatra Parkway @ Laredo Energy Arena	11
8	Sierra Vista Boulevard @ Corrada	20
9	Calle Del Norte Drive @ Northpoint Drive	2A, 12A
10	San Bernardo Avenue @ Lafayette Street	2A, 2B
11	San Bernardo Avenue @ Walmart	1, 2A, 17
12	San Dario Avenue @ HEB Grocery Store	2A, 2B
13	Guadalupe Street@ Malinche Avenue	14, 19, 20
14	San Bernardo Avenue @ Ugarte	2A, 2B
15	Convent Avenue @ Coke Street	3
16	W Mann Road @ Home Depot	1
17	Sierra Vista Boulevard @ S Lucy Avenue	20
18	McPherson @ Country Club Drive	3, 12A
19	S Zapata Highway @ Frees Street	14, 20
20	E Del Mar Boulevard @ J.B. Alexander High School	16
21	Sinatra Parkway @ Endeavor Drive	11
22	W Hillside Road @ Yeary Street	2B
23	Jacaman Road @ Arena Boulevard	11
24	Saunders Street @ Tilden Avenue	3
25	Santa Maria Avenue @ Bruni	1
26	Springfield Avenue @ E Locust Street	4

Taking into account total boardings and alighting samples for all periods of the day, Houston Street at Flores contains the highest number of boardings and alightings after the Downtown Transit Center. This location is served by several routes and provides users access to nearby shopping and other destinations near downtown Laredo. Other top stop locations include major shopping locations such as Walmart, Target, Kmart, and HEB grocery store as well as a more distributed number of locations near residential neighborhoods.

CONCLUSIONS

The ride check review confirms several findings from both the onboard customer survey and technical analysis previously conducted:

- The Downtown Transit Center provides direct linkage between all routes on the system and has the highest number of both boardings and alightings on both weekdays and weekends.
- Top weekday boarding and alighting locations, beyond the Downtown Transit Center, are distributed throughout the city service area, and provide access to major shopping centers for both work and shopping/errands, major employment centers such as Mines Road, colleges such as Laredo Community College Main Campus and Texas A&M University, and important social services such as city government and social security offices as well as medical centers and major hospitals in the area.
- Top weekend boarding and alighting locations share weekday major shopping destinations such as Walmart, Target, Kmart, and HEB grocery store, but also provide more direct connections for passengers between home origins in southern and southwest Laredo and these retail and recreational destinations.

In reviewing the ride check review data alongside technical analysis previously conducted, some additional conclusions were noted:

- While Routes 11 and 13 are underperforming routes, based on previous technical analysis of route performance, these same routes are some of the largest sample boarding and alighting locations for weekend services. Major destinations on these routes include shopping and recreational locations, such as the Walmart or the Laredo Energy Arena.
- While Routes 14, 19, and 20 operate between 90 to 120 minutes for Saturday and Sunday services, these routes are over performing compared to system-wide averages. Weekend sampled ride check data indicate these routes contain many top boarding and alighting locations for heavily transit dependent populations that rely on transit for meeting travel needs.

CHAPTER 8
TRANSIT NEEDS IDENTIFIED

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Chapter 8. Transit Needs Identified

Based on the findings of the demographics analysis, El Metro system-wide and route performance data, on-board surveys and the ride check analysis; as well as public input; this chapter provides a list of identified improvement needs to the El Metro system. While the TDP is focused on a series of short-term improvements that may be considered over the next five years, some identified needs are longer term considerations for system-wide improvements where further planning study may be needed. These longer-term needs are also noted within the chapter to provide El Metro and the MPO with a more comprehensive list of needs and funding for planning.

Proactive planning for the future requires identifying the most comprehensive list of short-term needs. At the same time, it is recognized that improvements often come with associated additional costs and the availability, or not, of local funding will ultimately dictate the timeline and local support for implementation of these improvements. As such, this chapter also provides a planning-level evaluation of the identified needs to help prioritize improvements and help decision makers weigh the benefits and costs of improvements.

Physical Capital Improvement Needs

Physical improvements which require capital funding are further detailed below and include modernization of the vehicle fleet, construction of a new maintenance and operations facility near the regional airport, technological improvements such as bus passes, Google Maps Transit and wi-fi on buses, as well as bus stop improvements.

Vehicle Fleet

The "useful life" of a transit vehicle is defined as the expected period of service, and this time is typically measured from the date a vehicle is placed in revenue service until it is removed from service. Much like a car, the useful life of transit vehicles depends on the type, age, and mileage, and general wear and tear accumulation.

The Federal Transit Administration has established minimum useful life criteria (FTA Circular 5010.D) for buses and vans as detailed in **Table 8-1**. Because most transit vehicle purchases rely upon federal funding (which pays approximately 80 percent of vehicle costs), these standards represent minimum useful life which will allow the agency to apply for federal funding for vehicle replacement. For planning purposes, El Metro uses 15 years as the expected fixed-route vehicle life expectancy. El Metro uses a 10-year life expectancy for demand response van replacement scheduling.

Table 8-1: FTA Useful Life Criteria for Buses and Vans

Bus/Van Vehicle Asset	Size	FTA Useful Life Standards
Large heavy-duty transit buses	35-40'	12 years or 500,000 miles
Small heavy-duty transit buses	30'	10 years or 350,000 miles
Medium medium-duty transit buses	25-35'	7 years or 200,000 miles
Medium light-duty transit buses	25-35'	5 years or 150,000 miles
Light-duty vehicles (vans, sedans, light-duty bus)	< 30'	4 years or 100,000 miles

Source: FTA Circular, 5010.D.

An important consideration regarding vehicle life expectancy is the size of a vehicle. While some public and stakeholder input challenged the need for larger vehicles in the fleet, as noted in the FTA criteria, these vehicles have a greater life span than smaller vehicle purchased and often represent greater savings and ability to maintain the fleet than smaller, shorter life span vehicles.

In addition, it should be noted that orders for new vehicles take approximately 18 months' lead time to arrive and be ready to be put into service. As such, older vehicles will continue to be in service and contribute to the age of the fleet until such time that they are fully replaced.

FLEET CHALLENGES

Based on the fixed-route useful life standards and 15-year vehicle life expectancy, there are 9 additional buses that will need to be ordered through 2021 (the horizon year for this TDP). Three other buses were recently ordered in 2015 and 2016 and are expected to arrive and be placed in service in late 2017 or early 2018. Currently, 12 buses (or roughly 23 percent of the fleet) is between 11 and 14 years old. Replacement of these vehicles is critical to sustaining El Metro services.

While somewhat less significant in the immediate term due to generally good conditions and a larger available fleet that minimizes overuse of any one vehicle, there are also 18 smaller demand response vehicles (vans) that have already reached these FTA minimum useful life standards and are approximately 7 years old. Over the next five years, the need for replacement of this aging fleet will become more critical.

The findings of the analysis indicate that funding available for fleet replacement purchases have not been historically sufficient to match demands. This has resulted in a substantially aged fleet that will take continued incremental investment to address and maintain. Several key points identified regarding the status of the fleet are identified below:

- **Operating costs, specifically maintenance costs, are impacting system cost-effectiveness:** Due to the aging vehicle fleet, higher costs for maintenance work to maintain the fleet have resulted. This directly impacts the cost-effectiveness of the system despite a good level of service coverage in Laredo and stable ridership levels. Based on 2014 National Transit Database reporting, in 2014 there

were 84 major fixed-route vehicle failures and 117 other vehicle failures reported. This is a total of 201 vehicle failures on the fixed-route system. Comparatively, there were 13 major failures and 11 other failures reported for the demand response vehicle fleet in the same year. Frequency of failures is expected to increase as the age and condition of the fleet continues to deteriorate. In addition, comparing 2014 maintenance and operations costs to similar peer agencies in the state, El Metro costs for maintenance and other related operational costs were approximately twice the costs as most of the peer agencies reviewed. With the recent purchase of nine new vehicles that went into service in 2015, these costs have already begun to be reduced. For instance, older parts have significantly more costs than newer vehicles due to lack of supply in older models – recent investments have shown reduction in those parts costs from approximately $1.80 per part to less than $0.07 per part. While these are positive steps, continued investment in the fleet is needed to maximize efficiency of maintenance costs and by extension, cost effectiveness.

- **The ability to repair buses is limited due to the age and status of the fixed-route fleet:** Several fixed-route buses on the system (10) are currently older models and replacement parts are much more difficult to locate and order. This has resulted older vehicles already out of service being retained by the agency to allow for repairs of active service vehicles. In addition, through the life cycle of a vehicle, the costs of repairs often outweigh the capital investment of a new vehicle. This also impacts cost-effectiveness. The recent replacement purchases of nine new buses has helped to reduce retained "spare parts" vehicles and helped to reduce part replacement costs, and additional investments in the fleet replacement are needed to continue to improve repair and replacement costs.

- **Vehicle spare ratios are higher than average:** Based on the 2014 NTD data, the fixed-route system operated 35 buses in maximum service, and had a vehicle fleet of 48 buses. This equated to a "spare ratio", or number of additional buses beyond those needed for maximum operation, of 37 percent. In addition, the demand-response system operates 14 vans in maximum service and has a vehicle fleet of 18 vehicles (a spare ratio of 29 percent).

  Based on most current data obtained from El Metro staff, the system currently operates 38 vehicles in maximum service for the fixed-route system and has reduced its fixed-route vehicle fleet to 44 vehicles, a spare ratio of 16 percent.

  Spare ratios are needed to ensure continued levels of service for a system. The determination on appropriate spare ratios is based on several variables (e.g., fuel type, needs to rotate buses in the system to balance mileage and use, etc.) and depends largely on specific local conditions for proper management of operations. For over 25 years, a 20 percent spare ratio policy has been applied to transit industry fixed-route bus fleets with 50 or more vehicles. In more recent years, analysis of changes in vehicle types, fuel sources, and other factors within

transit agencies across the nation have noted that a more flexible spare ratio (greater or lesser percentages of spare ratios) may need to be established based on specific transit agency conditions.[1]

The recent large spare ratio in the El Metro system was at least partially due to the historic aging fleet and El Metro staff should be commended on recent investments in the fleet and work to reduce the spare ratio. As more strategic investments are made to keep the vehicle fleet in a state of good repair and meeting useful life standards, target spare ratios may be further considered.

- **The lack of available funding to maintain the necessary vehicle fleet, combined with sporadic funding availability, have created an imbalance in future replacement schedules:** El Metro and the City have taken several proactive steps in recent years to leverage newly available and limited duration federal resources, such as American Recovery and Reinvestment Act (ARRA) funds, and address long-term needs in fleet replacement.

In 2015, five newer and more fuel-efficient buses arrived and were placed into fixed-route service and three new paratransit vehicles were placed into service based on these unique funding opportunities. This has helped considerably in addressing a backlog of vehicles that were substantially past their useful life.

While these recent investments have helped in addressing immediate needs in the fleet, it is important to realize that large fleet purchases in any one year may equate to similar needs in future years as new vehicles age and reach their useful life. This can result in greater financial burden to operate and maintain service in some years over others to a point where maintaining service levels is infeasible given potential budget constraints. This is a current issue for the time horizon of this TDP and unless other corrective actions are taken in the future to better balance fleet needs, will continue to be a long-term issue for the system.

Table 8-2 illustrates fixed-route fleet replacement schedule need over the five-year planning horizon of the TDP. Several additional years beyond the TDP horizon are also shown to indicate the need for balancing vehicle replacement needs over time. This schedule assumes the existing number of buses are maintained (i.e., no additional reduction in spare ratio for the system-wide fixed-route fleet) and that buses are replaced on a 15-year schedule. Also, keep in mind that bus replacement arrival times after the date of order can take approximately 18 months. The table below shows replacement needs for the entire fleet in years that are required for ordering new buses so that they can be placed in service at a 15-year age. Buses ordered in 2015 and 2016 are expected to arrive and be available to place into new service in late 2017 or early 2018 at the latest based on order arrival times. Those vehicles would be due for next replacement in 2032/2033.

[1] American Public Transportation Association (APTA). Final Report: Analysis of Bus Fleet Spare Ratios, 2009.

Table 8-2: Fixed-Route Vehicle Replacement Schedule

Proposed Order Date	Fixed-Route Vehicles Requiring Replacement Ordering	Estimated Cost per Vehicle*	Time Horizon
December 2015	2	$475,500	Five Year TDP Horizon
June 2016	1	$475,500	
December 2017	2	$475,500	
November 2018	2	$487,400	
November 2019	3	$499,500	
September 2021	2	$524,800	
October 2023	10	$551,100	Beyond Five-Year Horizon
October 2024	13	$578,600	
October 2026	9	$652,400	

**Note: Replacement costs are planning level costs only, rounded to the nearest $100 and include a 2.5 annual inflation rate based on El Metro vehicle replacement planning level costs. Actual costs will need to be validated in actual replacement years. In addition, based on current funding, it is expected that a mixture of federal, state, and local funds are used to purchases these (80/20 share).*

In addition to the findings on the fixed-route concerning this imbalance, there are also paratransit vehicle fleet imbalances. Seventeen of the 21 vehicles provided on that service were received and went into service in 2009. The minimum useful life for these vehicles is shorter than larger fixed-route buses (five years versus 12 years), and a 7-year replacement schedule is used for planning purposes for these vehicles. **Table 8-3** provides the anticipated vehicle replacement schedule for the paratransit fleet over the next five years. This schedule of the number of replacement vans is expected to continue in future without any further adjustments to fleet spare ratio for the paratransit vans. Increased numbers of replacement vans (3 additional vans) would be needed in 2024 to replace currently new vehicles, and would mean a need to purchase another 6 vans by 2024.

Purchases of the vehicle fleet would likely be made incrementally per year over the longer-term horizon to keep funding availability in line with needs for replacement, but is indicative of the imbalance in fleet replacement that should be considered over time.

Table 8-3: Paratransit Vehicle Replacement Schedule

Proposed Order Date	Paratransit Vehicles Requiring Replacement Ordering	Estimated Cost per Vehicle*	Time Horizon
December 2016/ January 2017	3	$98,000	Five Year TDP Horizon
2018	3	$100,940	
2019	3	$ 103,968	
2020	3	$ 107,087	
2021	3	$ 110,300	

**Costs are from planning-level El Metro vehicle replacement data. Due to the near-term costs anticipated, no inflation factor is anticipated; however, actual costs will need to be verified by El Metro staff as replacement year ordering occurs.*

The immediate replacement need is currently less critical due to the larger spare ratio of demand response vehicles that allow less wear and tear to be placed on any one vehicle, but is expected to become a greater concern in the coming years (by 2024) as the fleet continues to age. Measures may also need to be considered in the TDP horizon to address this replacement year imbalance on the paratransit vehicle fleet as well.

STRATEGIES TO MAINTAIN THE AGING FLEET

In summary, approximately 20 percent of the total existing fixed-route vehicle fleet are due for replacement within the next five years. In addition, the paratransit vehicle fleet (while in good condition currently due to the number of vehicles available) has 18 vans that have or will reach their useful life over the next five years. The following strategies are recommended to address this critical investment need and to proactively plan for more balanced replacement in the future:

- **Combined Vehicle Replacement and Reduction in Spare Ratio:** A combined strategy of investment in replacement vehicles combined with reduction to the spare ratio of vehicles in the fleet is recommended both over the next five years and into the future to address this critical system need. If there are no additional fleet purchases, continuing to operate at the current service levels will be challenging to maintain. To maintain the fixed-route fleet and assuming a relatively stable expenditure of funding to allow for long-term replacement schedules, purchase of at least three to four fixed-route vehicles each year over the five-year TDP horizon is recommended. Additional asset management review and analysis is currently being conducted as part of an overall system-wide Transit Asset Management Plan and will provide estimated needs for paratransit vehicle replacement. Based on initial review, it is anticipated that at least three paratransit van purchases would be needed each year over the next five years in combination with reductions to spare ratios on the demand response fleet.

The average current year through next three-year cost for one fixed-route vehicle is estimated at $467,000 based on most recent El Metro vehicle purchases. The average cost for one demand response van is estimated at $98,000 based on most recent El Metro vehicle purchases. These estimates are for planned budgeting only and may vary slightly based on actual vehicle purchased and price changes at the time of expenditure. Some level-of-inflation rates are provided for planning level years and were based on data from El Metro and their experience in replacement cost increases over time.

- **Greater Monitoring and Reporting on Asset Conditions and Replacement Schedules:** Several measures may also be taken in the near-term to provide better understanding and reporting on condition and age of vehicles which directly relate to this investment need. It is recommended that El Metro staff conduct periodic review (more than once per year) of the condition of vehicles, anticipated remaining useful life, and document needed spare ratios for the system to maintain service. Many of these measures are already reported on for FTA required processes, but can be enhanced through a standalone report as part of the Transit Asset Management Plan. This report can also provide details on successes of the fleet management system over the year, such as reductions in maintenance costs and service failures, to demonstrate to local decision-makers and other funding agencies the effective return on investment for these expenditures. These elements will also serve to support further development of an access management system and, over time, can help to establish performance targets resulting from capital investments.

NEW TRANSIT ADMINISTRATION, OPERATIONS AND FLEET MAINTENANCE FACILITY

The existing El Metro Transit Administration, Operations and Fleet Maintenance Facility is located along Scott Street, just west of downtown Laredo, with residential communities immediately adjacent to the property. The current facility was originally the City's Sanitation Building and was repurposed into the Maintenance and Operations Facility approximately 25 years ago. In the intervening years, with the growth of the fleet and the lack of expansion space due to the adjacent residential uses on the current site, the constraints of the facility are impacting the functional efficiency of fleet maintenance.

To address these constraints and needs, studies were completed to identify a location for a new facility on an existing City-owned property adjacent to the regional airport, which has been purchased with a 100 percent local dedicated sales tax. The 25-acre site is of sufficient area to be configured as the new center of the transit authority with a 45,800 ft² bus maintenance facility, a 6,000 ft² bus fueling and wash facility and covered bus parking for the anticipated fleet. Additionally, a 17,000 ft² administration and bus operations building will house dispatch and training facilities for drivers and service areas for the public.

El Metro and the City have begun to seek funding for this improvement, which will assist in extending the useful life of the fleet, while also providing for operational efficiencies achieved by consolidating Maintenance, Operations and Administrative functions in one location.

The total cost for construction of the new facility, including construction and land acquisition, is estimated at approximately $25.9 million. Construction of the new facility is proposed in two phases. On September 8, 2016, the City and El Metro were awarded $9,875,083 of the $12,750,167 requested from the FY 2016 Federal Transit Administration Bus and Bus Facilities Competitive Program. These funds were requested and approved for Phase I implementation of the project. Additional local matching dollars will be needed. El Metro also expects to apply for Phase II federal funding in coming years.

TECHNOLOGY FOR PASSENGER IMPROVEMENTS

BUS PASS TECHNOLOGY UPGRADES

Currently, due to limited ticketing technology on buses, El Metro does not offer electronic bus passes. Based on coordination with the public, local stakeholders such as college representatives and major employers, and El Metro staff, this technological upgrade for buses would provide a key opportunity for increasing ridership in key existing rider markets (e.g., job commuters and schools, among others).

Many transit agencies across the nation, especially of the size of El Metro, provide daily, weekly, monthly and annual passes as well as other student or employer based bus pass programs which:

- Increase the ease of use of the service,
- Allow for dedicated advance revenue funds from participating organizations, and,
- Support increases in ridership, system performance, and customer satisfaction.

Potential opportunities and benefits of implementing this technology include, but are not limited to:

- Partnerships with Laredo Community College and/or Texas A&M University Laredo Campus to allow student fees to pay for dedicated student passes or to provide discounted student pass programs and further market student ridership
- Partnerships with major employers, including the City and County, that could be marketed to pay for employee passes, provide employer and employee tax breaks, and further develop provision of transit services with demonstrated ridership demands
- Coordination with other social service organizations in Laredo to provide bus pass availability for transit-dependent populations, with particular attention to

providing discounts to elderly and disabled populations that may currently be using more costly paratransit services, but could use the fixed-route service if incentivized and made easier to use.

- Bus passes that can offer discounts to connecting El Aguila rural services, allowing potential for greater cost sharing and enhanced ridership between El Aguila and El Metro

The implementation of bus passes provides dedicated and dependable additional funding to support operations of the system. Further, increases in ridership that are possible with implementation of bus pass programs can result in a greater share of costs for the service being paid for from fares (known as "farebox recovery"). This, in turn, has the potential for enhancing the cost efficiency (such as costs per passenger). Fares will always pay only a portion of the actual costs of operating a service. El Metro currently has a farebox recovery of approximately 25 percent, which from nation-wide experience and review of other transit agency peers, is well performing. Improvements such as these provide opportunities for further increases in ridership and greater cost-efficiency.

To implement this type of payment option, the fare collection equipment on buses would need to be upgraded to accept electronic fare cards. Planning-level costs for this capital expenditure are estimated at approximately $260,000 based on El Metro staff cost estimates. Maintenance costs for maintaining equipment would be provided through existing operating costs, and is expected to be a low-cost maintenance item into the future.

GOOGLE MAPS TRANSIT

Transit on Google Maps is a public transportation planning tool that provides point to point destination data for users using Google Maps. The tool integrates transit stop, route, schedule, and fare information to provide easier trip planning for users. Users could utilize the tool through the El Metro website, the Google Maps website, and most smart phone users can use the cell phone application for Google Maps to plan trips. With this tool, users can type in their origin and desired destination and receive information on routes to use and timing for reaching their destinations.

Implementation of this tool is freely available and El Metro staff are currently working on providing the necessary route and scheduling information to Google to implement this tool. These services are already employed in several cities in Texas, across the United States and abroad. In Texas alone, this includes other peer agencies reviewed in preparation of the TDP, such as Lubbock, Denton, Brownsville, and El Paso. Based on public and stakeholder engagement as well as on-board surveys conducted for the TDP, this tool is widely supported by riders and non-riders alike to provide additional ease of use of the El Metro system to meet their transportation needs.

ON-BUS WI-FI

Free wireless internet access on buses provides riders with additional amenities and can serve as an incentive to attract non-riders. This service is used by many transit agencies across the nation, particularly on longer commuter routes to attract and retain commuters to the public transportation system.

Planning-level costs for this service are between approximately $1,500 to $2,000 per bus for equipment upgrades (wiring and installation) necessary to make the wireless service work. With a fixed-route fleet of 44 buses, this would equate to a capital investment of between approximately $ 75,000 to $ 90,000. Additional costs for monthly services would need to be determined based on further coordination with wireless service providers. In some places across the nation, such as Dayton, Ohio, monthly fees are waived for this public transportation use.

One option for incremental implementation of this improvement could target longer commuter routes and associated buses first or be implemented with any new express/commuter routes that may be implemented in the future (such as Loop 20 Express services or others) and then make this a standard for future bus purchases.

BUS STOP IMPROVEMENTS

Several findings from the TDP analysis and public outreach process indicated the need for short-term improvements and investments into bus stops in the El Metro system. There are approximately 1,400 bus stops in the system and:

- Public input has indicated that because many of the flag pole stops along the system do not indicate routes served, the system is difficult to maneuver without an existing knowledge of routes.
- Approximately 50 percent of all stops do not have benches or shelters, while headways for at least half of all buses operated are more than an hour between next bus service.

El Metro has recently taken steps to better serve customers and provide system information by providing system maps at existing bus stops with shelters. This is an important first step in improving customer awareness and ease of use of the system. Recommended next steps to improve the existing bus stops are further described below. All improvements proposed can start by staff augmenting and regularly maintaining their existing inventory of bus stops to include:

- Updating information on flag pole stops to provide information on routes and/or ways to access Google Map Transit or real-time bus information, as well as updated El Metro logo
- An annual and ongoing assessment of the physical conditions of existing bus stop amenities (flag stops, benches, shelters). This could include a rating system or determinations from field investigations of conditions such as “poor,” “fair,”

"good," and "excellent." This ongoing assessment and documentation will allow staff to prioritize replacement needs and establish more effective budgeting of bus stop improvement needs. This is recommended to become part of the ongoing Transit Asset Management System currently under development.

- An annual and ongoing assessment of new bus stop improvement needs, such as benches or shelters and documenting any physical limitations of adding bus stop amenities (e.g., spacing issues, lack of sidewalk placement/connection, or unacceptable slopes or angles). Stops with greater boardings and alightings, feasibility of improvement, but with existing minimal amenities would be prioritized for new amenities.
- An annual and ongoing assessment of bus stop safety improvement needs, including bus bays, sidewalk connectivity gaps, and other roadway conditions impacting safe bus and pedestrian movement. This information would be proposed to be gathered through the Laredo MPO given its larger transportation system implications and could be shared at least annually with El Metro staff and members of the Laredo MPO technical advisory committee, which include responsible roadway agencies, and will allow for tracking and provision of improvements to enhance safe bus and pedestrian movements as future roadway and roadway maintenance improvements are proposed and designed.

Costs for updating existing bus stop inventories involve use of existing staff time and resources. Due to constrained staff resources, completion of baseline assessments may take several months to one year to complete, but would be expected to take less time once baseline assessments are provided and assessments to update conditions are conducted in future years. Planning level estimated costs for a planning study to inventory safe conditions of the bus stop system are anticipated at $150,000.

Full costs of improvements to bus stops would need to be determined based on these updates to El Metro's bus stop asset management database. Based on current budgeting estimates, new shelters generally cost $2,000 each. Additional bus stop amenities, from new signs to benches or other amenities, are estimated to run between $250 to $500 each depending on amenities included.

OPERATIONAL IMPROVEMENT NEEDS

Short-term operational improvement needs were identified as part of the TDP technical analysis and public and stakeholder input. Short-term route modifications as well as priorities for route improvements and new routes are described based on the findings of the analysis and outreach conducted. Perhaps most importantly from these findings, recommendations for more regular formal mechanisms for monitoring route performance are provided to allow El Metro greater flexibility and responsiveness to customer needs are provided below.

PERFORMANCE MONITORING, BENCHMARKING, AND REPORTING

Based on the analysis of system-wide and route performance (Chapter 5), El Metro is performing well compared to other peer transit agencies within the state. In addition, El Metro and City staff continue to review routes and adjust periodically to respond to changes in route performance and customer needs.

To maintain and enhance performance of the system and routes, it is recommended that El Metro institute more formal performance monitoring of routes and in considering new routes as they are requested. Benchmarks provide quantifiable standards to measure performance over time, and are recommended to be employed immediately. Benchmarks should review routes based on system-wide averages for specific measures such as passengers per revenue hour and passengers per revenue mile. If routes are shown to perform below one standard deviation of these averages, modification or other corrective action for routes should be considered and documented.

Based on the most recent system-wide data and averages provided in **Chapter 5**, these benchmarks would regularly monitor existing or new planned routes so that they meet the following minimum standards:

- 16 passengers or more per revenue hour, and/or
- 1.3 passengers or more per revenue mile

Monthly monitoring by El Metro and City staff on all routes against these benchmarks is recommended and should be shared as part of ongoing internal organizational meetings. If, over the course of a three-month period, route performance is not improved and continues to not meet standards, El Metro and City staff should work to identify potential modifications to routes, consolidation with other routes, flexible services, reduced headways, or other corrective actions, as needed. In some cases, lower performing routes may serve specific transit-dependent riders and this may require careful consideration of performance against meeting the needs of customers with no other options for meeting their travel needs.

Route changes proposed, and reasoning for or against changes, should be documented internally so that El Metro can answer questions from the public, elected officials, and other agency stakeholders on changes or modifications of routes. Route modifications and reasoning should also be shared regularly (at least quarterly) with Laredo MPO technical advisory staff and others to keep them apprised of the performance of the system. This regular monitoring and reporting will demonstrate to the public and stakeholders the commitment of the agency to provide efficient, cost-effective solutions that meet transportation demands in the city.

Over time, El Metro should also consider establishing monitoring mechanisms and separate benchmarks for weekday versus weekend services. Because weekday and weekend ridership levels and needs may be quite different, being able to distinguish standards for performance of weekday and weekend services will further allow El Metro to identify high and low performing routes and adjust, as needed, based on performance and available budgets.

SHORT-TERM ROUTE MODIFICATIONS

The five lowest ridership routes, which also have the highest cost per passenger trip, were identified for modification in the short-term, based on the operational analysis in **Chapter 5**. Proposed changes are designed to be operational cost neutral, replace very low frequency service that serves a small customer base, and will provide more cost-effective service.

The following routes were identified and reviewed in detail for potential changes:

ROUTE 5: TILDEN

This route could be eliminated with the following proposed changes and assumptions:

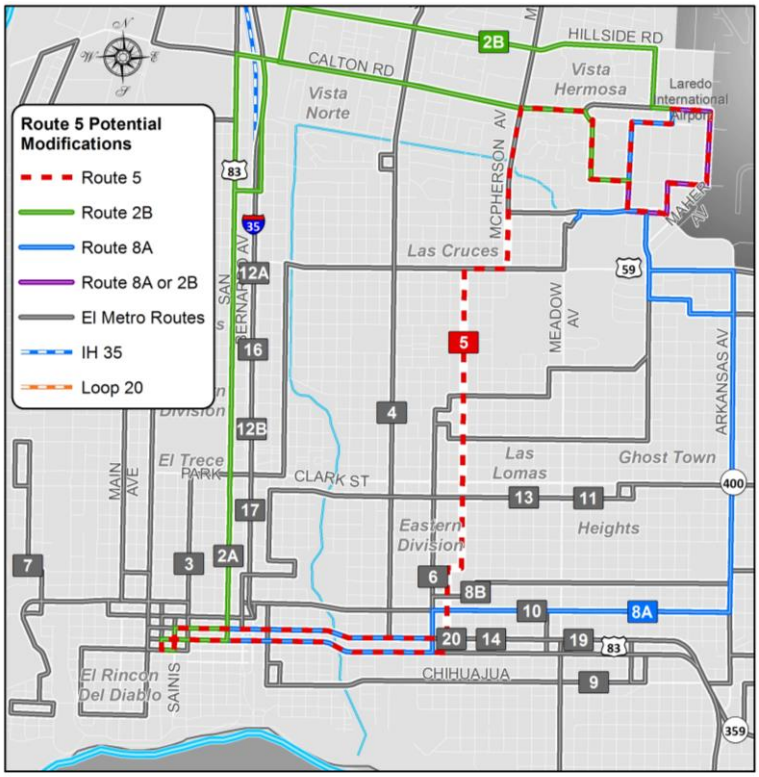
- Multiple routes currently provide service along Guadalupe Street/Chihuahua Street between the El Metro Transit Center and Tilden Avenue
- Route 6 could serve the portion of Tilden Avenue between Guadalupe Street/Chihuahua Street and Lyon Street
  - This is two blocks west of existing Route 5 service
- Route 3 could serve the portion of Tilden Avenue between Lyon Street and Bustamante Street
  - This is five blocks west of existing Route 5 service
- Route 2B could be extended southeast to serve the loop portion of Route 5 north of Bustamante Street and west of the airport

  OR

- Route 8A could be extended north to serve the loop portion of Route 5 north of Bustamante Street and west of the airport

Figure 8-2 shows the current Route 5 alignment and potential modifications to Route 2B and Route 8A alignments.

Figure 8-1: Route 5 Potential Modifications



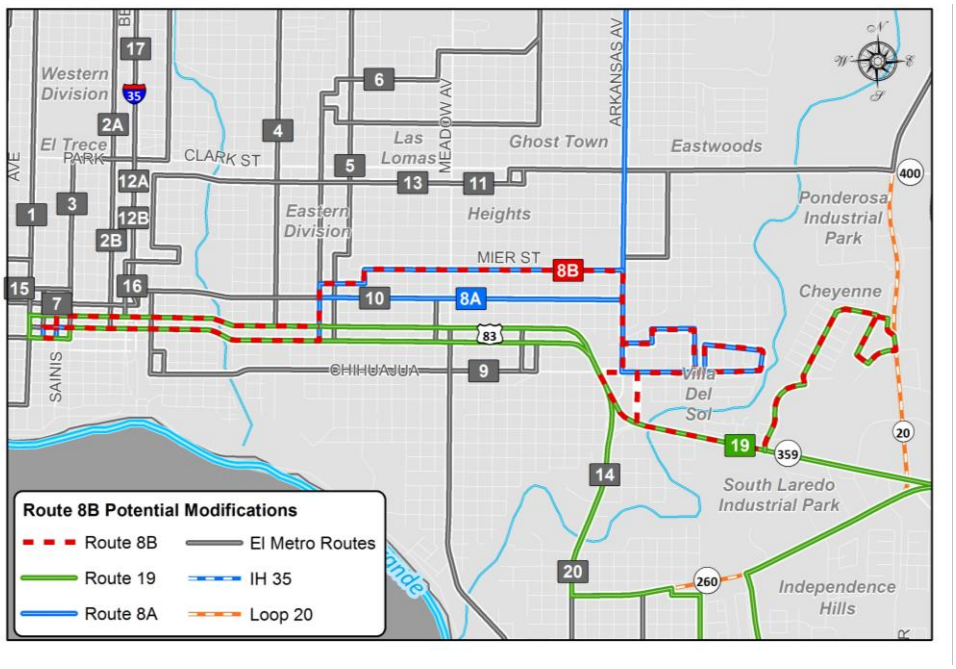
ROUTE 8B: GUADALUPE/VILLA DEL SOL

This route could be eliminated with the following proposed changes and assumptions:

- Multiple routes currently provide service along Guadalupe Street/Chihuahua Street between the El Metro Transit Center and Cedar Avenue
- Route 8A could be reconfigured to provide service along Garfield Street/Mier Street between Cedar Avenue and Arkansas Street
  - This portion of the route could be inbound only, with outbound offered on Corpus Christi Street between Cedar Avenue and Arkansas Street
- Route 8A outbound service could travel south along Arkansas Street to serve the loop portion of Route 8B northeast of Market Street and Arkansas Street near Villa del Sol, and then continue north along Arkansas Street
- Route 19 inbound service could serve the portion of Route 8B along the Dorel Drive loop and along HWY 359, between Dorel Drive and Market Street near Cheyenne

Figure 8-4 shows the current Route 8B alignment and potential modifications to Route 8A and Route 19 alignments.

Figure 8-2: Route 8B Potential Modifications



ROUTE 11: GUSTAVUS/LEA

This route could be eliminated with the following proposed changes and assumptions:

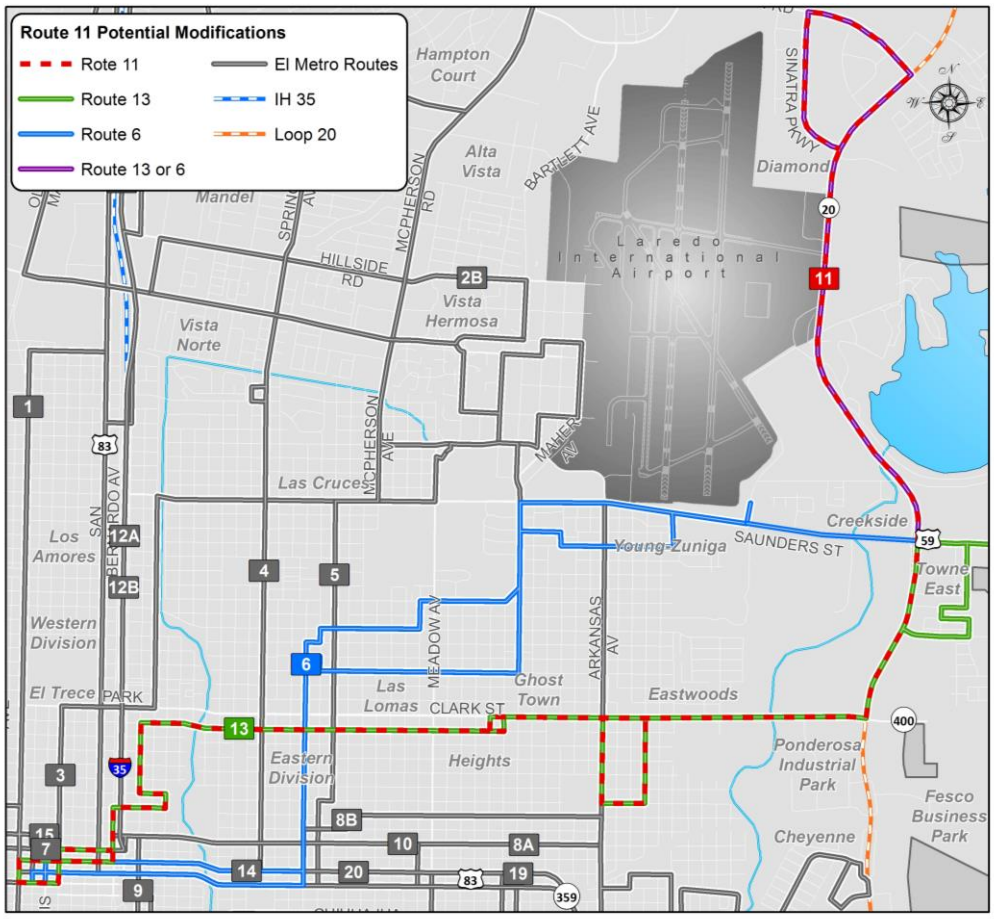
- Route 13 currently provides service similar to Route 11 between the El Metro Transit Center and US 59/Saunders Street
- Route 13 inbound service could be extended north to serve the portion of Route 11 north of US 59/Saunders Street and east of the airport

  OR

- Route 6 service could be extended east and north to serve the portion of Route 11 north of US 59/Saunders Street and east of the airport via Saunders Street

Figure 8-3 shows the current Route 11 alignment and potential modifications to Route 13 and Route 6 alignments.

Figure 8-3: Route 11 Potential Modifications



ROUTE 13: HERITAGE PARK

This route could be eliminated with the following proposed changes and assumptions:

- Route 11 currently provide service similar to Route 13 between the El Metro Transit Center and US 59/Saunders Street
- Route 11 outbound service could be extended to serve the loop portions of Route 13 near Towne East and along US 59/ Saunders Street toward Woodlands and San Jose

  OR

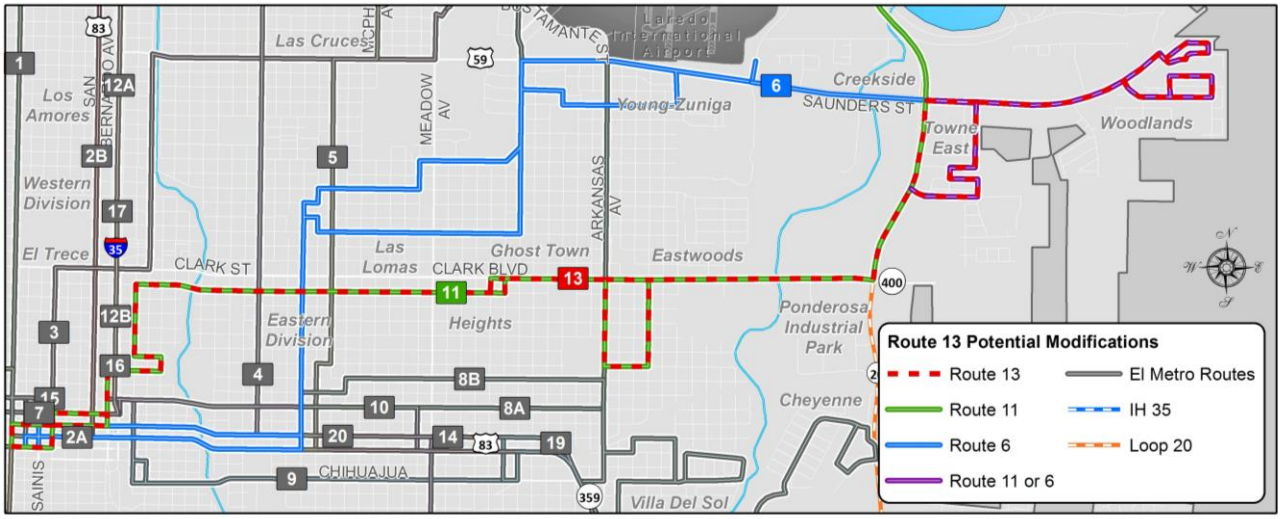
- Route 6 service could be extended to serve the loop portions of Route 13 near Towne East and along US 59/Saunders Street toward Woodlands and San Jose

  OR

- Route 11 outbound service could be extended to serve the Route 13 loop near Towne East, and Route 6 service could be extended to serve the Saunders Street loop

Figure 8-4 shows the current Route 11 alignment and potential modifications to Route 13 and Route 6 alignments.

Figure 8-4: Route 13 Potential Modifications



ROUTE 15: MAIN/RIVERSIDE

The current serpentine routing, limited street network, and narrow roadway geometrics limit the opportunity to effectively modify the route while still maintaining similar boarding locations as exist today. Route 1 inbound service could be modified to provide service along Main Avenue between Washington Street and Chicago Street, but the current Route 1 is one of the best performing routes and modifications to lengthen the route are not recommended. This route should be investigated in detail as part of the next COA to determine what level of service and geographic location should be provided northwest of the El Metro Transit Center.

There are other opportunities to combine portions of routes, based on a planning-level review of the current routes, that were not reviewed in detail, but should be investigated as part of the next COA:

- Route 2A: San Bernardo/Social Security & Route 4: Springfield
- Route 2A: San Bernardo/Social Security & Route 12: Del Mar Express
- Route 2B: San Bernardo/Calton Rd. & Route 5: Tilden
- Route 5: Tilden & Route 8A: Guadalupe/Lane
- Route 6: Cedar & Route 13: Heritage Park
- Route 7 & Route 15: Main/Riverside
- Route 8B: Guadalupe/Villa Del Sol & Route 19: Santo Nino
- Route 9: Market & Route 10: Corpus Christi
- Route 11: Gustavus/Lea & Route 16: Texas
- Route 14: Santa Rita/L.C.C. South & Route 20: Los Angeles

In addition to potential modifications for poor performing routes, there is an opportunity to consolidate routes that have A/B service, as they have very duplicative service

areas. These consolidations could result in improved cost per passenger trip, free up operational costs to increase frequency, and remove any passenger confusion over the A/B service. Each route with A/B service should be reviewed in more detail to identify opportunities to better separate the two services, whether portions are consolidated into other routes or rebranded as separate routes.

The above route modifications and consolidations would be, at worst, operational cost neutral. In many instances, especially if service is eliminated, the proposed route modifications and consolidations may result in a net reduction of operational costs and allow for frequency increases on other existing routes or the implementation of new routes.

FREQUENCY IMPROVEMENTS

Six of the top 11 highest ridership routes, are also performing very well today in terms of cost effectiveness and customer efficiency, based on the operational analysis in **Chapter 5**. The following routes would benefit from increased frequency of service, as allowed by operational funding:

- Route 1: Santa Maria/Target – High frequency service that serves a large customer base
- Route 16: Texas – High frequency service that serves a large customer base
- Route 17: Mines Road – Very low frequency service that serves a large customer base
- Route 20: Los Angeles – Very low frequency service that serves a large customer base

The cost of the above frequency improvements would vary, depending on changes in revenue hours of service, which is a function of frequency change and length of existing routes. The operational cost per revenue hour for El Metro is approximately $84/hour. Frequency changes would also require additional buses to operate the service. The number of buses needed would also vary depending on the frequency change and length of existing route. The current cost of a new bus $467,000, though existing, spare vehicles could also be used. Some of the frequency improvements could be paid for by modifying and consolidating some routes to free up operational funding and increasing the number of available vehicles for service provision.

NEW ROUTES

Findings from the needs analysis and stakeholder and public comments indicate the need for new service outside the core area of Laredo. The following planning-level proposed routes should be further evaluated as part of the next COA and implemented as funding is available.

SERVICE FROM LOCATIONS SOUTH OF HWY 359 TO TEXAS A&M INTERNATIONAL UNIVERSITY

- Existing transit service requires a ride on two different buses with a transfer at the El Metro Transit Center

- Potential service options include:
  - Express service along Loop 20 that is designed to provide new transfer opportunities while also connecting destinations south of HWY 359 to Texas A&M International University and Mines Road. Service characteristics could be tailored to initial need (ex. school hours for Texas A&M International University or shift changes for employees of Mine Road businesses). Transfer points, with potential park and ride lots, could be provided near the following locations:
    - Loop 20/I-83
    - Loop 20/Clark Boulevard
    - Loop 20/Saunders Street
    - Loop 20/Laredo International Airport
    - Loop 20/ Texas A&M International University
    - Loop 20/Del Mar Boulevard
    - Loop 20/International Boulevard
    - Loop20/I-35
    - Loop 20/Mines Road
      - Extending Route 11 from the Laredo Energy Arena to Texas A&M International University along with a transfer opportunity near the connection of I-83 and HWY 359

SERVICE FROM MINES ROAD TO LOCATIONS SOUTH OF HWY 359

- Existing transit service requires a ride on two different buses with a transfer at the El Metro Transit Center

- Potential service options include:
  - Express service along Loop 20, as previously described
  - Express service along Loop 20 and Del Mar Boulevard that is designed to provide new transfer opportunities while also connecting destinations south of HWY 359 to Texas A&M International University and Mines Road. Service characteristics could be tailored to initial need (ex. school hours for Texas A&M International University or shift changes for employees of Mine Road businesses). Transfer points, with potential park and ride lots, could be provided near the following locations:
    - Loop 20/I-83
    - Loop 20/Clark Boulevard
    - Loop 20/Saunders Street
    - Loop 20/Laredo International Airport
    - Loop 20/ Texas A&M International University
    - Loop 20/Del Mar Boulevard
    - Del Mar Boulevard/McPherson Road

    - Del Mar Boulevard/Springfield Avenue Target
  - This route could terminate at the Target or continue as a local service along the existing Route 17 west of I-35

MINES ROAD INDUSTRIAL PARK CIRCULATION

- The Mines Road Industrial Park continues to grow and is a key employment location in Laredo
- Route 17 currently serves a portion of this area but does not circulate through the entire area, providing access to all businesses
- As part of the next COA, this area should be investigated in detail to determine if a circulator route within the industrial area would be successful and what service levels would be required. Such a route could potentially replace the portion of Route 17 along Mines Road and within the Industrial Park if a transfer to other routes is provided at the Del Mar Boulevard/Springfield Avenue Target. Alternatively, Route 17 could terminate along Mines Road with a timed transfer to a circulator route.
- The circulator service could also connect with potential park and ride locations north and east of Mines Road.

The cost to operate a new route would vary, depending on changes in revenue hours of service, which is a function of frequency change and length of existing routes. The most currently available data on operational cost per revenue hour for El Metro is approximately $84/hour. El Metro staff estimated a base assumption of $300,000 per year increase in operating cost if a new route is implemented. New service would also require additional buses to operate the service. The number of buses needed would also vary depending on the frequency change and length of existing route. The current cost of a new bus $467,000, though existing, spare vehicles could also be used.

SHORT-TERM NEEDS EVALUATION

Table 8-4 provides a qualitative assessment of short-term needs identified within this chapter based on El Metro's vision, mission, and goals and objectives of the TDP. While funding investments will need to be further determined and prioritized with local decision-makers and continued coordination between the city, MPO, and state and federal agencies, this evaluation provides some guidance for assisting these decision-makers in prioritizing funding as it becomes available.

Table 8-4: Short-Term Needs Evaluation

Improvement	Maintain Existing Service	Increase Ridership Opportunities	Enhance User Visibility, Comfort and Accessibility	Cost Impact ($ to $$$)
Vehicle Fleet Replacement	High	High	High	$$$
New Operations and Maintenance Facility	High	N/A	N/A	$$$
Bus Stop Improvements	Medium	High	High	$
Bus Pass Technology Upgrades	Medium	High	High	$
Google Maps Transit	Low	Medium	High	N/A
On-Bus Wi-Fi	Low	Low	Medium	$
Short-Term Route Modifications	High	Low	Medium	N/A
Improvements to Existing Routes	Medium	Medium	Medium	$$
Implement New Routes	Low	Medium	Medium to High	$$

The purpose of a TDP is to provide direction over the next five years for potential improvements to the system. At the same time, funding availability will dictate the ability to implement recommendations to address needs. As such, a primary criterion used to evaluate improvements was to rank improvements that are most critical to maintaining the existing service. Following that, additional criteria are provided to allow decision-makers to weigh benefits and costs of improvements.

Critical capital needs for maintaining the system include additional investment in the vehicle fleet to maintain a state of good repair and implementation of the new proposed operations and maintenance facility near the regional airport. Short-term modifications to routes provide further opportunity to address efficiency and cost-effectiveness challenges on existing routes and are ranked high for their ability to continue to maintain the system while streamlining services, as possible, to reduce overlap and respond to lesser demands on the system.

In addition to these critical short-term actions, capital cost upgrades to allow for bus passes are also prioritized. This capital investment can have far-reaching positive impacts to ridership and may provide further potential to partner with schools and universities and major employers and enhance revenues and cost efficiency of the system.

Other low to no-cost improvements and those that are already programmed and under initiation, such as provisions for better signage at bus stop shelters with route information and Google Transit Maps, are also identified priorities due to their low-cost

investment and ability to enhance ridership and use of the system. Additional purchase for flag stop information on routes served is still needed and is also considered a low-cost improvement that can dramatically increase the accessibility and visibility of the system for users.

Finally, several improvements ranked highly on one or more performance measures but should only be considered once critical and more immediate cost-effective actions are taken, including wi-fi on buses, increased service on existing routes, and implementation of new routes.

LONGER-TERM IMPROVEMENT NEEDS

In the process of developing the TDP, several longer-term investments were identified by the technical analysis, public, stakeholders, and El Metro staff which are beyond a feasible five-year implementation plan but are important considerations for improvement needs. These items are summarized below.

In many cases, a first step in achieving these visions for long-term improvements will require further planning study and analysis which will assist local decision-makers in determining the direction for El Metro's future.

TRANSFER CENTER MODEL VS GRID NETWORK MODEL PLANNING STUDY

Through the development of the TDP, several public comments and stakeholder inputs indicated a larger, system-wide service reconfiguration may be beneficial in the future. A major concern for riders and non-riders alike is that the Downtown Transit Center serves as the single hub for all routes in the system. As such, making trips throughout the City often requires longer trip distances and time due to the need for transferring between routes at this center.

The previous TDP and recent planning studies have identified the potential to create additional hubs/transfer centers in north, south, and southeast Laredo to better connect the system and routes. Specific locations for these new transfer centers have not been fully determined, and could require additional capital investment for land acquisition to serve this purpose. The offset to this capital investment could be a reduction of recurring operational costs if routes can be restructured more efficiently and cost-effectively.

Comparatively, several stakeholders have brought up ideas to completely restructure the system from the current hub and spoke model to a grid network. A grid network, as has recently been employed in Houston and other places across the nation, would provide routes on major north-south and east-west roadways instead of making more specific routing to meet different destinations along a route.

Because of the operational configuration of a grid network, transfer hubs and capital costs for establishing new centers may not be required if this structural configuration is preferred. However, best practices and lessons learned from other agencies that have

implemented this type of system structure indicate that this system works best in places where routes are offered at greater frequency. As such, operational costs to successfully implement such a service could be much higher and require more annual investments to operate a more frequent service.

Further planning study is needed to examine each of these system-wide options, identify specific changes to the system-wide routes and structure, and to provide more detailed benefits and costs (both capital and operating costs) for each option and a technical recommendation which will allow local decision-makers to determine the most efficient and cost-effective structuring of the service into the future. A planning study of this size and complexity is estimated at $250,000 to $350,000 and costs will largely depend upon the level of routing detail required of the study.

COMPREHENSIVE OPERATIONAL ANALYSIS

While the TDP looks at overall system-wide performance and options for future growth and development of the system as whole, a comprehensive operational analysis (COA) is a planning study that looks route by route at potential modifications to service that can be implemented in the short-term. Based on findings from the TDP and the need to further determine and gain buy-in from local decision-makers on major structural changes to service noted above, a COA may be initiated to further define incremental routing changes to achieve the future vision of the system. This COA could be conducted in tandem with the structural planning study noted above or could be further delineated once larger decisions are made about the direction of future system-wide changes.

Typical costs for a COA for the size of the system and number of routes to be considered is estimated to cost between $200,000 and $300,000, and costs may be further determined based on the level of routing detail provided by the structural system planning study above as well as level of public and stakeholder involvement necessary.

NEW PARK AND RIDES

Park and rides are parking facilities co-located with transit stops, particularly at the urban fringe, to facilitate transit and rideshare use. In addition, some park and rides also include bicycle amenities for additional intermodal connectivity. Parking is generally free or relatively cheap and can help to serve commuters in outlying areas traveling to more congested urban centers.

Costs for park and rides vary depending on the size and cost of available vacant lots, but are generally a low-cost option comparative to larger investments such as transit centers or downtown structured parking. Often, one-time capital costs for construction can be offset by providing minimal costs to users of the park and ride services.

While El Metro staff and other stakeholders indicated interest in further developing park and ride options, only one potential lot has been identified to date – near Loop 20 and

Clark Boulevard. Because more pressing short-term needs, such as vehicle fleet and baseline customer amenities were identified in the process of the TDP, park and ride improvements are proposed as a longer-term priority for improvement.

Some near-term initial investigation can be conducted by El Metro staff to better define the desired locations and connectivity of park and rides with the future system and may be considered for shorter term improvement as future TDPs are developed. As a first step, El Metro staff could conduct additional investigations on potential and viable park and ride locations that align with long-term improvement priorities and routing.

Areas that could better connect other regional services, such as better connections with El Aguila rural transportation services, may be further considered as well. Building on this park and ride review, additional analysis can be done by El Metro staff to prioritize park and ride locations with the greatest potential for existing and new riders and will allow for refinement of costs necessary for these improvements.

BUS RAPID TRANSIT NETWORK

A Bus Rapid Transit (BRT) Feasibility Study was completed in 2011 in conjunction with the previous TDP update. The primary purpose of the study was to determine the feasibility of BRT in the City of Laredo and identify strategies for implementing the service to address continued growth and resulting in greater transportation demands in the City. Previous studies including the Metropolitan Transportation Plan (MTP) and TDP, as well as the San Bernardo Renovation and Restoration Project identified the potential need for BRT in Laredo and recommended this further study.

Based on the study, a recommended BRT Program was identified (depicted in **Figure 8-5**) which involves a three-phased plan for implementation.

Figure 8-5: Proposed BRT Network

While Phase 1 was proposed over a five-year period at a cost of approximately $7 million with no dedicated transit lanes, less than one percent increase in operating costs annually), full phased implementation was proposed over a 25-year period and capital cost estimates vary considerably (between $28 million and $106 million) depending on the level of dedicated transit lanes and other infrastructure included for each phase.

The proposed BRT network envisioned relies heavily on development of three additional transit centers (north, east, and a southwest transit center), and includes several incremental route changes and consolidations to support four major BRT routes as well as one longer-term BRT route. Several consolidated route recommendations have been included in short-term needs identified above to both prepare the system for future potential implementation of a BRT network on already higher ridership routes and because they provide effective ways to streamline routes and potentially decrease operational costs. The proposed BRT routes are summarized below:

- **BRT on I-35:** from the existing Downtown Transit Center north to a transit center located near Del Mar Boulevard and Springfield Avenue. In the short term, the proposed BRT would operate as express bus in mixed flow on I-35. Future traffic conditions will require either the BRT run in an HOV lane with carpool traffic or a dedicated transit lane of its own.

- **BRT along Loop 20 (Bob Bullock Loop):** begins at the proposed North Transit Center and connects to the proposed Southwest Transit Center by running north on I-35 to Loop 20 (Bob Bullock Loop) where it turns east on Loop 20 (Bob Bullock Loop) and then turns south along US 83 (Zapata Highway) to the proposed Southwest Transit Center. The BRT would operate as express service in mixed flow in the near term as the corridor is currently relatively free flowing. By 2035, the entire corridor will be congested and signal priority and queue jump lanes or a dedicated transit lane may be required.

- **BRT East West:** runs west along US 59 (Saunders Street) from a potential East West Transit Center near Loop 20 (Bob Bullock Loop) and US 59 (East Saunders Street) to San Francisco Avenue where it turns south and continues to Park Street, where it turns east to Convent Avenue. At convent Avenue, turns south again and terminates at the Downtown Transfer Center. This route will require signal priority and possibly queue jump lanes at critical intersections in the near term and likely a dedicated transit lane in the long term, as segments are currently operating at a failing level of service and US 59 (Saunders Street) will be at LOS E or F in the future.

- **BRT South on US 83:** from the existing Downtown Transfer Center travel east along US 83 (Chihuahua Street) and then continue south along US 83 (Zapata Highway) to a proposed Southwest Transit Center near US 83 (South Zapata Highway) and La Pita Mangana Road. Current traffic conditions justify signal priority along US 83 (Guadalupe Street/Chihuahua Street and Zapata Highway) and queue jump

lanes at critical intersections. Congestion is predicted to be worse along this corridor in the future, extending to the southern city limit and a dedicated transit lane may be required to achieve acceptable running times.

- **BRT Loop South (Future):** the proposed BRT would continue down US 83 (South Zapata Highway) from the proposed Southwest Transit Center to Cuatro Vientos and then follow Cuatro Vientos north to SH 359. At SH 359 and US 83 (North Zapata Highway) the following routing options exist: Continue following SH 359 to the existing Downtown Transit Center; or turn south on US 83 (South Zapata Highway) and return to the proposed Southwest Transit Center.

Given the level of operating and capital costs associated with this initiative, existing pressing immediate needs such as modernization of the bus fleet, and the uncertainty of whether the City would prefer to move forward with a modernized hub network or grid network, this future network is proposed beyond the time horizon of this TDP but is recommended to be included in future updates of the long-range transportation plan for the region (MTP).

CONCLUSIONS

The results of the TDP analysis have identified a series of proposed improvements to the system to further develop public transportation in Laredo. A summary of these improvements and anticipated costs are provided in **Table 8-5**.

Table 8-5: Summary of Improvement Needs and Anticipated Costs

Improvement	Short Description	Anticipated Costs
Immediate Priorities to Maintain and Enhance Service		
Aging Fleet Replacement	• By 2021, almost half of the bus fleet will be past its minimum useful life • Over next 5 years: - Budget: 2-3 buses per year 3 vans per year - Needs: 3-4 buses per year 3 vans per year • New routes not possible until existing fleet is replaced	Average Cost One Bus: $467,000 Average cost for One Van: $98,000 Costs Over Next 5 years: • *Scheduled:* $6,120,040 • *Additional Needs*: $4,097,085
Modification of Poor Performing Routes	• Modify poor performing Routes: 5, 8B, 11, 13, 15 • Monthly monitoring of routes using benchmarks • Continual monitoring/modification of routes not performing to benchmarks over 3 month period	• Cost Neutral • Potential for cost savings in modifying/consolidating routes for maximum efficiency

Improvement	Short Description	Anticipated Costs
Automated Bus Pass System	• Improve ease of use of the system • Allow for ability for partnerships with public/private organizations • Provides a low-cost way to enhance ridership	• Anticipated Cost: $260,000 • Additional Maintenance Costs: TBD, considered low impact to existing Operations and Maintenance Budget
Ongoing Priorities to Maintain Existing Service Needs		
New Transit Administration, Operations, and Fleet Maintenance Facility	• Existing facility is over 25 years old and no longer adequate/cannot be expanded at existing location • New location will be a 25-acre facility near airport	Anticipated Total Cost: $25.9 M • Phase 1: $19,750,167 • Phase 2: $6,230,848
Other Low Cost Improvement Priorities		
Bus Stop Improvements	• Many routes do not have signs showing routes served • Half of stops do not have benches or shelters • Half of all routes operate at over an hour between buses	• Average new Shelter: $2,000 • New Bus Sign/Bench:$250-$500 Costs Over Next 5 Years: $602,056 *Additional study of bus stop inventory recommended to further detail cost and schedule*
Google Maps Transit	• Improve ease of use of the system • Attract new riders	Cost Neutral
Secondary Priorities to Improve Service		
Improved Frequency on High Performing Routes	• Improve service levels in high demand areas • Highest Performing Routes: 1,16,17,20	$350,000-$475,000 per route
On-Bus Wi-Fi	• Provides additional customer amenities • May help attract new riders	$1,500-2,000 per bus (plus monthly services)
Implement New Routes	Public has voiced a desire for new routes, such as: • From south to Texas A&M • From south to Mines Road • Mines Road Circulator	$375,000-$475,000 per route
Additional Near-Term Planning Studies Recommended for Addressing Short and Long-Term Needs		
• Bus Stop Inventory/Safe Conditions Analysis: $150,000 • Structural System-Wide Study; $250,000-$350,000 • Comprehensive Operational Analysis:$200,000-$300,000		

Major takeaways from these findings include:

- The most pressing capital investment needs are in the aging fixed-route fleet system. Historically, the needs for replacement of vehicles has outstripped available funding. This has resulted in more costly operations and maintenance challenges, higher than average spare ratios of vehicles, and an imbalance in vehicle replacement schedules that have far reaching implications on continued operations of the system. A minimum of three to four fixed-route vehicles per year over each year of the TDP (2016 to 2021) are recommended and at least two paratransit van purchase each year over the next five years combined with reductions to spare ratio needs of the system are proposed to address this critical need. The average cost for one fixed-route vehicle is estimated at $467,000 based on most recent El Metro vehicle purchases. The average cost for one demand response van is estimated at $98,000 based on most recent El Metro vehicle purchases.

- The existing El Metro Maintenance Facility, located along Scott Street, is past its useful life and is no longer large enough to meet vehicle fleet and maintenance needs. A new, 25-acre facility is proposed near the regional airport to serve as the new center of the transit authority with a bus maintenance facility, bus fueling and wash facility and covered bus parking for the anticipated fleet. Additionally, administration and bus operations building will house dispatch and training facilities for drivers and service areas for the public.

  The total cost for construction of the new facility, including construction and land acquisition, is estimated at approximately $25.4 million. Construction of the new facility is proposed in two phases. On September 8, 2016, the City and El Metro were awarded $9,875,083 of the $12,750,167 requested from the FY 2016 Federal Transit Administration Bus and Bus Facilities Competitive Program. These funds were requested and approved for Phase I implementation of the project. Additional local matching dollars will be needed and will need to be confirmed with El Metro staff.

- Other capital improvement needs identified include technology related investments. This includes upgrades to the existing vehicle fleet to provide bus pass technology upgrades, implementation of a Google Map Transit tool that integrates transit stop, route, schedule, and fare information to provide easier trip planning for users, and wireless internet access on buses.

  - Costs for improvements to provide bus pass capabilities are estimated at $260,000 and represent a capital expenditure that can provide enhanced ridership and partnership opportunities with both universities and employers in Laredo.

  - Google Maps Transit is free and El Metro staff are continuing to work to implement this new user tool that will enhance the visibility and ease of use of

the system for customers. This is a no-cost improvement and once data is in the needed format, it can be freely used in other services as well – Bing, MapQuest, and other similar mapping sites.

  - Planning-level costs for providing wi-fi on buses are between approximately $1,500 to $2,000 per bus for equipment upgrades (wiring and installation) necessary to make the wireless service work. With a fixed-route fleet of 48 buses, this would equate to a capital investment of between approximately $ 75,000 to $ 90,000. Additional costs for monthly services would need to be determined based on further coordination with wireless service providers. Incremental investment in wi-fi for routes that serve longer commute times or specific rider markets may be considered to manage costs for this service.

- Bus stop improvements are also recommended to make the system easier to use for customers, enhance visibility and ease of use, and meet customer demands at busy stops. El Metro has recently purchased improved signage for bus flag pole stops which will now indicate routes served. Additionally, more extensive inventory of the existing bus system to identify and prioritize stops where additional amenities may be provided are recommended in the short-term. Based on current budgeting estimates, new shelters generally cost $2,000 each. Additional bus stop amenities, from new signs to benches or other amenities, are estimated to run between $250 to $500 each depending on amenities included.

- Operational improvement needs were also identified and include the following:

  - Short-term modifications of poor-performing routes are recommended. These short-term improvements may be addressed by consolidating and combining with existing routes to provide more cost-effective service provision and are not anticipated to substantially increase operational costs.

  - Several routes are performing very well today in terms of cost effectiveness and customer efficiency and, as funding is available, may be considered as priorities for additional investment in the system.

  - A number of routes have A/B services or provide some level of duplication of service areas. The reason for this is due to high boarding and alightings and a number of key destinations at these locations, particularly San Bernardo Avenue. While service levels should be maintained to address customer needs in these areas, further ways to consolidate or re-organized these services are recommended to further improve system performance.

  - New routes were recommended through public and stakeholder outreach, including service from the south to Texas A&M University and Mines Road. Additional services, such as services along Loop 20 at key times of day (i.e., commute hours) to start may be considered to address these additional service requests, as operating funds are available.

- In addition to the short-term improvements identified for the TDP update, there were longer-term improvements suggested which offer opportunities for further planning study and incorporation into longer-term visions for improvements.
  - Additional planning studies recommended for the near future to advance these longer-term visions include a study of the system structure and comparing the existing "hub and spoke" model of the system against potential grid network options and conducting more extensive comprehensive operational study of each route based on the findings of the system structure study.
  - A number of existing stop locations currently have high boardings and alightings and serve multiple routes. These locations, particularly San Bernado Avenue at Walmart, and San Dario Avenue at the mall and K-Mart may be considered for super stop improvements and offer potential additional transfer opportunities. As part of the comprehensive operational study, these and any other locations for transfer would need to be further investigated to ensure that planned routes and timing of routes could be provided to offer transfer benefit to passengers.
  - Additionally, it is recommended that El Metro staff work to identify potential park and ride location opportunities in the city and develop recommendations for priority locations that may serve to better connect routes with customer (particularly commuter) demands.
  - Finally, previous planning studies have identified a long-range bus rapid transit network of four major corridors. While further capital and operating funding would be needed to support these investments over a longer term, El Metro staff may also consider recommendations from that study on specific route adjustments that may help further establish and consolidate routing along the identified travel corridors along I-35, Loop 20, Saunders Boulevard, and US 83.

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CHAPTER 9

FINANCE AND IMPLEMENTATION PLAN

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Chapter 9. Finance and Implementation Plan

Chapter 8 outlines a series of needs for further developing and implementing improvements to the El Metro transit system over the next five years. Implementation of these improvement plans will require federal, state, and local funding to both maintain and grow the system to meet the needs identified. Securing this funding will require ongoing coordination with federal, state, and local funding partners. In this way, the TDP serves as a living document that may be revisited and updated as needed to reflect funding availability.

This chapter provides financial needs information for maintaining and improving services over the five-year TDP horizon. It also identifies a series of funding sources that may be pursued in meeting the five-year vision of improvements.

Operational Funding Needs

This section provides further details on planning level costs and needs for maintaining existing service levels and expanding service over time.

Maintaining Existing Service Levels

National Transit Database information from 2010 to 2014 on annual operating costs for El Metro were reviewed in line with annual inflation rates to determine an appropriate escalation rate for projecting 2017 to 2021 operational costs.

A four percent annual escalation rate was used based on Texas Department of Transportation used inflation rates and for consistency with the regional long-range transportation plan. This rate provides a conservative estimate on anticipated cost needs. It is important to keep in mind that operational costs are contingent on a number of factors, including fuel, labor, and maintenance costs among other factors that may fluctuate over time. As such, cost needs should be reviewed at least annually and updated to reflect changes in system costs.

Table 9-1 provides a summary of anticipated operating costs over the five-year TDP horizon to maintain existing service levels, without any of the proposed service changes proposed in this document.

Table 9-1: Baseline Estimated Operational Costs 2017-2021

	2017	2018	2019	2020	2021
Fixed-Route Service	$13,365,197	$13,899,804.98	$14,455,797	$15,034,029.06	$15,635,390
Demand Response Service	$2,497,583	$2,597,486.09	$2,701,386	$2,809,440.96	$2,921,819
TOTAL:	**$15,838,765**	**$16,472,315.24**	**$17,131,208**	**$17,816,456.17**	**$18,529,114**

Planning-level cost estimation for maintain existing service levels above would allow for some near-term improvements to operations, including modifications and streamlining of Routes 5, 8B, 11, 13, and 15 to enhance service level efficiency (these are anticipated to be cost neutral).

Enhanced performance monitoring is also proposed to increase cost efficiency and service effectiveness. Enhanced performance monitoring may offer additional ways to reduce anticipated operational costs noted in maintaining the existing service in the coming years. This is not anticipated to increase operational costs as staff are already assigned to review this information.

VISION NEEDS

As noted within **Chapter 8**, several operational improvements are also proposed to enhance service levels in the near-term. These include increasing service frequencies on high-performing routes in the system and implementing new services to provide enhanced service coverage to Texas A&M International University and Mines Road from south Laredo as well as additional circulator service near Mines Road Industrial Park.

To increase operating frequency and for implementation of new service, additional operational funding will be required. Additional service planning in the form of a Comprehensive Operational Analysis is needed to identify several required inputs for calculating implementation costs. Based on 2014 operating costs and existing routes provided, anticipated cost for each of these types of improvements is expected to be between $350,000 and $475,000 depending upon specific routing determinations.

CAPITAL FUNDING NEEDS

VEHICLE FLEET

Based on conversations with El Metro staff, fixed-route buses are planned for replacement every 15 years and paratransit vans are planned for replacement every seven years. These planned schedules are critical to maintaining baseline conditions in the fleet. In addition, because historic funding levels have not been sufficient to keep pace with fleet demands on the system, periodically over recent years El Metro has been forced to purchase a larger number of vehicles within specified years rather than incrementally replacing vehicles. This has led to a longer-term imbalance in vehicle fleet replacement schedules. While outside of the five-year TDP horizon, replacement needs by 2023 and 2024 are again expected to outstrip available funding. Additional, more incremental investments in the near-term are recommended to help address this imbalance and ensure the longer-term viability of maintaining the fleet.

BASELINE MAINTENANCE OF VEHICLE FLEET

Table 9-2 provides a baseline of fixed-route bus replacement needs over the next five years. These purchases represent a minimum investment need through the planning horizon of the TDP but would not address longer-term replacement schedule

imbalances. Based on data from El Metro, existing costs, and anticipated escalation of purchase prices based on historic expenditures, a 2.5 percent escalation rate for fixed-route buses and a 3 percent escalation rate for paratransit vans were used to estimate capital costs.

Table 9-2: Vehicle Fleet Replacement Schedule (Order Date)

	2017	2018	2019	2020	2021
Fixed-Route Bus Needs	2	2	3	0	2
Cost Per Fixed-Route Bus	$475,463	$487,350	$499,533	$512,021	$524,822
Paratransit Vans Needs	3	3	3	3	3
Cost per Paratransit Van	$98,000	$100,940	$103,968	$107,087	$110,300
TOTAL:	**$1,244,926**	**$1,301,292**	**$1,847,055**	**$321,261**	**$1,405,506**

ADDITIONAL FLEET PURCHASES TO ADDRESS LONGER-TERM IMBALANCES

The fleet purchase needs identified above represent a baseline for vehicle replacement. Additional fleet purchases within the TDP horizon are also recommended to begin to alleviate longer-term imbalances in vehicle replacement.

Anticipated fixed-route bus fleet needs in 2023 (10 buses) and 2024 (13 buses) will be challenging to address without more aggressive purchase planning combined with continual monitoring and adjustments to spare buses available. The proposed additional purchases over the planning horizon, shown in **Table 9-3**, are proposed and, in the short-term may also be used in meeting additional fleet needs for implementing greater frequencies (more buses) on well-performing existing routes and/or new routes.

Paratransit van replacement may continue using the baseline replacement schedule noted above, and spare ratios for the paratransit fleet may be regularly monitored and adjusted to maintain the fleet to FTA recommended ratios.

Table 9-3: Additional Fixed-Route Replacement Recommendations (Order Date)

	2017	2018	2019	2020	2021
Fixed-Route Bus	1	1	1	3	2
Cost Per Fixed-Route Bus	$475,463	$487,350	$499,533	$512,021	$524,822
TOTAL:	**$475,463**	**$499,236**	**$511,717**	**$1,536,063**	$1,074,606

Additional purchases of 4 new buses each year from 2022 to 2025 is also recommended and, in combination with shorter-term aggressive purchases noted in the table above, would serve to resolve imbalances in bus replacement schedules in the longer-term. Keep in mind that with an existing bus fleet and adequate spare ratio (currently totaling 44 buses), and a life span of 15 years for each bus, a balanced replacement schedule requires purchase of three buses roughly every year regardless of the time horizon.

TRANSIT ADMINISTRATION, OPERATIONS AND FLEET MAINTENANCE FACILITY

The total cost for construction of the new facility, including construction and land acquisition, is estimated at approximately $25.9 million. Construction of the new facility is proposed in two phases. Phase 1 is estimated at approximately $19,750, 000 and Phase II is estimated at approximately $6,231,000.

On September 8, 2016, the City and El Metro were awarded $9,875,083 of the $12,750,167 requested from the FY 2016 Federal Transit Administration Bus and Bus Facilities Competitive Program. These funds were requested and approved for Phase I implementation of the project. Additional local matching dollars will be needed and have yet to be determined. El Metro also expects to apply for Phase II federal funding in coming years.

Table 9-4 provides a summary of costs for constructing this new facility. A more precise schedule will need to be developed for this implementation plan and will be based on local funding match decisions.

Table 9-4: New Administration, Operations and Maintenance Facility Costs

	Total Cost
Maintenance Building	*$8,824,255*
Administration Building	*$3,459,034*
Fuel Facility	*$3,797,051*
Site Work	*$9,900,676*
TOTAL:	***$ 25,981,015***

BUS PASS TECHNOLOGY UPGRADES

Currently, due to limited ticketing technology on buses, El Metro does not offer electronic bus passes. Based on feedback from the public, local stakeholders such as college representatives and major employers, and El Metro staff, this technological upgrade for buses would provide a key opportunity for increasing ridership in key existing rider markets (e.g., job commuters and schools, among others).

To implement this type of payment option, the fare collection equipment on buses would need to be upgraded to accept electronic fare cards and a bus card vending machine would be required to dispense cards to passengers. Planning-level costs for this additional capital expenditure are estimated at approximately $260,000 based on El Metro staff cost estimates.

If funded, recommended implementation would begin in 2018, with availability provided by 2019-2020. Maintenance costs for maintaining equipment would be provided through existing operating costs, and is expected to be a low-cost maintenance item into the future.

BUS STOP IMPROVEMENTS PROGRAM

Several findings from the TDP analysis and public outreach process indicated the need for short-term improvements and investments into bus stops in the El Metro system. El Metro has recently taken steps to better serve customers and provide system information by providing system maps at existing bus stops with shelters. This is an important first step in improving customer awareness and ease of use of the system.

Based on current year budget projections from the City of Laredo on bus stop and shelter program needs, and assuming an escalation rate of 3 percent per year to account for increase in pricing over the five-year horizon, a baseline for expenditure on bus stop improvements are provided in **Table 9-5**Table 9-5. This includes costs for capital outlay, as well as contractual and personnel service expenditures.

Additional inventory of the bus stop system is needed to identify additional recommendations for funding improvements to maintain existing bus stop amenities, identify quantity and implementation plan needs for enhancing shelters in the system, and quantify enhanced signage needs in the system.

Table 9-5: Baseline Bus Stops/Shelter Program Needs, 2017-2021

	2017	2018	2019	2020	2021
Bus Stops/Shelters	$113,400	$116,802	$120,306	$123,915	$127,633

OTHER CAPITAL IMPROVEMENTS

Additional technological improvements to the system, including implementation of Google Transit mapping applications and wi-fi on buses, were also identified as system improvement needs. Google Transit implementation is ongoing and is freely available to transit agencies. It requires development of geographic based data for implementation and staff are working to implement this in the immediate term.

Costs for implementation of wi-fi on buses is not included in cost needs estimation due to the uncertainty in how this could be more incrementally and cost-effectively implemented and given the extent of vehicle replacement needs and other more immediate capital cost needs such as bus pass technology improvements and continued investment in the bus stop program. Planning-level costs for this service are between approximately $1,500 to $2,000 per bus for equipment upgrades (wiring and installation) necessary to make the wireless service work. With a fixed-route fleet of 44 buses, this would equate to a capital investment of between approximately $ 75,000 to $ 90,000. Additional costs for monthly services would need to be determined based on further coordination with wireless service providers.

FUTURE YEAR PLANNING NEEDS

Beyond capital and operational improvement needs identified, public and stakeholders also identified longer-term needs such as the potential for re-structuring the system to provide more direct east-west and north-south connections or by further developing transit hub concepts. Additional planning study is needed to ascertain the opportunities and challenges of each of these different concepts for system structure and to ascertain high-level costs and implementation needs of a preferred concept.

Planning funds for this initial study are estimated at $250,000 to $350,000 depending on the level of route by route evaluation conducted for this study. Additional study to conduct a Comprehensive Operational Analysis (COA) and Plan could be conducted for the entire system routes once results from this initial planning study are conducted. **Chapter 8** provides additional estimates on COA costs, but would need to be determined based on the scope and outcome of this initial structural system study.

In addition, to support the identified need to enhance the bus stop and shelter program inventory and improve safety, an inventory of bus stop safety improvement needs, including bus bays, sidewalk connectivity gaps, and other roadway conditions impacting safe bus and pedestrian movement are recommended. Planning level estimated costs for a planning study to inventory safe conditions of the bus stop system are anticipated at $150,000 and would support El Metro efforts to inventory and identify needed bus stop improvements over time.

It is recommended that this study be completed within the five-year TDP horizon, which will allow the next TDP and long-range transportation plan to include more definitive vision and costs for longer term implementation of a system structure that will best meet the needs of the growing population in Laredo.

POTENTIAL REVENUE SOURCES

Funding for baseline and recommended improvements will require assistance from both federal, state, and local funding sources for implementation. Below are a listing and explanation of potential sources for funding allocations to help meet funding needs. All sources listed are helping to fund the existing El Metro system or have been available to El Metro in the past.

FEDERAL/STATE SOURCES

FTA URBANIZED AREA FORMULA GRANTS (SECTION 5307)

The Urbanized Area Formula Funding program (49 U.S.C. 5307) makes federal resources available to urbanized areas and to governors for transit capital and operating assistance in urbanized areas and for transportation-related planning. For urbanized areas with 200,000 in population and over such as Laredo, funds are apportioned and flow directly to a designated recipient selected locally to apply for and receive Federal funds.

The federal share is not to exceed 80 percent of the net project cost for capital expenditures. The federal share may be 90 percent for the cost of vehicle-related equipment attributable to compliance with the Americans with Disabilities Act and the Clean Air Act. The federal share may not exceed 50 percent of the net project cost of operating assistance.

FTA ENHANCED MOBILITY OF SENIORS AND INDIVIDUALS WITH DISABILITIES (SECTION 5310)

This program (49 U.S.C. 5310) provides formula funding to states for assisting in meeting the transportation needs of older adults and people with disabilities when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. Funds are apportioned based on each state's share of the population for these two groups. Formula funds are apportioned to direct recipients; for small urban areas like Laredo, this is the state Department of Transportation. Direct recipients have flexibility in how they select sub-recipient projects for funding, but their decision process must be clearly noted in a state/program management plan.

The federal share of eligible capital costs may not exceed 80 percent, and 50 percent for operating assistance. The 10 percent that is eligible to fund program administrative costs including administration, planning, and technical assistance may be funded at 100 percent federal share.

FTA BUS AND BUS FACILITIES GRANT FUNDING (SECTION 5339)

The Grants for Buses and Bus Facilities program (49 U.S.C. 5339) makes federal resources available to states and direct recipients to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities including technological changes or innovations to modify low or no emission vehicles or facilities.

There are three components to this program. The first is a formula based bus program. The remaining two components include the bus and bus facilities competitive program based on asset age and condition, and a low or no emissions bus deployment program. Competitive elements of this plan may be sought generally in March of each year so long as this program continues. El Metro recently applied for and received competitive grant funding for further implementation of the new operations and maintenance facility. Both regular formula level grants under this program as well as competitive funding allocations will be needed in future years to fund system improvements.

The federal share of eligible capital costs is 80 percent of the net capital project cost, unless the grant recipient requests a lower percentage. The Federal share may exceed 80 percent for certain projects related to the ADA, the Clean Air Act (CAA), and certain bicycle projects.

USDOT TIGER GRANT FUNDING

The Transportation Investment Generating Economic Recovery Program (TIGER) provides competitive based funding for innovative, multi-modal and multi-jurisdictional

transportation projects that promise significant economic and environmental benefits to an entire metropolitan area, a region, or the nation. TIGER funding is provided in the FY 2016 Consolidated Appropriations Act, signed by President Obama on December 18, 2015. The Act does not provide dedicated funding for the planning, preparation, or design of capital projects; however, these activities may be eligible to the extent that they are part of an overall construction project. Anticipated funding application deadlines for future years are anticipated in April of each year.

FLEXIBLE FUNDING PROGRAMS – NATIONAL HIGHWAY PERFORMANCE PROGRAM (23 USC 119)

This program provides formula-based support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS, and to ensure that investments of Federal funds in highway construction are directed to support progress toward the achievement of performance targets established in a State's asset management plan for the NHS. Provisions under these regulations allow for funding of transit projects along the same corridor as the NHS as well as potential for funding intelligent transportation system solutions on the NHS, publicly owned intracity or intercity bus terminals servicing the NHS, and other potential provisions related to flexibility in funding transit improvements.

FLEXIBLE FUNDING PROGRAMS – NATIONAL HIGHWAY PERFORMANCE PROGRAM (23 USC 133)

This program provides formula based funding that may be used by states and localities for a wide range of projects to preserve and improve the conditions and performance of surface transportation, including highway, transit, intercity bus, bicycle and pedestrian projects.

LOCAL AND OTHER NON-GOVERNMENTAL SOURCES

A combination of local governmental as well as non-governmental sources of potential funding are described below. Availability and feasibility of these funding sources would need to be determined by the City.

FARE REVENUE

Passenger revenues represent an important part of the overall transit revenue stream; however, fares for using El Metro and El Lift do not cover the total cost of operating these two transit services. Based on review of most recent data, farebox recovery comprises approximately 24 percent of total operating funds. Comparative to other peer systems in the state, this is well performing recovery rate.

Based on information from El Metro staff, the last fare increase was over five years ago. Current full fares are $1.50 for fixed-route service or $1 for El Lift demand response service. Increased fares will be further considered in the next year to meet funding needs over the next five years, but it is cautioned that ridership levels are often somewhat decreased because of fare hikes, particularly for riders with other transportation options. Based on 2014 ridership levels, and accounting for fluctuations in fare pricing rate differences and potential ridership changes (assumed a 2.5% decrease in ridership as result), an increase of $0.25 may be able to produce an estimated

additional funding of approximately $750,000. It should be noted, however, that it is difficult to predict ridership changes resulting from fare changes and may be expected to fluctuate over time.

TRANSIT CENTER FACILITY REVENUES

The Downtown Transit Center provides revenues from rent, parking and commissions that can be used to assist with local funding.

ADVERTISING REVENUE

El Metro, like many transit systems around the country, has implemented on-board bus advertising and transit shelter programs to provide other sources of non-governmental local funding. Advertising revenues typically cover a small portion of the total transit operating expenses (approximately one percent or less), however they do serve to assist with local matches and lessen burdens placed on the locality. El Metro will seek additional revenue sources by selling advertisements on benches, and is currently evaluating whether to manage advertising sales in house or outsource to an advertising agency.

GENERAL REVENUE FUND

These revenues are committed on an annual in amounts that vary from budget cycle to budget cycle based on local priorities. The potential uneven flow of general funds contrasts with the more predictable revenue flow from dedicated funding sources. The potential revenue allocations feasible and available for this source of funding would need to be determined by the City.

SALES TAX FUNDING

Sales taxes are the most widely used source of dedicated local and regional transit funding because they often provide the greatest yield and stability. This source also is the most broadly accepted funding source for public transportation from a nation-wide standpoint. At the local level, additional sales taxes enacted for public transit generally range from ¼ to 1 percent, and they often exempt or apply lower rates to selected good and services such as food, clothing, and other necessary items.

Chapter 453 of the Texas Transportation Code, *Municipal Transit Departments*, permits cities with municipal transit departments to levy a sales and use tax for public transit of 1) one-quarter of one percent, and 2) one-half of one percent following voter approval in a referendum. The local share of the State's sales tax for all uses cannot exceed 2 percent.

PROPERTY TAXES

Property taxes on land and building value are generally the principal revenue source for local governments with no restrictions on their use. Some transit authorities and local governments use portions of local property taxes to support transit operations.

VEHICLE FEES

The authority to collect vehicle fees is often provided by state governments to local jurisdictions in the form of a local option. The fees can be charged for issuance of titles, licenses, registration, and/or inspection. Revenues from these fees can be dedicated directly to public transportation.

Chapter 451 of the Texas Transportation Code, *Metropolitan Rapid Transit Authorities*, permits the levy of a motor vehicle emissions tax as a transit revenue source. The tax varies by the number of cubic inches of cylinder displacement for the vehicle, and the annual tax per vehicle cannot exceed a specified amount and allows exemptions to the imposition of the vehicle emissions tax for certain vehicle classes.

TAX INCREMENT FINANCING (TIF) DISTRICTS

TIF is a public financing mechanism that can be used to subsidize the costs of redevelopment, infrastructure, and other community improvement projects. A TIF district is established around a defined geographic area and future property tax revenues in this defined area are then used to funding public improvement projects. The borrowing capacity is established by committing all normal yearly future real estate tax increases from every parcel in the TIF district for a long-range period such as 20 years along with the anticipated new tax revenue eventually coming from the project or projects themselves. If the projects are public improvements paying no real estate taxes, all the repayment comes from the adjacent properties within the TIF district. While the use of TIF funds may provide a variety of sources for public improvements, transit projects may be included into overall plans for the TIF district. This could serve as an additional source of funding over time for capital improvements, however use of funding for operational improvements may be limited by how the TIF is established legally.

UNIVERSITY BASED PASS PROGRAMS

This potential funding source allows universities to pay upfront fees to the transit agency for use by students and employees and is used in a variety of cities across the United States. By obtaining these upfront fees, the "U-Pass" program could provide passes for full-time students, and eligible faculty and staff with valid IDs and provides an ability to leverage a key rider market of the El Metro system. Additional coordination with Laredo Community College and Texas A&M International University would be needed to determine proposed implementation of this program, but represents a way to leverage existing and potential user markets in the system to pay for transit service.

PRIVATE EMPLOYER- BASED FUNDING

Similar to the U-Pass Program above, this program could be implemented to allow employers to pay upfront fees for employees using transit services and may be of particular use in future funding of expansion of services in areas like the Mines Road Industrial Park area and further north in Laredo. Local hospitals in the area may also be potential funding partners for this type of program, which promotes healthier and more environmentally friendly options for meeting their transportation needs. With these

programs, often both employers and employees can obtain tax breaks for participation in such programs – an additional incentive for participation.

DEVELOPMENT-BASED TRANSIT ENHANCEMENTS

Working with City and County staff on reviews of site planning, El Metro staff could help to identify bus shelter, sidewalk, bus bays, and other improvements to the bus stop system needed as new development occurs. These costs typically represent smaller investments for developers seeking site plan approval and can help to both support investments in the system and better coordinate land use and transit planning.

TICKET BLOCK PURCHASES

Upgrading to an electronic bus pass system would make ticket block purchases more user-friendly, allowing El Metro to work with additional local and county agencies that provide services to key rider markets. These agencies would be able to pay upfront for passes on the system that they could then distribute to their customers. Potential local agencies might include Housing Authorities and other social services in the City.

SHARED MAINTENANCE FACILITY USE

Working with other local agency departments, such as police services, fire departments or others, an additional source of revenue could come from making washer or other maintenance facility equipment and services available for use by these agencies. Agencies would pay a fee for use of these services, but often these can actually produce savings over additional outlay of capital equipment needs and payment of contracting services. Additional coordination with the Federal Transit Administration would be needed to ascertain any restrictions to implementing this funding strategy.

PROPOSED IMPLEMENTATION PLAN

The following provides an overview of measures to be taken over the five-year TDP horizon to maintain existing services and provide additional improvements identified within the TDP.

YEAR 1 (2017)

- Implementation of fare structure increases to support maintenance of existing service and implementation of new services.
- Implement Google Transit Map application availability.
- Implement routing modifications to Routes 5, 8B, 11, 13, and 15.
- Develop quarterly review and report of route level performance and additional route adjustments made to consecutive quarter low-performing routes. Performance data may be shared with MPO technical committee staff and other local stakeholders to demonstrate commitments to efficiency and cost-effective services.

- Identify and report annual maintenance costs savings based on purchase to date of new fleet.
- Review fleet replacement schedules and coordinate with state and federal agencies on formula based Section 5339 funds over the next five years.
- Based on discussions with state and federal agencies, determine additional vehicle fleet replacement needs and apply for Section 5339 competitive based funding for vehicle replacements.
- El Metro staff to conduct inventory and assessment of bus stop condition and establish maintenance needs program.
- Identify funding needs and potential sources for funding bus pass technology upgrades.
- Coordinate, through MPO committees, ways to incorporate El Metro staff into site plan review for identification of bus stop improvements needed for new development.
- Begin Phase 1 work on Transit Administration, Operations and Fleet Maintenance Facility implementation.

YEAR 2 (2018)

- Continue quarterly review and reporting of route level performance and additional route adjustments made to consecutive quarter low-performing routes.
- Identify and report annual maintenance costs savings based on purchase to date of new fleet.
- Review fleet replacement schedules and coordinate with state and federal agencies on formula based Section 5339 funds over the next five years
- Based on discussions with state and federal agencies, determine additional vehicle fleet replacement needs and apply for Section 5339 competitive based funding for vehicle replacements.
- Based on identified bus stop condition reporting, develop and update five-year maintenance replacement schedule needs and cost estimation for budgeting purposes.
- Initiate and conduct system-wide structural study (1-year study).
- Through MPO committees, continued coordination on ways to incorporate El Metro staff into site plan review for identification of bus stop improvements needed for new development.

- Implement bus pass technology upgrades.
- Coordinate with universities and employers to develop a proposed U-Pass and Employer pass program.
- Identify funding needs for new routes and ridership potential (based on coordination with employers) on new routes.
- Implement increased service on Routes 17 and 20 based on available funding and potential cost savings of operational efficiency monitoring.
- Continue Phase I work on Transit Administration, Operations and Fleet Maintenance Facility implementation. Begin applications process for Phase II funding.

YEAR 3 (2019)

- Continue quarterly review and reporting of route level performance and additional route adjustments made to consecutive quarter low-performing routes.
- Identify and report annual maintenance costs savings based on purchase to date of new fleet.
- Initiate and conduct Comprehensive Operational Analysis (COA) based on findings from the system-wide structural study (1-year study).
- Review fleet replacement schedules and coordinate with state and federal agencies on formula based Section 5339 funds over the next five years.
- Based on discussions with state and federal agencies, determine additional vehicle fleet replacement needs and apply for Section 5339 competitive based funding for vehicle replacements.
- Update five-year maintenance replacement schedule needs and cost estimation for budgeting purposes.
- Based on results of structural system planning analysis, identify capital and operating cost needs for implementation of the preferred structural system. This includes identification of lands for additional transfer hubs or re-routing needs and implementation plan.
- Continued coordination through MPO committees ways to incorporate El Metro staff into site plan review for identification of bus stop improvements needed for new development.
- Implement proposed U-Pass and Employer pass program.

- As funding is available based on previous year review, implement new proposed route services.
- Implement express service in morning and evening peak hours for Routes 1 and 16 based on available funding and potential cost savings of operational efficiency monitoring.
- Continue Phase I work on Transit Administration, Operations and Fleet Maintenance Facility implementation. Monitor Phase II funding needs and sources.

YEARS 4 AND 5 (2020-2021)

- Continue quarterly review and reporting of route level performance and additional route adjustments made to consecutive quarter low-performing routes.
- Identify and report annual maintenance costs savings based on purchase to date of new fleet.
- Review fleet replacement schedules and coordinate with state and federal agencies on formula based Section 5339 funds over the next five years.
- Based on discussions with state and federal agencies, determine additional vehicle fleet replacement needs and apply for Section 5339 competitive based funding for vehicle replacements.
- Update five-year maintenance replacement schedule needs and cost estimation for budgeting purposes.
- Based on results of structural system planning analysis and COA, apply for capital and operating funding programs to fund needed improvements. Document any cost savings anticipated from implementation of system restructuring efforts.
- Continued coordination through MPO committees ways to incorporate El Metro staff into site plan review for identification of bus stop improvements needed for new development.
- Monitor U-Pass and Employer pass program to identify ridership increases and costs and revenues of service implementation.
- As funding is available based on previous year review, implement new proposed route services.
- Implement express service in morning and evening peak hours for Routes 1 and 16 based on available funding and potential cost savings of operational efficiency monitoring.

- Continue Phase I work on Transit Administration, Operations and Fleet Maintenance Facility implementation and begin Phase II finalization, as applicable, based on available funding identfied.