CITY OF LAREDO

Comprehensive Operational Analysis of El Metro

Final Report

December 2021

ACKNOWLEDGEMENTS

The Comprehensive Operational Analysis (COA) was initiated and funded by the Laredo Webb County Area Metropolitan Planning Organization (MPO) in coordination with Laredo Transit Management, Inc. (LTMI), locally known as El Metro. The participants from the MPO, El Metro and other stakeholder groups are listed below. We thank the MPO for funding this project via FHWA PL-112 and FTA Section 5303 funds.

LAREDO & WEBB COUNTY AREA METROPOLITAN PLANNING ORGANIZATION

MPO:

- Juan S. Mendive, Interim MPO Director
- Jason Hinojosa, Transportation Planner III
- Graciela Sosa-Briones, Transportation Planner III
- Julio A. Nino, Transportation Planner III

EL METRO

El Metro:

- Claudia San Miguel, General Manager
- Eduardo Bernal, Planning Manager
- Rosa E. Soto, AGM of Operations
- Sandy Esparza, Operations Manager
- Monica Serna, Transit Center Coordinator
- Monica Garcia, AGM of Administration II
- Adrian Chavera, Chief Safety Officer

Stakeholders:

- City of Laredo
  - City Manager
  - Engineering
  - Planning
  - Public Works
  - Parks and Recreation
- Texas Department of Transportation (TxDOT)
- El Aguila Rural Transportation
- South Texas Development Council (STDC)
- Councilors and representatives
- Laredo Police Department
- Kansas City Southern
- First Transit
- Laredo Independent School District (LISD)
- United Independent School District (UISD)
- Texas A&M International University (TAMIU)
- Laredo Community College (LCC)

The prime consultant for the COA study was Stantec Consulting Services Inc. (Stantec), a global architecture and design consulting firm with over 22,000 employees across the globe and six office locations across Texas. Stantec partnered with Able City, a South Texas-based firm specializing in architecture, urbanism, community and stakeholder engagement for the stakeholder and community engagement tasks, and also partnered with Arthur N. Gaudet & Associates, Inc. (Runcutter) to develop route schedules, vehicle blocking and driver runs.

Stantec

able.city
ARCHITECTURE. URBANISM. CITY MAKING.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

ACS	American Community Survey
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ATP	Active Transportation Plan
CB	Commuter Bus
COA	Comprehensive Operational Analysis
FAS-PAS	Failsafe Audible Signal – Power Assisted Switch
KCS	Kansas City Southern railroad
LCC	Laredo Community College
LEP	Limited English Proficiency
MB	Motor bus
MPO	Metropolitan Planning Organization
NTD	National Transit Database
OTP	On-time performance
PCA	Personal care attendant
TAMIU	Texas A&M International University
TAMP	Transit Asset Management Plan
TDP	Transit Development Plan
TIDF	Transit impact development fee
TIRZ	Tax increment reinvestment zone
TNC	Transportation Network Company
TxDOT	Texas Department of Transportation
UPT	Unlinked passenger trips
UZA	Urbanized Area

EXECUTIVE SUMMARY

Laredo, Texas is unique in many ways and is deeply shaped by and connected to its history. It has a long and intimate relationship with its sister city across the border, is the busiest inland port in the country, and is focused on retaining its small town feel in the face of continued population growth and development. Providing effective and efficient transit services will be necessary to support future growth and will allow Laredo to achieve its vision of mixed-use, walkable neighborhoods with a distinct sense of place and a variety of mobility options that reduce the need for a car.

This Comprehensive Operational Analysis (COA) of El Metro provides a great opportunity to understand the challenges facing El Metro today and develop recommendations to improve the system's service, efficiency, and effectiveness and prepare Laredo for a bright future.

The COA consisted of the following tasks.

- Stakeholder Engagement
- Background Data Analysis
- System Efficiency and Effectiveness Review
- Gap Analysis
- El Metro Network Plan
- Supporting Recommendations
- Implementation Plan
- Scheduling and Runcutting

The goals of the COA and its recommendations are to:

1. Improve transit service
2. Enhance the customer experience
3. Expand El Metro's value to Laredo

Three rounds of engagement were held during the COA process:

- **Round 1: "Listening"** involved the project team of Stantec and Able City listening to stakeholders, the public, and local advocacy organizations about what is working well with El Metro and where El Metro can improve. During Round 1, an online survey was also released to the public and received over 370 responses (231 El Metro riders, 119 non-riders, and 21 El Lift riders)
- **Round 2: "Creating"** involved sessions with stakeholders, the public, and as El Metro staff that acted as input into the network plan and recommendations.
- **Round 3: "Informing"** involved the project team returning to the stakeholders and the public to present the initial routing concepts and receive feedback on ideas such as microtransit.

The stakeholder engagement, background review, analysis of existing conditions and gaps assessment set the groundwork for future recommendations. Key takeaways drawn from the existing conditions analysis that were taken forward in the COA included:

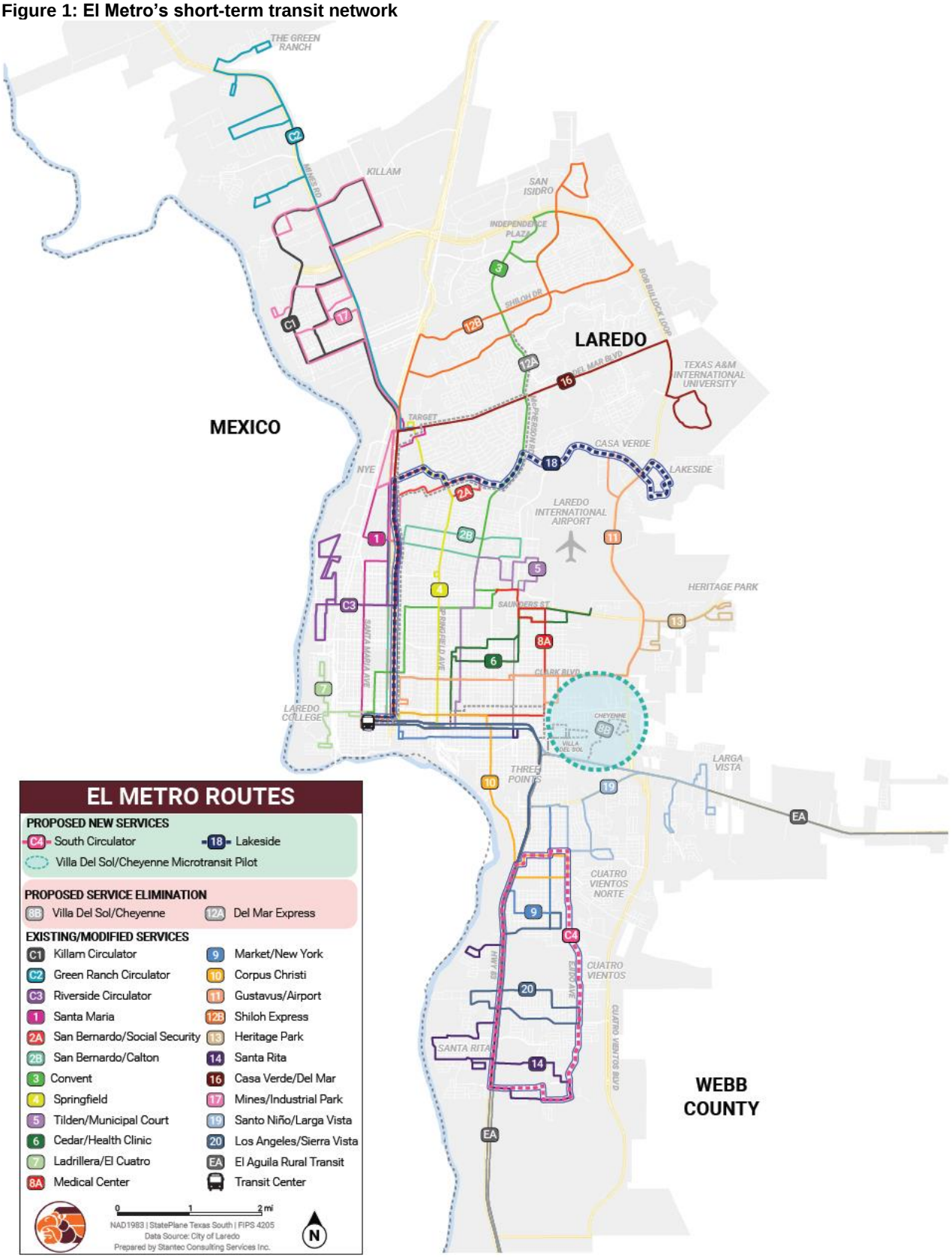
- **Low transit demand outside the downtown area.** The growth and expansion of the City of Laredo outside the downtown area has largely been designed around the private automobile, with segregated land uses, low-density developments, and a disconnected street network. The greatest demand for transit remains downtown where a higher density of people and jobs creates sufficient demand to support productive bus service.

- **Lack of funding to support transit growth.** As the city has grown, El Metro has continued extending its bus routes into new neighborhoods, which has increased route lengths and the overall service area without equivalent funding increases, meaning there has not been enough funding to maintain frequent headways.
- **High fare revenue per boarding and farebox recovery (fixed route).** El Metro currently has a strong farebox recovery ratio and 2019 fare revenues per boarding that exceed all peer agencies.
- **Low frequency across all fixed routes.** El Metro does not operate any routes at headways of 15 minutes or less. The most frequent routes operate at 25 to 35-minute headways and least frequent routes operate at 90-minute headways Monday to Saturday and 120 minutes on Sunday, which is not frequent enough to attract potential riders to the system. To grow ridership, corridors with high transit demand should be identified for frequent transit service and the least frequent routes should operate every 60 minutes. In areas where there is not enough demand to support 60-minute fixed-route service, alternative service delivery strategies such as on-demand transit should be explored.
- **High transit demand from student population.** Despite the low frequency of Route 16 (which serves TAMIU), it is the most productive route in the system with 25.6 boardings per revenue hour in 2019 and 8.5 boardings per revenue hour in 2020. Nearly 18% of daily boardings are on three routes (7, 14, and 16) geared to college students. Improving service and increasing the frequency of routes serving colleges such as LCC, LC South and TAMIU could help grow ridership in the short-term as well as establish a ridership base of young adults who will continue to use transit long-term.
- **Services that do not reflect current demand.** Some existing schedules do not reflect demand for those routes. For example, service to LCC and TAMIU is provided at the same (or similar) frequency on the weekend as weekdays even though most riders do not travel to campus on the weekends. Reallocating weekend resources to other routes with higher demand would likely improve productivity of the network overall.
- **Service reliability impacted by rail crossings.** As the largest inland port in the country, international trade is a defining feature of Laredo and results in a strong presence of freight trains. These trains cause delays to bus service and make it challenging for riders to plan their trips and make it difficult for El Metro to deliver reliable service. More frequent service, real-time travel information, and shorter route lengths can all help customers' ability to reach their destination on time. Monitoring on-time performance would also help El Metro understand the extent to which rail crossings impact reliability and how they can make schedule adjustments to address reliability issues.
- **High paratransit operating costs.** El Metro's paratransit service has the highest operating cost per boarding and second highest operating cost per hour out of its peers. This reveals that there are opportunities to find efficiencies in the way paratransit services are delivered.
- **Decline in ridership due to COVID-19 pandemic.** Since March of 2020, El Metro has experienced a decline in ridership on fixed-route and paratransit services due to COVID-19 restrictions. Most fixed routes experienced decreases of approximately 40-50% from 2019 to 2020 with some experiencing over a 60% decrease. Comparing monthly ridership in January 2020 before the pandemic to January 2021 ridership, El Metro fixed-route service lost 62% of its ridership and El Lift lost 54%. Service hours on El Lift were reduced by 51% in response to the low paratransit demand, whereas there was only a 9% decrease in service hours on El Metro's fixed routes.

El Metro staff, MPO staff, and Stantec staff held four network planning workshops to develop a series of route adjustments based on the analysis and needs assessment, considering customer and community feedback, and considering short-term issues and constraints.

The proposed short-term network including new routes, modifications, and proposed microtransit is shown in **Figure 1**.

Figure 1: El Metro's short-term transit network



The long-term network strategy aims to achieve several of the goals and priorities uncovered through customer outreach and the needs assessment conducted by Stantec, as well as address shortcomings in the short-term network concept. Generally, these recommendations are aimed at:

- Addressing unmet needs that will still be unaddressed after the immediate and short-term service changes.
- Addressing projected growth in population and jobs. Since 2010, Laredo's population has grown by 12.6%[1]. Looking ahead, the total population of Laredo is projected to reach 450,000 by 2045, or an increase of 67% between 2018 and 2045. Considering that transit mode share stands at less than 2% presently, with improved service and population growth, the aim is for El Metro to translate that growth into ridership gains.
- Improving the directness of bus routes to improve travel times, network legibility, as well as reliability.

El Metro should implement distributed hubs so that not all routes go downtown. El Metro needs to develop a transit hub in the north and in the south of Laredo. This need was identified in previous plans, and currently, the north hub is in planning stages. El Metro recently applied for RAISE federal funding for the construction of the north hub, which would come online in 2023. A south hub would also be needed to facilitate service in south Laredo, although this project is still in nascent stages.

The distributed nature of a hub and spoke network design is facilitated by multiple hubs, rather than relying only on a centralized downtown hub, and can help streamline routing and thus trip making. This scheme can also help improve service frequency on select routes. The schematic below demonstrates our proposed concept **(Figure 2**).

Figure 2: Radial, multi-hub, and grid network designs

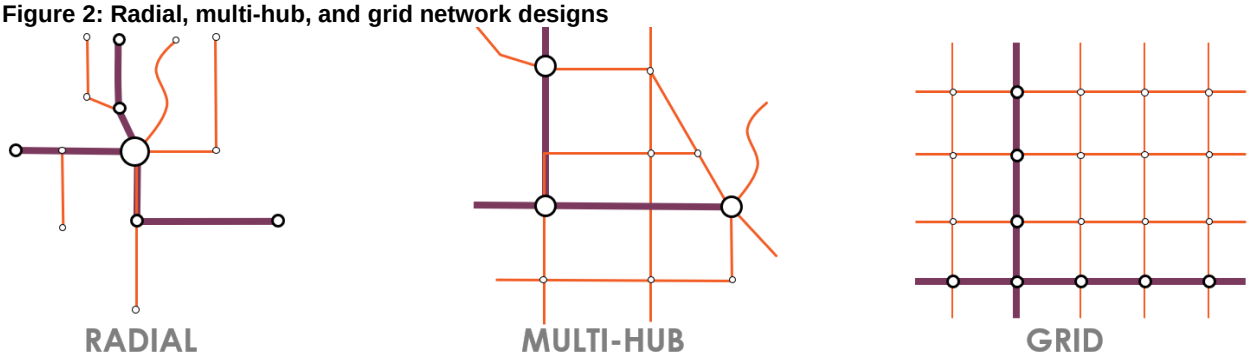


Figure 3 provides a long-term network concept using a multi-hub design strategy and leveraging microtransit rideshare concepts for areas with low productivity routes or transit potential.

[1] https://worldpopulationreview.com/us-cities/laredo-tx-population

Figure 3: Proposed Long-Term Network Concept

Bus route changes, service changes, and other adjustments require ongoing monitoring, as well as supporting strategies and policies to ensure El Metro is consistently meeting its goal of "[…] *providing safe, reliable, courteous, accessible and user-friendly services to its customers.*"

The key goals that guide the recommended actions aim to:

1. Improve transit service.
2. Enhance the customer experience.
3. Expand El Metro's value to Laredo.

Table 1 provides a summary of the 15 proposed actions that will help El Metro achieve the goals of the COA plan.

Table 1: Proposed actions and recommendations

	2022	2023	2024	2025	2026
A. Improve Transit Service					
A1 **Implement route adjustments/service changes**	Implement short-term network changes (route adjustments; south circulator). Identify opportunities to increase frequency on key corridors.	Examine opportunities to improve weekend service; other off-peak service.	New services to be identified through process established by service guidelines.		
A2 **Create targeted data collection and usage plan**	Develop data collection and analysis plan to inform decision making	Hire IT staff to collect and analyze data. Procure vehicles equipped with APC-AVL tech.	Continuously collect, analyze, and use data to inform routing, service levels, and new/removal of service		
A3 **Develop and adopt transit service guidelines**	Develop transit service guidelines. Adopt guidelines.	Use data to refine service guidelines.	Continuously measure service based on guidelines and adjust as needed. Identify priority routes/areas for more (or less) service when resources become available (or constrained).		
A4 **Pilot microtransit services**	Pilot microtransit in 2 areas	Monitor and refine microtransit areas Expand the number of microtransit zones			
A5 **Establish a transit priority infrastructure task force**		Establish task force; develop recommendations	Begin implementation		Study need for BRT
A6 **Design NextGen bus network**	Develop a new network to account for North and South hubs.	Open North Hub; rollout new routes	Adjust routing as needed. Develop South hub design; Apply for funding	Open South Hub; rollout new routes	Adjust routing as needed
A7 **Address shortcomings with El Lift**	Refine software parameters to improve efficiency of trip booking. Train dispatchers and schedulers on optimized software. Increase shared trips.	Targeted travel training of conditionally eligible riders. Leverage investments of improved accessibility of bus stops and fixed-route service infrastructure.	Explore opportunities for increasing the use of fixed-route of riders with disabilities (trip-by-trip eligibility).		
B. Enhance the Customer Experience					
B1 **Develop bus stop program (stop balancing, signage needs, infrastructure and accessibility needs)**	Develop accessibility program for bus stops. Work with marketing plan to improve stop visibility/signage.	Address bus stop accessibility. Develop bus stop consolidation plan.	Removal/consolidation of bus stops.	Install more shelters and benches. Implement stop signage refresh.	
B2 **Conduct a fare strategy and revenue study**	Pilot fare promotions, like free ride Fridays, discounts for cyclists using transit, and others.	Launch next generation fare study for policy review, fare media, and revenue generation (parking, etc.).	Implement fare changes		
B3 **Improve accessibility for all ages and abilities and improve customer service**	Develop training plan for operators with input from accessibility advisory committee. Develop customer service training plan for operators.	Rollout training for operators on accessibility and customer experience.	Bus stop accessibility improvements	Continual training refresher sessions.	
B4 **Improve trip planning ability**	Improve customer information -- Update route map and materials online. Improve bus tracking. Update GTFS feed regularly.		Coordinate with marketing and branding strategy to create unified look for schedules, maps, etc.		
C. Expand El Metro's Value to Laredo					
C1 **Implement a marketing plan to enhance brand recognition**	Identify quick-wins for improved brand visibility, marketing, and community partnerships. Implement quick-wins.	Develop a branding and marketing strategy. New Marketing staff (or planner/marketer) will lead this effort. Develop new website.	Implement strategies and recommendations from marketing plan (new bus stop signage, etc.)	Refresh El Metro's brand.	
C2 **Implement a working group of El Metro staff and city partners**	Working with the MPO, City, and others, establish transit working group to foster transit-first vision in Laredo. Examine improved opportunities for connections with El Aguila and Greyhound.	Require developers to include travel demand strategy. Enhance integration with cycling by launching a Bike+Transit study.	Expand biking parking at major bus stops/transfer areas. Collaborate with the City on Active Transportation campaigns.	Working with Owners having jurisdiction, determine ways to regulate parking supply/price to encourage more transit use. Collaborate with the City and other stakeholders to beautify key bus stops.	
C3 **Implement partnership programs for passes and transportation with schools, employers, events, etc.**	Develop a long list of potential partners, like schools, business, events, and others that travel demand and would benefit from bus service. Narrow down the list.	Design a partnership strategy by stakeholder group (can leverage the marketing strategy/plan development)	Implement partnership strategies, like discounts, bus pass promotions, event shuttles, etc.		
C4 **Expand El Metro's internal resources and capacity**	Hire at least two key staff: a planner/marketing role; Transit Systems Manager	Develop a Strategic Plan that provides a vision and path for the agency, including an analysis of roles, staffing, etc. Hire dedicated marketing staff. Hire dedicated grants/funding staff.	Develop and launch training programs for staff in technical roles, with appropriate refreshers.		

To monitor the implementation of the plan, we propose several key performance indicators (KPIs). The KPIs are objective measures of performance against each of the goals. Several of these are already captured by El Metro for NTD reporting and are proposed for inclusion in El Metro's service guidelines (**Table 2**).

Table 2: KPIs and COA Goals

A. IMPROVE TRANSIT SERVICE
• Increase average speed • Improve frequency and span of service • Increase access to destinations
B. ENHANCE THE CUSTOMER EXPERIENCE
• Increase ridership and boardings per revenue hour • Increase customer satisfaction and on-time performance • Increase vehicles in good state of repair • Increase percent of stops and vehicles that are ADA-compliant • Decrease travel cost as a share of income
C. EXPAND EL METRO'S VALUE TO LAREDO
• Increase transit mode share • Increase operating and capital funding per capita/decrease net cost per passenger boarding • Increase partnerships with local stakeholders • Increase fare programs with local employers and school districts • Increase percent jobs and population within ½-mile of frequent transit service • Decrease per capita VMT

El Metro, working alongside the City of Laredo, the MPO, and TxDOT, together with the private sector and community advocates all have a role to play in developing a resilient, equitable and sustainable mobility network for Laredo.

1 INTRODUCTION

Laredo, Texas is unique in many ways and is deeply shaped by and connected to its history. It has a long and intimate relationship with its sister city across the border, is the busiest inland port in the country, and is focused on retaining its small town feel in the face of continued population growth and development. Laredo is also unique in terms of its transportation history, where the Laredo streetcar (the first electric street railway system in operation in the country west of the Mississippi River) flourished from the time of its construction in 1889 to when the automobile became the primary choice of transportation in the early twentieth century.

While the private automobile is the dominant mode choice for residents and visitors of Laredo, El Metro's transit system is a vital mobility provider with over 2.5 million fixed-route and dial-a-ride paratransit trips in 2019. However, like most transit agencies across the country, El Metro has seen decreases in ridership amid rising operating costs over the last decade. The steady decline in ridership over the last several years, paired with the recent and rapid ridership decline related to the COVID-19 pandemic, means El Metro must evaluate its current service delivery and determine how transit can be delivered more effectively and efficiently.

1.1 ABOUT THE PROJECT

Providing effective and efficient transit services will be necessary to support future growth and will allow Laredo to achieve its vision of mixed-use, walkable neighborhoods with a distinct sense of place and a variety of mobility options that reduce the need for a car. This Comprehensive Operational Analysis (COA) of El Metro provides a great opportunity to understand the challenges facing El Metro today and develop recommendations to improve the system's service, efficiency, and effectiveness and prepare Laredo for a bright future.

The COA consisted of the following tasks.

- Stakeholder Engagement
- Background Data Analysis
- System Efficiency and Effectiveness Review
- Gap Analysis
- El Metro Network Plan
- Supporting Recommendations
- Implementation Plan
- Scheduling and Runcutting

The goals of the COA and its recommendations are to:

4. Improve transit service
5. Enhance the customer experience
6. Expand El Metro's value to Laredo

This report begins with a review of background documents, market assessment, analysis of existing services, peer comparison, engagement summary (What We've Heard), vision, short- and long-term network plans, supporting recommendations, implementation plan, funding opportunities and high-level costs.

1.2 CONTEXT

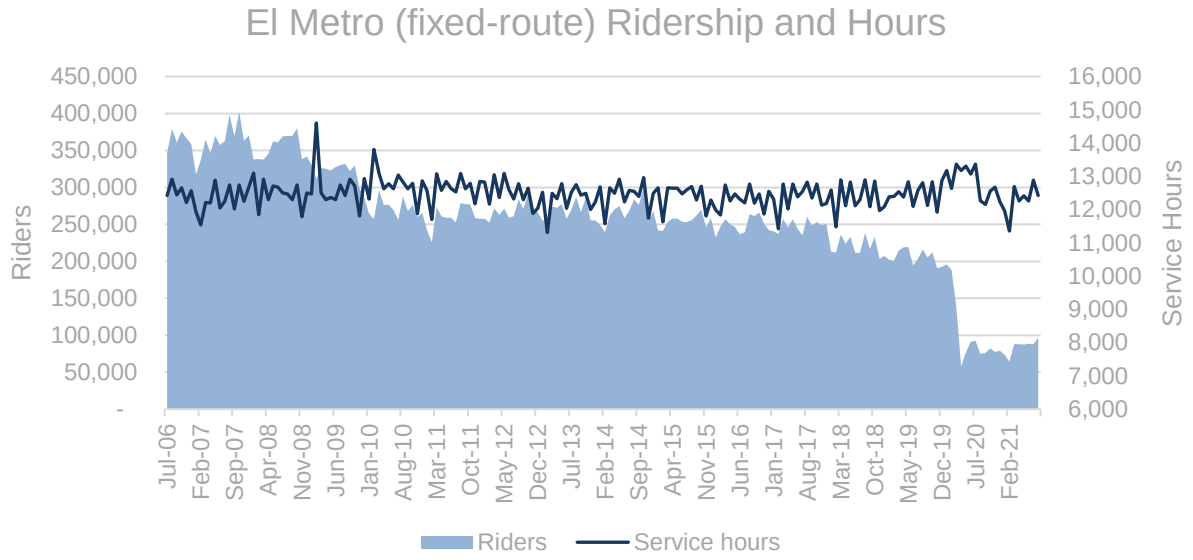
This planning effort started nearly a year into the COVID-19 pandemic, and at the time of this writing, the economy has slowly been re-opening, vaccination rates are on the rise, schools are back in session, and the re-opening of the land border with Mexico for non-essential trips began in early November 2021.

El Metro's fixed-route ridership, as detailed throughout this project, plummeted during the pandemic—comparing the most recent data, August 2021 ridership is down 55% compared to August 2019 ridership. The rebound from the largest dip in April 2020 has only recaptured about one-fifth of monthly ridership. Nonetheless, service hours are down only about 3% over the same timeframe.

While these COVID-related trends have been experienced throughout the country, a more troubling trend (which was also seen by transit agencies nationwide) has been the steady decline of ridership over the last 15 years, while service levels, generally, have remained stagnant.

The downward trend in ridership is apparent in the red area in the chart in **Figure 4**.

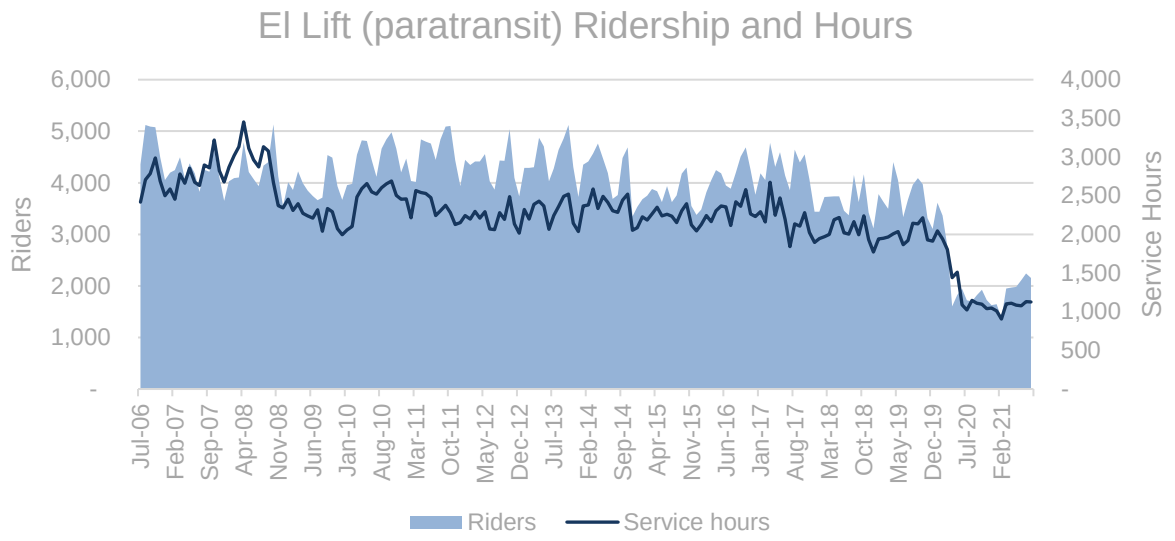
Figure 4: El Metro ridership has steadily declined over the last 15 years, while service has remained stagnant. Monthly ridership and revenue hours, 2006 to present.



This decline in ridership began around 2010 and has continued, only to be exacerbated by the pandemic. The red line in the chart (**Figure 4**) demonstrates that service hours have generally remained stable. The product of these two opposite trends has been a steady decline in El Metro's productivity, from 18 boardings per hour in 2015 to 15 boardings per hour in 2019 systemwide. As a result, the cost per passenger boarding has increased from $80 in 2015 to $93 in 2019.

A similar story is apparent for El Lift service too (**Figure 5**). However, since this service is a demand-response type service, service hours track ridership more closely. Overall, paratransit ridership before the pandemic declined about 17% from 2006, keeping pace with a similar 15% decline in service hours. In contrast, fixed-route ridership dropped 43% over the same period, while service increased a modest 6%.

Figure 5: El Lift ridership has steadily declined over the last 15 years, while service has also decreased. Monthly ridership and revenue hours, 2006 to present.



Taken together, this story paints a challenging picture for El Metro, even prior to the COVID-19 pandemic. But El Metro is not alone. This story is one that reflects a broader decline in transit use in Texas and nationwide.

In Laredo, and in much of Texas, despite increasing population growth and economic activity, transit ridership, particularly on buses has declined. A Texas State Comptroller article[2] indicates that increasing traffic due to growing population has decreased transit reliability and service quality. As such, people who can afford to drive, drive. Moreover, traditionally transit-reliant populations, when given the opportunity to acquire a vehicle—and vehicle ownership costs had been decreasing before the pandemic due to advantageous loan rates and low fuel costs—will leave transit and switch to driving. This in turn worsens traffic and transit quality in a vicious cycle. Lack of affordable housing in city centers also pushes people to more rural and suburban locations where transit is either unavailable or infrequent for their needs, forcing car ownership. Altogether, these phenomena have shrunk transit's mode share.

And while transit ridership in Laredo is dependent upon students, as well as workers coming over from Mexico, a substantial number of Laredoans do use transit. And as our surveys indicated, these are individuals who lack other mobility options; only 8% of regular riders indicated they would drive if El Metro was not available. So, while El Metro may have a small proportion of choice transit riders (people with car access who use transit instead), it doesn't mean that El Metro can't grow ridership from its base of customers. The challenge is to make transit attractive, easy to use, and viable for enough trips that people who are already using transit, make more trips on transit.

But the Laredo environment presents a number of challenges to transit use, like poor pedestrian amenities that could encourage people to walk to transit in the first place, destinations that are out of the way requiring meandering and long bus rides, destinations in a sea of parking, and surface roads that are congested which slows bus speeds. While these elements are outside of El Metro's control, El Metro does have the ability to make other important choices that may help grow ridership.

[2] https://comptroller.texas.gov/economy/fiscal-notes/2021/apr/transit.php

Looking ahead at the broader Laredo community, we see much in terms of economic growth and population shifts that El Metro can strategically capitalize upon to grow ridership.

- The economy has slowly been re-opening, and in Texas, most business are back to business-as-usual. However, hiring shortages have impacted job growth and with it, the need to commute. Further, the recruiting difficulty of El Metro and other US agencies for bus operators has serious impacts on delivering service, distorting the transit ridership recovery from COVID-19.

- The US-Mexico land border is re-opened for non-essential travel in November 2021. With it, El Metro's ridership may grow to a certain extent if visitors use transit, and if jobs return as well and if these workers ride El Metro.

- El Metro receives 0.25% sales tax from the City of Laredo, providing a good source of operating funding. Of course, with the pandemic, spending dipped, but with economic recovery hopefully the sales tax returns increase. This could help provide El Metro is more operating revenue.

- Schools are back to in-person learning. This bodes well for increasing ridership from market segments like TAMIU students, as well as secondary school students for school trips and other trips too.

The culmination of the planning efforts in this project provides a roadmap for El Metro and the levers they control to help incrementally improve service quality and delivery.

2 BACKGROUND DOCUMENT REVIEW

The purpose of this section is to provide context for the overall COA process. Relevant studies and plans have been examined to identify themes, opportunities, and constraints of transit and transportation in and around Laredo. A summary of key documents considered and their relevance to the COA has been detailed below, starting with the most recent plans:

2.1 TITLE VI PROGRAM UPDATE REPORT 2019

With a population of approximately 96% Hispanic residents, Laredo is a community which requires special focus to ensure that non-English speakers are accommodated. In 2019, El Metro issued an update to its Title VI Program. Some key outcomes of this report included:

- El Metro will phase in additional Spanish language communications materials and services.
- Interpreters and translators for any public engagement meetings should be provided for limited-English proficiency (LEP) riders.
- LEP training will be provided to all El Metro employees and the LEP Plan will be distributed to all management personnel.

2.2 VIVA LAREDO COMPREHENSIVE PLAN 2017

The Viva Laredo Plan pertains to the ongoing development and urban design of the city. It is often said that “a city’s transit plan is only as good as its land-use plan”, as denser land uses naturally promote transit use. Therefore, specific attention was paid to this forward-looking plan, and the following policies and insights were noted:

- There is community support for the return of a historic streetcar/trolley line through the downtown center to act as higher-order transit and spur development.
- The plan is encouraging overall of transit-supportive development for new and existing neighborhoods.
- New annexed areas of outer Laredo would be required to pay a Transit Impact Development Fee to fund expansion of transit to these outlying areas.
- Transit access between the downtown core, new mall, universities, and industrial lands should be encouraged.
- Transit innovations such as bus-only lanes, queue jump lanes, and traffic signal priority should be considered to speed up transit routes.
- New buses should be procured with the goal of reducing emissions (CNG, hybrid, or zero-emissions).

A summary report of Viva Laredo’s goals and policies is provided in **Appendix A**.

2.3 EL METRO ASSET MANAGEMENT PLAN 2017

El Metro produced a Transit Asset Management Plan (TAMP) in 2017 which is active until 2026, falling within the scope and duration of this COA assignment. Some of the relevant outcomes include:

- All of the fleet under the “Small Bus” and “Van” categories was scheduled to be retired between the time of TAMP publishing and the conclusion of the short-term outlook for this COA (2022-2025). Replacement of this fleet is a major priority outlined in the TAMP.

- Miscellaneous repairs and upgrades to the Maintenance Center and Downtown Transit Center were identified as other high-priority programs.

2.4 EL METRO MARKETING PLAN 2017

To better communicate the strength of the El Metro transit service, a marketing plan was developed in 2017 to assess how to best position El Metro to grow its ridership and improve its communications strategies.

A SWOT analysis determined the major strengths, weaknesses, opportunities, and threats as shown in **Table 3**.

Table 3: El Metro Marketing Plan SWOT Analysis

Strengths	Opportunities
• New 40-ft bus fleet • Industry award for safety • New transit technologies (GPS, scheduling software) • Redesigned communications materials • Low fares	• Corporate sponsorships • Customer service training • Route re-structuring and transfer hubs • Improved branding • New fare types (i.e. monthly pass)
Weaknesses	**Threats**
• Customer service • Public perception • Inconsistent transit service • Poor passenger infrastructure • Only one transfer location	• Few incentives to ride • Car ownership • Lack of preventative maintenance • Increasing energy/emissions standards

The marketing plan also identified stakeholder feedback such as, promoting social media channels, coordinating with local schools and colleges for work opportunities, and partnering with ride-hailing services such as Uber.

2.5 EL METRO TRANSIT DEVELOPMENT PLAN 2016

A transit development plan (TDP) was completed in 2016 to map out the future of El Metro's services. The TDP was built off several additional background documents including a previous TDP from 2009 and a BRT feasibility study completed in 2011. The TDP reached the following conclusions:

- The population growth of Laredo is outpacing that of the state of Texas and the United States, prompting need for increased transit services.
- Much of the employment within Laredo is related to cross-border industrial shipment, and therefore is spread out amongst the city. The high volume of truck traffic creates additional considerations for the transportation network.
- Between 20-40% of El Metro ridership may be using the system to traverse the US-Mexico border. Transit service should be designed to capture latent ridership which may exist at border crossings.
- El Metro is performing above the peer average with respect to passenger trips per revenue-mile and revenue-hour. At the same time, the service's costs per revenue-mile and revenue-hour are higher than the peer average. The lower service cost efficiency was traced to higher maintenance costs compared to peer agencies. Combining the two statistics to yield the cost per passenger-trip and per passenger-mile, it was observed that El Metro performs above peers.

- Operating and maintaining an aged fleet (beyond the 2015 Gillig CNG buses) is creating unnecessary costs which could be avoided by procuring newer vehicles.
- Improved transit technology such as electronic fare payment and integrations with Google Maps were highlighted as potential projects which would increase the attractiveness of the El Metro service.
- Bus stop improvements were a requested item by El Metro stakeholders, as 50% of all bus stops lack benches or shelters.
- Several route modifications were suggested to improve frequency on routes with high ridership and service emerging trip generators such as industrial parks.

2.6 COMPREHENSIVE OPERATIONAL ANALYSIS 2005

The last comprehensive operational analysis (COA) was conducted in 2005. The COA process determined several insights into the performance of the transit system:

- The peer review determined that the transit service provided by El Metro was significantly higher than peers in terms of revenue-hours and revenue-miles, and service utilization was correspondingly high.
- The cost effectiveness of the service was amongst the best of the peer group. It should be noted that this was identified as a weakness in the 2016 TDP, meaning that El Metro has declined in this area since this COA was completed.
- Various recommendations surrounding the paratransit operations (eligibility, trip booking, contracting, etc.) were made to improve the efficiency of the service.
- Route alignments were modified to improve the frequency of high-ridership routes and avoid operational issues in certain areas of the city (i.e. near railway crossings).

2.7 TRANSIT DEVELOPMENT PLAN 2009

A prior TDP was conducted in 2009 which was the template for the document created in 2016. This study provided several insights, detailed below:

- It was recommended that bus scheduling should be modified to reduce congestion at the Downtown Transit Center.
- A new design for bus infrastructure should be developed to improve their usability and attractiveness to the rider.
- The paratransit service was determined to be operating at a higher cost per capita than comparable transit agencies, and it was recommended that the program costs should be reduced through negotiation with service providers or contracting out service to taxi operators.
- The implementation of a downtown circulator route was recommended.

3 MARKET ASSESSMENT

To understand the ingredients for successful and productive transit services we need to understand the market for transit. In other words, we need to understand the demographics of a city, its layout, and transit trip generators. Transit typically works best when it can provide fast and frequent service to a large amount of people travelling for different purposes. Higher density areas that offer a mix of residential, employment, commercial, medical, institutional, and recreational land uses are therefore the most conducive to productive transit service. However, transit also aims to meet the needs of transit-dependent populations who may reside in less dense parts of a service area; for example, low-income residents who do not have access to a car, but who must still travel to or within the city as a basic need.

The population characteristics and layout of the service area are predictors of transit use and can provide insight into the likelihood that transit will succeed. This section explores some of the ingredients for successful transit, including density, street connectivity, active transportation connections and sociodemographic composition.

3.1 POPULATION AND EMPLOYMENT DENSITY

Population density is one of the strongest predictors of transit use and refers to the number of people that can be served in close proximity to one another. Employment density is also vital to the creation and maintenance of an effective transit network by providing access to jobs. The density of jobs is particularly important in Laredo because of the significant population of employees coming to Laredo from Mexico who are not captured in the data from the American Community Survey (ACS). Employment density can therefore shed light on the destinations of workers travelling from both Laredo and Mexico.

Population and job density in the City of Laredo are shown in **Figure 6** and **Figure 7**. Population and employment density can be used together to determine where residential and employment opportunities co-exist (**Figure 8**). The presence of high population and employment density, particularly along major arterials that can be served by transit, enable multipurpose transit trips and often enable a favorable pedestrian environment for accessing transit.

As shown in the density maps, downtown Laredo has the highest population density and employment density, indicating a combination of residential and employment-related land uses. As you move away from the downtown, land uses become more segregated, where pockets of residential density are separated from job locations. More efficient use of land with smaller block sizes, a mix of uses and higher density developments, as seen downtown, are more conducive to pedestrians, cyclists and transit riders compared to the larger block sizes, separated land uses and lower-density developments seen outside the downtown area.

In Laredo, trade, transportation, and utilities account for the largest sector of employment, followed by government, and education and health services (**Table 4**). These sectors could support transit by attracting workers to transit, as well as attracting transit ridership from clients accessing these services, such as schools or medical centers. However, even more important than the type of industry, is their location and density.

Figure 6: Population Density in the City of Laredo

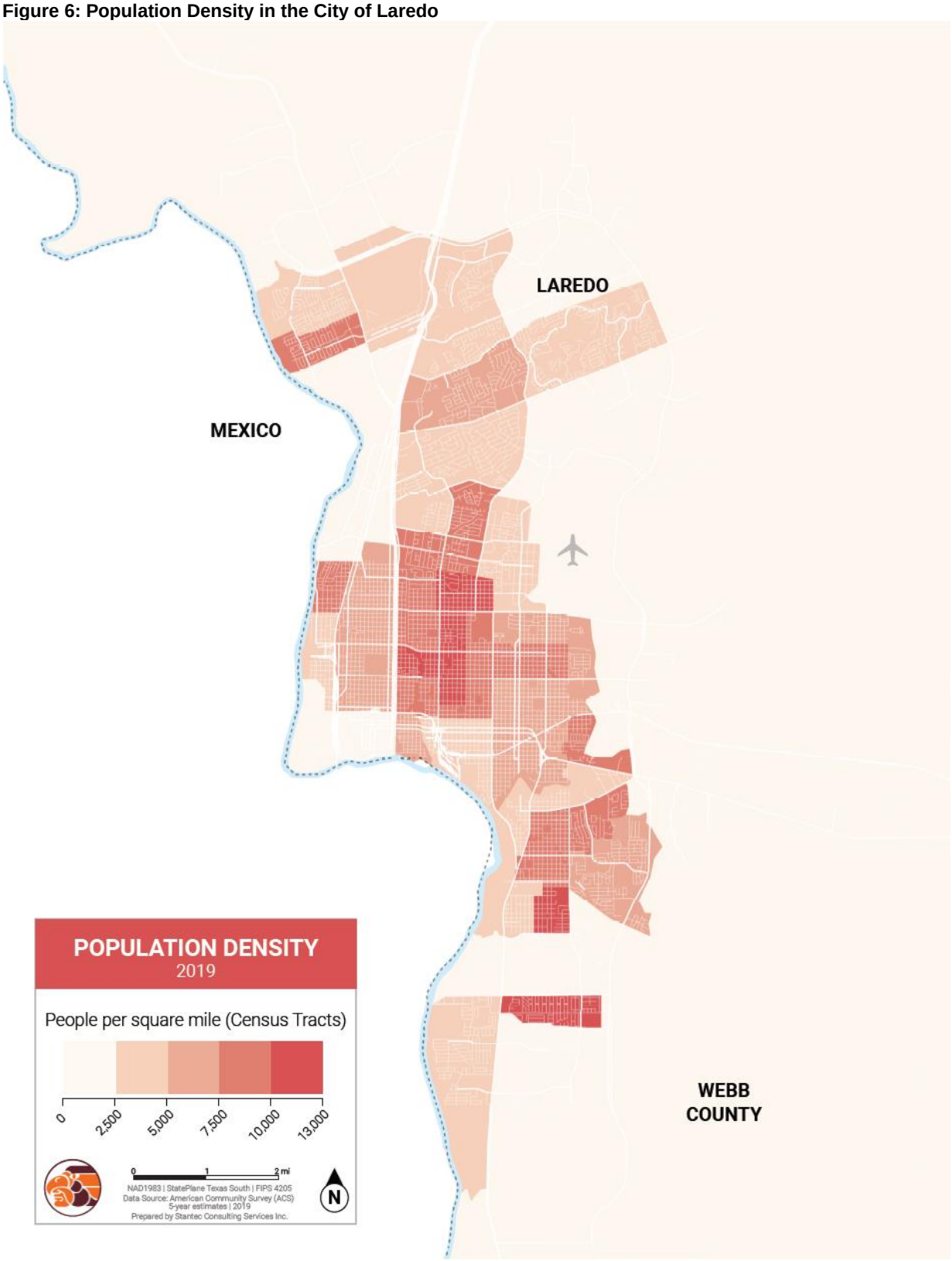


Figure 7: Employment Density in the City of Laredo

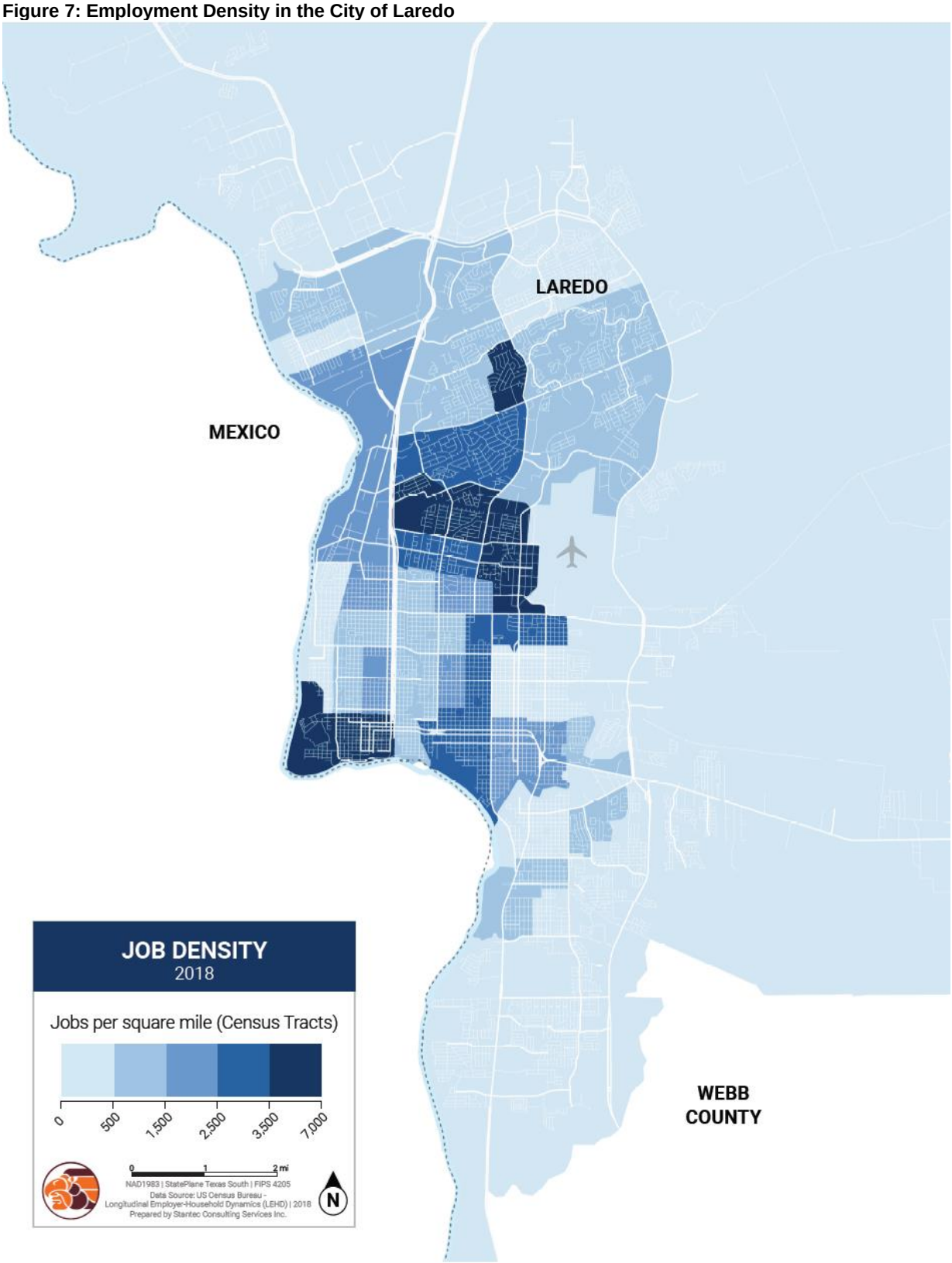


Figure 8: Population and Employment Density in the City of Laredo

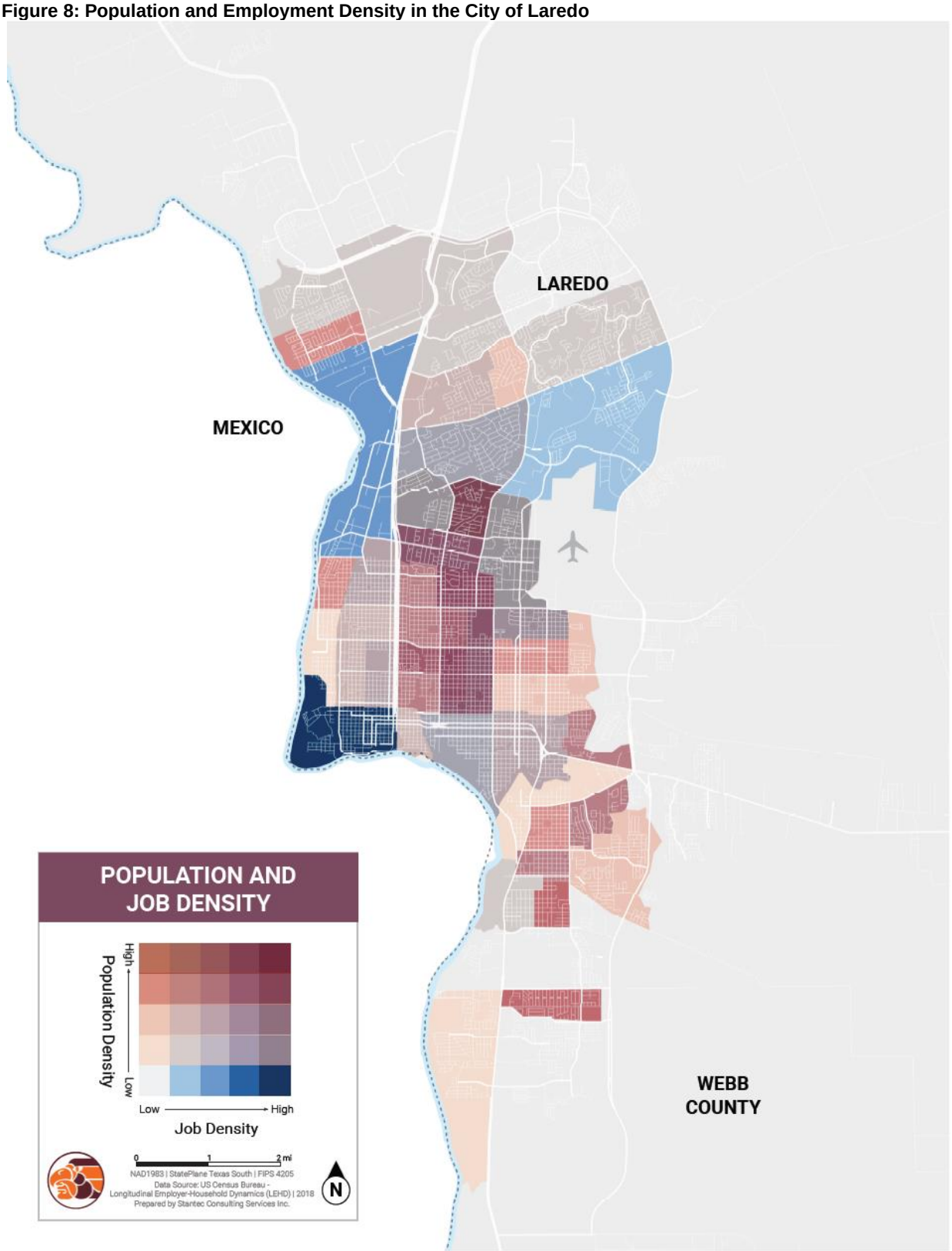


Table 4: Employment Industries by Sector, October 2020

Industry	Oct. 2020	Percentage
Trade, Transportation, Utilities	31,400	31.0%
Government	24,100	23.8%
Education & Health Services	18,000	17.8%
Leisure & Hospitality	8,400	8.3%
Professional & Business Services	8,100	8.0%
Mining, Logging, Construction	3,800	3.8%
Financial Activities	3,900	3.8%
Other Services	2,200	2.2%
Manufacturing	700	0.7%
Information	700	0.7%

3.2 JOB ACCESSIBILITY

Approximately 42,000 jobs are located within a quarter-mile (5-minute walk) of a bus stop and 50,000 jobs are within a ½ mile walking distance (10-minute walk) of a bus stop. Therefore, approximately 89% of jobs in Laredo are a 10-minute walk from an existing El Metro bus stop, indicating that El Metro provides good transit coverage to areas with high employment activity (**Figure 9**).

While 89% of jobs are located within walking distance of a bus stop, it is important to also consider the quality of the service provided, particularly how frequent the routes operate. **Figure 10** shows that only 41% of jobs are located within a 10-minute walk of routes that operate every 30 minutes or better during the peak. It should be noted that frequent transit service is typically defined as any route that operates every 15 minutes or better because it allows riders to travel spontaneously without having to rely on a schedule. Since none of the existing El Metro fixed routes operate with a frequency of 15 minutes, 30-minute service was used to illustrate how many jobs are located within walking distance of the most frequent routes in the system.

One way to increase job accessibility is to increase the number of routes operating every 30 minutes or better, and even increasing service to every 15 or 20 minutes on the routes with the highest employment demand.

Figure 9: Jobs within walking distance of El Metro fixed-route bus stops

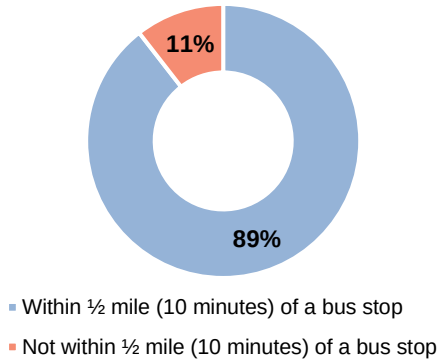
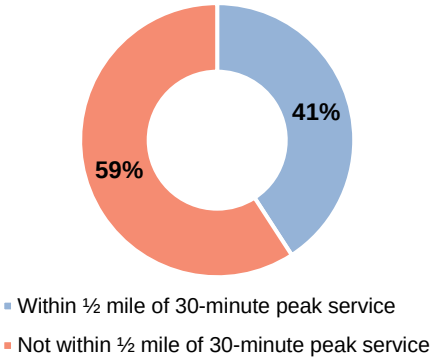


Figure 10: Jobs within walking distance of El Metro fixed-route bus stops that have 30-minute peak service or better



3.3 STREET CONNECTIVITY

Another measure of how well a city can be served by transit is its street connectivity. Roads designed along a grid network allow transit vehicles to efficiently serve communities by traveling along direct paths between destinations. On the other hand, circuitous neighborhoods with winding roads and cul-de-sacs are more challenging for transit vehicles to serve because the route between stops is less direct. The number of potential transit alignments is also lower in low-connectivity neighborhoods, as vehicles are often forced to travel down low-productivity streets due to the layout of the street network rather than serving the places people want to go. On a permeable grid network, agencies have the ability to select the best streets to serve, resulting in higher ridership and subsequently more frequent service. Grid networks also afford transit agencies the ability to be more creative in developing a network (or parts of a network) with on-street transfers in mind if passenger activity and route frequencies are significant enough to warrant them.

Street connectivity is also a good indicator of walkability, where a more connected network allows greater pedestrian connections. Walkability is important because each transit trip begins and ends with a connection between the bus stop and the origin or destination. Neighborhoods with low connectivity produce greater walking distances to transit as well as longer travel times once riders board the bus, making transit a much less attractive option for potential riders.

Street connectivity scores (see **Appendix B**) were calculated for each census tract and are presented in **Figure 11**. Examples of census tracts in Laredo with high and low street connectivity scores are shown in **Figure 12.** Unsurprisingly, the highest street connectivity is observed in Downtown Laredo, where the street network is more reflective of a grid system. This grid system was developed along historic trolley and streetcar routes in the pre-war era. Following World War II and the widespread adoption of the private automobile, the city expanded its network along highways to create the suburban neighborhoods seen today outside the downtown.

The Viva Laredo Plan emphasizes the desire for a gridded street network that encourages active transportation and transit use. In addition to policies dedicated to maintaining the historic character and road network of the downtown area, the Viva Laredo Plan also includes strategic directions and policies that support the creation of walkable neighborhoods along grid networks in *new* subdivisions, getting back to the traditional neighborhoods shown on the left in **Figure 12.**

Figure 11: Street Connectivity in the City of Laredo

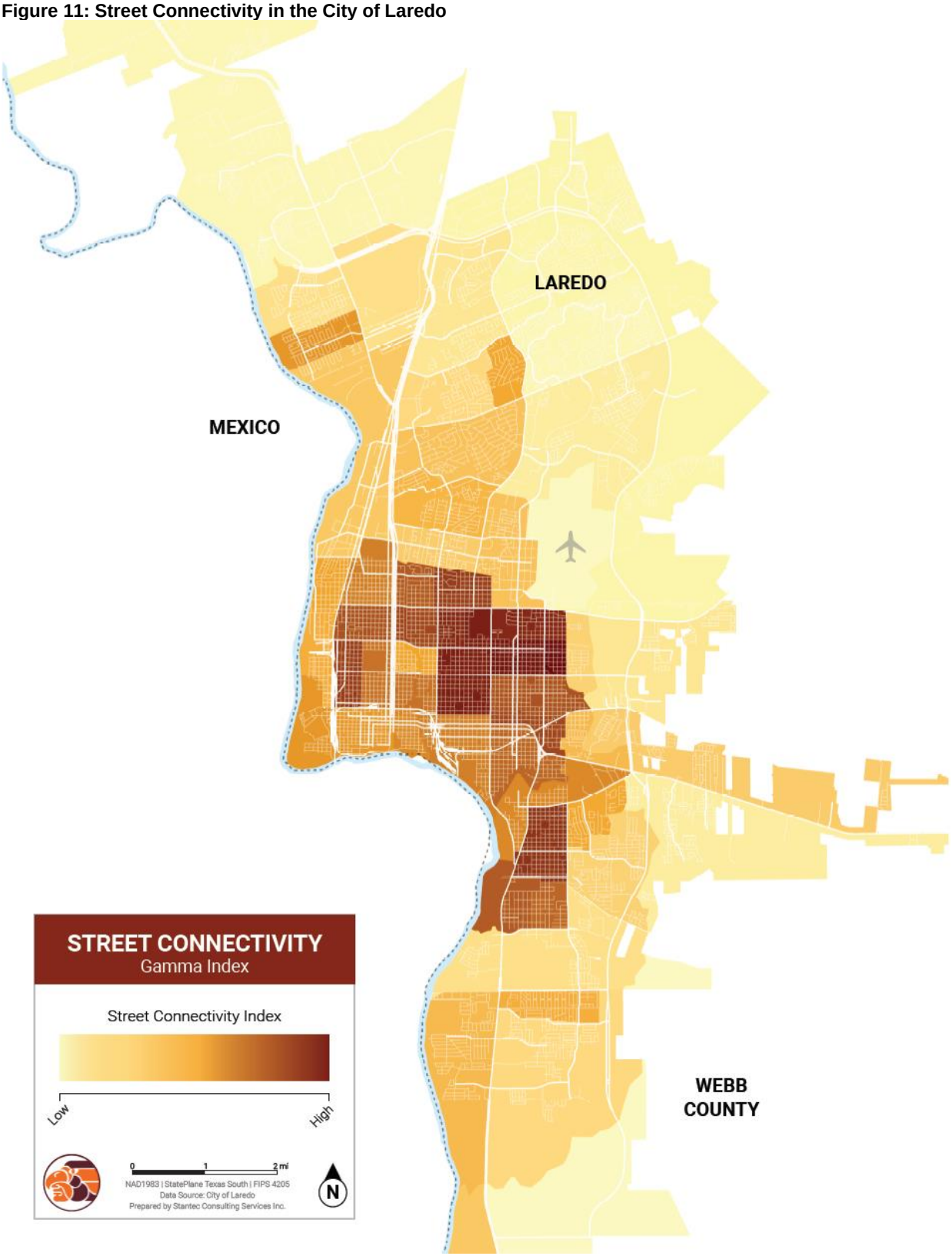
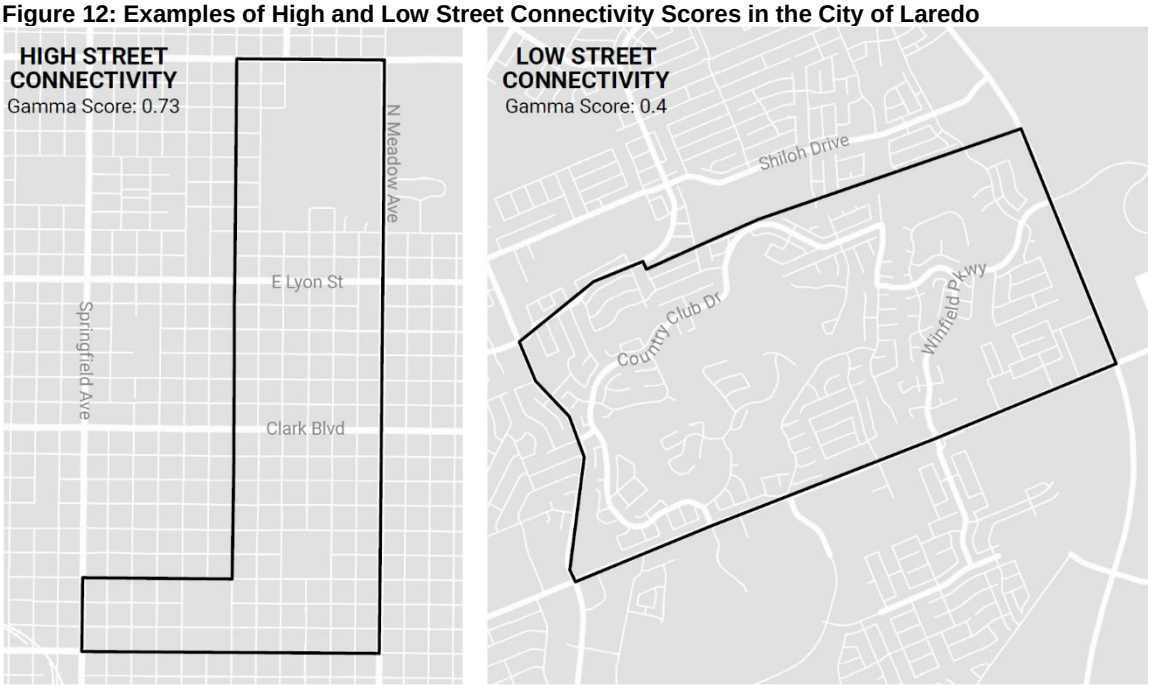


Figure 12: Examples of High and Low Street Connectivity Scores in the City of Laredo



3.4 ACTIVE TRANSPORTATION CONNECTIONS

A comfortable pedestrian environment surrounding bus stops is important for attracting and maintaining riders. Disconnected sidewalks, lack of attractive streetscaping/landscaping, and barriers such as freeways, water bodies, and railways, can all negatively impact pedestrian access to bus stops as well as route design and operations. This is also true of cycling infrastructure, where bike lanes, multi-use paths, and amenities such as bicycle parking can provide more seamless transfers to transit and encourage cycling as a first- and last-mile travel option and extending the reach of transit. The existing and proposed (10-year) cycling network is shown below in **Figure 13**, on top of quarter- and half-mile walking distances to existing El Metro transit routes.

Quarter- and half-mile network distances generally represent 5- and 10-minute walk times, respectively. Freeway interchanges, railroad tracks, grade separations and circuitous streets all reduce the distance that can be covered in 5 or 10 minutes from transit. Designing pedestrian-friendly walkable streets around mixed-use developments will improve the experience for pedestrians accessing transit and reduce the distances from transit to the final destination. Of course, active transportation infrastructure needs to be considered in tandem with transit service quality, recognizing that transit users are generally more willing to walk farther distances to their stops if transit is reasonably frequent, direct, and reliable.

The cycling network is also fragmented and does not help to extend the coverage of the transit network. Proposed off-street multi-use paths, such as along Bob Bullock Loop, will help extend the reach of transit by allowing riders to cycle to/from bus stops in neighborhoods with low street connectivity and walkability. To make the most of these planned investments in cycling facilities and to facilitate transfers from cycling to transit, the City should install features that encourage multi-modal trips such as transit-related wayfinding, real-time displays, benches, lighting, and bicycle parking.

3.5 NETWORK BARRIERS

Features such as highway interchanges, railway crossings, and water bodies act as barriers for pedestrian access to bus stops, pose accessibility constraints, and also cause concerns for transit service operations. These major network barriers, such as bodies of water or highway interchanges, impact bus route design by requiring buses to take more circuitous routes to avoid them. In Laredo, rail crossings are one of the greatest barriers to service reliability as passing freight trains cause delays to service. This is made worse by the fact that freight schedules are variable and are therefore difficult to plan around. As shown below in **Figure** 14, railways intersect with numerous El Metro bus routes and are difficult to avoid given their location through Downtown Laredo where there is the highest demand for transit.

Figure 13: Active Transportation and Transit in the City of Laredo

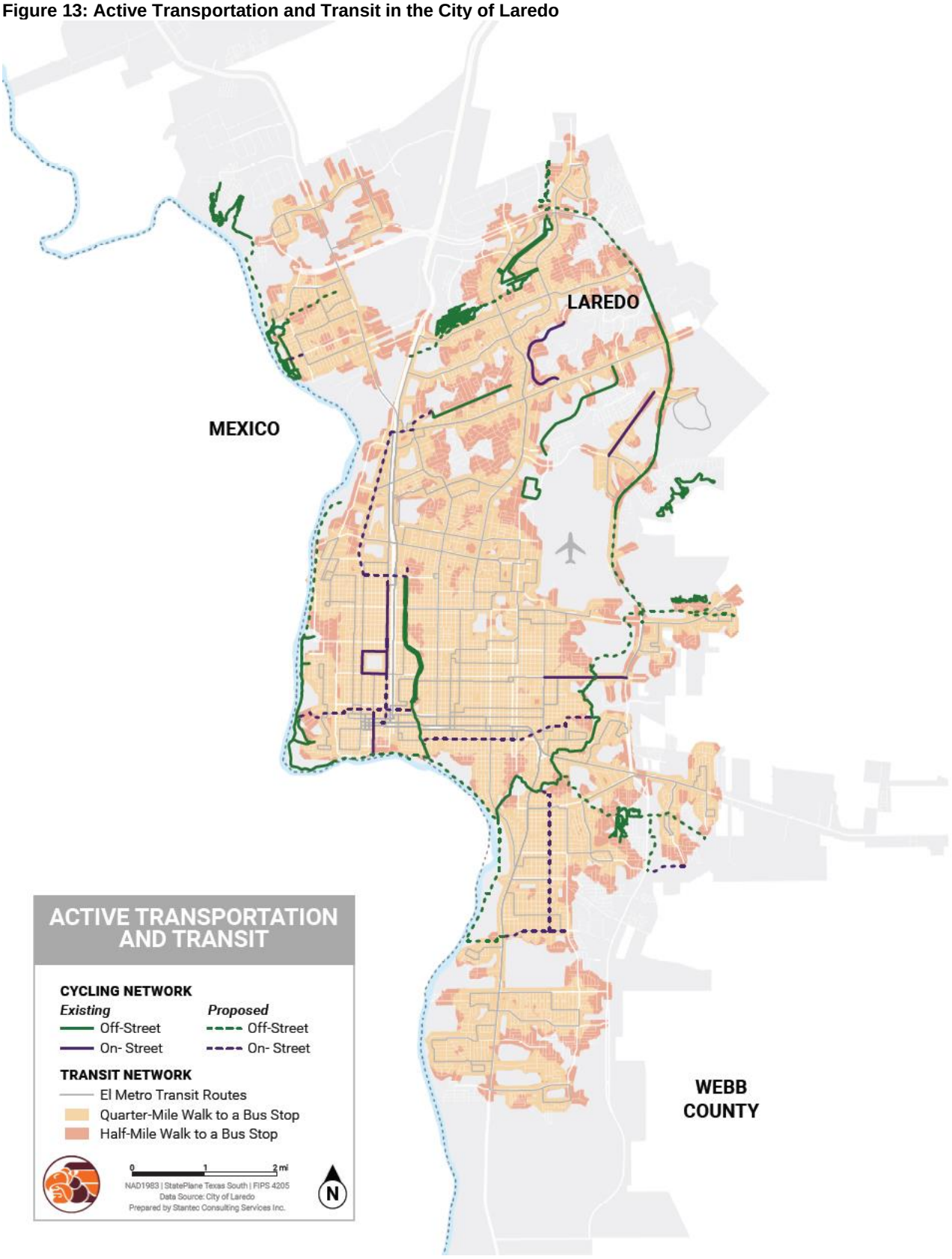
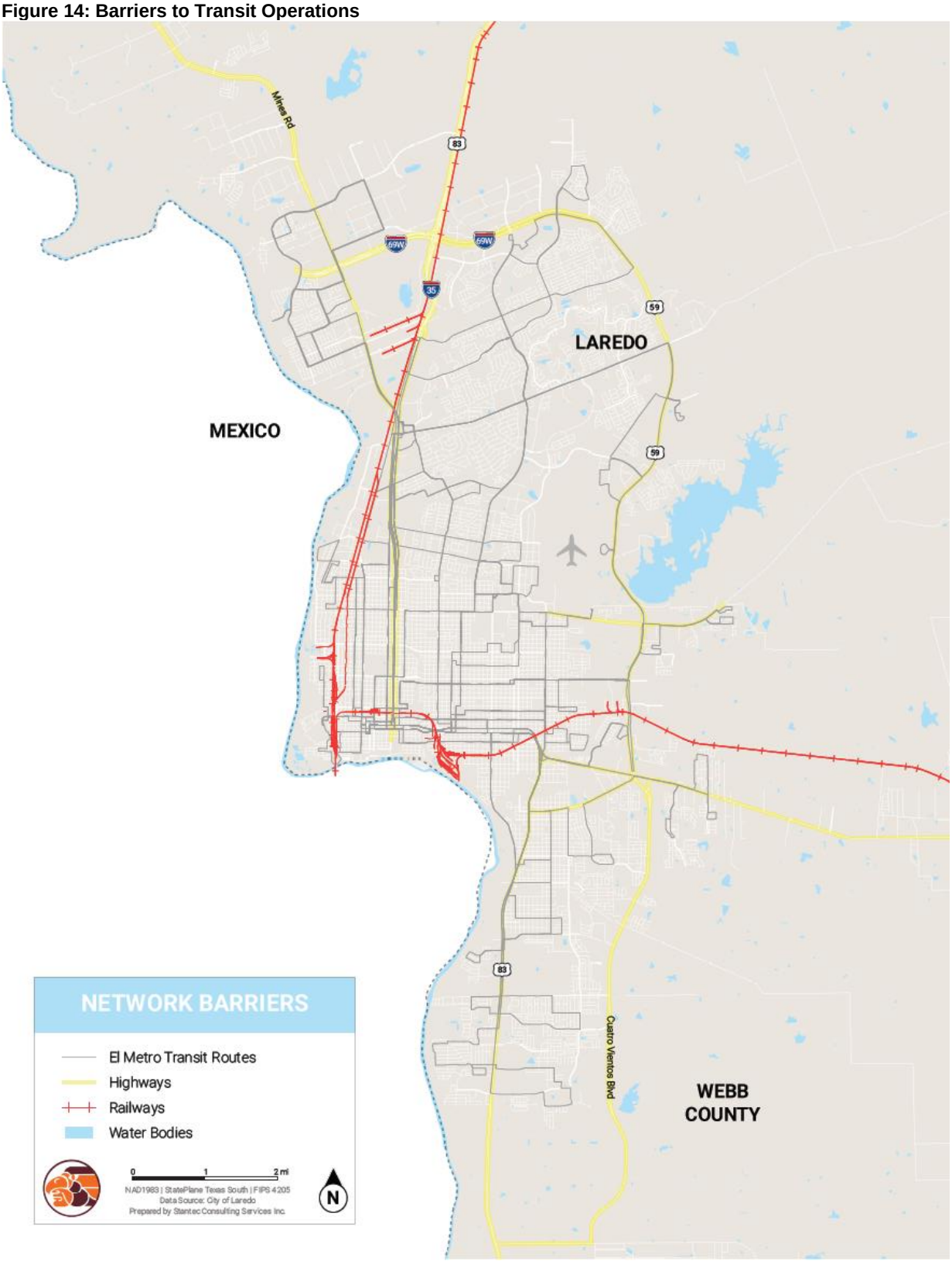


Figure 14: Barriers to Transit Operations



3.6 TRANSIT MODE SHARE AND VEHICLE OWNERSHIP

Based on 2019 5-year estimates from the ACS, the dominant mode share to work in Laredo is the private automobile with a combined driver and passenger mode share of 93% (**Figure 15**). Lower levels of automobile use are seen at the state level, with a combined driver and passenger mode share of 90%. Across the city and state, transit represents only 1% of work trips and walking represents 2%. Changes in travel behavior can be achieved, but requires transit-oriented development, state and federal funding to support transit improvements, and a connected network of multi-modal and sustainable travel options that provide similar convenience to the private vehicle. The existing transit mode share to work across the City of Laredo is shown in **Figure 16**, illustrating that most census tracts have a mode share of 0-2%.

While the commuting mode share data only reports the mode used for traveling to work, it gives a good representation of the current travel preferences of residents. Nevertheless, riders are more frequently choosing transit to travel to events, run errands, and travel for recreational purposes. Increasing transit ridership and productivity is not only possible through attracting new riders to the system but through increasing transit use by existing riders for new trip purposes as well.

One of the major reasons for transit use is the lack of personal vehicle. Simply put, not owning a car increases probability of transit use, of course depending on transit's viability and attractiveness for any given trip. There are many reasons for not owning a car, primarily due to the costs of owning and maintaining a car, as well as other reasons such as being unable to drive, or not wanting to drive (e.g., for environmental reasons, hassles regarding parking, etc.). **Figure** 17 depicts the distribution of zero-vehicle households across Laredo, including census tracts mostly concentrated in the downtown area. These observations suggest that a market does exist for transit services in Laredo beyond commuting trips.

Figure 15: Mode Share in the City of Laredo and Texas

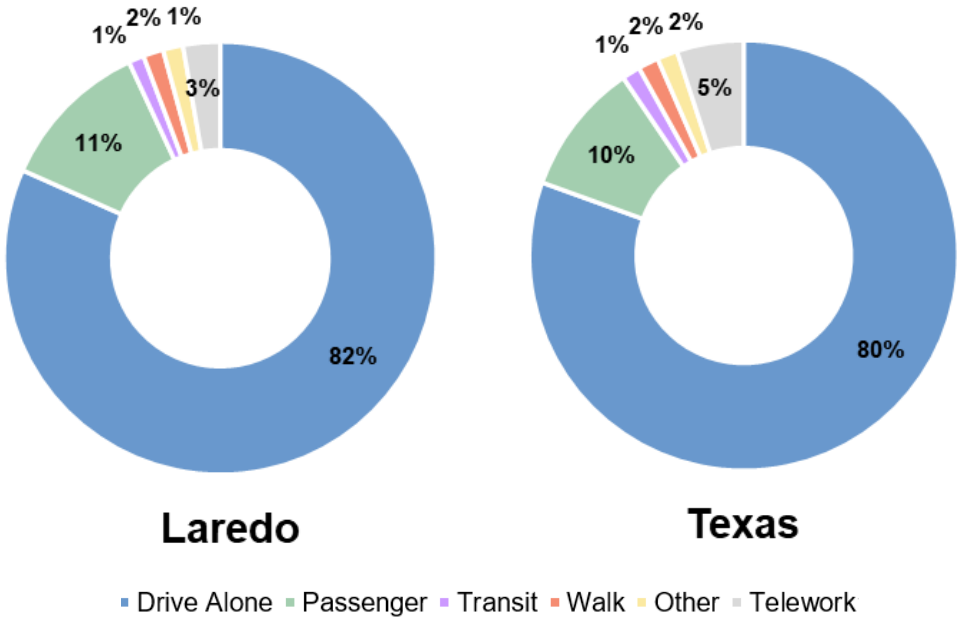


Figure 16: Transit Mode Share in the City of Laredo

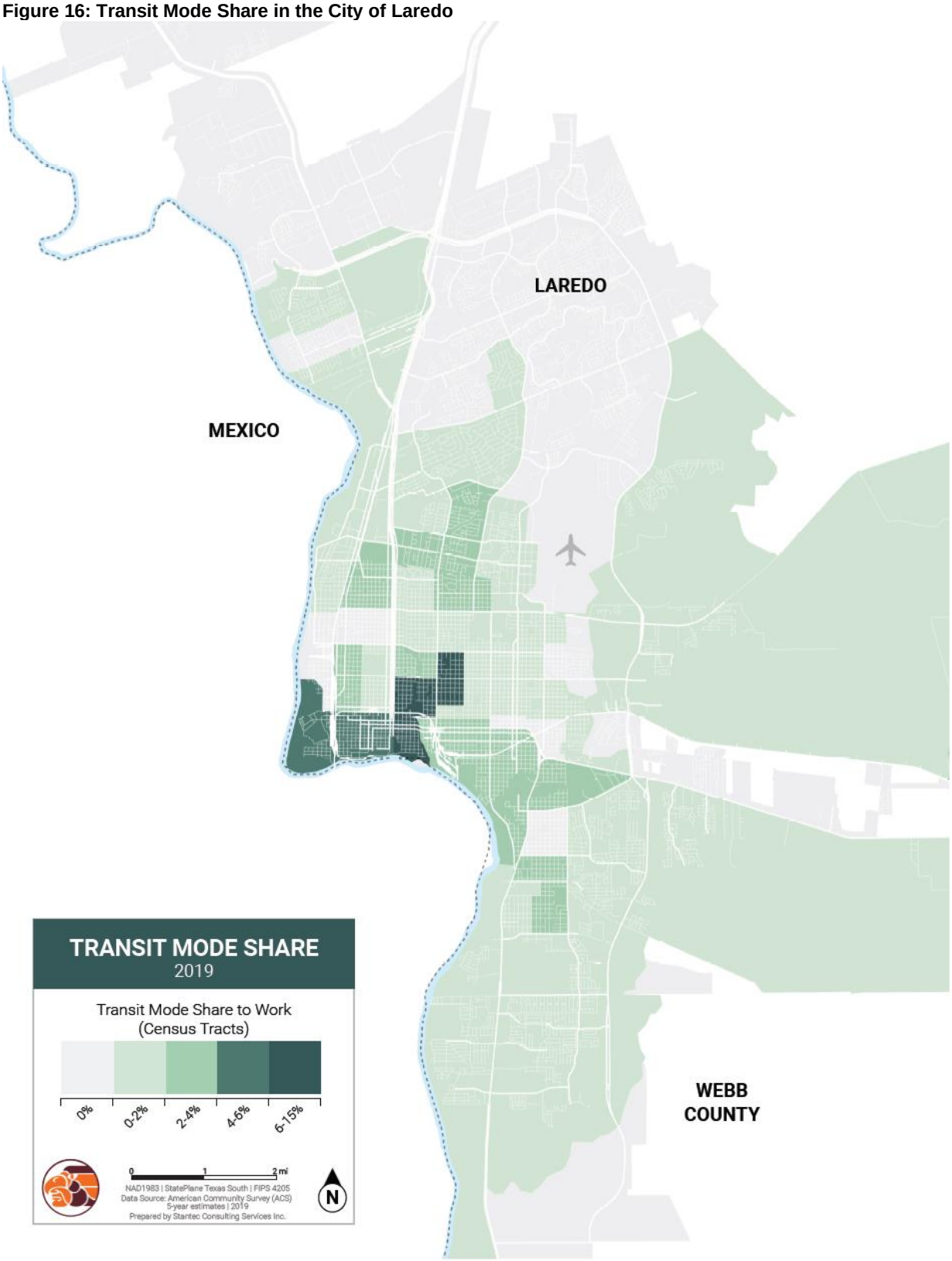
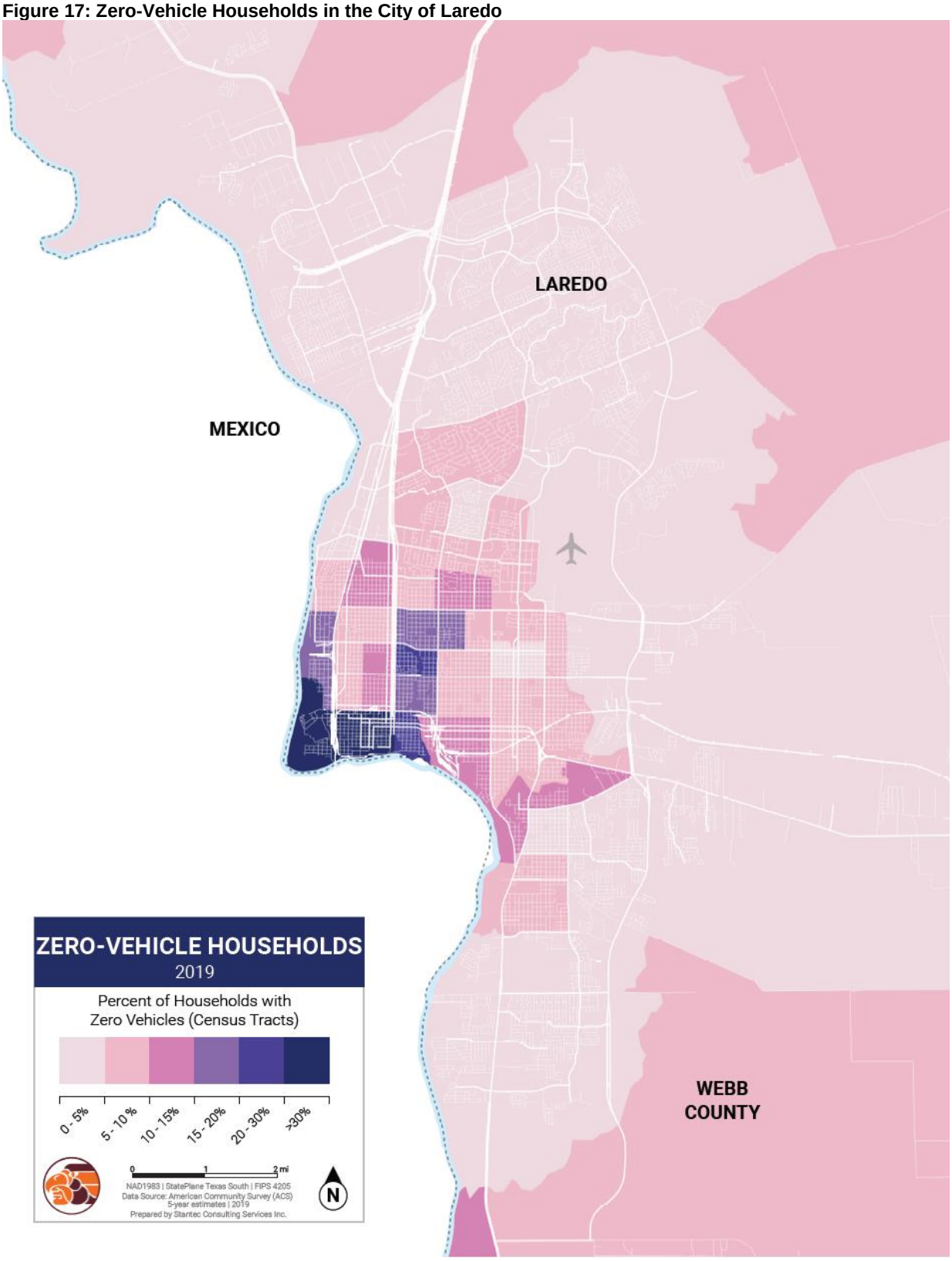


Figure 17: Zero-Vehicle Households in the City of Laredo



3.7 TITLE VI INDICATORS

Household Income

In 2019, the median household income in the City of Laredo was approximately $40,000, which was below the median income of Texas which was nearly $62,000. Household incomes are generally lower in Downtown Laredo where households are more likely reliant on transit than other neighborhoods (**Figure** 18). Looking together at the previous maps of transit mode share and households without vehicles, this suggests that lower income households are less likely to own a personal vehicle and are therefore more likely to depend on public transit.

Limited English Proficiency

Transit agencies must also consider the population of Limited English Proficiency (LEP) to not only ensure people with limited English proficiency have access to transit service, but to ensure information about transit is available in multiple languages. The LEP population makes up 25% of the total population in Laredo, and the primary language used by the LEP population in Spanish. **Figure 19** illustrates areas of the city with the highest percentage of LEP and is combined with household income in **Figure 20** to illustrate areas with a combination of low income and LEP populations. These are considered disadvantaged populations and are more likely to be transit dependent or face mobility challenges compared to areas with higher incomes and greater English proficiency.

Minority Populations

Laredo is 95.5% Hispanic or Latino, which is significantly higher than the statewide population in Texas that is only 39.3% Hispanic or Latino. The Hispanic/Latino population is spread throughout the city, making up 90-100% of the population in nearly all Laredo census tracts. The density and location of all residents by race or ethnic origin is presented in **Figure 21**.

Figure 18: Median Income in the City of Laredo

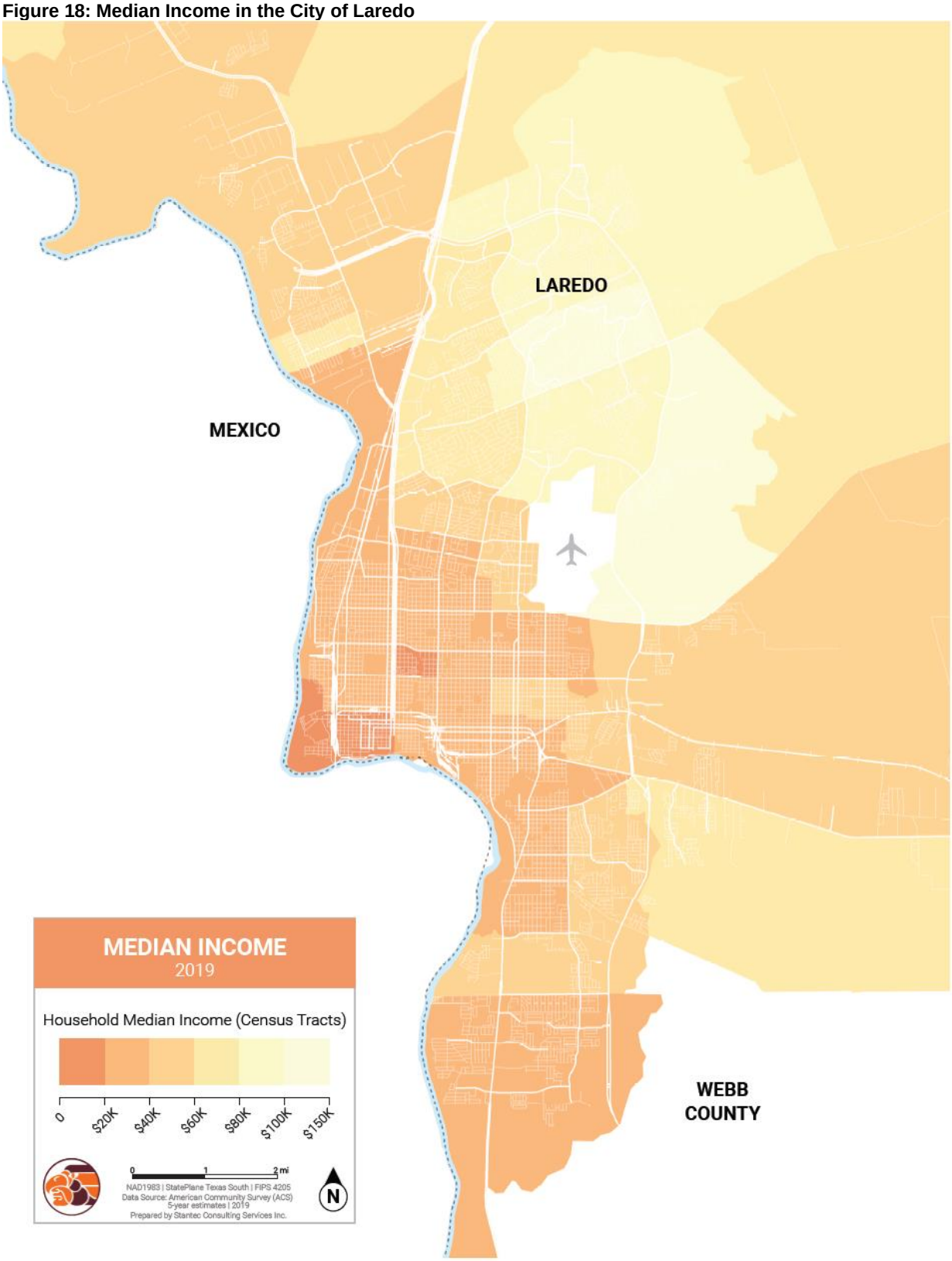


Figure 19: Limited English Proficiency in the City of Laredo

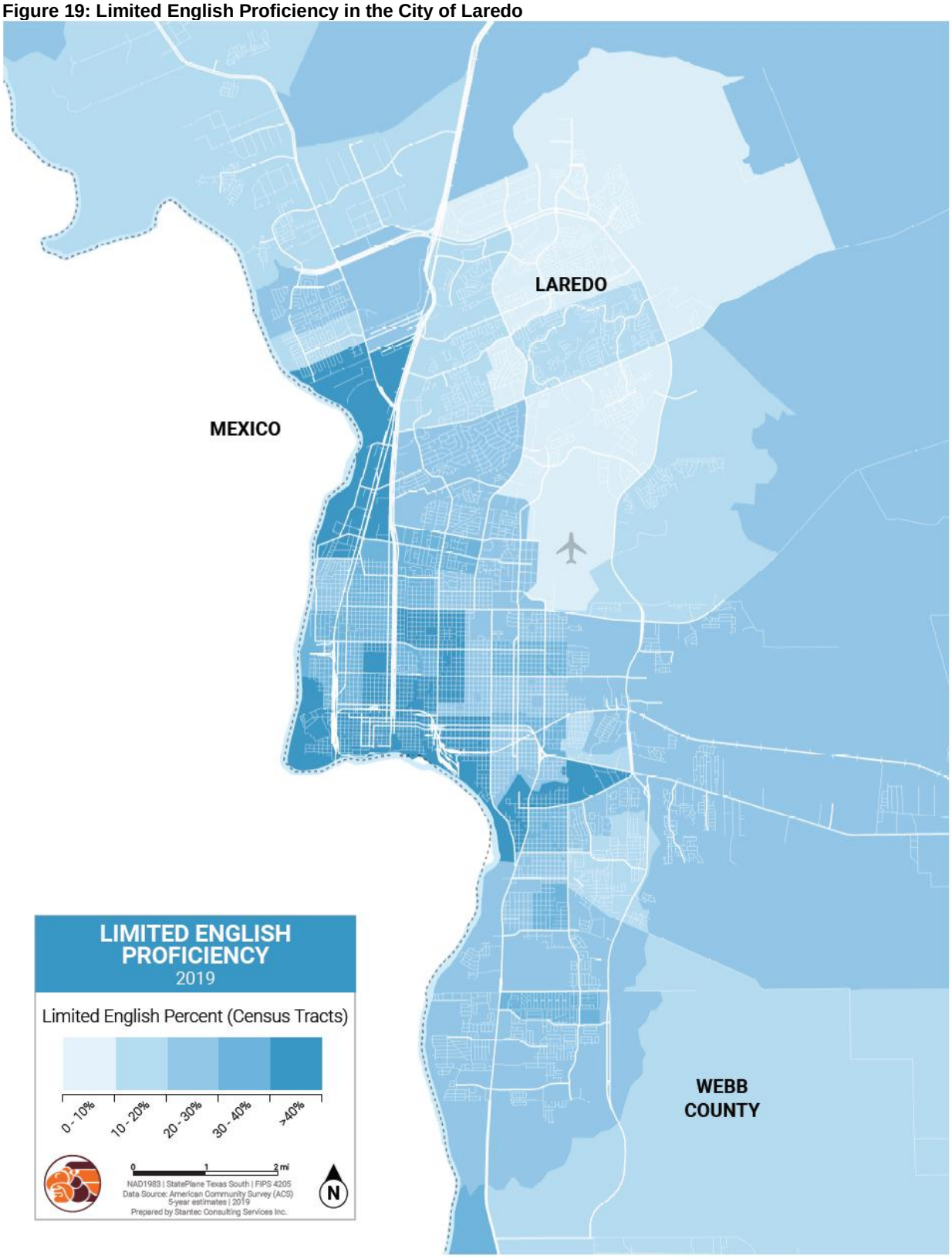


Figure 20: Income and Limited English Proficiency in the City of Laredo

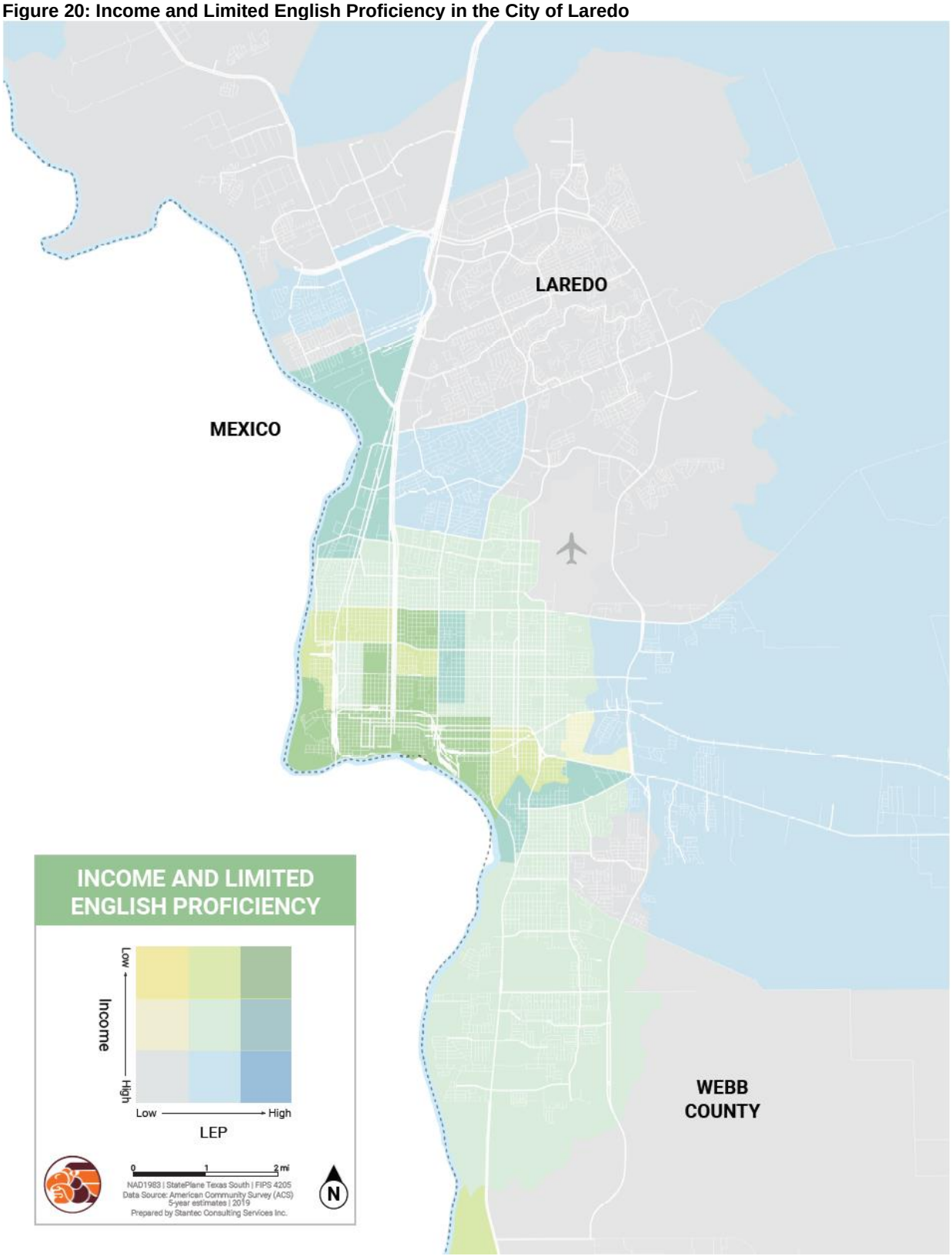
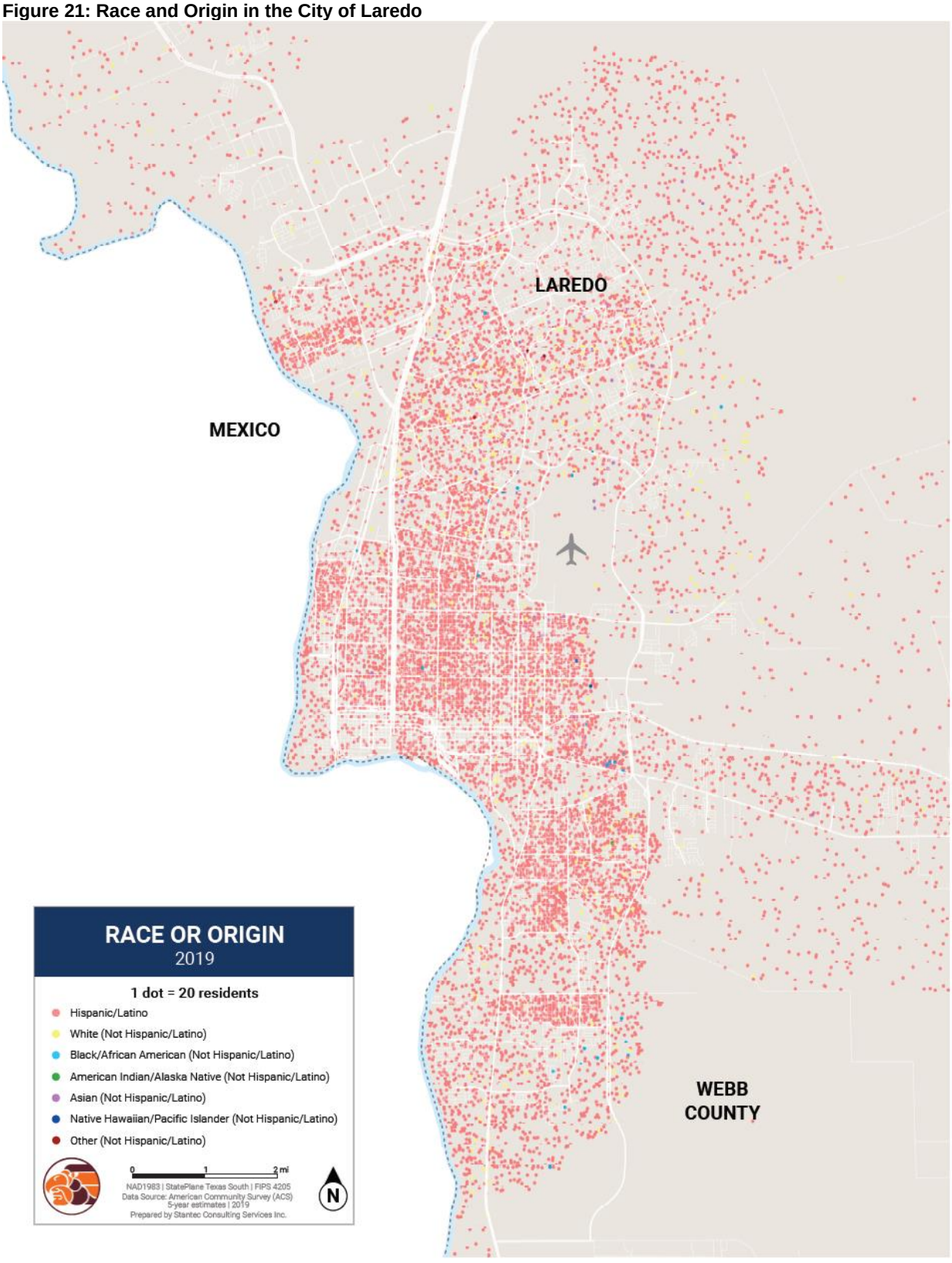


Figure 21: Race and Origin in the City of Laredo

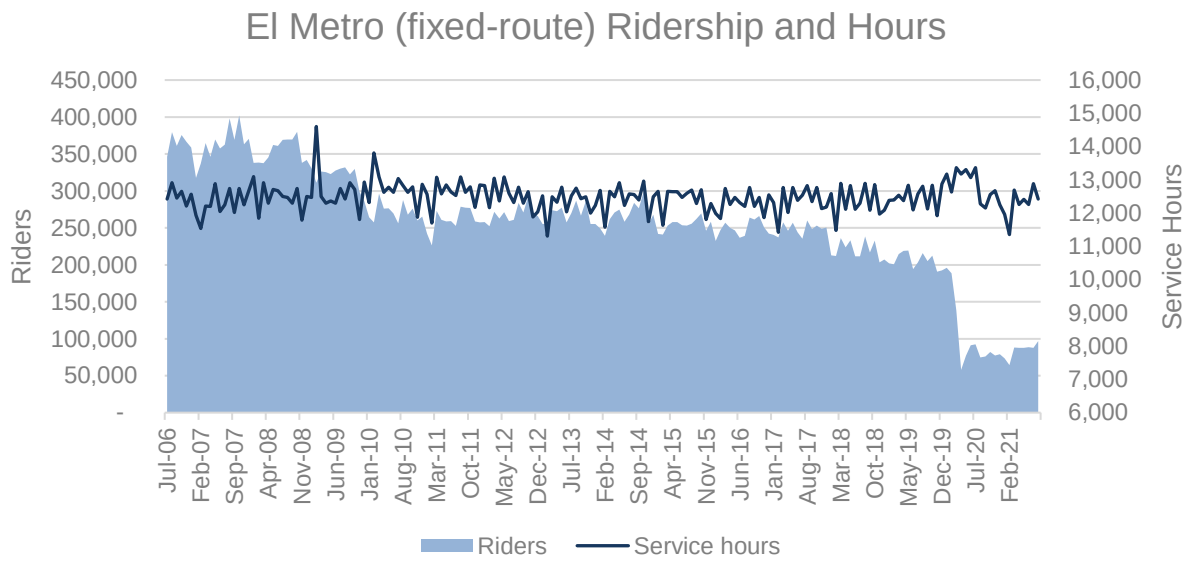


4 EXISTING FIXED-ROUTE TRANSIT ANALYSIS

4.1 RIDERSHIP OVERVIEW

El Metro carried approximately 2.5 million unlinked passenger trips in 2019 on its fixed-route system that is comprised of 22 regular fixed routes and one circulator service. Overall, ridership on El Metro's fixed-route system has been declining over the last decade as shown in **Figure 22**. While El Metro's ridership experienced a steep decline starting in March of 2020 due to the COVID-19 pandemic and closure of schools and businesses, the downward trend in ridership had been observed for a long time and is not dissimilar from the declining ridership trends observed across the United States.

Figure 22: El Metro Fixed-Route Monthly Ridership and Service Hours (2006-2021)



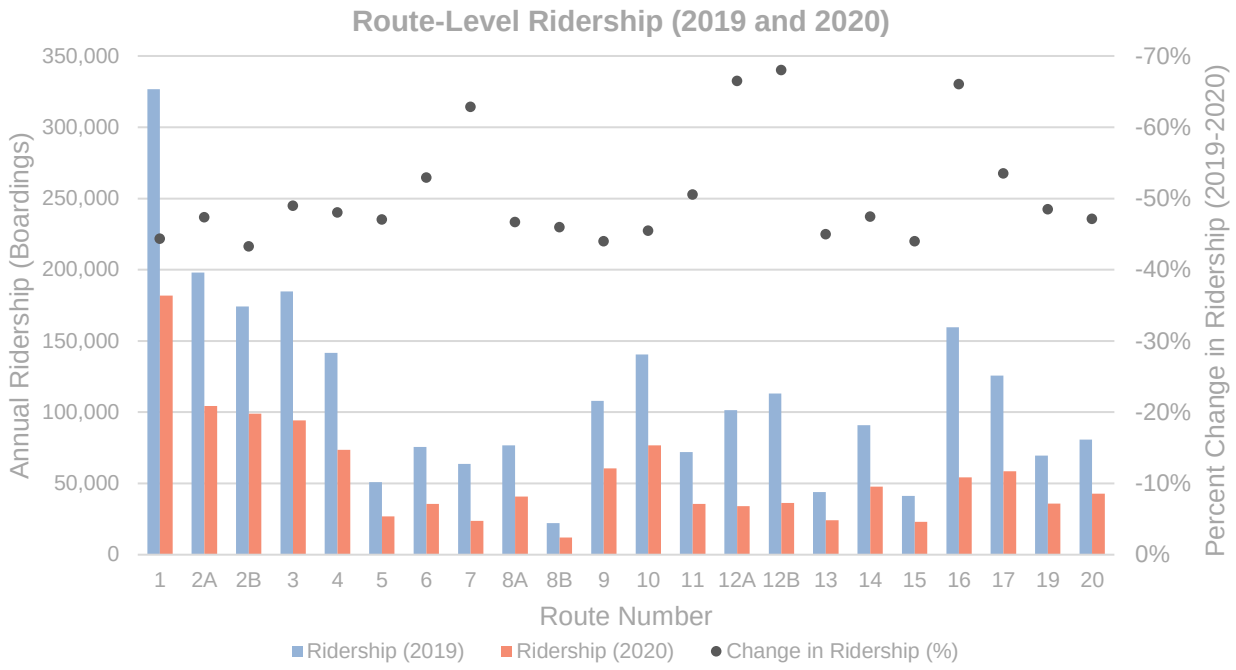
To explain recent ridership decline (pre-pandemic), a report by the American Public Transportation Association (APTA) pointed to factors including the erosion of time and cost competitiveness, reduced customer affinity and loyalty, and external factors such as policy changes and housing shortages.[3] Vehicle affordability, longer travel times on transit, growing dissatisfaction with current transit services, and increasing costs of transit passes reduce the competitiveness of public transit as a daily mode choice across the nation. A key solution to attracting people to transit and increasing ridership is focusing on the quality of service, namely service frequency, span, reliability, and travel time.

By breaking down the ridership by route we can determine that school closures had the greatest impact on ridership between 2019 and 2020 as El Metro routes serving schools—such as routes 7, 12A/B, and 16—experienced the greatest ridership declines (**Figure 23**). Route 7 serves Laredo Community College, Route 16 serves TAMIU, and Route 12A/B serves numerous elementary, middle, and high schools, so it is unsurprising that these routes experienced the greatest ridership impact. Notably, all other routes

[3] American Public Transportation Association. *Understanding Recent Ridership Changes: Trends and Adaptations* (2018). Policy Development and Research. https://www.apta.com/research-technical-resources/research-reports/understanding-recent-ridership-changes/

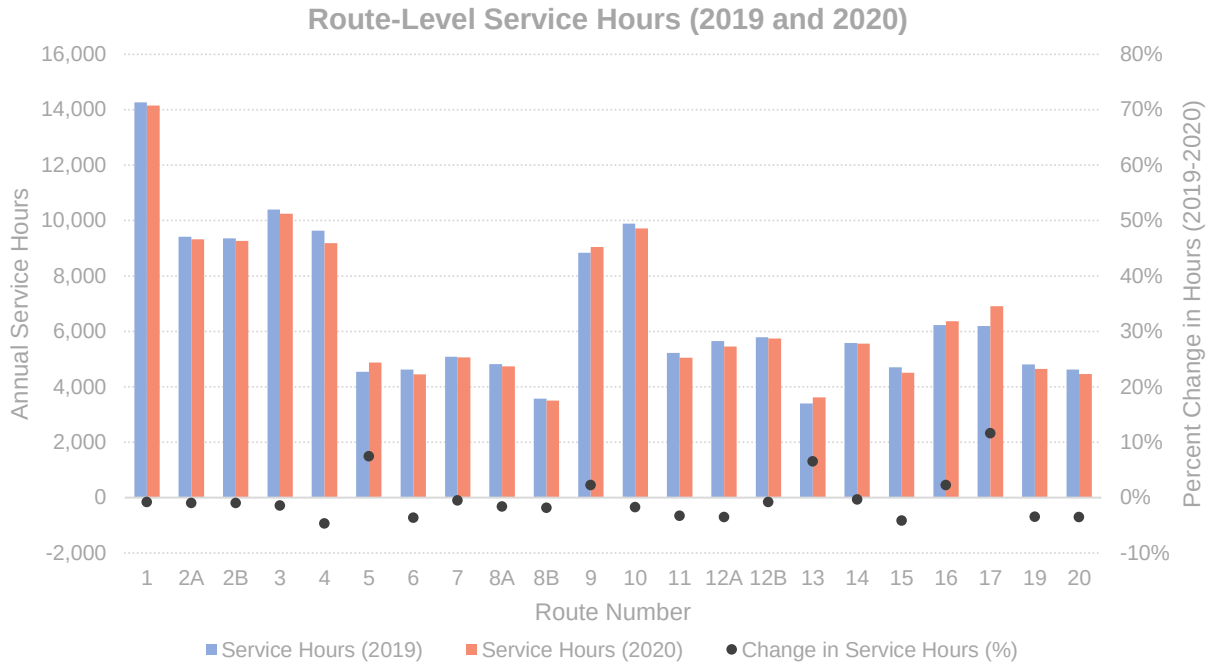
experienced similar declines in ridership (decreases of approximately 40-50%), and the closures of businesses and the border do not appear to have impacted specific routes more than others.

Figure 23: El Metro Fixed-Route Ridership by Route (2019 and 2020)



As seen below, the changes in service hours between 2019 and 2020 were minimal compared to the changes in ridership observed during the same period (**Figure 24**)**.** In fact, increases in service hours were observed on some routes including routes 5, 9, 13 and 17.

Figure 24: El Metro Fixed-Route Service Hours by Route (2019 and 2020)



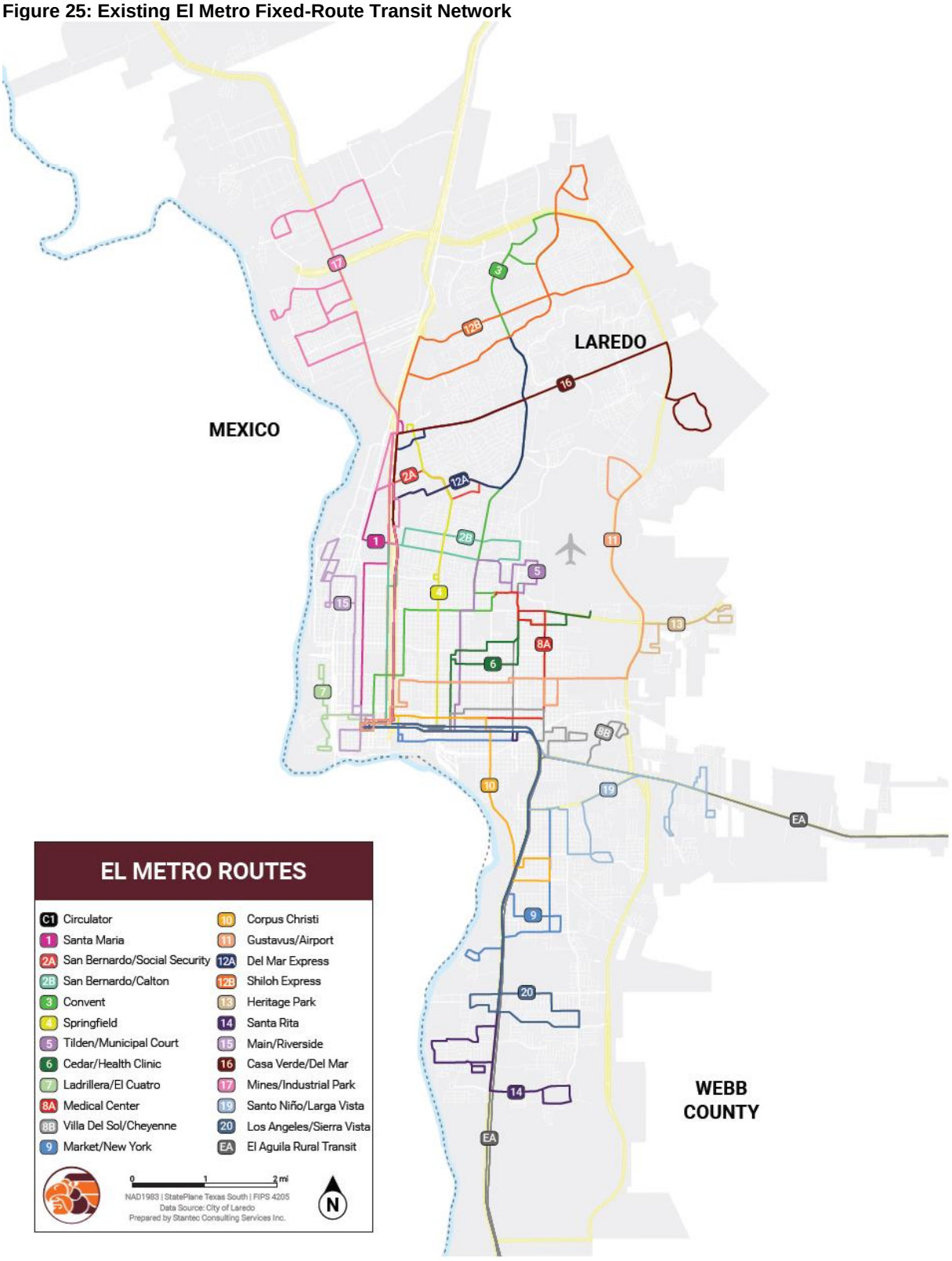
The decreases in service hours were mainly due to terminating service an hour or two early in accordance with curfew guidelines. For example, Route 11, which previously operated until 10:10 PM, stopped running service at 9:15 PM amid the COVID crisis. Otherwise, the route alignments and headways remained largely unchanged.

Much of the following analysis focuses on evaluating data from 2019 to understand pre-pandemic performance. Analyzing pre-pandemic conditions helps identify areas for improvement that would improve overall system performance regardless of pandemic impacts, which will in turn also help rebuild ridership as Laredo returns to more normal conditions.

4.2 SERVICE CHARACTERISTICS

El Metro operates local fixed-route transit across 22 regular routes and one circulator route, as shown in **Figure 25**. Below we discuss three major elements of transit service—frequency, span, and reliability—that are critically important to customers, and as such, for growing and retaining ridership. These elements also dictate, to a large extent, the cost of operating transit service. Ensuring that resources are allocated in a rational and efficient manner requires tradeoffs to ensure that service can meet demands across the City of Laredo.

Figure 25: Existing El Metro Fixed-Route Transit Network



Service Frequency

Service frequency is perhaps the most important attribute for choosing or forgoing transit as a mode choice, particularly for people with other modes at their disposal. Frequent service, which in North America is understood as headways of 15 minutes or less, allows people in a community to travel with great freedom on transit because it provides an opportunity to travel spontaneously, rather than relying on a scheduled bus. Headways of 15 minutes or better can help transit approach a level of convenience that is competitive with personal vehicles.

Nevertheless, increasing service frequency directly increases operating costs. While costly, analyses of route productivity and frequency from agencies across North America reveal a strong and positive relationship between the two—the greater the service frequency, the greater the route productivity. We caution that frequent routes be designed with a purpose, that is, used to connect high-density activity centers (a lot of people and jobs, with mixed land uses) along a relatively straight line. Corridors such as Santa Maria Ave and San Bernardo Ave may be good candidates for frequent service, and will be confirmed in subsequent parts of our study, whereas neighborhoods outside of the downtown are not good candidates for frequent service and can be served by coverage routes that operate at a lower frequency and serve a specific purpose. Low productivity for coverage routes is acceptable because they address another goal.

The service frequencies of El Metro's fixed routes are shown in **Figure 26**. Overall, El Metro's routes operate at highly variable service headways, with the most frequent routes operating at 25 to 35-minute headways and least frequent service operating at 90-minute headways Monday to Saturday and 120 minutes on Sunday. Even the most frequent routes, operating every 25 or 35 minutes, are not frequent enough to build ridership and entice occasional or non-riders to use transit.

Upon initial review, Stantec notes that many service frequencies are well beyond best practices in the transit industry (typically less than 60 minutes). It is important to note that El Metro has grown organically over the years. As requests for service to new areas were presented, El Metro accommodated those requests without any new operating dollars to maintain pre-existing service frequencies on these longer routes. Over the years, service headways have become longer, and as a result, unattractive for luring new choice riders.

Service Span

Transit service needs to be available when people need to travel. Service span tells customers between what hours transit service operates. El Metro generally operates between 6 AM and 10 PM on weekdays, and weekends see shorter service spans which generally matches decreased transit demand. Ensuring transit is available when people need it is important but costly. Like service frequency, lengthening the service span will increase operating costs (more buses and more operators).

Service span is also important to consider when selecting frequency operated at different times of the day. This is most easily understood by discussing morning and afternoon peaks—typically, from 6-9 AM, and from 4-7 PM, transit agencies increase service frequency to match peak demand. This span is important for meeting a particular need (commuting). However, in many communities, these peaked trends are giving way to more sustained all-day demand, which should be matched by sustained all-day service.

The service span for each route in 2019 is shown in **Figure 27**. As mentioned above, some reductions in service span were made in 2020 in accordance with pandemic restrictions on late-night social activities. It should also be noted that routes 8B, 13, and C1 (circulator) operate during Monday to Saturday only.

Figure 26: El Metro Fixed-Route Service Frequency (2019)

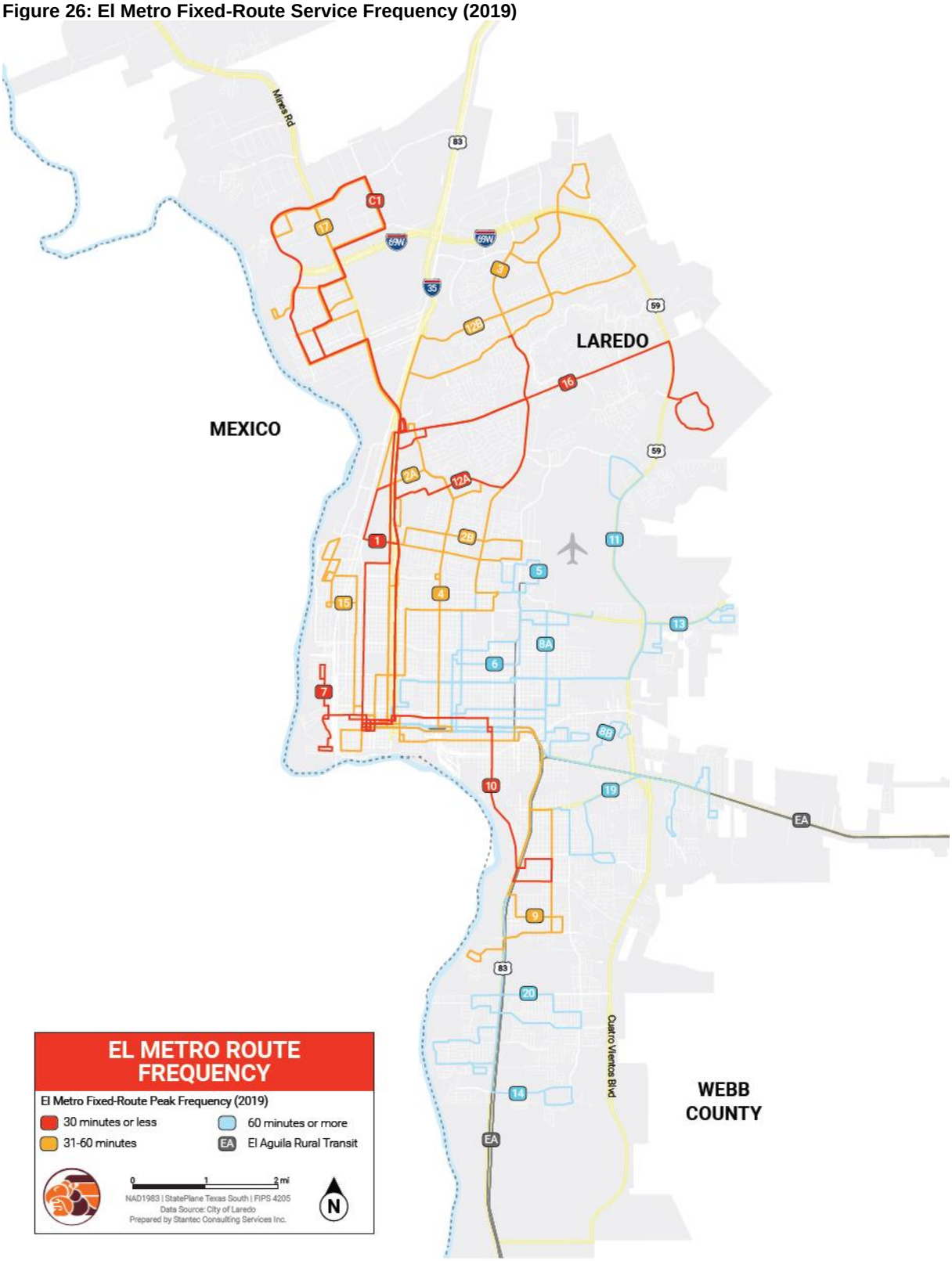
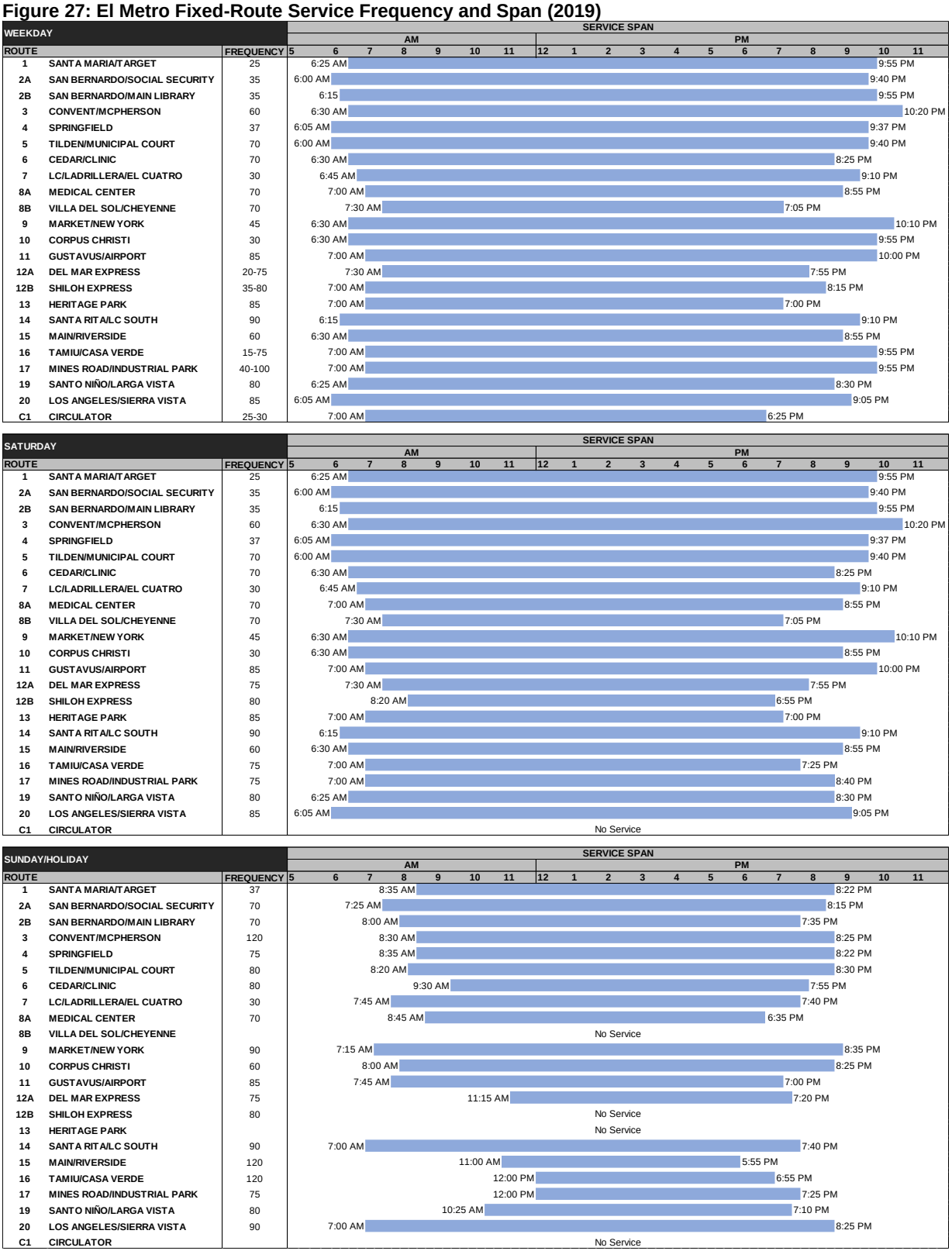


Figure 27: El Metro Fixed-Route Service Frequency and Span (2019)



Service Reliability

Knowing your bus will arrive at its scheduled time and getting you to where you need to go at the expected time are important attributes for customer satisfaction and ridership. If the bus is constantly late or early, coupled with long headways, a missed trip can lengthen travel which is a key attribute to choosing transit over other modes. Service reliability is a necessary ingredient for a successful transit system; an unreliable system negatively impacts customers by causing them to arrive late to work or school, miss major transit connections, or miss daily activities and appointments. On-time performance is particularly important for infrequent routes, as an early arrival can cause a rider to miss their bus and wait an additional hour or more for the next bus.

One of the greatest challenges to service reliability facing El Metro is the prevalence of railway crossings throughout the transportation network, especially at locations where rail crossings intersect with multiple bus routes. On more frequent routes like Route 1, which has the highest ridership in the system, rail crossings may be preventing El Metro from reaching its true ridership potential because the variability in travel time and scheduled stop times makes it difficult for riders to plan their trip. As shown in **Figure 28**, there are many at-grade rail crossings that intersect with El Metro bus routes in the downtown area near El Metro Transit Center that make it difficult to plan and deliver reliable service.

Figure 28: Downtown Laredo At-Grade Rail Crossings

Reliability is typically measured as on-time performance (OTP) at key time points, and whether the departure of the bus at the time point is within an acceptable window (this is known as schedule adherence). An initial recommendation for El Metro is to track OTP at time points as they do not formally monitor this measure. Tracking OTP helps transit agencies identify issues in the schedule that would otherwise be difficult to identify.

While on-time performance data is not available as a consistent measure of service performance, El Metro has conducted surveys to understand customers' satisfaction with reliability (buses on time). The 2016 TDP found that reliability of service was an a rea of improvement and had the highest percentage of respondents (8.4%) rating reliability 'poor' on weekdays and an even higher percentage (18.4%) rating reliability 'poor' on weekends.

With the prevalence of technology, many transit agencies including El Metro have onboard technology allowing real-time bus tracking. El Metro allows customers to track buses via their website or mobile app, which shows real-time bus positions and can help customers better plan for trips and actual bus arrivals. However, we note that some complaints have been received pertaining to availability of information, as some phone carriers do not allow users to view this information. El Metro could publish its real-time GTFS to be picked up by third-party transit and trip planning apps like Transit and Citymapper to provide customers with real-time arrival information, multimodal trip planning, all with simple and intuitive interfaces. Real-time information is crucial to winning ridership today because of the expectations of riders to provide current and reliable information.

4.3 SYSTEM PERFORMANCE AND PEER COMPARISON

Through discussion and collaboration with El Metro staff, peer agencies were identified based on several considerations including:

- Population and density
- Agency size (number of vehicles operated in maximum service)
- Transit modes offered
- Ridership
- Agency-specific considerations, including other agencies located in Texas and border cities

Understanding these considerations, the peer agencies included in the peer analysis are summarized in **Table 5**[4].

Table 5: Peer agencies for peer analysis[5]

Agency	Location	Urbanized area (UZA) population	Service area (sq miles)	Modes operated	# Peak vehicles (VOMS, MB)	Ridership (UPT, MB only)
City of Brownsville (Brownsville Metro)	Brownsville, TX	217,585	82	CB, DR, MB	16	1,491,403
City of Visalia (Visalia Transit)	Visalia, CA	219,454	63	CB, DR, MB	28	1,236,081
Laredo Transit Management, Inc. (El Metro)	**Laredo, TX**	**235,730**	**66**	**DR, MB**	**35**	**2,517,520**
City of Lubbock (Citibus)	Lubbock, TX	237,356	96	DR, MB	65	3,442,579
Municipality of Anchorage** (People Mover)	Anchorage, AK	251,243	85	DR, MB, VP	55	3,410,108
City of Santa Clarita (Santa Clarita Transit)	Santa Clarita, CA	258,653	77	CB, DR, MB	44	2,137,959

**Modes operated as reported to NTD; CB-commuter bus; MB-motor bus; DR-demand response; VP-vanpool; UPT-unlinked passenger trips*
***includes purchased transportation and directly operated services*

All peer agencies have a population that does not exceed a 10% variance from that of Laredo's population. Two agencies, City of Lubbock Citibus and Brownsville Metro, display densities that vary more than 20% from Laredo's; however, we believe these are important to include to provide a comparison to other Texas cities and one other border city (Brownsville). All agencies operate demand response and fixed-route bus service, with three of the peer agencies also operating commuter bus service.

The selected peer agencies show similarities to El Metro in different ways, and thus provide different viewpoints for comparison of different metrics of service. For example, Visalia Transit provided 1.2 million unlinked passenger trips in 2019, but shows a very similar density to Laredo (density variance of 4%). The following sections provide a comparison of El Metro to these selected peer agencies across a number of key performance metrics to understand how El Metro performed in relation to peers across categories including ridership, service provided, service productivity, and financial performance. Specifically, the analysis includes:

- **Ridership**: being a primary performance measure, the ridership change between 2015 and 2019 was plotted with the change in service area population. This may illustrate whether a change in

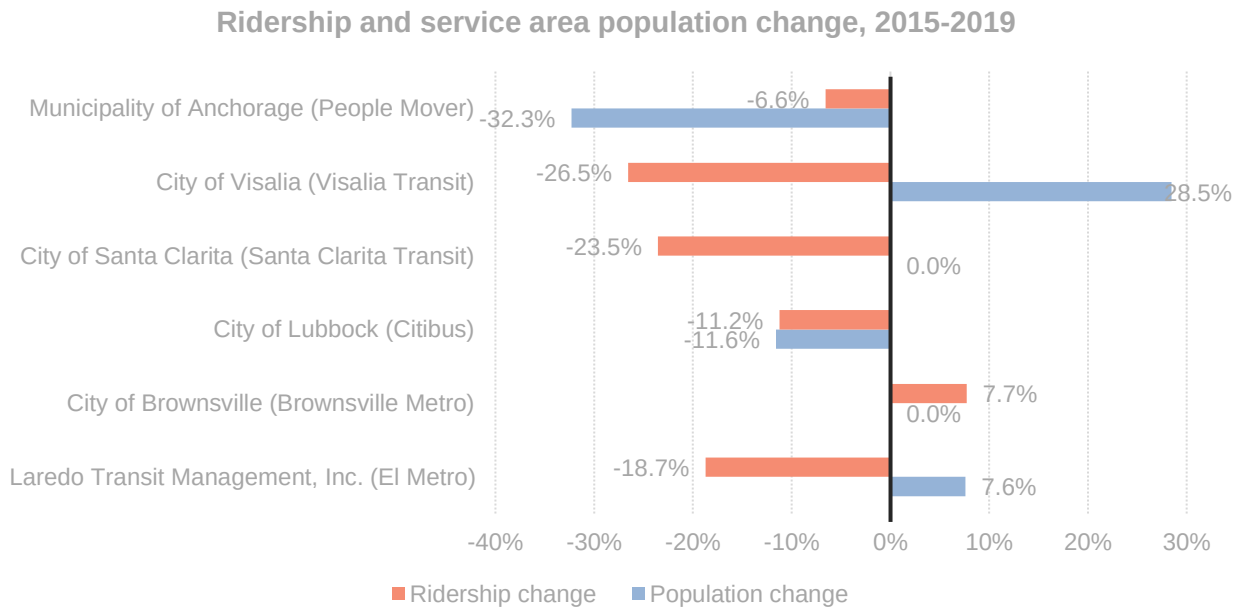
[4] All information included in the peer analysis was obtained from NTD data unless noted otherwise. The fixed route comparisons include on MB (motor bus, aka fixed-route services) metrics and exclude CB (commuter bus) by agencies that operate CB services.
[5] NTD 2019

ridership is reflective of a change in the population served or other factors. Higher values are favorable for both metrics. To examine the popularity or attractiveness of transit, the ridership on a per capita basis was measured, which also accounts for population changes. A higher boarding per capita indicated greater transit usage.

- **Service provided**: the revenue hours on a per capita basis were considered to measure the level of service provided based on the population served. This may help to understand why or why not individuals choose to use transit as service hours play an important role in this decision. The higher the revenue hours per capita, the more service offered.
- **Service productivity**: an industry measure of the productivity of a public transit system results from the amount of service provided (revenue hours) and its utilization in the form of ridership or boardings. As such, boardings per unit of service hour (revenue hours) provides a good understanding of the level of use of a transit system, with higher values translating to greater service productivity.
- **Financial performance**: several metrics may be considered to evaluate the financial investment and financial efficiency of a public transit agency. One measure of this is the operating cost on a per hour and per boarding basis. A lower operating cost per hour and per boarding would indicate greater cost efficiencies in operating transit service. Additionally, a lower change over time in these values would be favorable, while acknowledging that certain operating costs are bound to increase over time.

Ridership

Figure 29: Ridership and service area population change, 2015-2019

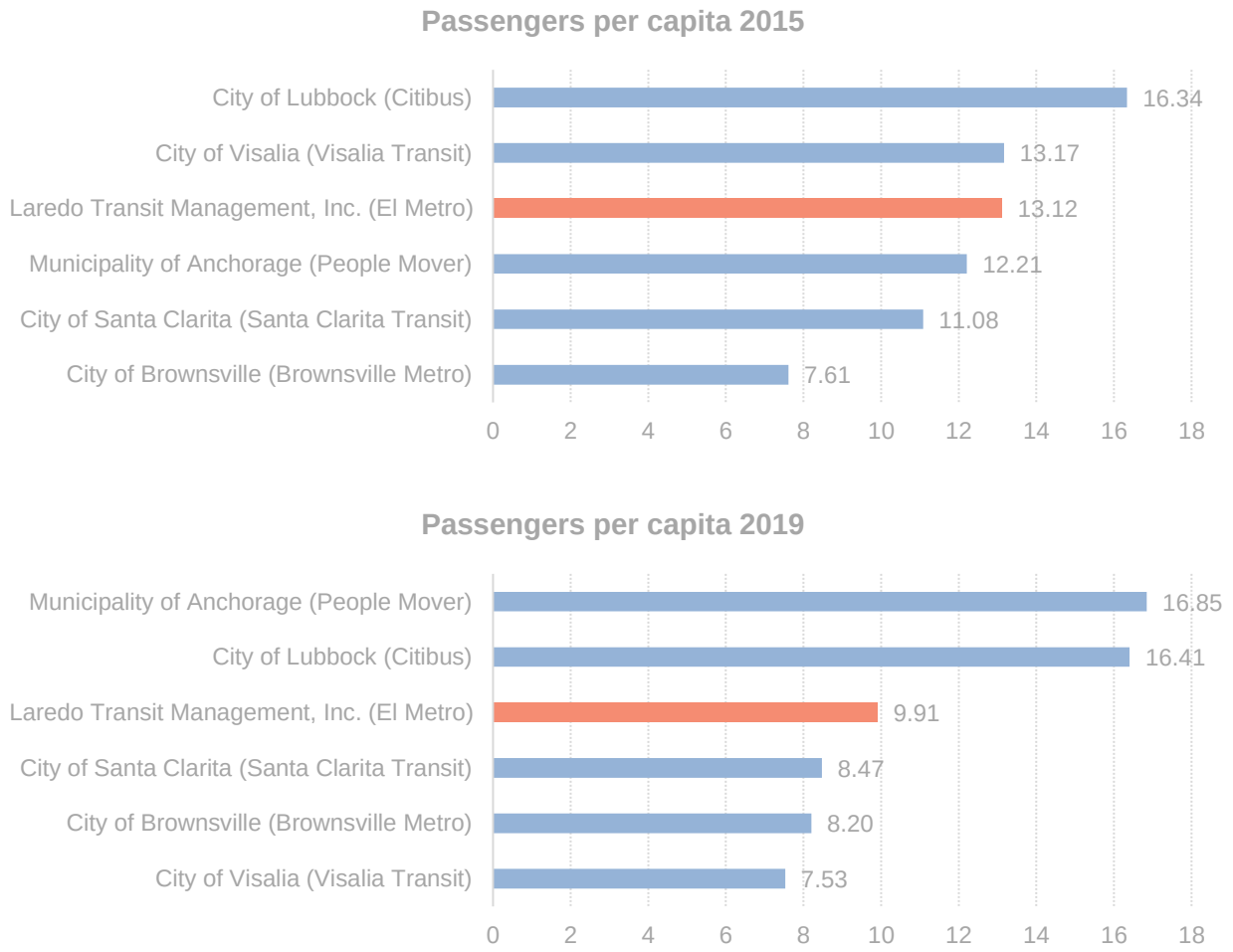


On average, agencies experienced a 1.3% decrease in service area population, which is much smaller than the average 13.1% decrease in ridership seen during the same time period. In fact, only Brownsville Metro experienced a ridership increase during this time. El Metro's ridership decrease of 18.7% is not as extreme

as the ridership decreases seen in by other agencies such as Visalia Transit and Santa Clarita Transit, and is indicative of the nationwide trend of decreasing transit ridership.

While Brownsville and Santa Clarita did not see any changes in service area population, Anchorage and Lubbock saw decreases in service area population. It is interesting to note that Lubbock's population and ridership decreases are nearly identical, while Anchorage's population decrease is much more pronounced than their decrease in ridership.

Figure 30: Passengers per capita, 2015 and 2019

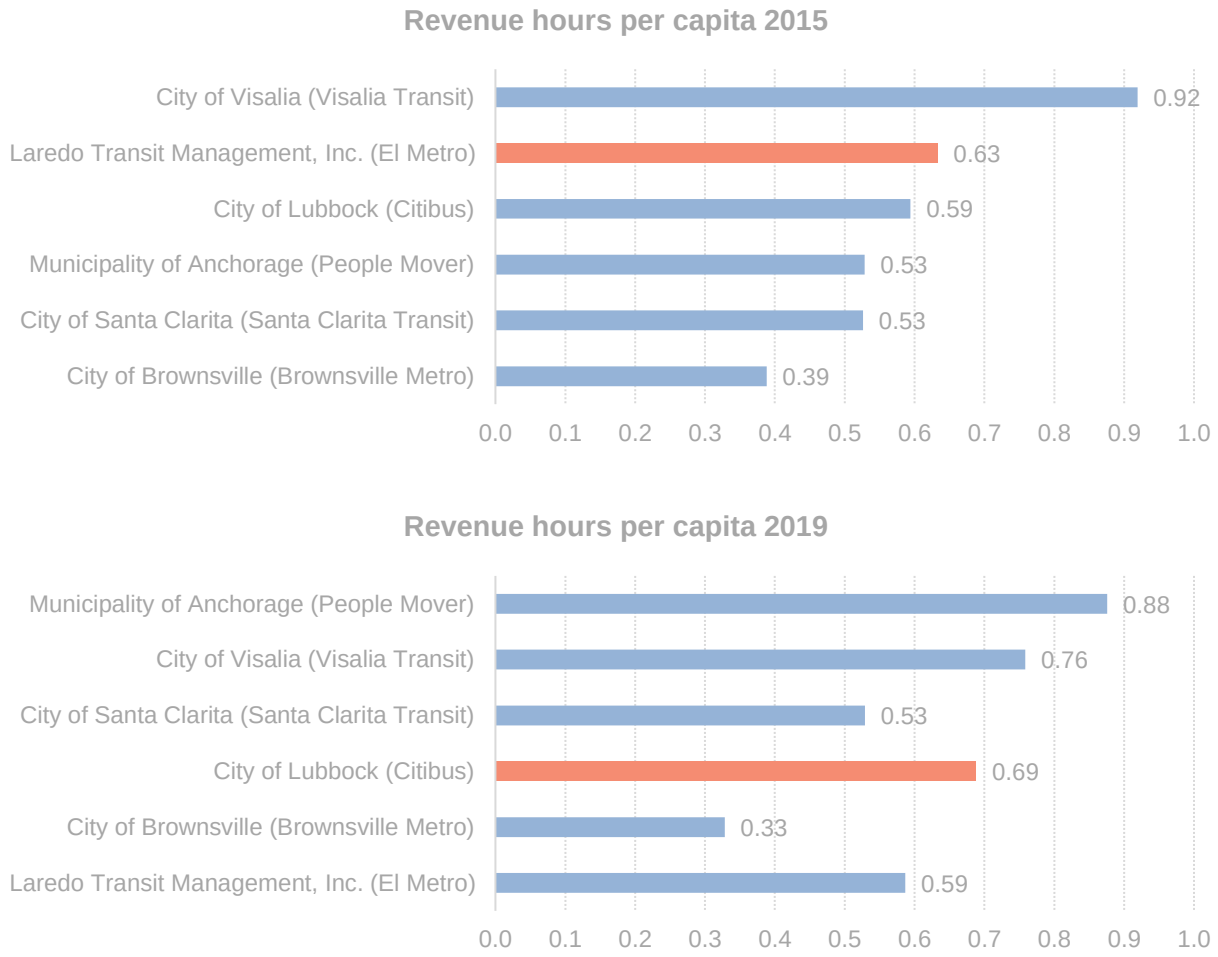


Passengers per capita range from a maximum of 16.85 passengers per capita to a minimum of 7.53 passengers per capita. Three agencies experienced increases in passengers per capita, with Brownsville Metro's passengers per capita increasing 7.7% between 2015 and 2019 and Anchorage seeing a significant increase of 38% during the same time period. Lubbock Citibus saw a minimal increase of 0.4%. the remaining three agencies, including El Metro, saw decreases in passengers per capita, with Santa Clarita Transit and El Metro experiencing 23.5% and 24.5% reductions, respectively, and Visalia Transit seeing a much more significant reduction in passengers per capita of 42.8%. this suggests that transit has become a less attractive mode of transportation for El Metro, Santa Clarita, and Visalia.

In 2015, El Metro's 13.12 passengers per capita exceeded the average of 12.26, but fell to 9.91 passengers per capita in 2019, below the average of 11.23.

Service Provided

Figure 31: Revenue hours per capita, 2015 and 2019

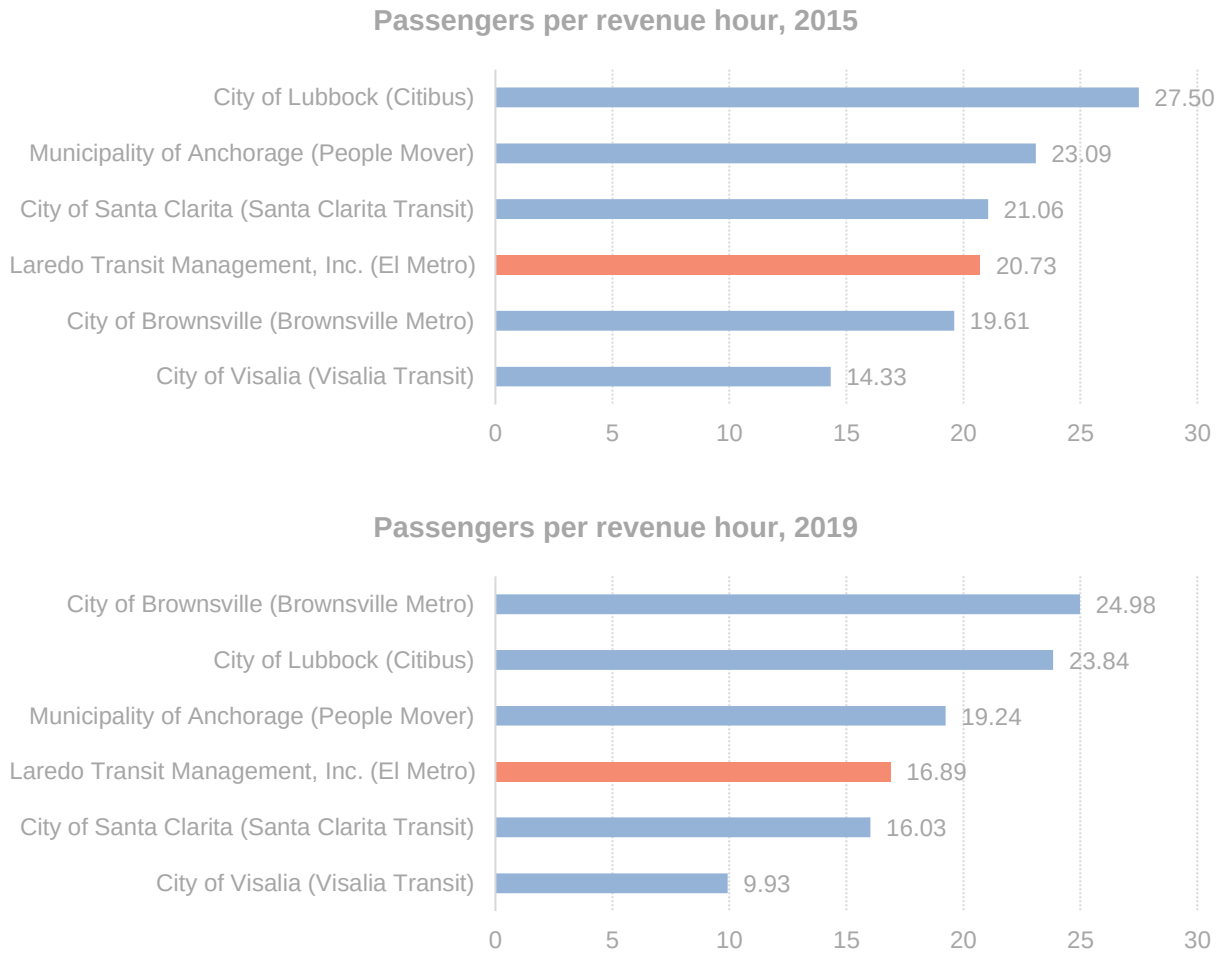


In 2015, El Metro fared above average in terms of revenue hours per capita (El Metro's 0.63 revenue hours per capita compared to the average or 0.60 revenue hours per capita), and provided more service per capita than every agency with the exception of Visalia Transit. Between 2015 and 2019, El Metro saw a 7.3% reduction in revenue hours per capita and falls slightly below the average of 0.63 revenue hours per capita in 2019. This is understood to be due to the fact that El Metro saw a small decrease in revenue hours (0.3%) between 2015 and 2019 coupled with a 7.6% service area population increase. Essentially, El Metro is providing the same amount of service but to a larger population.

Two other agencies, Brownsville and Visalia Transit, saw decreases in revenue hours per capita (15.5% and 17.5%, respectively), while the three remaining agencies saw increases in revenue hours per capita to varying degrees, ranging from the slight increase of 0.5% at Santa Clarita Transit to the significant increase of 65.6% at Anchorage. The large increase in revenue hours per capita seen at Anchorage can be attributed to a decrease in service area population coupled with an increase in the number of revenue hours provided.

Service Productivity

Figure 32: Passengers per service hour, 2015 and 2019



A decrease in service productivity between 2015 and 2019 is seen across all agencies with the exception of Brownsville Transit, which saw an increase of 27.4% between 2015 and 2019. Brownsville Metro's increase in service productivity is a result of a decrease in revenue hours combined with an increase in passenger activity, a trend that was not seen in any of the other agencies. All other agencies saw decreases in the number of passengers per revenue hour, ranging from a 13.3% decrease from Lubbock Citibus to a 30.7% decrease seen by Visalia Transit. El Metro's decrease of 18.5% falls roughly in the middle of agencies who saw decreases in service productivity.

El Metro's measure of service productivity is below average for both 2015 and 2019. El Metro's 20.73 passengers per revenue hour in 2015 is just below the average of 21.05, and is further below the average of 18.48 in 2019, with El Metro reporting 16.89 passengers per revenue hour.

Brownsville Metro: Regional Partnerships to Bolster Service Productivity

Brownsville Metro, the transit agency for the city of Brownsville located in the Rio Grande Valley, saw an impressive 27.4% increase in passengers carried per revenue hour between 2015 and 2019, which was the result of increased passenger activity and a decrease in revenue hours provided. Brownsville Metro

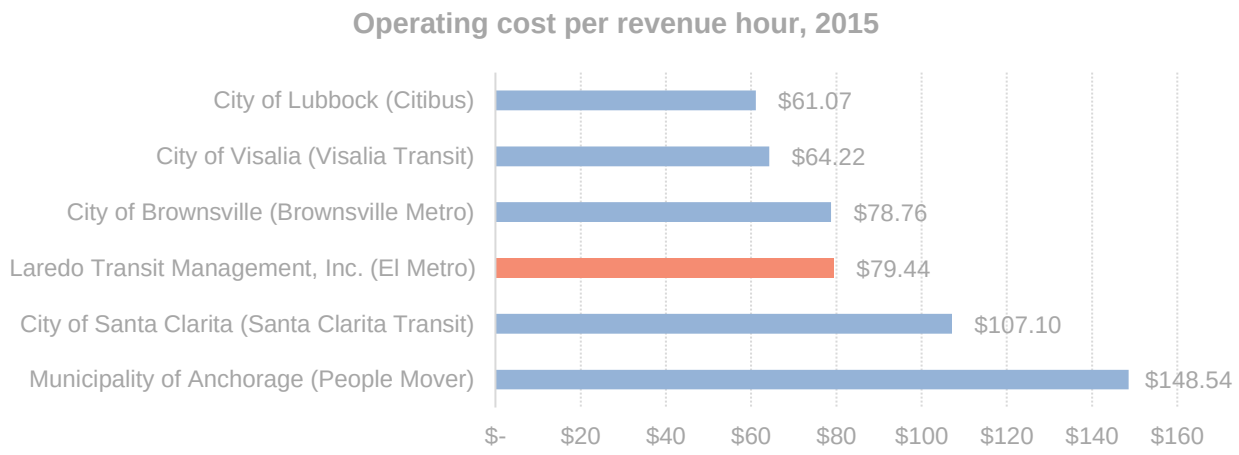
found that through strategic regional partnerships and the creation of a regional system, minimizing service duplication resulted in a more effective use of revenue hours and a better customer experience.

In 2013, Brownsville Metro partnered with Metro McAllen and Island Metro (South Padre Island), two other municipal service providers in the Rio Grande region, to secure funding to create a regional transit system, named Metro Connect. The regional system allows passengers to travel throughout the region and a fare can be used on the local services as well, allowing for seamless regional transfers[6]. In 2017, the service was expanded and rebranded as RGV Metro Express, and expanded to include Valley Metro and UT-Rio Grande Valley to create a regional, express bus service that connects all major cities in the Rio Grande Valley. During this rebranding and expansion, Valley Metro overtook administration and operation of the project, helping to lower costs for other participating agencies and opening the door for more state funding opportunities. The creation of the regional transportation system not only improves the customer experience by providing seamless, convenient regional travel, but also helped Brownsville Metro reduce service hours that are now covered by RGV Metro Express (reducing service duplication), and bringing more passengers onto the local system[7].

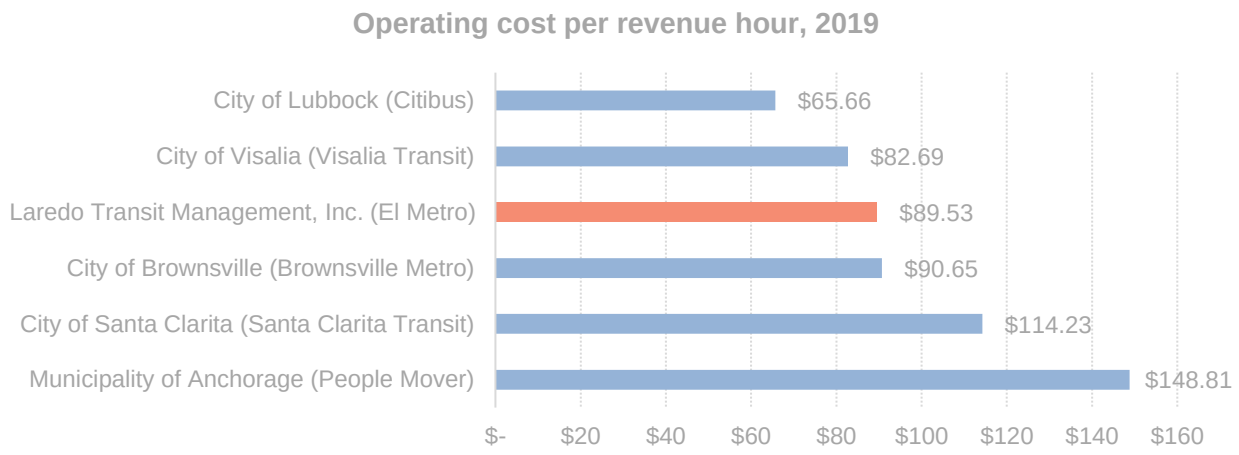
In addition, the Brownsville MPO has held a planning focus on improving and enhancing active transportation infrastructure in the region to create more opportunities for pedestrian and bike activity, which in turn help to strengthen first/last mile connections to bus stops and can help encourage transit ridership without the addition of more service hours[8].

Financial Performance

Figure 33: Operating cost per revenue hour, 2015 and 2019



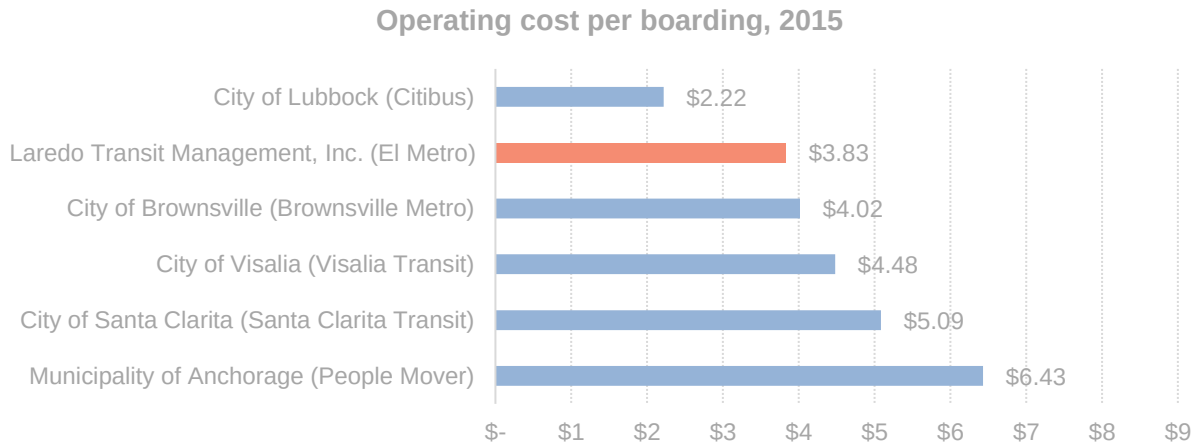
[6] https://www.cob.us/DocumentCenter/View/4491/UPWP-FY2018?bidId=
[7] https://riograndeguardian.com/metro-connect-to-be-expanded-and-rebranded-as-rgv-metro-express/
[8] https://www.cob.us/DocumentCenter/View/7454/2013-Brownsvilles-Bike-Master-Plan-

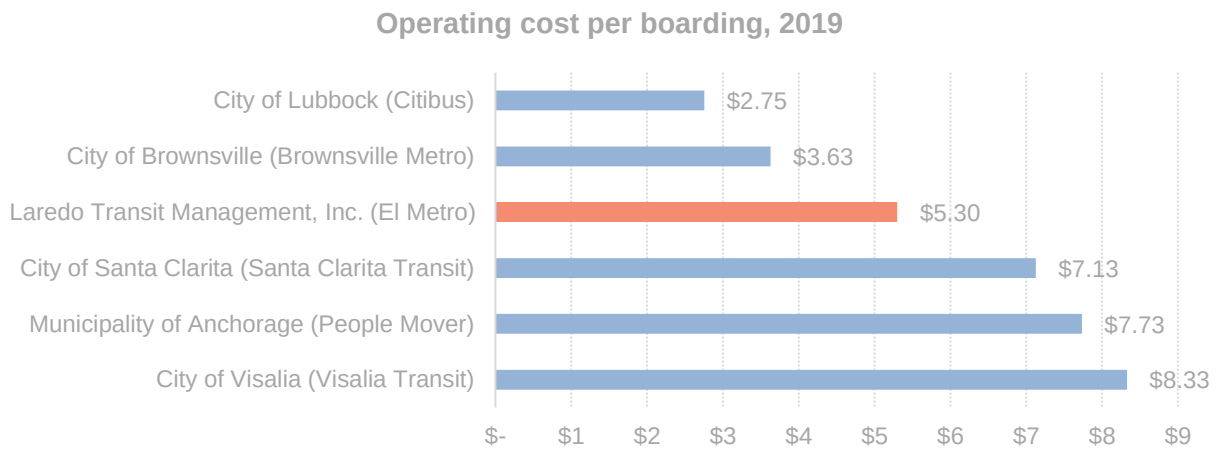


Overall, El Metro sees operating costs per revenue hour that are close to average of that of their peers and this pattern has been sustained over time. In fact, El Metro's operating costs per hour in 2015 was $79.44, lower than the average of $89.86 per revenue hour and $89.53 per revenue hour in 2019, also lower than the average of $98.60 per revenue hour.

It is not surprising that operating costs per revenue hour increased over time for all agencies. It is interesting to point out that while Anchorage shows the highest operating costs per revenue hour for both years, it also saw the smallest increase in costs per revenue hour (0.2% increase) over time. Santa Clarita and Lubbock Citibus both saw smaller increases over time (6.7% and 7.5%, respectively), with El Metro, Brownsville Metro, and Visalia Transit seeing the largest increases over time (of 12.7%, 15.1%, and 28.8%, respectively).

Figure 34: Operating cost per boarding, 2015 and 2019





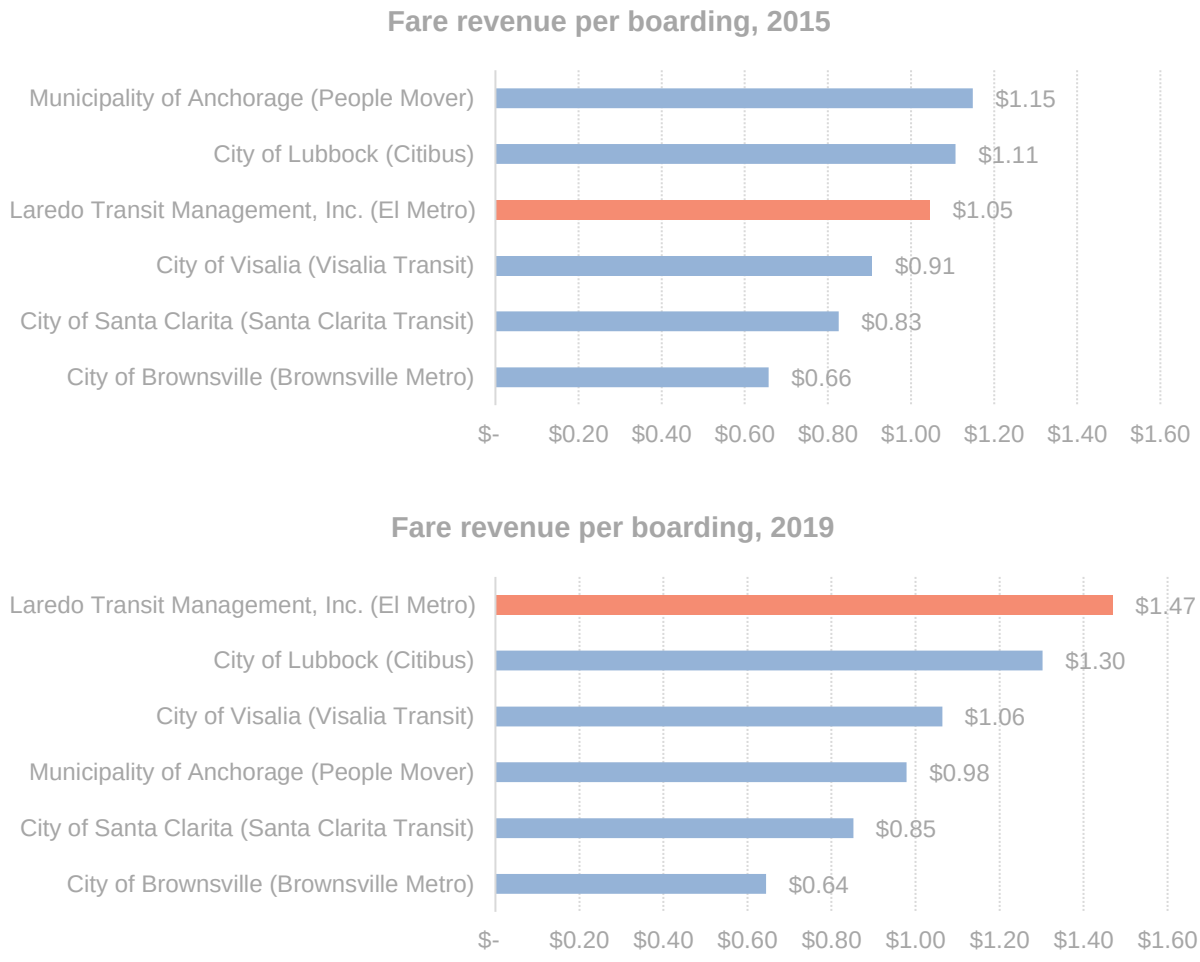
All agencies saw an increase in the operating costs per boarding with the exception of Brownsville Metro, due to the fact that they saw an increase in boardings and a decrease in operating costs between 2015 and 2019. While El Metro's operating costs per boarding increased by 38.3% between 2015 and 2019 Brownsville Metro's operating costs per boarding decreased by 9.7%.

El Metro fared very well in in terms of operating costs per boarding compared to peer agencies across both years. In 2015, El Metro's $3.83 per boarding was below the average of $4.35, and even though operating costs per boarding increased to $5.30 in 2019, this is still below the average of $5.81 per boarding.

Lubbock Citibus displays the lowest operating cost per revenue hour and per boarding for both 2015 and 2019. According to their recently released COA Working Paper, this is due to the fact that they serve a large university (Texas Tech University, where over 40,000 undergraduate and graduate students were enrolled in the Fall 2020 semester) that is centrally located within the metropolitan area of the city. The COA notes that operating costs per passenger trip and boarding are lower for university populations, which tend to have higher concentration of people going to fewer destinations. The COA further states that the average cost for serving the general population is $6.22 per passenger trip, while the average cost to serve a Texas Tech student is $1.62. Thus, the large student population helps to keep operating costs per boarding and revenue hour very low for Citibus[9].

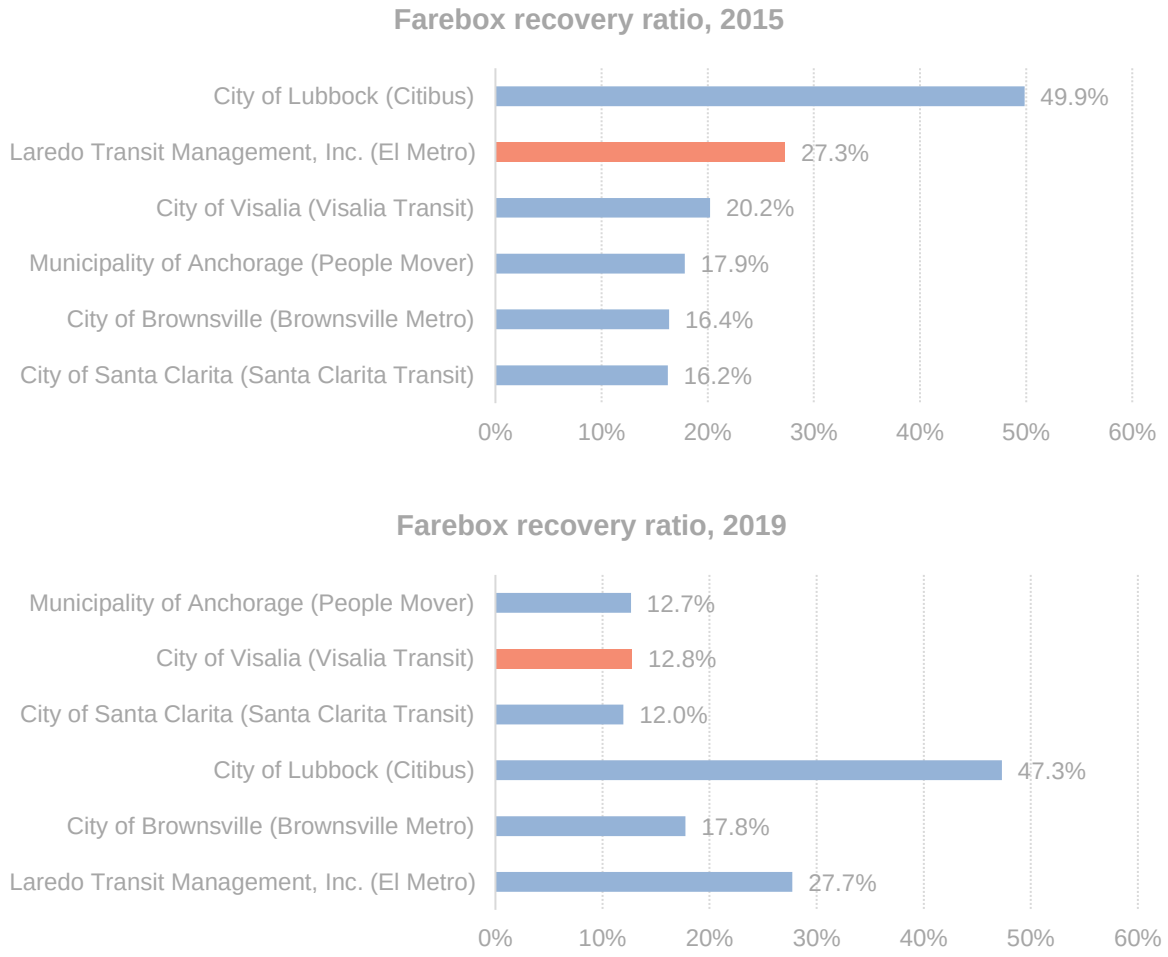
9 https://static1.squarespace.com/static/59d5585af5e2319471bb7169/t/5dd5af8547de32553017b8ac/1574285211632/Citibus+COA+-+Working+Paper+1.pdf

Figure 35: Fare revenue per boarding, 2015 and 2019



On average, agencies saw a 10.3% increase in fare revenues per boarding, though there are some variations within that. For example, Brownsville Metro and Anchorage saw decreases in fare revenue per boarding, which were offset by increases in the fare revenue per boarding experienced by all other agencies. Notably, the largest increase was seen with El Metro, whose fare revenue per boarding increased from $0.91 per boarding in 2015 to $1.47 in 2019, an increase of 40.5%. this is reinforced by the observation that El Metro's overall fare revenue from bus boardings increased 14.2% between 2015 and 2019.

Figure 36: Farebox recovery ratio, 2015 and 2019



Farebox recovery ratio is the portion of an agency's operating expenses which are met through fares paid by passengers. The farebox recovery ratios of peer agencies vary greatly from below 20% to over 40% in both years analyzed. However, El Metro sees farebox recovery ratios that are higher than the average for both 2015 and 2019, as well as a slight increase from 27.3% in 2015 to 27.7% in 2019. As boardings decreased for El Metro during this time, this could be the result of fare changes made during this time. Lubbock's farebox recovery ratio is significantly higher than any other peer analyzed. According to their COA working paper, this can be attributed to the fact that they include revenues from other sources, such as from charter services and Texas Tech shuttle buses, in their farebox revenue.

Encouraging Peer Case Studies

This section presented an overview of how El Metro compares to peer agencies over time across a number of different metrics, including ridership, service provided, service productivity, and financial performance.

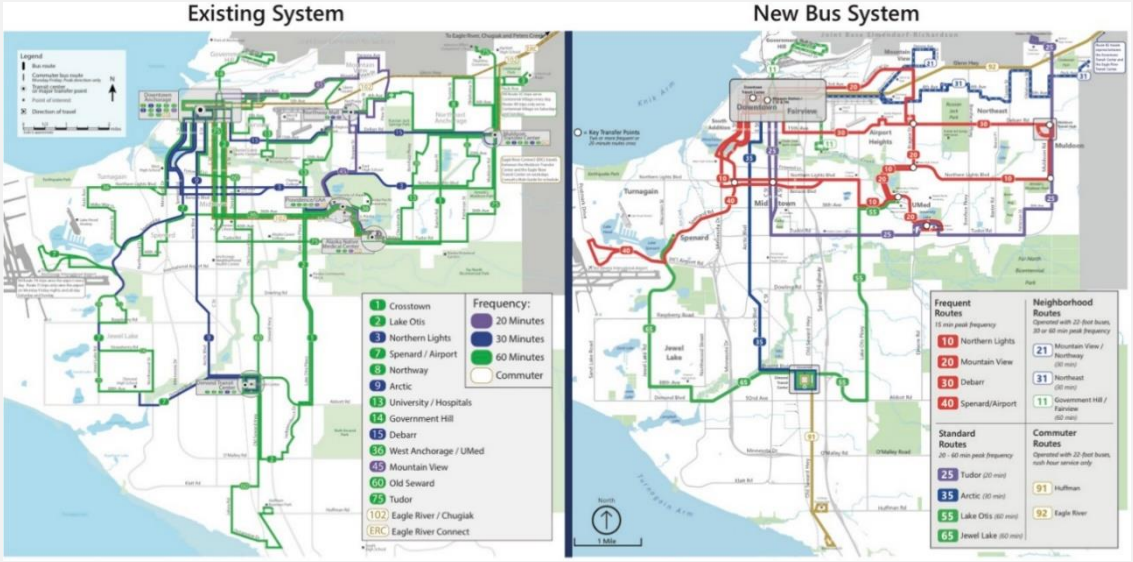
In terms of ridership, El Metro falls in the middle of the pack with a 18.7% decrease in ridership between 2015 and 2019, following the trend of falling ridership seen by agencies across the country. El Metro's passengers per capita also fell during this time, from 13.12 in 2015 to 9.91 in 2019, suggesting that transit has become less attractive compared to other options (such as private vehicle use or TNCs) over time.

Between 2015 and 2019, El Metro's revenue hours per capita decreased 7.6% due to a small reduction in revenue hours coupled with an increase in service area population; essentially, El Metro is now providing slightly less service to a larger population. El Metro also saw a decrease in service productivity, with an 18.5% decrease in passengers per revenue hour between 2015 and 2019. And while El Metro has fairly high operating costs per revenue hour compared to peer agencies, they increased at a lower rate compared to some peers over time.

Overall, there are opportunities to bolster ridership and improved service productivity and service efficiency for El Metro, which will be focuses of forthcoming tasks related to developing service concepts and recommendations. El Metro is currently doing a good job in terms of an admirable farebox recovery ratio and 2019 fare revenues per boarding that exceed all peer agencies.

Anchorage – Rerouting to Success

Anchorage, Alaska is a growing town with nearly 300,000 residents. A relatively small transit agency, since peaking in 2008, ridership had been dropping precipitously. To stem this ridership loss and reimagine how service is designed and delivered, the agency embarked on a bus network redesign process called "Anchorage Talks Transit". Beginning in May 2016 with robust public outreach and a system assessment, it was discovered that service was evenly split between 'coverage' and 'ridership' routes. Community feedback overwhelmingly pointed to the fact that most riders and non-riders would be willing to walk a little further for more frequent service, for instance, as well as uncovered the need for more service on Sundays and later into the evening. Through a redesign process, routes were straightened, frequency was bolstered on key corridors to expand accessibility, service was reclassified into different tiers based on frequency to improve legibility and ease of use, and service was increased on weekends and evenings. The new system is shown below[10]:



In May 2017, the new network was rolled out with robust engagement, marketing, and customer support to ease riders into the new service. While initial ridership continued to slide (although to a lower extent than

[10] https://humantransit.org/wp-content/uploads/Anchorage-Comparison-Maps-on-letterhead.jpg

projected without the redesign), starting in 2018, the resulting network has grown ridership significantly on both weekdays and Sundays.[11]

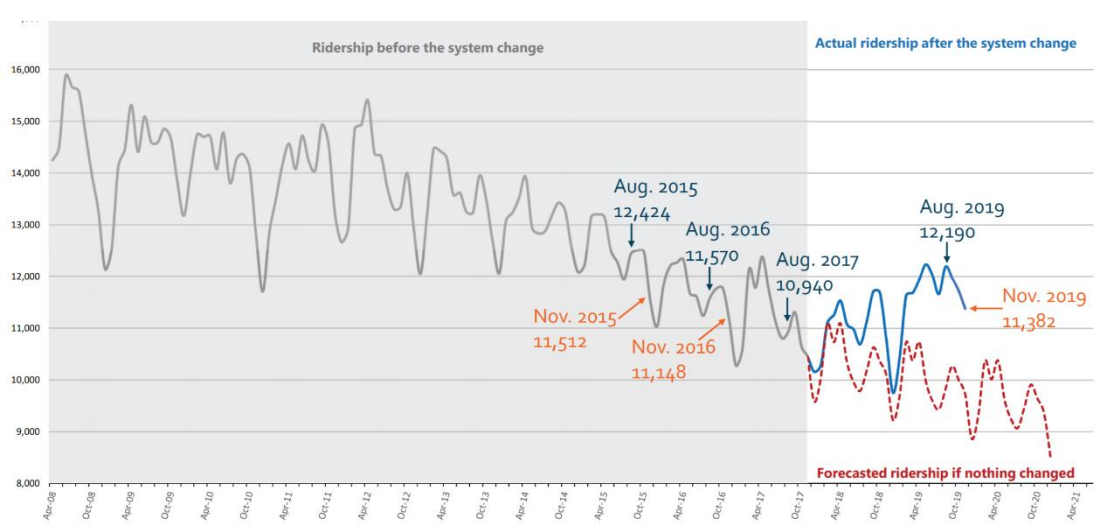


Figure 15: Average Weekday Ridership

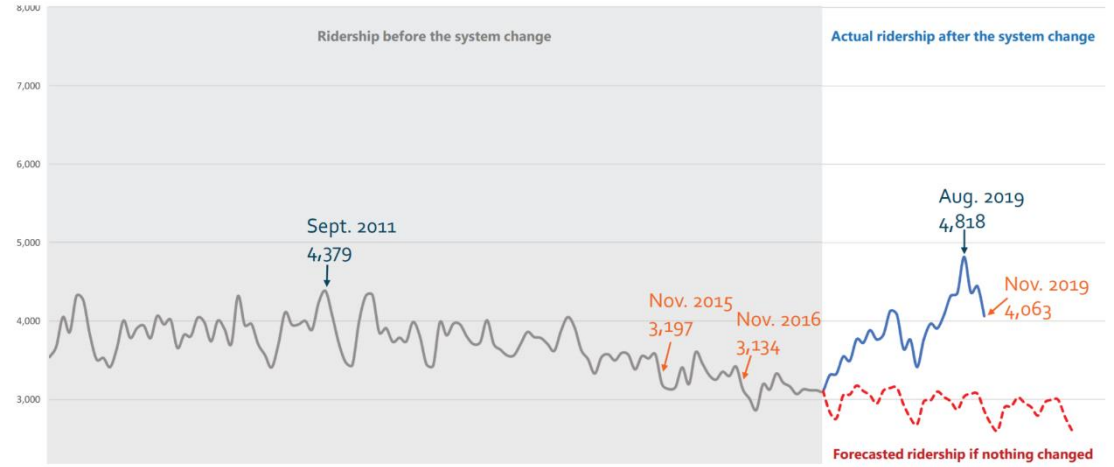


Figure 16: Average Sunday Ridership

More recently, in 2019-2020, Anchorage developed a new transit plan—"Transit on the Move"—which will chart the path forward to determine how to best leverage fixed-route, paratransit, and vanpool, while also exploring new concepts like microtransit.

This case study demonstrates that despite ridership losses and communities geared to auto use, transit agencies can rethink service design and delivery to focus on frequency and increased service hours, even

11 https://www.muni.org/departments/transit/peoplemover/documents/transit%20on%20the%20move/20200311_transit_on_the_move_final_plan.pdf

though this may require longer walks and loss of service for some riders that will result in ridership growth.[12]

Lubbock Citibus – Innovating a Better Transit System

In July 2019, Lubbock Citibus kicked off a COA to focus on how to improve fixed route, paratransit, and demand response services with specific objectives of optimizing existing transit service, improving mobility, improving cost-effectiveness, and making the system easier to use with more direct routes and frequent service. The project was initiated due to flatlining ridership and significant changes in land use and development patterns and land that has recently been annexed into the city.

To date, a working paper on existing conditions and a presentation on preliminary service concepts and recommendations has been released. The initial system alternatives are built off feedback gathered during community surveys and findings from the existing conditions working paper. The COA has proposed five system alternatives for further analysis and feedback from the public and stakeholders[13]:

- Alternative 1: maintain coverage of existing service, more direct routing
- Alternative 2: maintain coverage, add microtransit
- Alternative 3: streamline routing with improved frequency and later service
- Alternative 4: expanded service in southwest, north, and southeast Lubbock
- Alternative 5: balanced approach – high frequency route, core routes, and microtransit

Each alternative is exhibits different pros and cons, and shows an array of different solutions, from minor recommendations to make routes more direct, to more significant network redesigns and implementation of innovative service concepts such as microtransit. The service alternatives also have different cost projections, with more significant service changes or service expansion concepts coming with a larger price tag. These different service alternatives are important to show to the community and stakeholders to further understand where values lie (coverage or frequency? Expanded service area or longer service hours to existing service? Enhance core services or expand to new areas?) and ultimately to craft and refine final recommendations that are the best fit for the community and the best use of limited resources.

In addition to this COA initiative, Citibus has recently implemented two innovative programs to help respond to the needs of riders while keeping costs low. These include:

- Citibus NiteRide: a common request heard from riders is for more late-night service, which is often difficult to provide due to the high operating costs to continue service for a relatively small portion of the riding population. Citibus began offering the NiteRide service to provide late-night service substitution within city limits after fixed route and paratransit service have ended. The curb-to-curb service is open to the public but customers must register with Citibus beforehand. Customers can schedule advance trips or book trips the night of for an added fee.

[12] **Key references:**
https://muni.org/departments/transit/peoplemover/documents/transit%20on%20the%20move/20200311_transit_on_the_move_final_plan.pdf
http://www.muni.org/Departments/transit/PeopleMover/Pages/transitonthemove.aspx
https://www.muni.org/departments/transit/peoplemover/documents/system%20report%20cards/2019%20report%20card(final).pdf
http://www.muni.org/Departments/transit/PeopleMover/Pages/TransitTalks.aspx
https://www.adn.com/alaska-news/anchorage/2017/10/22/big-changes-in-anchorages-bus-system-take-effect-monday/#_

[13] https://static1.squarespace.com/static/59d5585af5e2319471bb7169/t/5dd5b0d7d168ef7c6a875d5d/1574285568873/PPT+-+CitibusAlternatives-forCityCouncil-FINAL.pdf

- Citibus On-Demand: in response to reduced service frequency during the COVID-19 pandemic, Citibus launched a microtransit pilot to supplement fixed route service. The pilot was designed to fill in the gaps of fixed route service, which transitioned to hourly frequencies during the pandemic. Citibus On-Demand runs during weekdays from 7am-11pm, and rides can be booked through a smartphone app. Fares are $2.00 per ride.

4.4 ROUTE-LEVEL PERFORMANCE

One of the best measures of the productivity of a bus route is the turnover of passengers or boardings per revenue hour. Essentially, this measure can provide an indication of utilization per hour of service. Service hours (or revenue hours) depends on the length of the route, average operating speed, frequency of service, and the service span. Altering any of these factors will impact revenue hours and thus the amount of service provided. Since an hour of service represents the major cost of operating service, boardings per revenue hour provides a clear indication of ridership relative to operating costs. We note that productivity is used when measuring the goals of maximizing ridership, that is, not measuring coverage routes that may see lower volumes of riders and productivity but instead provide a vital service. The annual ridership and productivity for fixed-route services is provided in **Figure 37**. It should be noted that Route C1 (Circulator) began operation in July 2019 and therefore only includes 6 months of service in 2019.

Figure 37: Fixed-Route Ridership and Productivity (2019 and 2020)

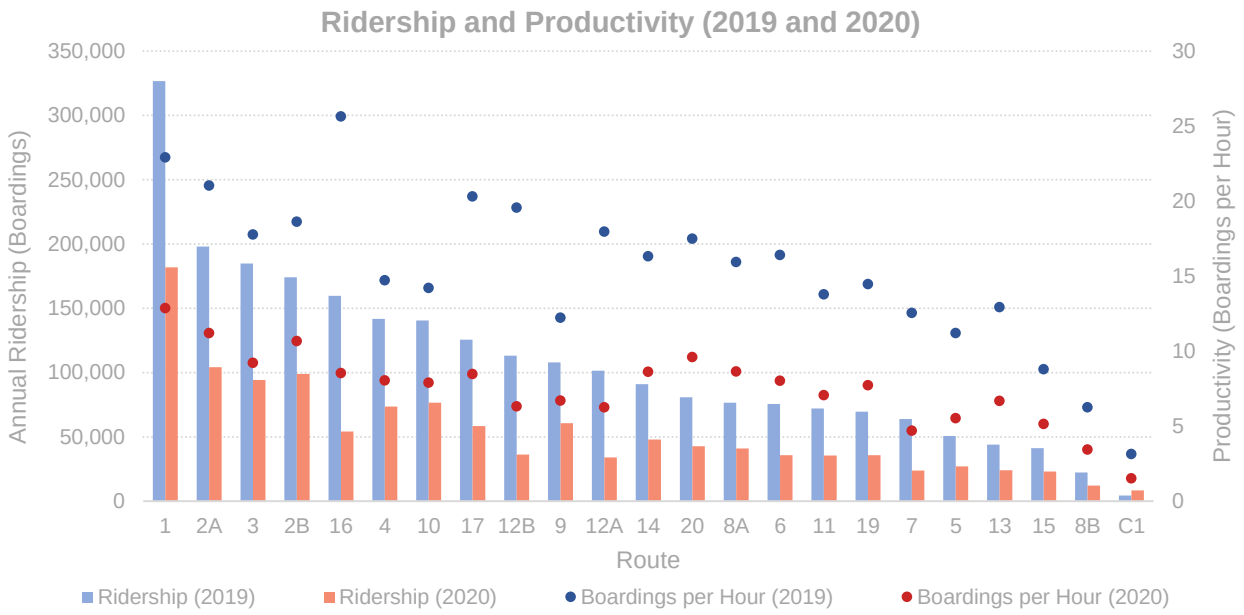


Table 6 shows fixed-route ridership, service hours and productivity, ordered from most productive to least productive in 2019. The most productive route is Route 16, with 25.6 boardings per hour and the least productive route is the circulator with 3.1 boardings per hour in 2019. It is clear from these measures that not all routes' primary goal is to carry the greatest number of passengers, as routes like the circulator and Route 8B act as lower frequency coverage routes.

Table 6: Fixed-Route Ridership, Service Hours and Productivity (2019 and 2020)

Route	Ridership (2019)	Service Hours (2019)	Boardings per Hour (2019)	Ridership (2020)	Service Hours (2020)	Boardings per Hour (2020)
16	159,590	6,225	25.6	54,214	6,365	8.5
1	326,641	14,265	22.9	181,807	14,151	12.8
2A	198,046	9,418	21.0	104,299	9,325	11.2
17	125,679	6,194	20.3	58,483	6,913	8.5
12B	113,178	5,789	19.6	36,250	5,744	6.3
2B	174,149	9,358	18.6	98,868	9,267	10.7
12A	101,524	5,654	18.0	34,057	5,456	6.2
3	184,769	10,397	17.8	94,348	10,246	9.2
20	80,786	4,620	17.5	42,726	4,458	9.6
6	75,693	4,619	16.4	35,663	4,451	8.0
14	90,952	5,577	16.3	47,829	5,558	8.6
8A	76,656	4,816	15.9	40,892	4,738	8.6
4	141,672	9,630	14.7	73,679	9,182	8.0
19	69,522	4,810	14.5	35,846	4,644	7.7
10	140,418	9,890	14.2	76,633	9,720	7.9
11	71,975	5,226	13.8	35,601	5,054	7.0
13	43,891	3,396	12.9	24,168	3,618	6.7
7	63,798	5,087	12.5	23,728	5,060	4.7
9	108,009	8,840	12.2	60,526	9,040	6.7
5	50,797	4,541	11.2	26,927	4,879	5.5
15	41,267	4,702	8.8	23,134	4,507	5.1
8B	22,246	3,569	6.2	12,024	3,504	3.4
C1	4,391	1,408	3.1	8,367	5,579	1.5

Table 7 displays daily ridership for each fixed route (2019) for a typical weekday, Saturday and Sunday as well as Saturday and Sunday ridership as a percentage of weekday ridership. Weekday boardings are generally higher than weekend boardings, however Saturday boardings do surpass a typical weekday on routes such as 1, 8B, and 12A.

These two tables are used together with each route's service span, frequency, and schedules to discuss each route's purpose and productivity.

Table 7: Weekday and Weekend Daily Ridership Comparison

Route	Weekday Boardings	Saturday Boardings	Saturday (% of Weekday Boardings)	Sunday Boardings	Sunday (% of Weekday Boardings)
1	933	951	102%	512	55%
2A	577	536	93%	245	42%
2B	480	464	97%	248	52%
3	615	385	63%	171	28%
4	429	353	82%	152	35%
5	168	108	64%	55	33%
6	291	147	51%	21	7%
7	381	88	23%	57	15%
8A	225	204	91%	145	65%
8B	50	66	133%	No Service	
9	328	246	75%	109	33%
10	456	314	69%	160	35%
11	204	149	73%	119	58%
12A	198	245	124%	69	35%
12B	196	No Service			
13	154	125	81%	No Service	
14	346	190	55%	231	67%
15	117	117	100%	93	79%
16	627	255	41%	30	5%
17	411	187	46%	87	21%
19	226	165	73%	80	35%
20	267	No Service			

Route 1 Santa Maria

- Route 1 provides north-south service mainly along Santa Maria Ave from El Metro Transit Center to the Target North shopping center, stopping at Walmart on the way.
- Located along Route 1 is also numerous elementary and middle schools.
- Route 1 operates every 25 minutes Monday to Saturday and every 37 minutes on Sunday.
- This route has the highest daily and annual ridership in the system (carrying 13% of annual riders) but is the second most productive route with 22.9 daily boardings per revenue hour in 2019 and 12.8 in 2020.
- Route 1 is one of the only routes with a greater number of Saturday boardings than weekday boardings, which is likely due to it being the most frequent route between the Transit Center and Target North, as well as providing service to Walmart. Commercial destinations often attract weekend ridership that is comparable to weekday ridership and have heavy ridership during off-peak weekday hours as well.
- Route 1 appears to create sustained ridership throughout the weekday and weekend, attracting peak ridership through schools and employment opportunities as well as off-peak ridership through commercial destinations.
- Overall, this route performs well and may be a candidate for more frequent service to attract demand following the post-pandemic reopening of Laredo.

- The decrease in ridership on Route 1 from 2019 to 2020 was approximately 44%, which was one of the lowest decreases in the entire system.

Route 2A San Bernardo/Social Security

- Route 2A operates north-south service primarily along San Bernardo Ave from El Metro Transit Center to the US Social Security Office, serving other civic destinations such as the Chamber of Commerce and Civic Center as well.
- Route 2A runs every 35 minutes Monday to Saturday and every 70 minutes on Sunday. Sunday service operates half as frequently as during a weekday and carries approximately 42% as many boardings as on a weekday.
- This route is one of the most productive routes in the system with 21 boardings per revenue hour in 2019 and 11.2 boardings per revenue hour in 2020 and has the second highest annual boardings after Route 1.
- Overall, this route performs well and connects important civic and employment destinations. This route's purpose is likely focused on ridership, however the one-way loop at the north of the route provides more of a coverage function.

Route 2B San Bernardo/Calton

- Route 2B provides north-south service along San Bernardo Ave from El Metro Transit Center to the Laredo Main Library on Calton Rd, duplicating the service provided by Route 2A along the south portion of the route.
- Route 2B runs every 35 minutes Monday to Saturday and every 70 minutes on Sunday. The service span and frequency on weekdays and weekends on Route 2B is the same as on Route 2A but Route 2B Sunday ridership is 52% of weekday ridership compared to 42% on Route 2A.
- The combined frequency from routes 2A and 2B is 15 to 20 minutes along San Bernardo, making San Bernardo one of the most frequent corridor of service in the network. Together, these two routes carry 15% of the total annual ridership of El Metro's fixed-route system.
- Similar to Route 2A, Route 2B overall is one of the most productive routes with 18.6 boardings per revenue hour in 2019 and 10.7 in 2020.

Route 3 Convent/McPherson

- Route 3 provides north-south service from El Metro Transit Center to Independence Plaza along Convent Ave and McPherson Rd.
- The north loop of this route serves a mix of land uses, including commercial destinations at Independence Plaza, Doctor's Hospital of Laredo and other medical offices, and mid-density residential developments such as Windsor Place Apartments. A mix of land uses are also observed along McPherson Rd, including apartments, schools, medical offices, fast food restaurants and other commercial activities. Route 3 therefore operates along a corridor that is generally transit-supportive compared to other corridors outside the downtown area.
- Route 3 operates every 60 minutes Monday to Saturday and every 120 minutes on Sundays, illustrating that this route functions as a community route.
- The portion of McPherson Rd from Calle del Norte to International Blvd is also shared with Route 12A, which operates every 20 minutes during the AM peak and every 40 minutes during the PM peak (2019). Together, routes 3 and 12A provide frequent service along the mix-use portion of McPherson Ave.
- Despite the presence of commercial destinations along the route, Sunday only carries 28% of a typical weekday's riders. We can likely point to the Sunday frequency to explain the low ridership

on Sundays as operating every 2 hours makes it difficult for riders to complete trips related to shopping or running quick errands because riders are constrained by the schedules.
- Overall, Route 3 is the 8th highest ranked route in terms of productivity with 17.8 boardings per revenue hour in 2019 and 9.2 boardings per revenue hour in 2020.

Route 4 Springfield

- Route 4 operates north-south along Springfield Ave from El Metro Transit Center to Target North shopping center on Del Mar Blvd. This route is relatively direct between the two termini along Springfield Ave except for a small detour away from Springfield Ave to serve Allendale Street and Tanis Valdez Village, a 72-unit affordable housing community.
- This route provides 30- to 40-minute headways Monday to Saturday and 75-minute headways on Sundays. Sunday service operates half as frequently as during a weekday and carries approximately 35% as many boardings as on a weekday.
- Route 4 provides the same terminal stops as Route 1, with slightly longer headways (30-40 minutes compared to 25 minutes) and similar travel times between the Transit Center and Target North. However, Route 1 is ranked the 2nd most productive route and Route 4 is ranked the 13th most productive route (2019). This indicates that Springfield Ave has much fewer transit destinations than Santa Maria Ave and is therefore less productive as a transit corridor.

Route 5 Tilden/Municipal Court

- Route 5 operates generally in a north-south direction between El Metro Transit Center and Laredo Municipal Court along Tilden Ave. This route serves additional civic land uses and key destinations including the Police Department, Laredo Development Foundation, Border Region Behavioral Health Center and Gateway Community Center.
- Route 5 operates every 70 minutes from Monday to Saturday and every 80 minutes on Sunday. Despite providing similar headways on all 7 days of the week, ridership on Saturdays is 64% of weekday ridership and ridership on Sundays is 33% of weekday ridership.
- This route functions as a coverage route, with a goal of providing necessary service to important destinations rather than focusing on ridership and productivity.
- Its function as a coverage is seen through its ridership and productivity measures, where Route 5 is ranked 19th in the system in terms of annual ridership (approximately 50,000 annual riders in 2019) and ranked 20th in terms of productivity, with 11.2 boardings per revenue hour in 2019 and 5.5 boardings per revenue hour in 2020.

Route 6 Cedar/Health Clinic

- Route 6 generally operates in an east-west direction from El Metro Transit Center to Old Casa Blanca Clinic along Cedar Ave, Stewart St, Barlette Ave, Montgomery St and Saunders St. Other destinations served along this route include the Texas Workforce Center, Cedar Clinic, and schools.
- This route has a circuitous alignment and low frequency service, providing coverage rather than direct connections between destinations.
- Similar to Route 5, this route runs every 70 minutes from Monday to Saturday and every 80 minutes on Sunday. However, daily weekday ridership on Route 6 is much higher than Route 5. Despite providing the same level of service as Route 5, Route 6 is the 10th most productive route (compared to 20th), with 16.4 boardings per revenue hour in 2019 and 8 boardings per revenue hour in 2020.
- The significant drop in ridership on Sundays compared to weekdays (on 7% of weekday boardings) signifies that demand for this route is likely during typical weekday demand peaks when

employment destinations and health clinics are open. This also illustrates that the main transit trip attractors on this route are the health clinics, which are closed on Sundays, and that other destinations along the route do not bring enough ridership to support the same level of service on Sundays. Schedules on this route could be updated to better match transit supply with demand for service by increasing service frequency during weekday peaks and reducing service on Sundays.

Route 7 LC/Ladrillera/El Cuatro

- Route 7 provides service to the west of the downtown, namely between El Metro Transit Center and Laredo Community College (LCC), also serving Ladrillera Recreation Center.
- This route operates every 30 minutes from Monday to Sunday, which is one of the most frequent routes in the system; however, the route alignment is circuitous and does not offer route directness that is typically observed on more frequent or local transit routes.
- Laredo Community College is a major trip attractor, and LCC students have transit passes that allow unlimited transit trips for the school term. It is expected that the goal of this route would be to generate high ridership and therefore have higher productivity scores. However, Route 7 was ranked 18th in terms of annual ridership and productivity, with 12.5 boardings per revenue hour in 2019 and 4.7 in 2020. This route experienced one of the greatest declines in ridership from 2019 to 2020 due to school closures amid the COVID-19 pandemic.
- While Sunday service operates at the same frequency as weekdays and Saturdays, it only carries 15% of the riders as a typical weekday.
- In subsequent tasks of the COA, we will explore ways that Laredo can maximize the productivity of service to LCC, as the student market has the potential to generate greater ridership and productivity than is seen today.

Route 8A Medical Center

- Route 8A operates along Corpus Christi St and Arkansas St from El Metro Transit Center to the Laredo Medical Center and Laredo Specialty Hospital north of Saunders St. Major destinations on the route are Lamar Junior High School, Mirabeau B. Lamar Middle School, and the Texas Workforce Center.
- This is considered a coverage route that is circuitous and provides low-frequency service, operating every 70 minutes from Monday to Sunday.
- Route 8A is ranked in the middle of the routes in terms of annual ridership (14th of 23 routes) and productivity (12th of 23 routes), with 15.9 boardings per revenue hour in 2019 and 8.6 in 2020. Productivity on this route is higher than some other coverage routes such as routes 5, 11, 13 and 19.
- This route has one of the highest percentages of Sunday ridership compared to weekday ridership, where Sunday boardings amount to 65% of weekday boardings. One explanation for this is that Laredo Medical Center and Laredo Specialty Hospital are open 24 hours a day, seven days a week, whereas medical clinics on Route 6, for example, are closed on Sundays.
- Strong transit access to healthcare facilities fulfills an important community need as it provides access to a major employment sector as well as providing assistance to individuals with medical needs. Accessible and convenient fixed-route service can also reduce the burden on paratransit services by providing an alternative travel option for people with mobility challenges. Throughout the COA, opportunities to further improve access to medical centers will be explored.

Route 8B Villa Del Sol/Cheyenne

- Route 8B operates generally in an east-west direction, providing service from El Metro Transit Center to the Villa Del Sol neighborhood of Laredo and City Hall Annex near Bob Bullock Loop.
- Route 8B operates every 70 minutes from Monday to Saturday and does not operate on Sunday.
- This coverage route is ranked the lowest (22nd) out of any other fixed-route service except for the circulator in terms of annual ridership and productivity. This route carried just over 22,000 riders in 2019 and had an average of 6.2 boardings per revenue hour in 2019 and 3.4 in 2020.
- The lack of connectivity and permeability of the street network in this area of Laredo is not conducive to productive transit service, which results in the lower-frequency, circuitous, coverage-focused service observed on Route 8B.
- When productivity is less than 10 boardings per revenue hour, transit agencies often consider alternative service delivery strategies, such as on-demand transit, to provide the same or better level of service to the customer at a lower cost to the transit agency, only providing service when and where demand exists. These concepts will be explored during the COA study.

Route 9 Market/New York

- Route 9 provides service from El Metro Transit Center south to Riverhill via Zapata Hwy and New York Ave, serving local destinations such as churches, schools and residential neighborhoods.
- Service operates every 45 minutes Monday to Saturday and every 90 minutes on Sundays, and Sunday ridership is approximately 33% of weekday ridership.
- Route 9 has the 10th highest number of annual riders but the 19th highest productivity, with 12.2 boardings per revenue hour in 2019 and 6.7 in 2020. This may indicate an over-supply of transit service based on the observed demand, where instead of providing service every 45 minutes, service should be provided at similar headways to coverage routes such as 60 minutes. Another way to potentially improve the productivity of this route is to provide greater frequency during the times of day that have the greatest demand such as AM and PM peak periods and reduce frequency during the midday periods where demand is lower.

Route 10 Corpus Christi

- Route 10 provides service from El Metro Transit Center south to Zacatecas St along Washington St and Meadow Ave, serving J Kawas ES, Daiches ES, and brings riders close to additional schools such as Dr Leo Cigarroa HS.
- Route 10 operates every 30 minutes Monday to Saturday and every 60 minutes on Sunday. Similar to Route 9 above, Route 10 operates half as frequently on Sundays and carries 33% of riders on Sunday compared to on a weekday despite providing service during a similar span.
- As one of the more frequent routes in the system, it has the 7th highest annual ridership but is ranked 15th in terms of productivity, with 14.2 boardings per revenue hour in 2019 and 7.9 boardings per revenue hour in 2020.

Route 11 Gustavus/Airport

- Route 11 provides service along Gustavus St, Clark Blvd and Bob Bullock Loop from El Metro Transit Center to the Laredo International Airport, Laredo Energy Arena, Uni-Trade Stadium, and United STEP Academy for at-risk students. Also along the route are commercial destinations such as Walmart and Target, as well as civic destinations including Texas Department of Public Safety and Laredo Department of Transportation.

- Service is provided every 85 minutes Monday to Sunday and has one of the highest Sunday ridership as a percentage of weekday riders (58%). This is likely due to the commercial destinations such as Target and Walmart at the intersection of Clark Blvd and Bob Bullock Loop.
- Service along Gustavus St and Clark Blvd is duplicated by Route 13, which also operates east-west along these streets before serving Heritage Park. This segment of the route is relatively direct, except for a detour to Galveston St and Arkansas Ave to serve Lamar Junior High School and Mirabeau B. Lamar Middle School.
- Since Route 13 also operates every 85 minutes Monday to Saturday, the combined frequency along Gustavus St and Clark Blvd is 35 to 45 minutes. The lack of service on Route 13 on Sundays is likely one reason why Sunday ridership on Route 11 is higher as a percentage of weekday riders than most other routes.

Route 12A Del Mar Express

- Route 12A runs from El Metro Transit Center to International Blvd along McPherson Rd, Del Mar Blvd, Calle Del Norte and San Dario. Notable destinations along this route are the Target North shopping mall, several elementary, middle, and high schools and commercial and medical destinations along McPherson Rd.
- The alignment of Route 12A is unique because no segments of the route are solely served by Route 12A, rather it duplicates segments of service from other nearby routes. 12A and 2A share Calle Del Norte, Route 12A and 16 share Del Mar Blvd, Route 2A and 3 share McPherson Rd, and Route 12A and 12B share International Blvd. This duplicative service connects destinations that would otherwise require transfers and increases the frequency of service along shared corridors.
- Route 12A operates every 20 to 100 minutes on weekdays, where service operates more frequently during the AM peak compared to the rest of the day and operates every 75 minutes on Saturday and Sunday. While service frequency is the same on Saturday and Sunday along Route 12A, the service span on Sunday is much shorter, running from approximately 11 AM to 7 PM compared to 7 AM to 8 PM on Saturday.
- Route 12A is ranked 10th in terms of annual ridership and 7th in terms of productivity, with 18 boardings per revenue hour in 2019 and 6.2 boardings per hour in 2020. This route had one of the largest decreases in ridership between 2019 and 2020 due to COVID-19 restrictions.

Route 12B Shiloh Express

- Route 12B operates in a north-south direction from El Metro Transit Center to United HS along Shiloh Dr, International Blvd, and San Dario Ave, stopping at other schools and parks along the way. Land uses along this route are primarily residential and institutional.
- Route 12B operates every 35-80 minutes Monday to Friday, every 80 minutes on Saturday, and does not operate on Sunday. Saturday service begins at 8:20 AM, which is later than any other route that operates on Saturday.
  This route is ranked 9th based on annual ridership but is ranked 5th in terms of productivity with 19.6 boardings per revenue hour in 2019 and 6.3 in 2020. The productivity of this route in 2019 is one of the highest in the network but this route also had one of the largest decreases in ridership between 2019 and 2020 due to COVID-19 restrictions.

Route 13 Heritage Park

- Route 13 operates service east of the city from El Metro Transit Center to Heritage Park. The route provides access to commercial destinations such as Walmart and Target, as well as civic

destinations including Texas Department of Public Safety and Laredo Department of Transportation and institutional uses such as schools in the Heritage Park neighborhood.

- Service along Gustavus St and Clark Blvd is duplicated by Route 13, which also operates east-west along these streets before serving the Airport. This segment of the route is relatively direct, except for a detour to Galveston St and Arkansas Ave to serve Lamar Junior High School and Mirabeau B. Lamar Middle School.
- Route 13 operates every 85 minutes Monday to Saturday, and the combined frequency of Route 11 and 13 along Gustavus St and Clark Blvd is 35 to 45 minutes.
- Route 13 has one of the lowest annual ridership values, ranked 20th out of 23 fixed-route services, and productivity is ranked 17th in the network.
- Saturday ridership is equal to 81% of ridership on a weekday, which is a higher percentage than most other routes in the network, likely due to the shopping destinations such as Walmart and Target that are often visited during weekend travel periods. The lack of service on Route 13 on Sundays is likely one reason why Sunday ridership on Route 11 is higher as a percentage of weekday riders than most other routes.

Route 14 Santa Rita/LC South

- Route 14 runs south from El Metro Transit Center to Laredo Community College South via Zapata Hwy. Along Zapata Hwy are a mix of destinations including Walmart, fast food restaurants, grocery stores and other commercial destinations, as well as schools and churches.
- Route 14 operates every 90 minutes Monday to Sunday, with one of the longest Sunday service spans in the system. Based on the low frequency of the service, this route is designed to provide coverage and is not expected to have the same ridership and productivity as ridership-focused routes.
- The route segment from El Metro Transit Center to Walmart is also served by Route 20, which operates every 85-90 minutes from Monday to Sunday as well. These two routes have the potential to operate every 35-45 minutes if the schedules are coordinated.
- Route 14 is ranked in the middle of the routes in terms of annual ridership (12th of 23 routes) and productivity (11th of 23 routes), with 16.3 boardings per revenue hour in 2019 and 8.6 in 2020.
- The ridership on Saturdays and Sundays is relatively high compared to other routes, which is probably a result of shopping destinations such as grocery stores and Walmart that are often visited on the weekend, as well as churches that attract Sunday ridership.

Route 15 Main/Riverside

- Route 15 operates service north from El Metro Transit Center to Riverside along Main Ave, serving mainly residential and industrial land uses, which are land uses that can be difficult to serve with transit.
- Service on Route 15 runs every 60 minutes Monday to Saturday and every 120 minutes on Sundays. Sunday service also starts at 11 AM and ends just before 6 PM, which is a much shorter service span than many other fixed-route services.
- Ridership and productivity of this route are some of the lowest in the system (21st out of 23 routes for both measures), with 8.8 boardings per revenue hour in 2019 and 5.1 boardings per revenue hour in 2020.
- The low productivity on this route may signify that the level of service does not match demand for transit along this route. Looking at ridership by time of day on this route may indicate that service is only required at certain times of the day, such as AM and PM peak commuting periods, and that midday service is not required due to the strong industrial/employment land uses.

- When productivity is less than 10 boardings per revenue hour, transit agencies often consider alternative service delivery strategies, such as on-demand transit, to provide the same or better level of service to the customer at a lower cost to the transit agency, only providing service when and where demand exists. These concepts will be explored during the COA study.

Route 16 Casa Verde/Del Mar

- Route 16 provides service between El Metro Transit Center and Texas A&M International University (TAMIU) along Del Mar Blvd.
- Service operates every 15 to 75 minutes Monday to Friday, every 75 minutes on Saturday and every 120 minutes on Sunday. The service span on Sunday is much shorter than all other days, operating from noon to 7 PM. Ridership on Sundays is therefore very low, and amounts to 5% of a typical weekday's ridership.
- Weekday headways in 2019 were not consistent, where trips from 8 to 10 AM ranged from 15 to 40 minutes while the rest of the day ranged from 40 to 75 minutes.
- This route has the 5th highest ridership and 1st highest productivity in the entire system, illustrating that the student population is a main rider group using El Metro. Productivity on this route was 25.6 boardings per revenue hour in 2019 and 8.5 boardings per revenue hour in 2020.
- The Customer Service Status Report (February 2019) included a complaint that Route 16 does not operate frequently enough. Frequent on this route will be explored during the COA study, also taking into consideration the impacts of the COVID-19 pandemic on student ridership. Route 16 experienced one of the most significant decreases in ridership from 2019 to 2020 (66% decrease).

Route 17 Mines/Industrial Park

- Route 17 operates along Mines Rd between El Metro Transit Center and Killam Industrial Blvd, serving key industrial and employment areas. This is one of the largest employment areas of Laredo and employs many workers who cross the border from Mexico on a regular basis.
- This service runs every 40-100 minutes Monday to Friday, every 75 minutes on Saturday and Sunday and provides access to numerous jobs during peak commuting periods.
- This route has the 8th highest annual ridership and the 4th highest productivity, with 20.3 boardings per revenue hour in 2019 and 8.5 in 2020.
- To strengthen this route even further, El Metro should work with employers to ensure schedules reflect demand (shift times) and to develop partnerships that can attract more riders to the system such as employer transit pass programs. These will be discussed further in the next stage of the COA.

Route 19 Santo Niño/Larga Vista

- Route 19 operates between El Metro Transit Center and Larga Vista, serving local and community destinations such as schools and residential neighborhoods.
- Route 19 operates every 80 minutes from Monday to Sunday, but Sunday trips only carry 21% of a typical weekday's ridership.
- This coverage route is ranked 17th in terms of annual ridership and 14th in productivity, with an average of 14.5 boardings per revenue hour in 2019 and 7.7 in 2020.
- The lack of connectivity and permeability of the street network in this area of Laredo is not conducive to productive transit service, which results in the lower-frequency, circuitous, coverage-focused service observed on Route 19.

Route 20 Los Angeles/Sierra Vista

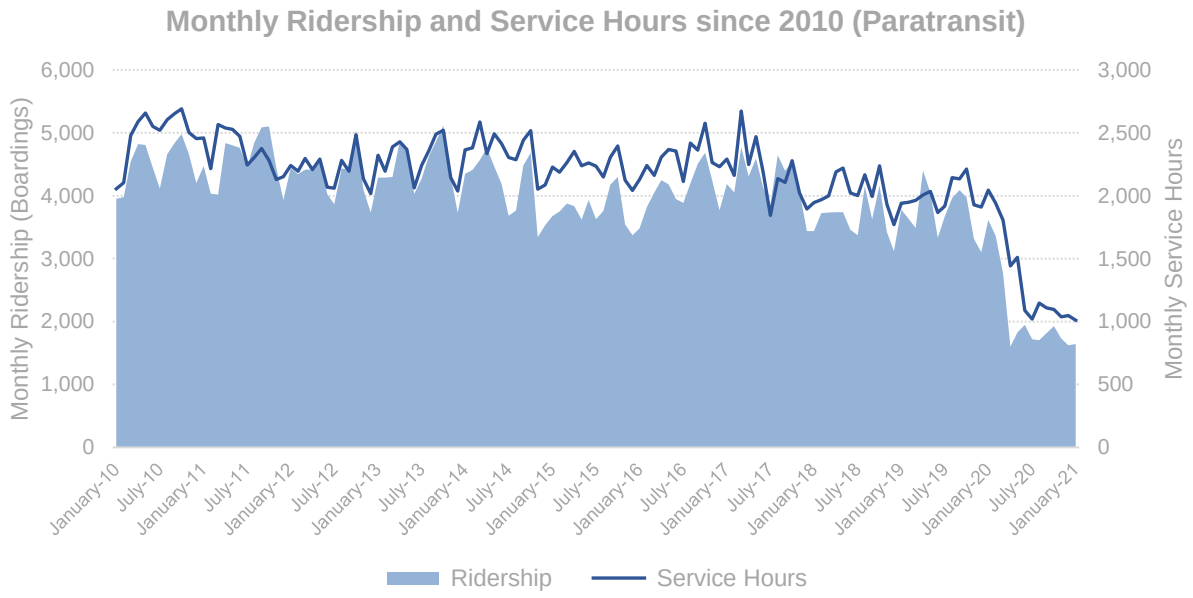
- Route 20 runs south from El Metro Transit Center to Sierra Vista Blvd via Zapata Hwy. Along Zapata Hwy are a mix of destinations including Walmart, fast food restaurants, grocery stores and other commercial destinations, as well as schools and churches.
- Route 20 operates every 85 minutes Monday to Saturday and every 90 minutes on Sunday.
- Ridership on Route 20 is ranked 13th in the network and productivity is ranked 9th, with 17.5 boardings per revenue hour in 2019 and 9.6 in 2020.
- The route segment from El Metro Transit Center to Walmart is also served by Route 14, which operates every 90 minutes from Monday to Sunday as well. These two routes have the potential to operate every 35-45 minutes if the schedules are coordinated.

5 EXISTING EL LIFT PARATRANSIT ANALYSIS

As an important part of Laredo's mobility landscape, El Lift is the complementary Americans with Disabilities Act (ADA) paratransit service of El Metro aimed at providing journeys to persons with disabilities that prohibit them from using fixed-route services. This section analyzes El Lift polices, procedures, operations, and service delivery.

While annual boardings on El Lift were 44,800 in 2019, the impact of COVID-19 reduced this number to 25,638 in 2020. Indeed, comparing monthly ridership in January 2020 before the pandemic to January 2021 ridership, El Lift lost 54% of its ridership (**Figure 38**), less than the loss of 63% for fixed-route ridership. Nonetheless, while service hours were only trimmed by 9% on fixed routes, service hours were more drastically reduced (51%) and aligned with decreases in demand; demand-response service only needs to be provided when a journey is requested by a customer.

Figure 38: El Lift Paratransit Monthly Ridership and Service Hours (2010-2021)



5.1 OVERVIEW AND OBSERVATIONS

Persons with disabilities and mobility challenges represent a growing part of Laredo's population as a major portion of the population ages. Disabilities and mobility challenges can have a large impact on daily living, particularly if transportation services are not tailored to a range of accessibility needs. The City of Laredo is committed to providing high-quality accessible service to all residents and visitors of the City. Laredo's El Metro service currently provides accessible conventional transit services that meet the needs of many customers with disabilities. However, some customers have disabilities that preclude the use of accessible conventional services. In these instances, these individuals potentially qualify for the use of El Lift services, a pre-booked, shared ride service that operates on a curb-to-curb model with additional "Assist-to-Door" services for customers that need further assistance in transportation between curb and door.

Legislation and Eligibility

The ADA is federal legislation that mandates accessibility standards that must be met – it is not elective. El Lift's eligibility criteria are driven by the ADA, which prescribe (at a high level) that all individuals that have a disability that prevents them from using conventional (El Metro) services have an accessible alternative (El Lift). An accessible alternative is defined to be service that is comparable to that provided on the fixed-route system in terms of the following criteria:

- Operating in the same service area as the fixed-route system
- Having a comparable response time
- Having fares no more than twice that of fixed route service
- Having parity in terms of days and hours of service
- Meeting requests for any trip purpose
- Not limiting service availability because of capacity constraints

Eligibility for El Lift service is independent of disability type – persons with physical, sensory, mental health, and cognitive disabilities all qualify for the service provided their disability prevents them from using El Metro fixed routes. The key word is "prevent"; that is, individuals who are inconvenienced by, or who feel uncomfortable with fixed-route transit, are not eligible on that basis. Some individuals may be granted eligibility for a temporary period of time or eligibility with certain conditions/restrictions applied; however, most individuals are granted unconditional eligibility, meaning there are no restrictions as to when they can use the service.

To apply for El Lift service, applicants must submit an online application form. Once the application form has been evaluated, the applicant will either be deemed "not eligible" or they will proceed to a phone interview where a member of the El Metro team will ask them questions about their application to further probe into whether their disability prevents them from using fixed-route transit. There is a process for sending applicants for a functional assessment for further evaluation of their eligibility, however, this is not currently done in practice nor was it done prior to COVID-19. To complete the eligibility process, applicants that are approved must come to the El Lift offices for their photo identification. This final step helps to ensure that only those who are serious about registering for the service do so.

There is no perfect eligibility process that fits every agency. Numerous factors must be considered when determining the "best" approach to evaluating applicants for ADA Paratransit use and these factors dictate how a transit agency decides on an approach to ADA Paratransit Eligibility.

An agency that is at or over its ADA Paratransit capacity and doesn't have (or cannot spend) additional funds to expand service often consider a strict, in-person eligibility process.

An agency that has not experienced many demand surges or budget issues in the operation of ADA Paratransit services usually has a paper-only eligibility process. This approach typically has a higher rate of unconditional riders and lower rate of denials.

Despite the lack of functional assessments, and although there may be opportunities to increase the proportion of registrants that are conditionally eligible for the service, agency staff felt that the existing customer base for the El Lift service are those that truly require the service. El Lift users are generally those that do not have any other viable forms of transportation. There are currently 655 El Lift registrants in total.

Recertification

El Lift requires its registrants to recertify their eligibility every 3 years. This is to ensure that an individual's eligibility for El Lift service is considerate of their current abilities, recognizing that their abilities may improve or worsen over time. This is also to ensure compliance with ADA and to maintain an up-to-date database of registrants. The onus is on the registrant to submit his/her recertification application at least one month prior to their service expiration date.

Fare Structure

El Lift fares are charged by distance. Trips up to 7 miles cost $1.75 per trip, trips up to 14 miles cost $2.00 per trip, and trips in excess of 14 miles cost $2.25 per trip. Most trips fall within the $1.75 fare category. By comparison, an adult fare on El Metro costs $2.00. The fare by distance on El Lift is perhaps more cumbersome to manage than it is worth when the fare levels are offset by only $0.25, however, the fares are well within the minimum threshold set by ADA of being no more than twice the value of the fare on fixed-route transit.

Trip Booking

El Lift registrants may book trips in between 1 and 7 days in advance of the date they wish to travel. At the time of booking trips, registrants must specify if there is a time they need to be picked up at their point of origin or arrive at their destination by. Registrants are unable to specify both a desired pick-up and drop-off time; those that have special requests with respect to pick-up time must be flexible as to their drop-off time, and vice versa. At the time of booking, users must also specify if they will be having a Personal Care Attendant or a service animal accompany them on their trip. Trips are typically booked by registrants through a phone call. Although there is an online portal for booking trips as well, not many customers use it, which is likely due to a combination of limited computer savviness and/or limited promotion of the online booking platform on El Lift's part.

Trips are scheduled on El Lift's end through RouteMatch software. Service generally runs on time and dispatchers do not experience many issues. Despite this, sometimes dispatchers need to manually coordinate trips based on the destination, which suggests that perhaps the RouteMatch software is not being used efficiently, or perhaps it is not being leveraged to its full potential.

Trips may be booked through a subscription in cases where registrants have recurring travel needs. Subscription trips are available for registrants traveling to/from the same place at the same time at least 3 times per week and for a period of at least 120 days.

Notably, a significant portion of El Lift's trips are for the purpose of transporting registrants to and from their dialysis appointments. Unlike some transit properties, which transport dialysis patients primarily on their return trip (post-treatment), dialysis trips are usually delivered in both directions by El Lift. All dialysis patients expect to book subscription trips but if there are too many subscription trips already, they may have to book their trips individually.

If a trip needs to be cancelled, it must be cancelled at least two hours prior to their trip. Cancellations after this are deemed "late cancellations" which are treated the same as no-shows. As no-shows, late cancellations, and cancellations at the door accumulate, there is a penalty system starting with a warning letter and graduating to service suspensions of increasing duration. Anecdotally, the warning system currently in place seems to be effective in changing the behavior of registrants who no-show too frequently, and service suspensions are not issued in practice. Notably, COVID-19 has caused a noticeable increase

in the rate of cancellations. If subscription trips are cancelled too frequently, the subscription may be cancelled by El Lift.

Service Provision

The El Lift service area is provided to all areas within the City of Laredo within three-quarters of a mile of an El Metro fixed route. This is consistent with what is mandated in the ADA. Notably, changes to El Metro routes and schedules will have a corresponding impact on El Lift service provision. Service is provided using 7 vans (4 on the weekend). Although this number is down from the 13 vans that used to operate, there is currently enough capacity to fulfill the demand. This is particularly the case during COVID-19 when trips are less than half of what they were prior to the pandemic (as of March 2021). Notably, two of El Lift's vehicles are low floor (New England Wheels Frontrunners), with the others being high floor. El Lift plans to purchase three more low floor vehicles in the near future, to continue its gradual transition to a low floor fleet.

Although El Lift offers an "Assist-to-Door" service, it must be noted that operators are not caregivers, meaning administering medication, operating medical equipment, or assisting customers beyond the "door" are not within the purview of their responsibilities. Operators have a responsibility to deliver El Lift service safely while maintaining the schedule, doing their part to ensure competitive travel times for customers and strong on-time performance.

Notably, El Lift also has a policy that the operator cannot go beyond 10 feet from the vehicle. In instances where the door is located more than 10 feet from the curb, this may lead to some confusion on the operators' part as to the correct course of action for providing assistance to customers outside of the vehicle. However, "Assist-to-Door" is a service that requires a separate application in addition to the El Lift service application, so not all El Lift registrants should expect "Assist-to-Door" services.

The pick-up window is 30 minutes, meaning if a customer is given a pick-up time of 2:00pm, they are expected to be ready for pick-up anytime in between 1:45pm and 2:15pm. The wait time is 5 minutes, meaning that the operator can only wait for 5 minutes once they arrive at a customer's pick-up location. If the customer is not ready to board the vehicle within 5 minutes of the operator's arrival it is considered to be a No Show (with some exceptions, for example on return trips if a customer's medical appointment does not finish on time).

Travel Training

Travel training is offered to El Lift users in an effort to highlight the accessible features of El Metro service and encourage them to use fixed-route transit where and when possible. Travel training is available for free, and eligible El Lift users can also ride El Metro fixed-route services at a reduced fare. Travel training, however, has not been done in practice for considerable time, though it remains a part of the El Lift offering.

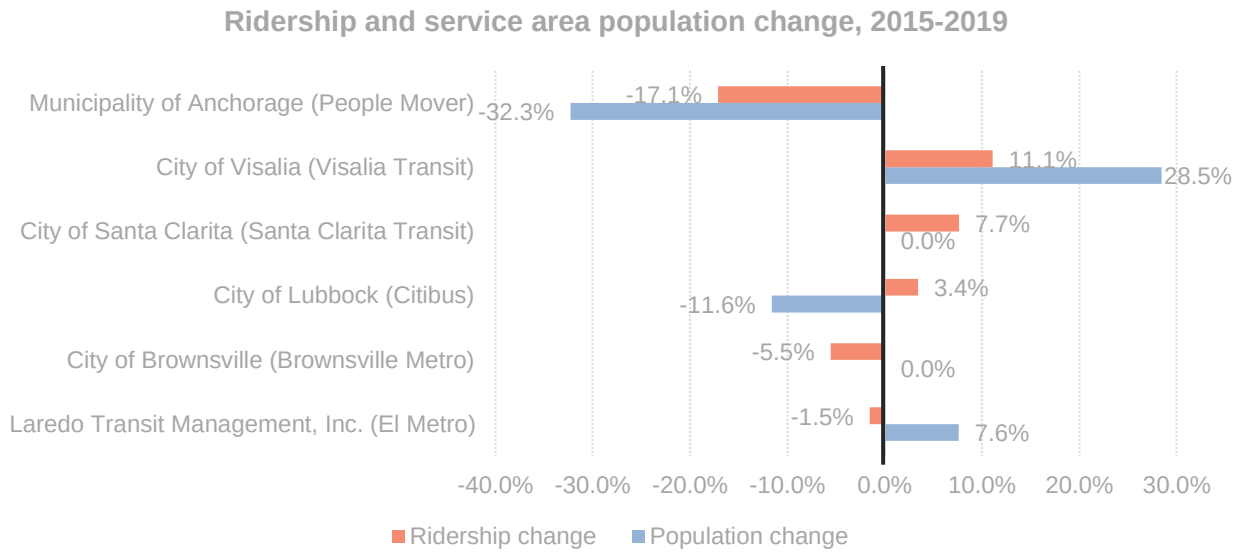
In the event that scheduling challenges in RouteMatch can be solved and there is correspondingly a lesser burden on dispatcher resources, this may potentially free up internal capacity at El Lift to reallocate to other responsibilities such as ramping up travel training efforts and promoting accessible conventional fixed-route services among El Lift registrants to the extent appropriate.

5.2 PEER COMPARISON

The same agencies that were included in the fixed route peer analysis were used for the paratransit peer comparison. In addition, the same four metrics of ridership, service provided, service productivity, and financial performance were used to measure performance among peer agencies.

Ridership

Figure 39: Ridership and service area population change (demand response services), 2015 and 2019



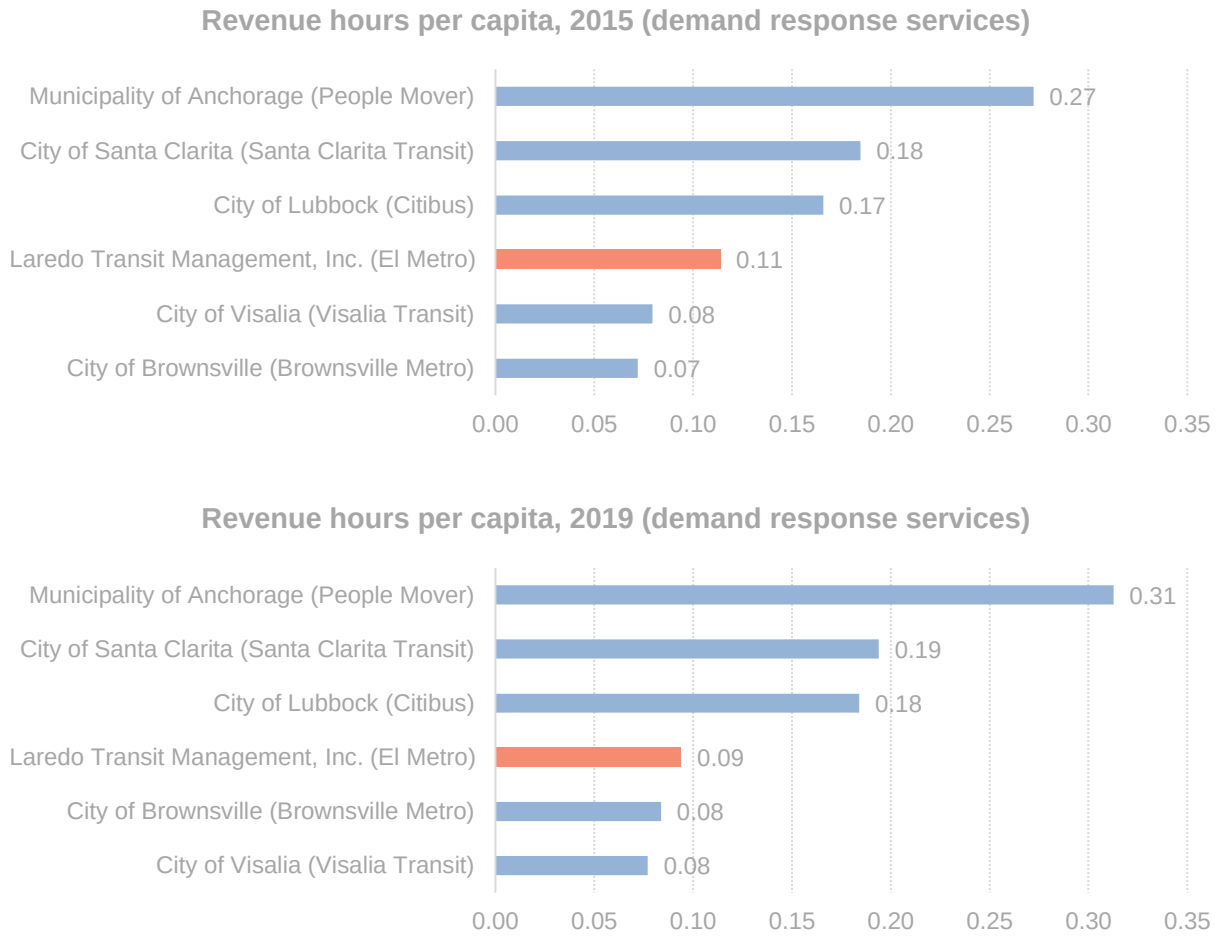
Overall, agencies saw more growth in demand response ridership when compared to fixed route ridership, but on average, demand response ridership dropped slightly between 2015 and 2019. This could indicate that demand response riders are choosing other modes (such as TNCs) and have more transportation options available to them than they did five years ago. Both Anchorage and Visalia Transit see increases or decreases in demand response ridership that trend the same way as the service area population change they experienced during that time, though Lubbock Citibus and El Metro saw ridership changes that trend the opposite direction from the service area population change (El Metro's service area population grew while demand response ridership decreased 1.5%, and Lubbock Citibus saw a service area population decrease with a 3.4% increase in demand response ridership). Overall, El Metro's demand response services saw a smaller decrease in ridership when compared to fixed route ridership.

Figure 40: Passengers per capita (demand response services), 2015 and 2019

El Metro's paratransit services have the second lowest passengers per capita for both 2015 and 2019, and saw a very slight decrease from 0.19 passengers per capita in 2015 to 0.18 passengers per capita in 2019. Changes in passengers per capita varies among peer agencies, from the 22.4% increase in passengers per capita experienced by Anchorage to a 13.5% decrease seen by Visalia Transit. El Metro's drop in passengers per capita can likely be attributed to an increase in service area population coupled with a slight decrease in demand response ridership between 2015 and 2019.

Service Provided

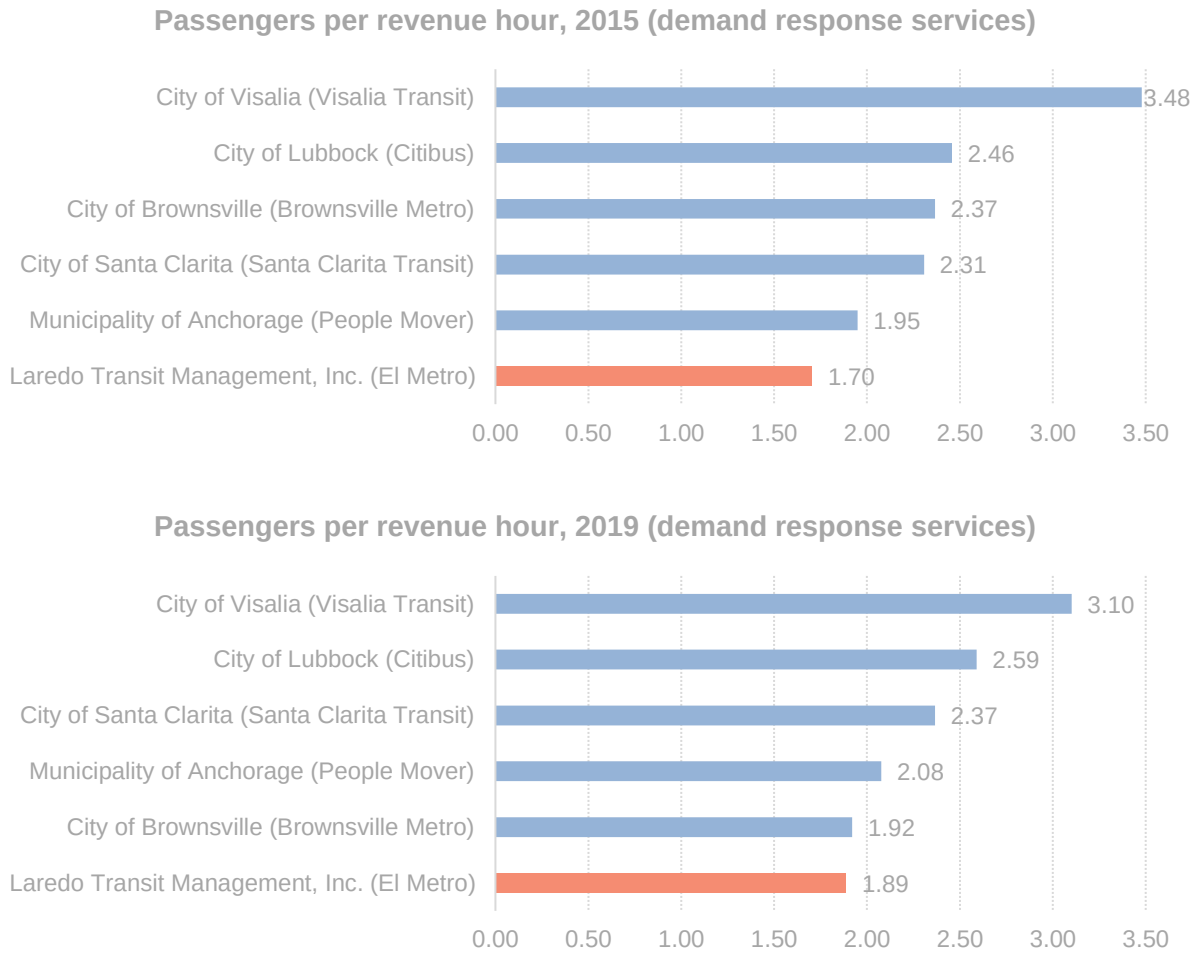
Figure 41: Revenue hours per capita (demand response services), 2015 and 2019



El Metro's paratransit service revenue hours per capita are below the average of peer agencies for both years examined, and saw the largest decrease (of 17.4%) over time of any other peer agency. In fact, other agencies predominately saw increases in revenue hours per capita with the exception of Visalia Transit, which saw a small decrease of 3%. The reason for El Metro's decrease in revenue hours per capita is due to a decrease in demand response service hours combined with an increase in service area population.

Service Productivity

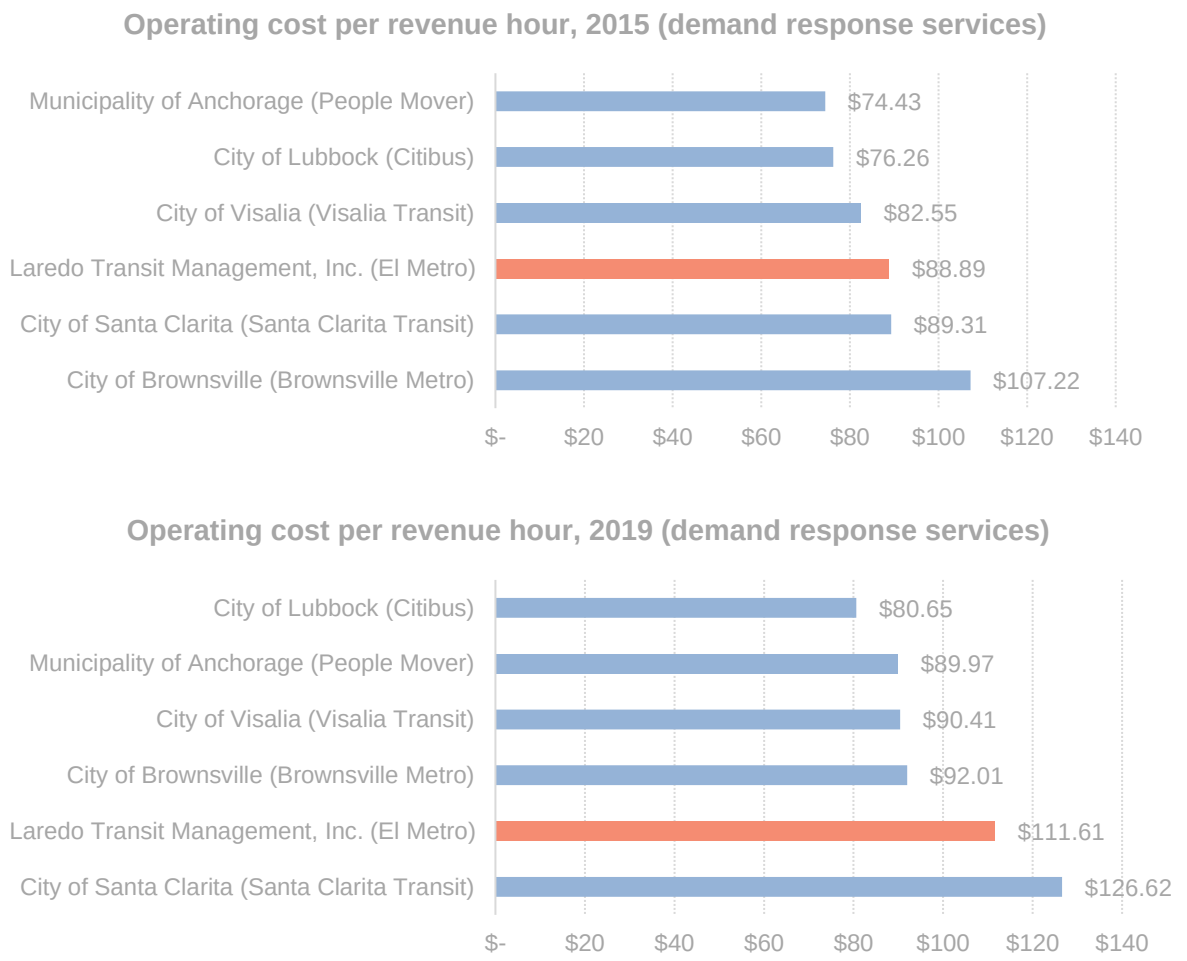
Figure 42: Passengers per revenue hour (demand response services), 2015 and 2019



El Metro paratransit shows the lowest service productivity among peers for both years analyzed; however, they also saw the largest increase (percentagewise) of any peer agencies, seeing a 10.7% increase in service productivity between 2015 and 2019. This is likely due to the fact that El Metro saw a small decrease in paratransit ridership and a more significant decrease in paratransit revenue hours. While Brownsville Metro and Visalia Transit both saw service productivity of paratransit decrease during this time, Anchorage, Santa Clarita Transit, and Lubbock Citibus saw paratransit service productivity gains over time.

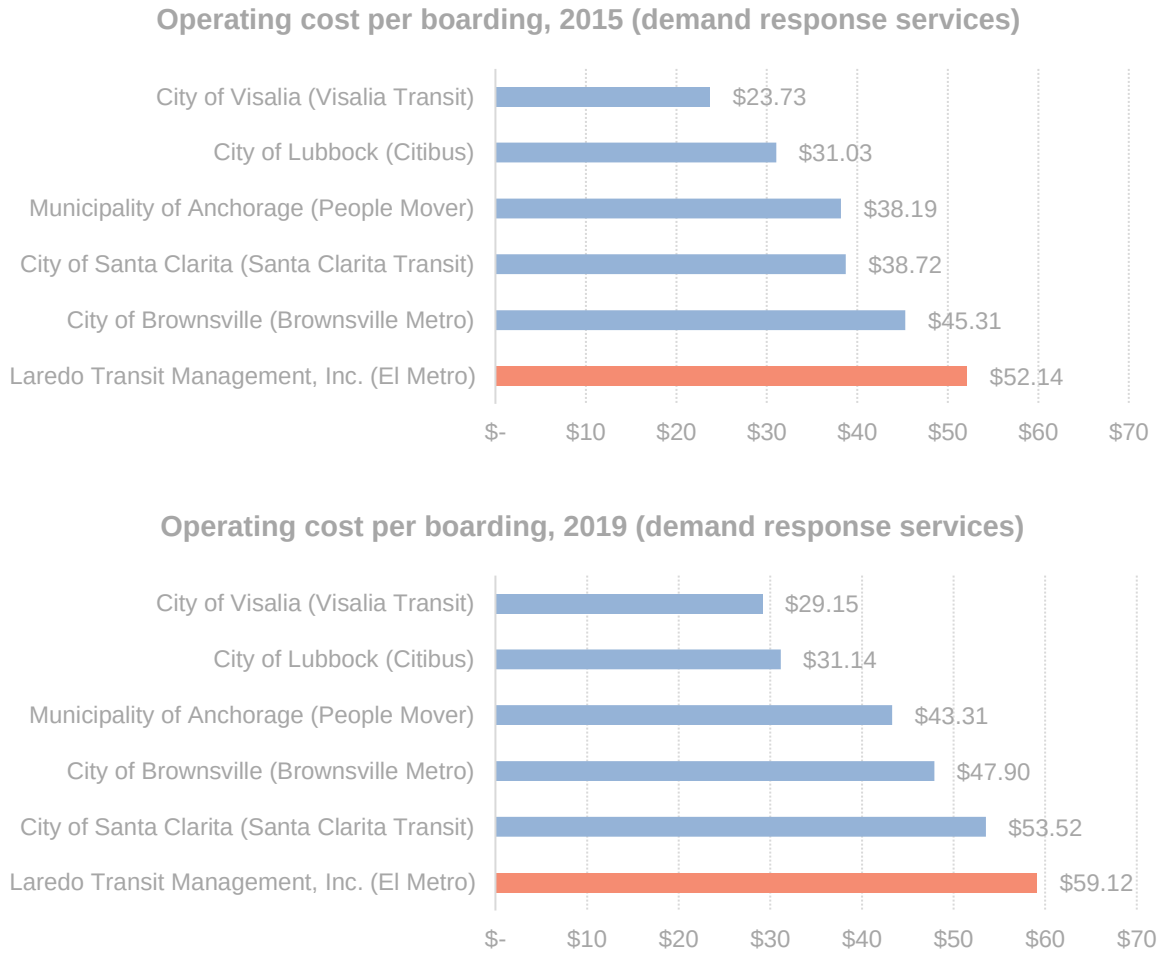
Financial Performance

Figure 43: Operating cost per revenue hour (demand response services), 2015 and 2019



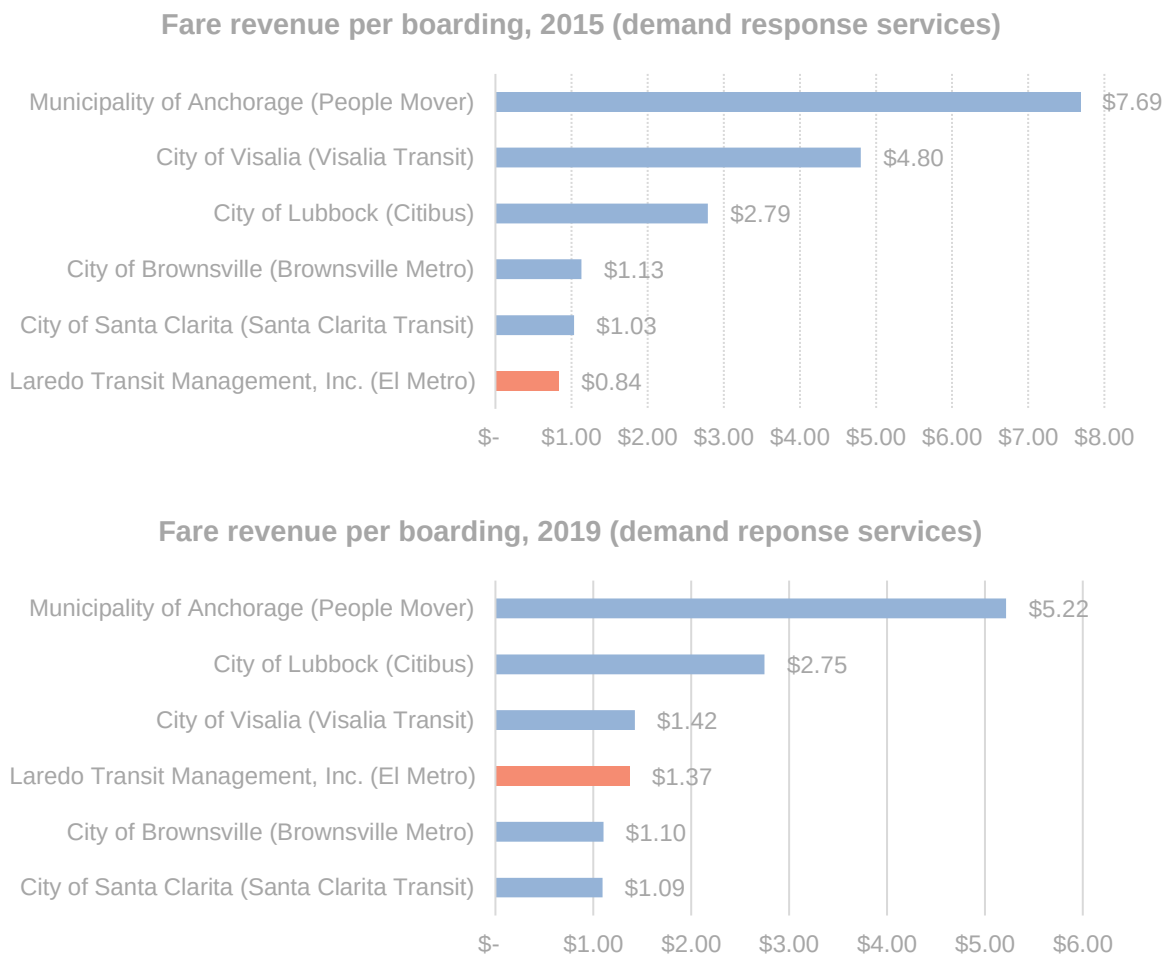
All agencies experienced an increase in operating costs per revenue hour to various degrees with the exception of Brownsville Metro, which saw a decrease of 14.2% due to a decrease in paratransit operating costs and an increase in revenue hours. In 2015, El Metro was slightly above the average of $86.44 per revenue hour, and was again above the average of $98.55 in 2019. Overall, El Metro saw a 25.6% increase in operating costs per revenue hour for paratransit operations, which was the largest increase of all agencies with the exception of Santa Clarita Transit, which saw a 41.8% increase during this time.

Figure 44: Operating cost per boarding (demand response services), 2015 and 2019



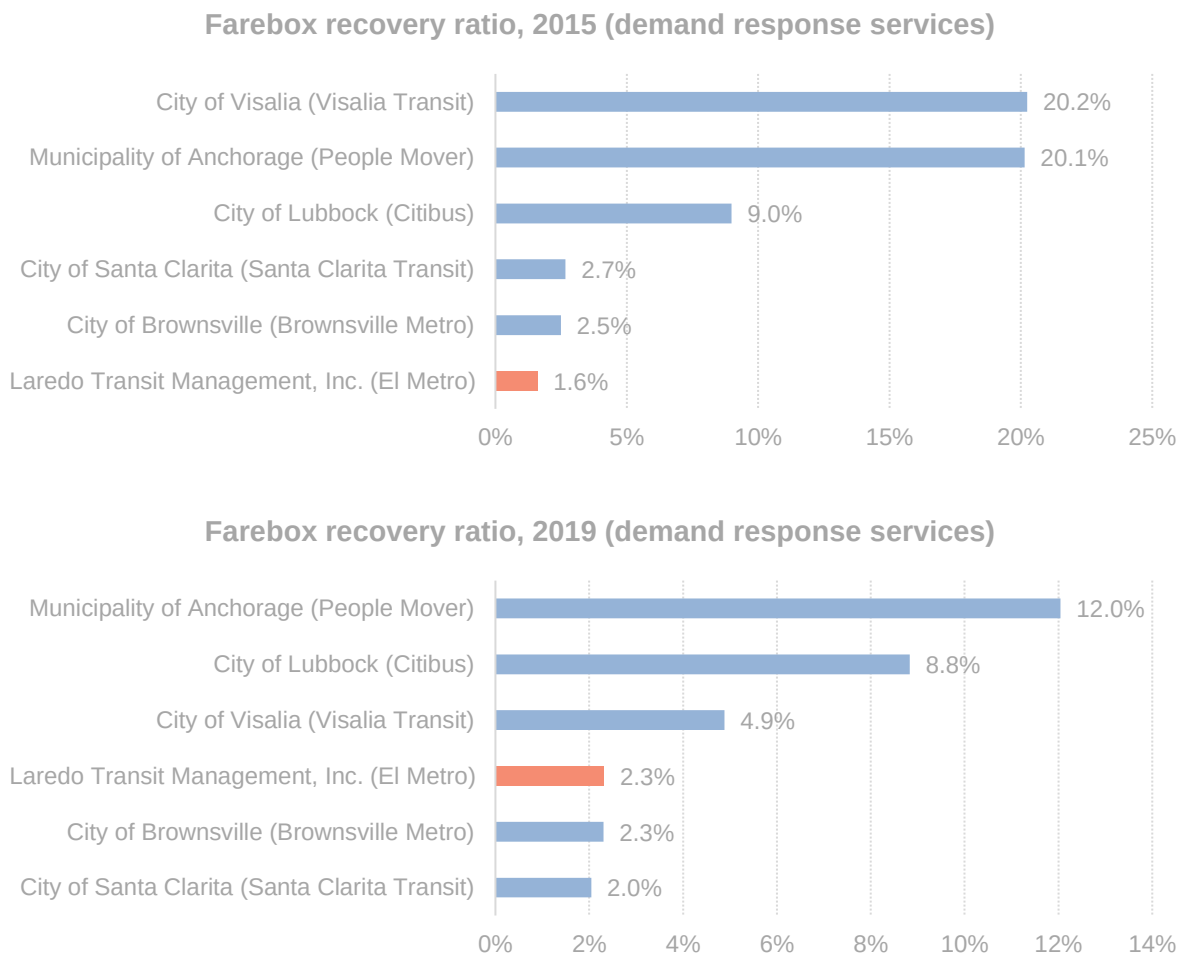
El Metro has the highest operating cost per boarding for paratransit services for both 2015 and 2019, a departure from this metric for fixed route services, where El Metro saw operating cost per boarding for fixed route services below the peer average for 2015 and 2019. All agencies saw increases in operating costs per boarding between 2015 and 2019 with the exception of Santa Clarita Transit, that saw a 14.2% decrease.

Figure 45: Fare revenue per boarding (demand response services), 2015 and 2019



El Metro paratransit's fare revenue per boarding was the lowest of its peers in 2015, but jumped significantly (by 64%) between 2015 and 2019, to $1.37 in 2019. While this is still below the 2019 average of $2.26 per boarding, this average is skewed due to the very high fare revenue per boarding seen in Anchorage for both years. This is likely due to the fact that they have a much higher fare for paratransit services compared to peer agencies.

Figure 46: Farebox recovery ratio (demand response services), 2015 and 2019



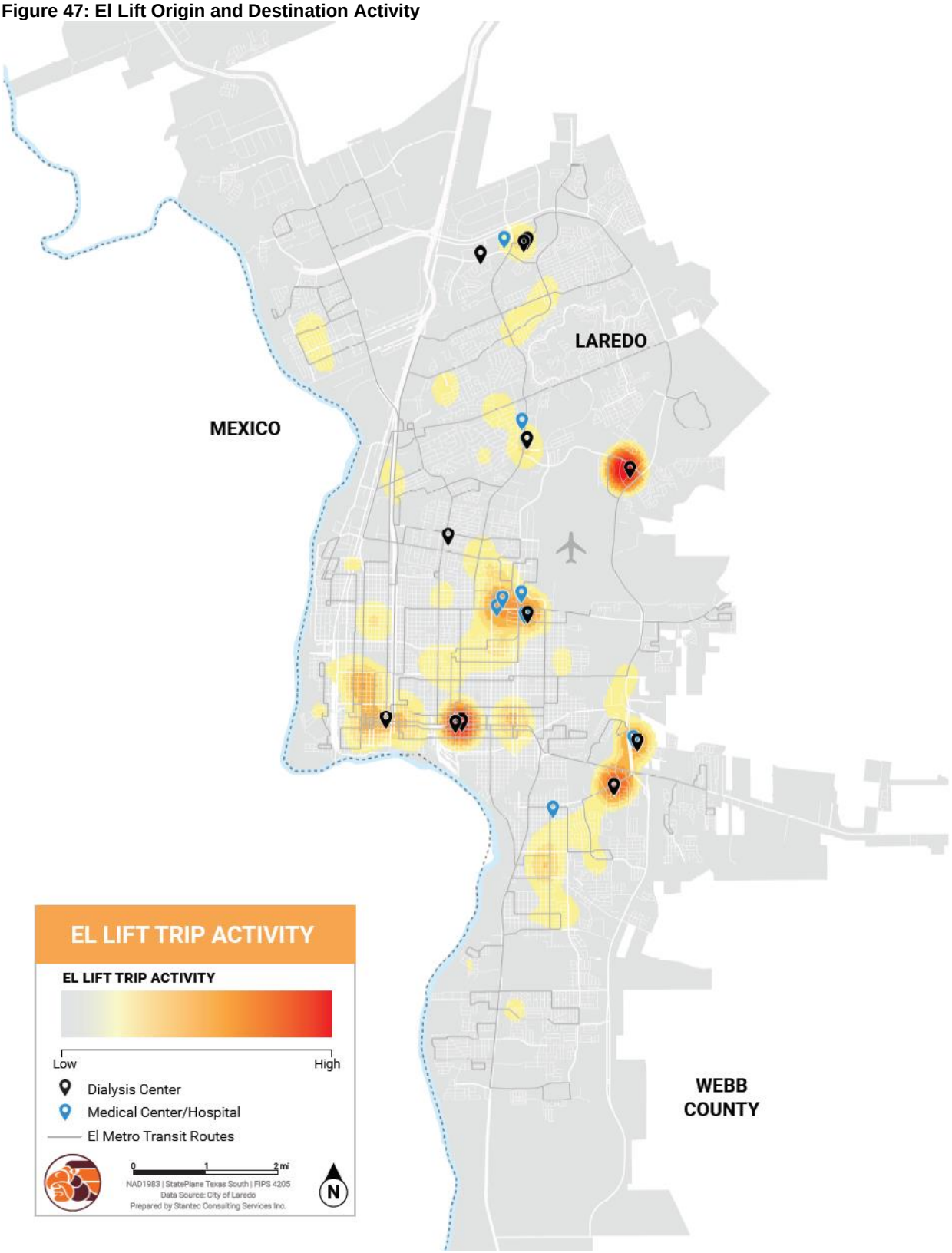
While El Metro fared very well in terms of farebox recovery for fixed route services, it sees a much lower farebox recovery ratio for paratransit services. However, El Metro saw the largest increase (44.6%) in farebox recovery ratio for paratransit between 2015 and 2019, and is the only agency to see an increase between 2015 and 2019 out of the peers analyzed. The degree to which farebox recovery ratios decreased among peers varies, from a slight 1.8% decrease from Lubbock Citibus to the much more significant 75.9% decrease seen by Visalia Transit.

5.3 EL LIFT ORIGIN-DESTINATION ANALYSIS

Anonymized origin-destination data for over 25,000 trips were provided by El Lift to determine whether opportunities exist to improve fixed-route or paratransit service delivery to make the overall system more efficient. Understanding paratransit demand can help identify if there are gaps in the fixed-route network that can be addressed to capture paratransit trips (for paratransit riders who are able to take accessible conventional transit for some of their trips).

As shown in **Figure 47**, existing paratransit demand is concentrated in a few key areas or “hotspots.” These hot spots are consistent with discussions with El Lift staff that identified dialysis trips as the main trip purpose, where some of the most common destinations are Liberty Dialysis North Laredo, Dsi West Laredo

Figure 47: El Lift Origin and Destination Activity



Dialysis Center, U.S. Renal Care Dialysis Center, Satellite Healthcare South Laredo Dialysis. The medical facilities and clinics near Laredo Medical Center also create a hotspot of paratransit demand.

The demand for dialysis trips may be greater than El Lift can offer—dialysis patients are not always able to book standing trips for their appointments because 50% of trip bookings needs to remain available for on-demand trips. Future stages of this COA will explore ways to efficiently provide paratransit service to those who need it, while ensuring that expectations from dialysis providers are realistic and manageable.

5.4 EL LIFT SUMMARY AND KEY TAKEAWAYS

El Metro's El Lift paratransit program provides vital transportation services to those who are unable to use the fixed route system. This peer comparison shows that there are opportunities to improve several different aspects of service to create a paratransit program that transports passengers in a way that is convenient from the passenger perspective and efficient for the agency.

While El Lift saw a small decrease in paratransit ridership, it falls low in the pack in terms of passengers per capita in 2015 and 2019 compared to peers. In addition, El Lift experienced the largest decrease in revenue hours per capita between 2015 and 2019, and experiences the lowest passengers per revenue hour for both 2015 and 2019. However, El Lift's passengers per revenue hour did increase 10.7% during this time, which could signal a positive trend for El Lift's service productivity. El Metro also falls low in the pack regarding financial metrics, with the second highest operating cost per revenue hour in 2019, the highest operating cost per boarding, and fare revenue per boarding and farebox recovery ratio that falls in the middle of the pack (though both of these metrics improved between 2015 and 2019).

6 FUTURE TRANSIT DEMAND

6.1 POPULATION AND EMPLOYMENT GROWTH

When assessing transit gaps, it is also important to understand where gaps may exist in the future if the existing network were to remain unchanged. Using population and employment projections from the 2013 Laredo Model Demographics Update, we explore the long-term growth of people and jobs in Laredo. This long-term growth is used to understand the trends and patterns in the region and to begin the conversation about creating future developments and neighborhoods that are supportive of transit.

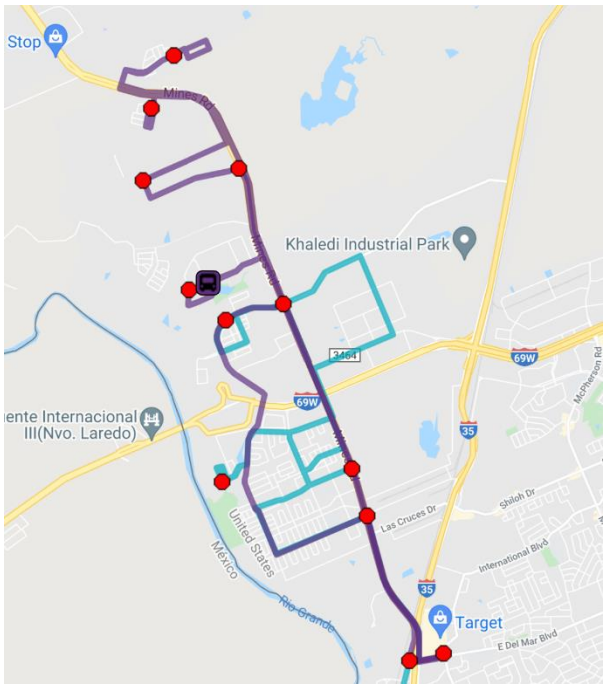
Population Growth

Figure 48 shows the 2045 projected population density colored by population change between 2018 and 2045 (by transportation analysis zone). This shows that even though some areas will experience slight decreases in population (such as downtown Laredo and other areas colored red and orange in the map), these areas will still have a high overall population density that still warrants fixed-route transit services. Areas colored in blue are projected to see population increases by 2045. There are pockets of population growth throughout the city, showing that the population is expected to increase throughout the city as opposed to increasing in one particular area.

Areas that will see population growth include the residential area north of the airport and south of Del Mar Blvd. Currently, this area is comprised of a few large apartment complexes, single family residential neighborhoods, and vacant/undeveloped land. According to the Viva Laredo future land use map, this area will be categorized as a combination of medium density residential and neighborhood mixed use, which should encourage sustainable development that will be supportive of transit.

A couple of key noted areas discussed with El Metro staff that are currently experiencing development include:

The Mines Rd area (shaded box in the top part of **Figure 48**). This area is mainly industrial but will see some modest residential growth by 2045. El Metro is currently piloting[14] two circulator routes in that area, including the fixed-route 17 (see map at right). This area, while relatively job rich, has low job density, and the lack of sidewalks means that transit service is difficult to provide in a safe and convenient fashion. Another further challenge is that employees who work in this northwestern sector of Laredo tend to commute from the south—a car ride from the Cuatro Vientos Dr area to the Mines Rd area is ~25-30 minutes (18 miles), compared to a roughly two-hour bus ride. While certain measures can be taken to improve the bus travel time, the sheer distance means that any trip, whether by bus or by car, will be long.



[14] As of summer 2021, C1-Killam Circ. And C2-Green Ranch Circ. operate in an overlapping fashion.

The areas between US-83, Loop 20, and south of Lomas Del Sur Blvd, also including areas outside of this like Wright Ranch, and Cuatro Vientos (shaded box in the bottom part of **Figure** 48). These areas are growing, including new subdivisions in construction. The difficulty here lies in the fact that these are mainly residential areas, devoid of mixed uses that would make transit service successful, that is, having riders not only leave the area for work, but have other transit customers use transit service to visit these areas to shop or use other potential services that would be expected for mixed-use land uses. Moreover, the abundance of cars in driveways and street design that forces circuitous bus alignments indicates that overall bus service will likely be low frequency, with low travel times—unattractive to most households with the ability to drive.

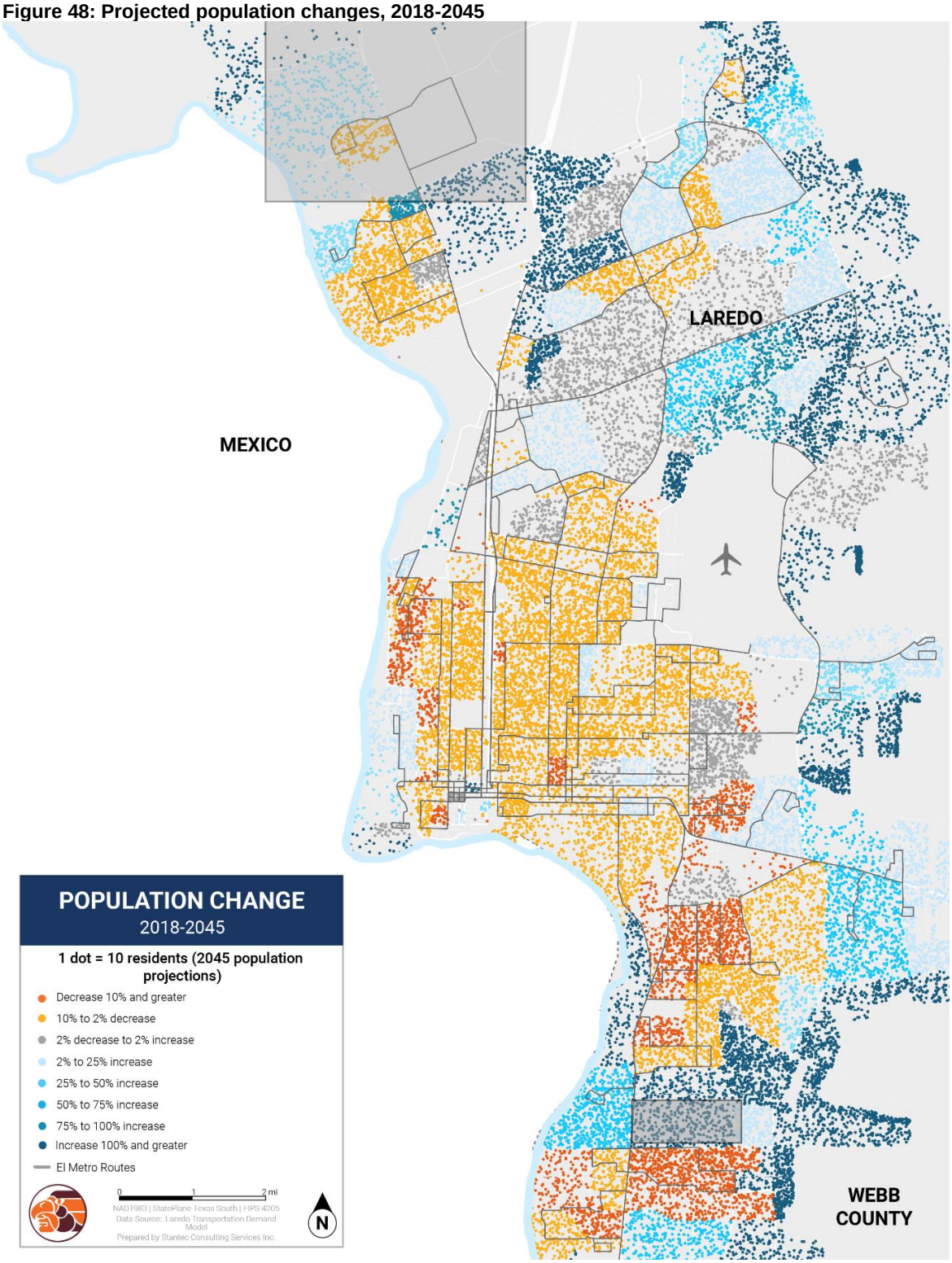
The image on the right on the right of Cuatro Vientos shows the lack of land use diversity around the United South Campus, as well as cul-de-sac street design. To the east of Cuatro Vientos Blvd (Loop 2), new subdivisions are developing in a similar way.

Other pockets of population growth in southern and eastern Laredo are planned to be zoned as a mix of low density, medium density, and high density residential in addition to mixed-use centers to create neighborhoods of different residential densities with some commercial uses (as described in Viva Laredo; these areas currently outside of the present urban boundary). In theory, this development can encourage sustainable transportation as residents in these areas will likely not have to travel long distances to reach commercial destinations in the mixed-use centers. Shorter trip lengths can encourage alternative modes of transportation, such as transit, walking, or biking.

Overall, a clear trend revealed by the map in **Figure** 48 together with the proposed land us map in **Figure** 50 is the envisioned growth of subdivisions at the periphery of City, with a projected decrease of population in the center (that will still remain the densest). As this growth at the periphery is unlikely to be at the necessary densities and mixed uses to facilitate transit use and productivity service, the challenge remains of whether and how to serve these communities with transit. Beyond the density matter, the design of the neighborhoods—cul-de-sacs, lack of sidewalks—and their demographics—wealthier, with multiple vehicles—could also significantly impact transit demand.

While some areas of Laredo are projected to see slight population decreases, the total population of Laredo is still projected to reach 450,000 by 2045, or an increase of 67% between 2018 and 2045. As Laredo continues to grow, El Metro services should grow smartly in accordance to continue to serve the city; clear service standards and design decision making tools will be important for allocating the right types of services in the right place, and no service where service is not justified.

Figure 48: Projected population changes, 2018-2045



Employment Growth

Overall, employment growth is projected throughout Laredo. As seen in **Figure 49**, employment growth will be especially significant in the following areas:

- The area containing Doctors Hospital of Laredo and Safari Pediatrics in northeastern Laredo is expected to see job growth of more than 10% by 2045. It is also worth noting that the shopping center across the street (which includes an Urgent Care and a number of large retailers such as a Ross, Petco, and H-E-B) is also expected to see an increase in jobs, as well as the Stat Specialty Hospital across the street from the shopping center. It can be assumed that this area will see a growth in medical-related and commercial/retail jobs to serve the multiple medical facilities and retail outlets located here. Currently, this destination is served by Route 3, which operates on hourly clock-facing headways (Monday-Saturday) and provides a stop at Doctors Hospital. However, the current stop does not have direct pedestrian access to the hospital entrance. Especially for passengers who may have limited mobility or a mobility device, this presents a barrier to being able to easily access the medical facility.

- Another area expected to see a large increase in jobs is directly west of the airport. The area is characterized by government services (including the Laredo police department, municipal court, and US Customs and Border Control office), airport-related service (Laredo Airport Control Tower, Laredo flight support services) and industrial/manufacturing services. Route 5 provides service to the municipal court with 70-minute Monday-Saturday headways.

- South of the airport and Lake Casa Blanca is another area of employment growth; further inspection shows that this is another commercial area which includes a Walmart, Target, and a number of other retail stores. This area is currently served by routes 8B, 11, and 13. It is important to ensure that bus stops to large retail establishments, which often are characterized by large surface parking lots, are located as conveniently for the passenger as possible, and the stop location does not present difficulties reaching the final destination. Providing convenient stop locations could help to make riders commutes much more comfortable and encourage ridership, especially as employment

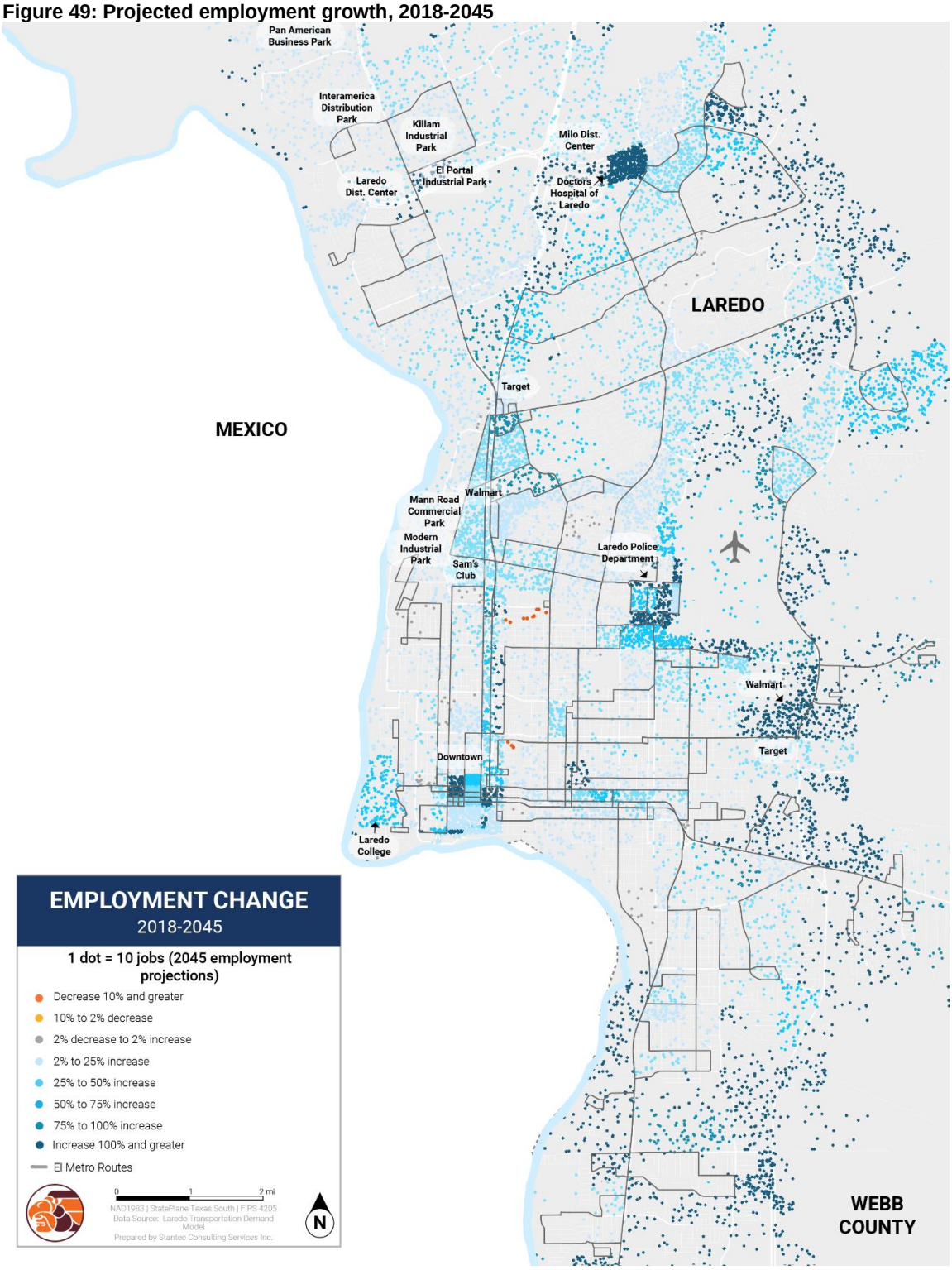
is projected to increase here. It is also important to provide stop amenities, such as shade and seating at these stops.

- Flanked by Santa Maria Ave and the I-35 in western Laredo is a string of large retail establishments that are also projected to see job increases, as well as an overall high density of jobs. This includes big-box retailers such as Sam's Club, Walmart, Kohl's, and Home Depot, in addition to smaller retailers and a number of motels and hotels. All of these destinations are serviced by Route 1.

- Another location in western Laredo experiencing employment growth is the area around Laredo College, which recorded a student enrollment of over 10,000 and over 500 faculty in 2020. Route 7, which operates with hourly weekday frequencies, services Laredo College. El Metro should consider increasing frequencies on this route to encourage ridership from both students and the growing faculty population.

- Downtown Laredo continues to show significant employment growth with very high employment density compared to the rest of the city. The urban core is characterized by a myriad of small retail shops and restaurants. Many El Metro routes service this area as routes converge at the downtown transit center.

Figure 49: Projected employment growth, 2018-2045



6.2 PLANNED TRANSPORTATION IMPROVEMENTS AND LAND USE CHANGES

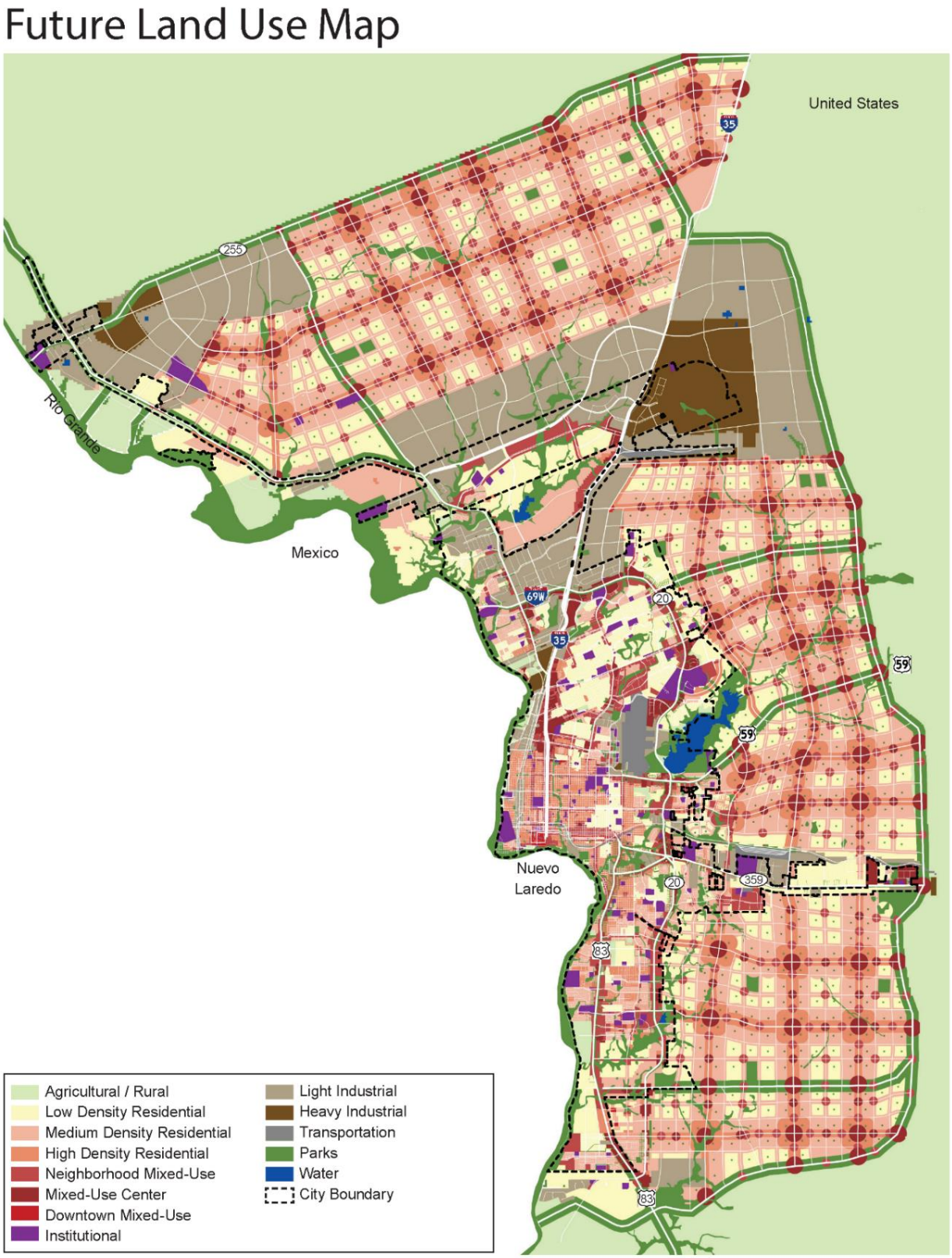
The city of Laredo has positioned itself as an important regional hub of freight, goods movement, and economic activity. Because of this and the significant projected population and employment growth discussed in the previous section, there are a number of planned transportation and land use projects that can help to shape the future of Laredo as the city and region continues to grow, from agencies including the City of Laredo, Laredo & Webb County Area MPO, the Texas Department of Transportation (TxDOT), and more. It is important that El Metro is aware of these and other projects that could change the transportation needs of Laredo residents and visitors, and subsequently signal a need for expanded or adjusted transit services. Understanding what these projects are and where they are taking place are important so that El Metro can capitalize on these developments and ensure that their service is serving these new developments as efficiently as possible.

Viva Laredo Comprehensive Plan 2017 (City of Laredo)

As summarized in the existing conditions report, the goals of the Viva Laredo Comprehensive Plan include *Make Downtown Great, Create Attractive Walkable Destinations, Complete the Streets, Plan New and Improved Public Spaces, and A Prosperous (But Still Affordable) City*. To achieve these goals, the comprehensive plan proposed an implementation plan. Specific highlights of the plan that are relevant to El Metro include:

- A future land use map to guide city growth policy, which also proposes new land uses for currently undeveloped land. The land use plan highlights walkable, mixed use land use types and higher-density residential areas. These areas are traditionally supportive of transit, and El Metro should investigate these areas more closely to ensure that sufficient levels of transit service are provided as these areas continue to densify. These land use changes are also discussed in greater detail in the ReCode Laredo section.

Figure 50: Viva Laredo Future Land Use Map



- The plan proposes the requirement of a transit impact development fee (TIDF) levied on new development to offset development's impacts on the transit system. The revenue from this fee will be able to be used by El Metro to fund both capital projects and operations. This would provide El Metro with a new revenue source that will help to fund new provision of transit services to the growing Laredo community.

- Within Viva Laredo's implementation matrix, El Metro is mentioned as a responsible department in a number of policy areas. It is important that El Metro is involved in the implementation of these policies to ensure that the goals laid out in Viva Laredo are achieved. These policies include:

    - **Extraterritorial Jurisdiction and Annexation:** as seen in the projected growth maps, much of the population growth in Laredo in the coming decades will take place outside of the downtown core of the city. El Metro has an important part to play in ensuring that transit services are provided to these growing areas (if and when demand warrants it), but also to ensure that transit is considered during every step of the development process and is not an afterthought to create communities that are supportive of transit and will ultimately help to boost ridership.

    - **Industrial Lands**: to support the regional economy, it is important for El Metro to not only provide direct transit connections to these areas to provide for those workers crossing the border to work in these industrial areas, but also to work with the city and MPO to consider implementing transit priority measures that can improve bus speeds and reliability for commuters.

    - **Urban Design Best Practices**: this policy area specifically calls for the coordination of land use and transportation policies. As Laredo continues to expand its multimodal transportation network, El Metro should ensure that the transit system incorporates these new ways to travel, so that biking and walking can become the first and last mile options of transit trips by strengthening transit, biking, and pedestrian connections.

    - **Land Use and Transportation Coordination**: Viva Laredo calls for transportation planning and development to be coordinated with growth in the region. It is recommended that El Metro proactively coordinate with city planning to provide input on new developments to help guide growth in a way that is supportive of transit use.

Overall, Viva Laredo lays out a vision for the future success and prosperity of Laredo that supports its future growth in a sustainable fashion, of which high-quality transit is an important component. To achieve the ambitious goals laid out in the plan, it is important that El Metro remains involved and invested as an active stakeholder with the MPO, city planning department, and other relevant stakeholders to ensure that these goals are achieved, and these policies are implemented.

Laredo & Webb County Area MPO Active Transportation Plan (2020) (MPO)

As illustrated in the existing conditions report, the MPO recently completed an Active Transportation Plan (ATP) that proposes a significant expansion of the bicycle network over the next 20 years (as shown in the existing conditions report), as well as a recommended Complete Streets policy and implementation plan. As the bike network continues to expand, and as biking becomes a more viable and popular transportation option in Laredo, El Metro has an opportunity to strengthen transit connections to the bike network, enabling passengers to make seamless multimodal trips. El Metro should continue to monitor the progress of the growing bike network to align transit with bicycle connections. Similarly, implementation of the complete

streets policy will help to fill in gaps in the sidewalk network, encouraging more walking and pedestrian activity. El Metro should capitalize on the opportunity to work with these programs to make connections between modes seamless, so that Laredo residents and visitors can leave their cars at home and opt for more sustainable transportation options.

ReCode Laredo (City of Laredo Planning Department)

To assist in the implementation of the Viva Laredo Comprehensive Plan, the Laredo Planning Department is undergoing an initiative to update the city's land development code to facilitate a more connected, sustainable, and affordable future. As the current code was developed over 30 years ago, the city is in need of a new unified development code to guide future development in a sustainable manner that is directly aligned with the goals laid out in Viva Laredo. The process to update the code began in fall of 2019 and is expected to be brought before City Council for approval in the summer of 2021.

Specific proposed land use changes relevant to El Metro include the creation of new categories including high density residential, mixed use, and downtown mixed-use land categories as well as expanding multifamily housing zones. Importantly, the code removes parking minimums for downtown districts and "right-sizes" parking minimums for suburban and rural areas.

Overall, ReCode Laredo allows for increased density and mixed-use developments, which can be much more supportive of transit than single-family or low-density residential uses. After the city adopts the new land use codes, El Metro should continue to work with the city to make sure new high-density and mixed-use developments are built with transit in mind.

TxDOT Laredo Mobility Study (2018)

TxDOT released the Laredo Mobility Study in 2018 to identify potential grade separations, grade crossing closures, railroad relocations, or other transportation improvements along rail corridors in Laredo to improve overall mobility in and through the city. The result of this study, which included extensive stakeholder outreach, is a program of short-, medium-, and long-range projects based on their feasibility according to a cost-benefit analysis.

The study classifies improvements into three overarching categories: grade separations, railroad relocations, and other crossing enhancements. Based on the cost benefit analysis and assessment of different improvement concepts, TxDOT determined the following list of projects to advance to more advanced planning and design:

- Short-range projects
    - Southbound I-35 Ramp Modifications
    - Warning device upgrades
    - Crossing consolidations
    - Determine optimal locations for grade separations and commence environmental review
    - Pedestrian overpass at Zaragoza Street and Union Pacific Railroad
    - Pedestrian crossing at Chicago and Union Pacific Railroad
    - Crossing closure with pedestrian crossing or roadway grade separation at Scott Street and Union Pacific Railroad
- Medium-range projects
    - Determine optimal location for underpass as a one-way couplet
    - Commence construction of rail grade separation
- Long-range projects

- Rail relocation away from downtown Laredo to remain in consideration in long-term if traffic levels increase significantly

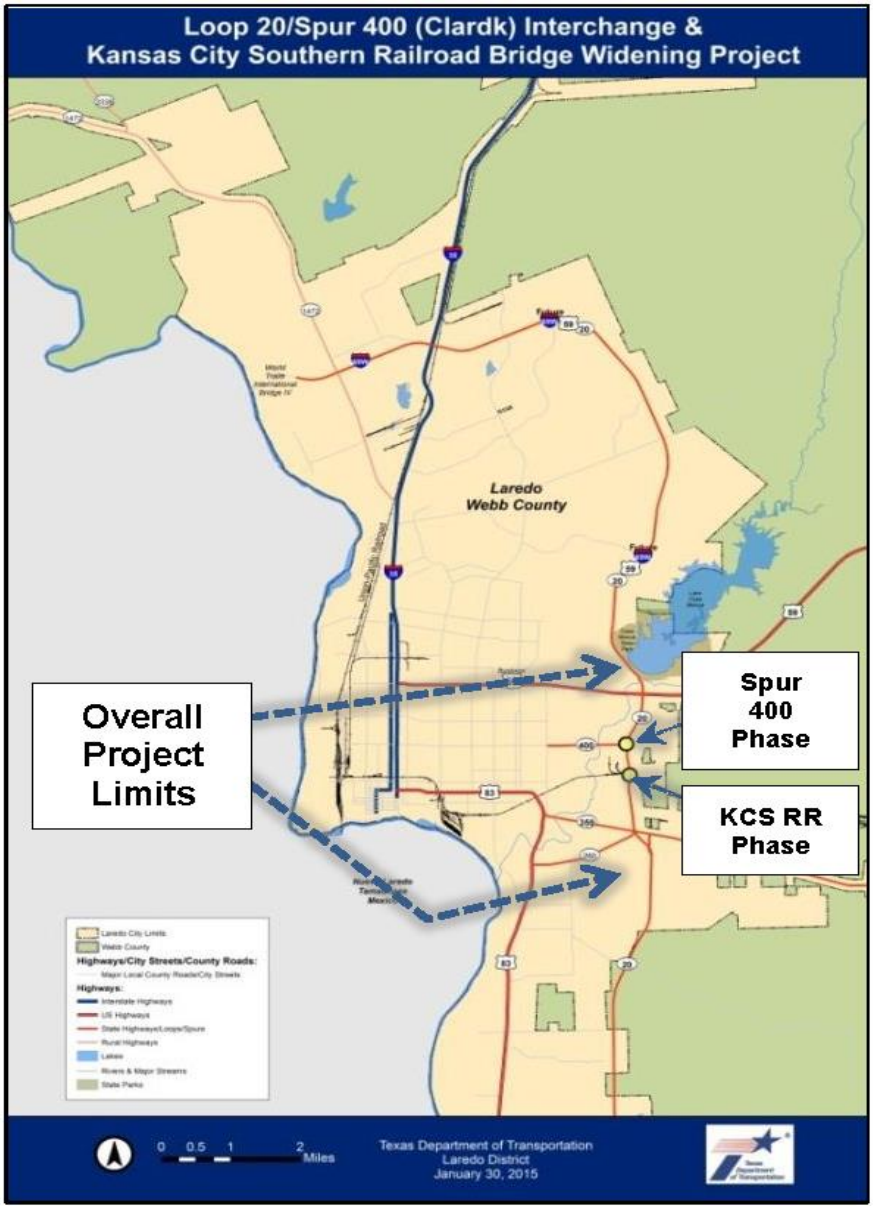
As El Metro was not listed as a stakeholder in this study process, this highlights an opportunity for El Metro to request involvement in future stages of this project as selected enhancements move forward to the next steps of the implementation process. For example, El Metro could provide input on where grade separations would be most beneficial to bus reliability and on-time performance.

TxDOT Laredo District Active and Proposed Projects

TxDOT lists a number of proposed and active transportation projects in the Laredo district. The Department notes that before a project can be built, a study must be completed to determine if it will fill a transportation need, will not negatively impact the surrounding area, fits the department's overall plan, and if the project will be cost effective while also efficiently improving mobility. Currently, there is one active project in the Laredo district:

- Loop 20 – Spur 400 Intersection to Kansas City Southern (KCS) Railroad Bridge
    - The purpose of this project is to reduce congestion and delays by constructing an overpass to separate Loop 20 mainlane traffic from the Spur 400/Clark Blvd intersection traffic. This area in eastern Laredo has long been a pain point for traffic and congestion, as motorists have to get onto the Loop 20 mainlanes' bridge to cross the KCS railroad tracks. By widening the existing bridge and adding frontage road bridges over the KCS railroad tracks, motorists can take a more efficient route while not disrupting KCS operations. TxDOT also notes that this will "be the best improvement possible for accommodating pedestrians and bicyclists" but provides no further detail on planned pedestrian and biking improvements.
    - The project was completed in two phases with a total estimated budget of $60.2 million.
    - El Metro currently does not have any routes that traverse this intersection, but improvements in traffic and congestion after the project has been completed should be analyzed by El Metro to understand if gains in service efficiency can be seen by re-routing routes through this intersection. El Metro should also be familiar with this project to understand how the project is planning on providing pedestrian and biking improvements so connections between the active transportation infrastructure and transit system can be realized.

Figure 51: TxDOT Loop 20 – Spur 400 Intersection to Kansas City Southern (KCS) Railroad Bridge

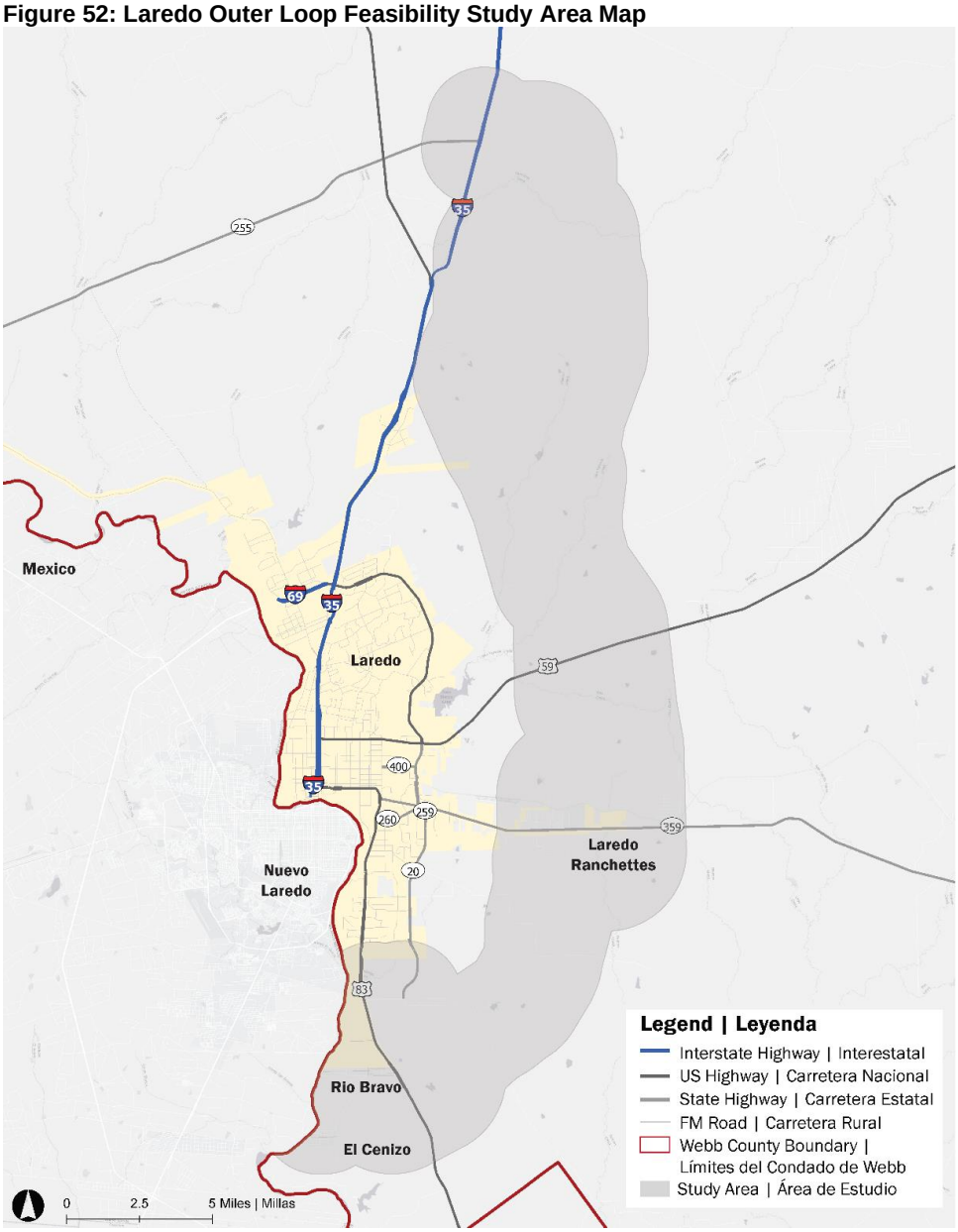


There are also two proposed projects for the Laredo district:

- Laredo I-35 Corridor Projects
    - Improvements to 24 miles of I-35 in northern Laredo and Webb County, and includes projects that are currently funded and unfunded. Construction on the funded projects is slated to begin in FY2021, so it is likely that these long-term projects will not be completed in the near-term future. However, the increased capacity proposed could translate to heavier traffic and more congestion along the I-35 and into Laredo in the long-term due to induced demand, which could impact El Metro operations.
- Laredo Outer Loop Feasibility Study

- Initiated in 2007, the Laredo Outer Loop is a proposed roadway located east of Laredo in Webb County. The aim of this loop is to provide additional capacity and accommodate future growth by providing a new, high-capacity connection through the county. The feasibility study was initiated in March 2019. Currently, the majority of the study area is outside Laredo city limits; however, this is another project that could impact regional and local travel patterns and traffic volumes long-term, and El Metro should maintain awareness of the project if it eventually becomes more relevant to El Metro operations.

Figure 52: Laredo Outer Loop Feasibility Study Area Map



El Metro should continue to monitor TxDOT projects in the Laredo/Webb County area, not only to understand how they will directly impact El Metro routes, but also to understand the larger impacts the project might have on regional travel, and how this could affect more local travel within the city. If TxDOT is improving mobility within a corridor, does it make more sense for El Metro to capitalize on these

improvements by re-routing service through that corridor? Especially in instances where TxDOT is providing improved roadway mobility where auto traffic interfaces with rail, minor re-routing may help El Metro improve on-time performance and reduce travel times.

TxDOT 2020 International Trade Corridor Plan

The International Trade Corridor Plan is a biannual report required by the Texas Transportation Code to detail planned investments in major highway trade corridors and non-highway trade corridors that facilitate trade. The 2020 report details a number of relevant projects in Laredo that El Metro should be aware of. Union Pacific Railroad provided the following information on planned investments regarding freight movement within Laredo:

- The Union Pacific Port Laredo Intermodal Terminal will receive $100 million in improvements geared towards increasing capacity, improving efficiency, and enhanced safety through a new grade-separated terminal entrance.
- Installation of Failsafe Audible Signal – Power Assisted Switch (FAS-PAS) which will allow train crews to switch tracks without having to stop or exit the train, translating to less blocked crossings.
- Public-private partnership opportunity between Union Pacific, the City of Laredo, Webb County, and the state of Texas through construction of overpasses between Scott and Jefferson Streets in downtown Laredo, resulting in an 8,000-ft. sealed corridor for trades free of at-grade crossings, with local road traffic benefitting by being able to traverse tracks without interruption and more safely. This project would also have obvious positive benefits for El Metro operations.

Laredo International Airport Master Modernization Plan (2015)

The Laredo International Airport Master Modernization Plan provides a strategy for new or expanded facilities to accommodate forecasted demand for cargo and passenger airline traffic. In 2013, the airport saw 103,000 passengers and 54.6 million pounds of cargo. Both passenger travel and cargo are expected to increase over the next 20 years. As a result of these projected increases, it is expected that the number of Laredo residents working in cargo handling and the number of people traveling through the airport will increase. The list of capital improvements projects includes construction of a new maintenance facility, taxiway extensions and widenings, construction of new taxiways, cargo road extension to accommodate increased capacity, expanded parking, and more. El Metro should continue to monitor trends in demand for travel to and from the airport, both from visitors and locals who are employed by the airport, as these may result in a need for increased bus service to and from the airport or additional service servicing the airport in addition to Route 11.

Port Grande Logistics Port

Located off the I-35 approximately ten miles from the US-Mexico border, the Port Grande is a 2,000-acre master planned logistics park which includes a distribution center, warehouse, and manufacturing port developed in response to increasing trade between the US and Mexico. The Port will provide more warehouse space to accommodate more goods and plans to make the next phase of Port Grande a public-private partnership with the city through creation of a tax increment reinvestment zone (TIRZ) for the land, which would give the developer tax breaks in return for creating jobs and revenue for Laredo. El Metro should analyze this site in closer detail to understand if there is demand from Port employees for transit service to and from the site.

7 WHAT WE'VE HEARD

7.1 STAKEHOLDER AND PUBLIC ENGAGEMENT

Three rounds of engagement were held during the COA process:

- **Round 1: "Listening"** involved the project team of Stantec and Able City listening to stakeholders, the public, and local advocacy organizations about what is working well with El Metro and where El Metro can improve. During Round 1, an online survey was also released to the public and received over 370 responses (231 El Metro riders, 119 non-riders, and 21 El Lift riders)
- **Round 2: "Creating"** involved sessions with stakeholders, the public, and as El Metro staff that acted as input into the network plan and recommendations.
- **Round 3: "Informing"** involved the project team returning to the stakeholders and the public to present the initial routing concepts and receive feedback on ideas such as microtransit.

A summary of each round of engagement is presented below and a full summary of the engagement activities and online survey results can be found in **Appendix C**.

Round 1: Listening

Stantec and Able City held its first round of stakeholder and public engagement to receive feedback on initial challenges and opportunities related to transit and mobility in Laredo. It involved meetings with stakeholders such as advocacy groups, active transportation and community development organizations, representatives from colleges, public officials, and other leaders in the community. A survey was also distributed widely to members of the public in Laredo, which remained open for several months to encourage greater participation. The results of the stakeholder meetings and focus groups are presented below. An analysis of survey results is provided in **Appendix C**.

The main topics discussed during the technical stakeholder meetings were:

- The Microtransit Pilot Program for District 6
    - Concerns about ridership and density
    - Question about the fare cost of the Microtransit Pilot Program
    - Concerns about the Microtransit Pilot program being ADA compliant
    - El Metro responded by saying that the ridership is expected to increase, fares might be based on the distance, and, finally, that microtransit will be ADA compliant.
- Suggested coverage extension in the Mines Rd. area: Green Ranch, La Bota and over the warehousing areas and connections to the south side of Mines Rd.
- El Metro suggested that land development should support transit, requiring new development to incorporate bus stops and infrastructure for El Metro.

The main topics discussed during the focus groups with organizations and advocacy groups were:

- Target choice riders through free rides during Jalapeno Fest, Jamboosie, Farmers Market, and through the "IT" Street program.
- Capitalize on bike riders crossing the bridge; since the bike inspection station was introduced, bike ridership has increased.
- Capture young riders, college students, and youth who want to use public transit.

- Deploy marketing campaigns, social media campaigns, and videos that would show the community how to use and ride El Metro.
- Riders find the El Metro app is hard to use and not helpful; they suggest being able to purchase tickets on an app, and using the app as a virtual pass. Stantec suggests a platform such as Token Transit, widely used across the US, which could achieve this goal at a relatively low cost to El Metro.
- Disability advocates feel that El Metro is not accessible for people with disabilities, visually impaired or blind.

Round 2: Creating

The Able City team held pop-up at the El Metro Transit Center to engage riders of El Metro while they were waiting to board El Metro buses. Visualizations of existing routes and network map were used as interactive visuals. Riders were asked to place a sticker on the routes they ride the most, and to leave ideas about the future of El Metro. Comments from the public during the pop-up included concerns about on-time performance and frequency of transit service.

Stakeholder meetings were also held during Round 2 to brainstorm ideas about the future transit network and recommendations. Some ideas shared during this session included the suggestion to create marketing campaigns and educational resources to encourage new ridership, and that low frequency on Sundays should be addressed.

Additionally, a pop-up was held at TAMIU during the first week of classes to inform students about the reduced fare pass for students and engage with students about what is working well and what is not with El Metro. Many students indicated that they like El Metro because they do not have access to a car or other travel options and they are environmentally conscious; however, for those who did have access to a car, students indicated that they do not take El Metro because they believe their car is more convenient.

Round 3: Informing

Round 3 involved another pop-up at El Metro Transit Center to inform riders of the proposed changes of the network plan and get feedback on the microtransit pilot program. Riders showed support to both of the new routes (Route 18 and Route C4 described further in **Section 9.2 – Proposed New/Modified Routes**), but most enthusiasm was for the C4 South Circulator. The project team then described the substitution of Route 8B for a microtransit pilot. The majority of riders were not familiar with microtransit, but after the team shared the benefits of this program, riders showed full support for this program and excitement to use it if available to them.

Round 3 concluded with another stakeholder meeting with El Metro executive leadership, Laredo MPO Staff, and the City of Laredo Engineering Department. Stantec presented the proposed Network Plan, including into short-term and long-term recommendations. The team's goal for the final stakeholder meeting was updating stakeholders on the plan and receive feedback, but most importantly was inviting them to support and collaborate with El Metro in the implementation process and in their pursuit to continue on providing safe, reliable, courteous, accessible, and user-friendly services.

7.2 CUSTOMER COMPLAINTS AND COMPLIMENTS

Complaints, comments, and requests made by community members to the Customer Service Department from January 2019 to November 2019 were reviewed to understand key issues raised by riders. During this period, El Metro received 29 complaints, 14 suggestions or requests for information, and 7 commendations/ compliments.

Some common themes emerged from this review, including:

- **Lack of information:** Numerous complaints were related to a lack of information about routes and schedules. Complaints mentioned confusing route maps, a lack of real-time information (or real-time information not working), and difficulty accessing online information. The requests to Customer Service for information about which bus route to take also illustrates that online materials may not be accessible or clear. There were 12 complaints or information requests related to a lack of available information.

- **Late buses:** Many El Lift riders indicated that they were arriving late to their destination or that the vehicles were not arriving to the pick-up locations on time (6 El Lift on-time performance complaints). El Metro's Customer Service Representatives have been working to address this by educating riders on trip booking practices (i.e., booking trips based on destination arrival time instead of origin pick-up time). There were also 4 complaints pertaining to trip booking, where riders had difficulty booking trips for the time they requested.

- **Service requests:** Riders requested changes to existing service including greater frequency on Route 16 to Texas A&M International University (TAMIU) and service to the South Texas Food Bank on Jefferson Street. There were 3 requests related to service changes.

- **Transit infrastructure:** Issues such as overfull garbage cans at bus stops, cleanliness of the Transit Center bathroom, vehicle rear light out, and incidents at bus stops (e.g. tree falling, flooding, overgrown weeds, etc.) were reported to Customer Service. There were 9 of these complaints recorded.

- **Driver behavior:** El Metro received complaints of reckless driving and poor driver behavior such as rudeness and uncertainty working with wheelchair tiedowns; however, El Metro also received several compliments about good driver behavior where passengers expressed gratitude for the service provided. There were 6 complaints and 7 compliments about driver behavior.

8 VISION

Developing a vision, goals and objectives is vital to the success of El Metro and this COA. We used stakeholder and public input to understand how transit is viewed in the community today and what the priorities are for the future.

8.1 VISION AND OBJECTIVES

*"El Metro's Mission is to promote and provide **high quality, cost-effective** public transportation services that address the needs and demands of the citizens of Laredo, Texas"* – this is the mission statement that guides El Metro service. This statement reflects the important role transit plays in Laredo with the following key values:

- **High quality:** High-quality transit service means that passengers can depend on public transit to get them where they need to go when they need to get there.
- **Cost-effective:** Transit service must be cost-effective, meaning it is delivered at the lowest cost possible to the rider, the agency, and the taxpayer.

With this in mind, the COA aims to:

1. **Strengthen core services.** In recent years, El Metro has been asked to extend its services to new neighborhoods and provide coverage to new developments that are not supportive of transit. El Metro has done so by stretching the coverage of fixed-route services and introducing Circulator services. As a result, services have been spread thinly to unproductive areas and do not run frequently enough to attract strong ridership. Through this COA, a key objective is to revisit the core network of fixed routes and identify opportunities to improve frequency and strengthen the routes that have potential to be more productive than they are today.
2. **Simplify the network.** The system should be as simple as possible and easy to use for everyone. Where possible, route structures should be straight and direct with purposeful designs and expectations for productivity. To improve service efficiency and the legibility of the network for customers, the new network should reduce or remove unnecessary duplication between routes.
3. **Match levels of service with demand.** A well-designed and successful system features a mix of layered transit services designed to meet the diverse needs of the region. Each layer of service has its own purpose and accommodates a specific demand. Transit service layers are distinguished by the level of service (headway or time between buses), distance between bus stops, and main purpose of the route. The COA will develop a set of service layers and associated features such as frequency and service span that matches the level of demand for that layer. Focus will be on providing more frequent services in areas with the highest demand or areas of high potential like TAMIU, while rethinking or modifying routes in areas with low demand.
4. **Attract riders to transit.** Build ridership by creating a system that is both easy to use and easy to operate. A system with less delay and better frequencies offers reliability and consistency to its customers and promotes the usability of the service. By designing straighter routes with greater frequencies that reduce passenger waiting time, El Metro can attract new riders by offering better travel times.

5. **Plan for the future.** Prepare a COA that is integrated with existing land use and transportation plans in Laredo and supports the city's growth. Short and long-term recommendations with clear targets and monitoring practices will allow El Metro to track its progress and make decisions about how the transit system should progress in the future.

6. **Make transit inclusive and accessible.** Provide accessible transit options to transit-dependent and marginalized populations. The communities must have transit access to job opportunities, education, and medical facilities to ensure they have access to the same opportunities as those with greater mobility. Paratransit services must be available to individuals with disabilities who are unable to use accessible conventional fixed-route transit at the same service levels as conventional riders.

7. **Create connections.** Reduce first and last-mile barriers to transit by working with other organizations to improve multi-modal connections. The transit network should also provide seamless transfers that encourage greater use of the system.

8.2 NETWORK GOALS

To create a network of high-quality transit service that is cost effective, El Metro must ensure the right type of service is provided in the right places. With limited resources to operate services, transit agencies must strategically choose how to distribute resources across routes and services to create the most effective and efficient service possible.

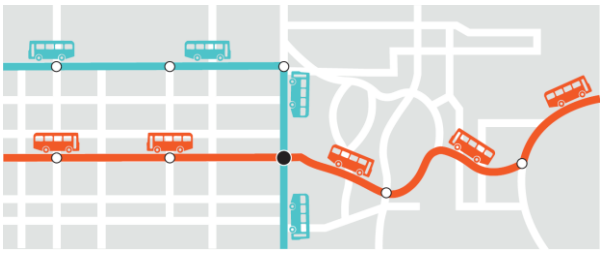
Typically, a transit network is either coverage-focused (implying easy access to the system for everyone regardless of quality or frequency of service) or it is ridership and productivity-focused, with high-frequency service and direct routes along major corridors but less systemwide coverage. Agencies can also adopt a hybrid approach based on specific community characteristics where aspects of each approach are applied in different parts of the service area to serve specific needs and populations. This strategy may include a more frequency-focused network concentrated in the denser areas closer to the downtown area, and a more coverage-focused network in less dense surrounding residential or industrial communities. The discussion regarding tradeoffs is an important one to have with the community, as it helps guide where resources should be concentrated.

- A **frequency-based** system maximizes ridership and productivity. It connects key destinations with services to encourage use of the system. Once routes operate at least every fifteen minutes, they tend to generate new ridership because wait times are reduced, and spontaneous travel without the need to reference a timetable can occur.

- A **coverage-based** system maximizes access to transit services regardless of the quality or frequency of service. Coverage-based models ensure that residents can access transit within a prescribed walking distance, but the quality of service they have access to may be limited. Today, El Metro's fixed-route system most closely resembles a coverage-focused network, where most routes provide a one-seat ride from the Transit Center to the destination and there are no high-frequency routes to transfer between. Routes commonly operate every 60 to 120 minutes, which is typical in a coverage-focus network.

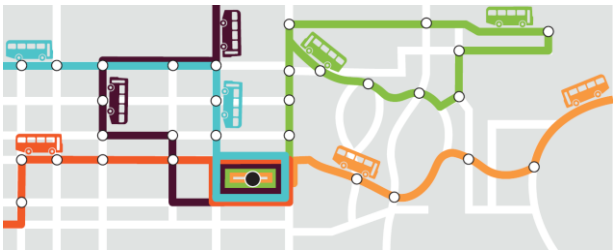
Typical characteristics of frequency and coverage-based networks are shown below along with an example of how the same number of resources (9 buses) can be deployed across these different network types.

Frequency



- Focus on **ridership goals** and productivity
- Simple, direct routing
- High frequency service
- Typical in areas of high demand
- Longer walking distances to reach stops
- Transfers are a key component but wait times between buses are shorter
- Buses stop less frequently, meaning faster travel times and shorter trips overall

Coverage



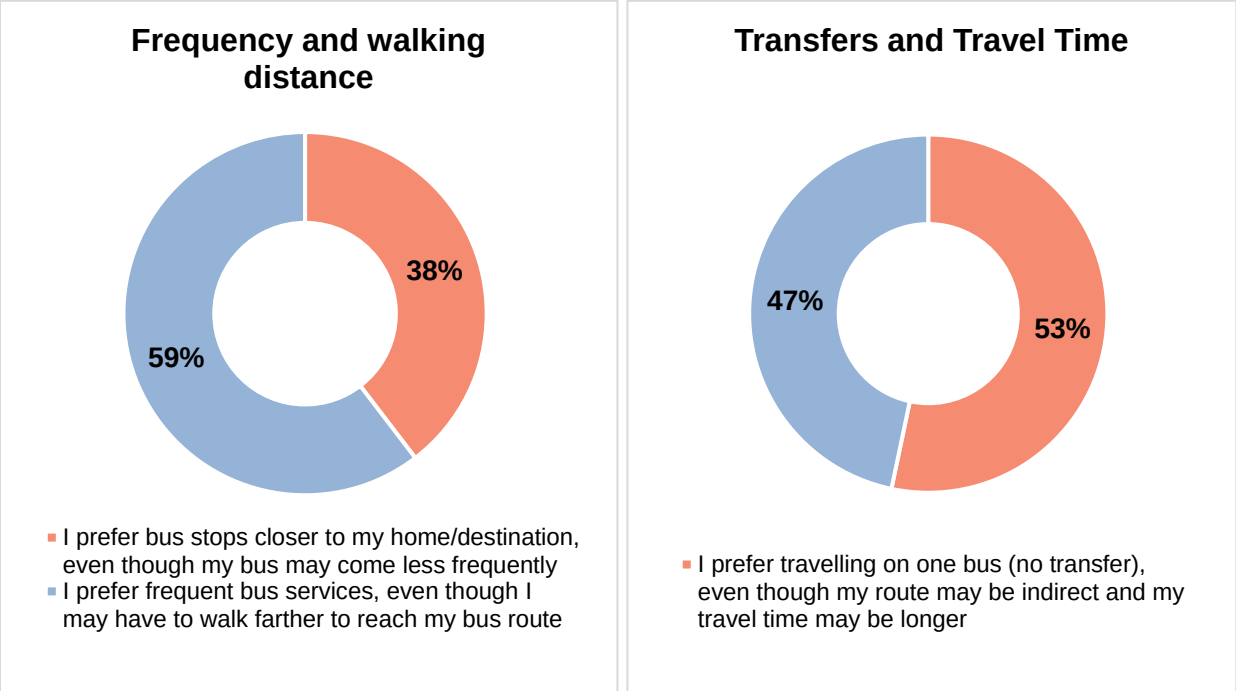
- Focus on **coverage goals**
- Circuitous, indirect routing
- Lower frequency service
- Typical in areas with low demand (auto-oriented)
- Shorter walking distances to reach stops
- One-seat rides to everywhere to avoid a transfer
- All routes meet at one central location
- Buses stop more frequently, meaning slower service and longer trips overall

With these principles in mind, we sought feedback from the public to determine how resources should be concentrated in the future. In the online survey at the outset of the project, riders of El Metro were asked to select their preferences between:

- Bus stops close to their home/destination but less frequent service, or bus stops with greater walking distance but more frequent service
- No transfers but longer travel times onboard the bus, or shorter travel times but a transfer is required

These questions aimed at getting the community to understand the trade-offs involved in transit planning and understand the priorities of the community. The results of those questions poll are shown below in **Figure 53**, where orange represents characteristics more typically associated with a coverage-based route compared to more-frequency based characteristics. The results illustrate that riders value frequency (59%) over short walking distances (38%), but value one-seat rides (53%) over shorter travel times (47%). One thing to note about these results is that El Metro, at the time of the survey, required additional fares for transferring, which may impact people's willingness to transfer. The appetite for transferring may differ if El Metro removes its transfer fare, as planned.

Figure 53: Online survey responses related to Frequency vs. Coverage



8.3 LAYERS OF SERVICE

Adopting a layered approach to transit is one way transit agencies can clearly demonstrate the role of different routes in a network and create goals that are specific to those layers, as not all routes are designed to provide the same level of service. While each layer should have a distinct purpose and set of standards, the layers must work together and operate as an integrated network. This means there should not be barriers in place preventing riders from transferring between route types and services. In El Metro's existing system, the fares for regular fixed routes differ from fares for the circulator, which makes it difficult to facilitate transfers between the two service types.

The existing layers of service currently offered by El Metro are as follows:

- **Regular Fixed Route:** El Metro operates 22 regular fixed routes on fixed schedules using 40-foot buses. Service frequency on El Metro's fixed routes vary, with the most frequent routes operating at 25 to 35-minute headways and least frequent services operating at 90 to 120-minute headways. Service span on fixed routes is generally from 6 AM and 10 PM from Monday to Saturday, with service ending at 8 or 9 PM on Sundays.

- **Circulator:** One circulator has been in service since 2019, called Route C1 Mines Road. It operates every 30 minutes from 7 AM to 7 PM Monday to Friday along a fixed route in smaller vehicles than conventional fixed-route service. Two additional circulator routes were added to the network in June 2021, C2 Green Ranch and C3 Riverside. The purpose of the circulator layer is to provide coverage in areas where ridership demand is low, connecting riders to fixed-route services.

- **Demand Response/Paratransit:** El Lift is the ADA paratransit service of El Metro aimed at providing journeys to persons with disabilities that prohibit them from using fixed-route services. El Lift operates in the same service area as the fixed-route system and during the same days and

hours. Riders book trips between 1 and 7 days in advance of their trip and the pick-up window is 30 minutes.

Based on feedback during the first round of public engagement, the community is interested in a greater emphasis on frequent service to improve wait times, overall travel times, and convenience. The service layers that will guide service planning recommendations for the COA therefore include the frequent, local, community and on-demand layers:

- **Frequent:** This layer aims to move towards an ultimate service frequency of 15 minutes all day but may operate at this higher frequency during peak periods only, or during demand periods that reflect the nearby land uses. For example, traditional AM and PM commuter peak periods may not match the demand along routes that serve college campuses, shopping centers or employment parks with unique shift times.

- **Local:** Local transit operates along corridors where there is a high level of use, but the density (both jobs and people) is not sufficient to warrant a frequent level of service. The goal of this service is to offer 30-minute frequencies throughout the day. The goal of all local routes is to operate on a clock facing headway to improve trip planning for riders.

- **Community/Circulator:** This layer is primarily designed to provide access within residential areas with community destinations in Laredo. This service connects to the local and frequent transit networks to provide access to transit services to the entire community. The goal of this service is to operate every 60 minutes on weekdays. More specifically, certain community routes are designed for target audiences, like seniors, as a more convenient travel option than El Lift. The existing circulators are also included as part of the community layer as they serve a similar function and operate along a fixed route in neighborhoods with low demand.

- **Demand Response/ ADA Paratransit:** On-demand transit service, also called demand response or microtransit, is an innovative service delivery model that allows transit agencies to only provide trips when and where demand exists instead of consistently along fixed routes throughout the day. Microtransit is often used to address the first/last-mile connection to transit, carrying passengers in shared rides over short distances to connect to fixed-route services for the rest of their journey. On-demand microtransit service can therefore be delivered at lower costs than conventional transit. ADA-compliant paratransit services (El Lift) also operate on demand, and agencies are increasingly combining resources to deliver shared conventional and paratransit trips to operate more efficiently.

9 SHORT-TERM NETWORK RECOMMENDATIONS (<3 YEARS)

El Metro staff, MPO staff, and Stantec staff held four network planning workshops to develop a series of route adjustments based on the analysis and needs assessment, considering customer and community feedback, and considering short-term issues and constraints.

The key principles that shaped the short-term network include:

- **Operating a similar number of revenue hours and vehicles as just prior to the pandemic.** This is a chief constraint because even though Texas and Laredo are open for business and ridership demand has slowly grown over the summer of 2021, El Metro, like so many transit agencies nationwide, are facing staffing shortages. These staffing shortages are most acute for operators. As such, to provide a conservative and realistic recovery plan, the goal is to operate within the budget envelope for revenue hours and vehicles as just prior to the pandemic. If and when El Metro's operator challenges are diminished, and if El Metro is able to provide more revenue hours, El Metro should prioritize increasing frequency on key routes, since we heard that frequent service was one of the top desires of current bus riders.

- **Designing a familiar network based on service coverage**. While riders told us they want frequent and reliable service, they also told us that they are comfortable with the current network design. This design prioritizes one-seat rides and minimizes the need to transfer between vehicles, even if this may mean longer travel times onboard the bus. Furthermore, El Metro strives to provide at least some level of service (i.e., coverage) to as much of Laredo as possible. Taken together, the network, at least in the short-term, reflects modest adjustments resulting in much of the similar amount of coverage of population, similar headways, similar route alignments, and similar service spans that are operated today.

- **Removing duplication, particularly on routes that have low ridership or perform poorly.** A certain amount of routing duplication along route segments is unavoidable in Laredo given its street network and the transit network design where all routes converge at the downtown transit center. Nonetheless, we propose restructuring routes to remove duplication and serve new areas. The result is expanded coverage, reassignment of vehicles to other routes (for potentially improved frequency on high performing routes), and potentially decreased headways on the routes that have alignment changes (as a result of longer alignments and running times without increasing the number of vehicles devoted to the route).

- **Beginning to slowly integrate new circulators, microtransit, and other modest service improvements.** Throughout 2020 and 2021, El Metro designed and implemented several 'circulators' which are routes that operate with small vehicles in localized areas. They have lower fares than other lines, and do not connect to downtown transit center. Microtransit services are envisioned to provide either coverage of certain areas of Laredo that lack fixed-route service, or provide an overlay in places that have infrequent fixed-route transit service. The progression looks something like [no service <-> microtransit <-> circulator <-> fixed-route]

The following table (**Table 8**) outlines the proposed short-term service plan recommendations compared to the existing service frequency and span, highlighting notable changes in grey, red and green.

Table 8: Short-term service plan.

Route	Existing frequency			Existing Span							Proposed Frequency			Proposed Span							
	M-F	Sat	Sun	M-F			Sat			Sun				M-F			Sat			Sun		
				Start	End	Hrs	Start	End	Hrs	Start	End	Hrs					Start	End	Hrs	Start	End	Hrs
1	25	25	37-75	6:30 AM	9:30 PM	15	6:30 AM	9:30 PM	15	8:30 AM	6:30 PM	10	25	25	25	6:30 AM	9:30 PM	15	6:30 AM	9:30 PM	15	6:30 AM	9:30 PM	15
2A	35	35	70	6:30 AM	9:30 PM	15	6:30 AM	9:30 PM	15	7:30 AM	6:30 PM	11	35	35	35	6:30 AM	9:30 PM	15	6:30 AM	9:30 PM	15	6:30 AM	9:30 PM	15
2B	35	35	70	6:30 AM	9:30 PM	15	6:30 AM	9:30 PM	15	8:00 AM	6:00 PM	10	35	35	35	6:30 AM	9:30 PM	15	6:30 AM	9:30 PM	15	6:30 AM	9:30 PM	15
3	60	60	120	6:30 AM	8:30 PM	14	6:30 AM	8:30 PM	14	8:30 AM	6:30 PM	10	60	60	60	6:30 AM	8:30 PM	14	6:30 AM	8:30 PM	14	6:30 AM	8:30 PM	14
4	30-40	30-40	70	6:30 AM	8:30 PM	14	6:30 AM	8:30 PM	14	8:30 AM	5:30 PM	9	30-40	30-40	70	6:30 AM	8:30 PM	14	6:30 AM	8:30 PM	14	8:30 AM	5:30 PM	9
5	70	70	140	6:00 AM	8:00 PM	14	6:00 AM	8:00 PM	14	8:30 AM	3:30 PM	7	70	70	140	6:00 AM	8:00 PM	14	6:00 AM	8:00 PM	14	8:30 AM	3:30 PM	7
6	70	70	140	6:30 AM	7:30 PM	13	6:30 AM	7:30 PM	13	9:30 AM	7:00 PM	9	70	70	140	6:30 AM	7:30 PM	13	6:30 AM	7:30 PM	13	11:30 AM	6:00 PM	6
7	30	30	30	6:30 AM	7:30 PM	13	6:30 AM	7:30 PM	13	7:30 AM	5:30 PM	10	30	30	30	6:30 AM	7:30 PM	13	7:00 AM	6:00 PM	11	12:00 PM	5:00 PM	5
8A	70	70	70	7:00 AM	8:00 PM	13	7:00 AM	8:00 PM	13	9:00 AM	5:00 PM	8	70	70	70	7:00 AM	8:00 PM	13	7:00 AM	8:00 PM	13	9:00 AM	5:00 PM	8
8B	90	90		8:00 AM	5:00 PM	9	8:00 AM	5:00 PM	9			0	90	90	0									
9	45	45	90	6:30 AM	8:30 PM	14	6:30 AM	8:30 PM	14	7:30 AM	6:00 PM	10	45	45	90	6:30 AM	8:30 PM	14	6:30 AM	8:30 PM	14	7:30 AM	6:00 PM	10
10	30	30	60	6:30 AM	9:30 PM	15	7:00 AM	8:30 PM	13	8:00 AM	6:00 PM	10	30	30	60	6:30 AM	9:30 PM	15	7:00 AM	8:30 PM	13	8:00 AM	6:00 PM	10
11	85	85	85	7:00 AM	8:00 PM	13	7:00 AM	8:00 PM	13	8:00 AM	4:30 PM	8	85	85	85	7:00 AM	8:00 PM	13	7:00 AM	8:00 PM	13	8:00 AM	4:30 PM	8
12A	75*	75	75	7:30 AM	7:00 PM	11	7:30 AM	7:00 PM	11	11:30 AM	6:00 PM	6	75*	75	75									
12B	80	80	80	7:00 AM	7:00 PM	12	7:00 AM	7:00 PM	12	8:30 AM	5:30 PM	9	80	80	80	7:00 AM	7:00 PM	12	7:00 AM	7:00 PM	12	8:30 AM	5:30 PM	9
13	85	85		8:00 AM	6:00 PM	10	8:00 AM	6:00 PM	10			0	85	85	0	8:00 AM	6:00 PM	10	8:00 AM	6:00 PM	10			
14	90	90	90	7:00 AM	9:00 PM	14	7:00 AM	9:00 PM	14	7:00 AM	5:30 PM	10	90	90	90	7:00 AM	9:00 PM	14	7:00 AM	9:00 PM	14	7:00 AM	5:30 PM	10
16	90	75	60	7:00 AM	8:30 PM	13	7:00 AM	6:30 PM	11	12:00 PM	5:00 PM	5	15-30 (peak) and 30-60 (off-peak)	75***	60***	7:00 AM	8:30 PM	13	7:00 AM	6:30 PM	11	12:00 PM	5:00 PM	5
17	40-60	75	75	7:00 AM	8:30 PM	13	7:00 AM	7:30 PM	12	12:00 PM	5:00 PM	5	40-60	75	75	7:00 AM	8:30 PM	13	7:00 AM	7:30 PM	12	12:00 PM	5:00 PM	5
18						0			0			0	60	60	60	6:30 AM	8:30 PM	14	8:00 AM	6:00 PM	10	8:00 AM	6:00 PM	10
19	80	80	80	6:30 AM	8:00 PM	13	6:30 AM	8:00 PM	13	11:00 AM	5:30 PM	6	80	80	80	6:30 AM	8:00 PM	13	6:30 AM	8:00 PM	13	11:00 AM	5:30 PM	6
20	85	85	90	6:30 AM	8:30 PM	14	6:30 AM	8:30 PM	14	7:00 AM	5:30 PM	10	60	60	60	6:30 AM	8:30 PM	14	6:30 AM	8:30 PM	14	7:00 AM	5:30 PM	10
C1	55			7:00 AM	6:00 PM	11							55	0	0	7:00 AM	6:00 PM	11						
C2	65			7:00 AM	4:00 PM	9							60	60	60	7:00 AM	4:00 PM	9						
C3	40	40		7:00 AM	6:00 PM	11	7:00 AM	5:30 PM	10				40	40	0	7:00 AM	6:00 PM	11	7:00 AM	5:30 PM	10			
C4													30	30	30	7:00 AM	6:30 PM	11	7:00 AM	6:30 PM	11			

**one extra trip is added during the PM Peak, making the headways 35-40 minutes for those trips*

9.1 CHANGES TO FREQUENCY AND SPAN

Weekend Service

While ridership is generally lower on Saturdays and Sundays than it is on a typical weekday, there are some routes that have similar or higher ridership on the weekend compared to the weekday because of the commercial and recreational destinations they serve. For example, in 2019, Route 1 Santa Maria carried approximately 950 riders on a typical weekday and Saturday; however only carried half as many on Sunday. Route 1 operates every 25 minutes from Monday to Saturday and every 37-75 minutes on Sunday depending on the time of day. Increasing the frequency of service on Route 1 on Sundays has the potential to increase ridership substantially on a route that has proven productivity on the other days of the week. It is also worth noting that a major destination on this route is Walmart, which is open from 6am to 11pm all 7 days of the week; however, Route 1 operates from approximately 6:30am to 9:30pm from Monday to Saturday and only 8:30am to 6:30pm on Sundays.

To adjust service levels on the weekend, ride checks (counting the number of riders on each trip) should be conducted to understand demand better. For example, if the last two trips of the day on a Saturday or Sunday is crowded and has relatively high ridership compared to the rest of the day, this may indicate that there is demand for service later into the evening on that route. Conversely, if the last one or two trips of the day are nearly empty, this may indicate that there is not enough demand to support service that late and that the service span should end earlier. El Metro can also consider offering different headways depending on the time of day. For example, Route 1 may not have demand to support 25-minute headways on Saturday morning at 6:30am and instead may only require 50-minute headways in the early morning and 25-minute headways on Saturday afternoon and evening. This can be determined better through more granular data collection.

To improve the mismatch between weekend service supply and demand, El Metro should consider taking the following actions:

- Develop a data collection and analysis program for ridership counts to monitor and refine existing weekend service levels (frequency and span).
- Consider increasing Sunday frequency and/or span on routes with strong Saturday ridership (relative to weekday ridership on the same route) and routes with strong shopping destinations, such as Route 1 Santa Maria, Route 2A San Bernardo Social Security and 2B San Bernardo/Calton.
- Consider reducing service levels on routes with low weekend ridership and destinations with high weekday and peak demand such as schools, government offices, and medical offices that are closed on weekends (or Sundays only). Examples of these routes include Route 7 Ladriller/El Cuatro (service Laredo Community College) and Route 6 Cedar/Health Clinic (serving health clinics that are closed on Sundays).
- Use findings from ridership counts, paired with operating hours of businesses along the route to add additional AM or PM weekend trips that better reflect activity levels by time of day.
- Adopt a layered approach to service planning with standards and performance measures to ensure needs are being met for each time of route. The most productive routes in the system should operate at least every 60 minutes or better on weekends to attract ridership. For example, Route 3 Convent/McPherson is ranked as the 3rd best route and carried approximately 185,000 passengers

in 2019, or approximately 615 on a typical weekday with 60-minute headways. Service on Route 3 operates every 120 minutes on Sundays from 8:30am to 7pm despite serving important destinations with long hours of operation on Sundays like Doctors Hospital of Laredo (open 24 hours), H-E-B plus! (open 6am-11pm) and Walmart (open 6am-11pm). Service headways of 120 minutes does not make transit an attractive option, especially for people who want to take transit to run a quick shopping errand on the weekend.

And while this analysis may paint a picture of poor productivity on weekends, or other 'off-peak' times for that matter—like late nights or midday—it is important recognize the consequences of cutting 'unproductive' off-peak service. Most routes, even the most 'productive', will have unproductive trips from a purely boardings per hour or boardings per trip metric.

If we think about peak vs. off-peak service and riders, we can quickly appreciate how riders who commute to jobs with non-traditional shift times may be able to reach work during the midday when buses are operating, but if they are unable to take a bus home late at night (or start early in the morning), those potential riders are less likely to take that midday trip (or take the job at all). Furthermore, if residents can rely on transit on the weekends, they are more likely to rely on it for weekday trips. Finally, providing more service during off-peak times can help address operator spilt shifts as well as use resources (buses) El Metro already owns and maintains to attract more riders, rather than trying to add more peak buses and more peak service; providing more service allows people to rely on transit since they know it's available if there's an emergency (getting home from work during the day) or if plans change (catch a movie after work). Overall, thinking about how service span and frequency beyond the commuting peak shapes ridership demand and may help grow all-purpose ridership is one method El Metro may look toward to build a more resilient, more equitable system.

Route 16: Casa Verde/Del Mar

Route 16 provides service between El Metro Transit Center and Texas A&M International University (TAMIU) along Del Mar Blvd and is one of El Metro's most productive routes (ranked number 1 in terms of boardings per revenue hour in 2019). In 2019, this route operated every 15-75 minutes during weekdays with a higher frequency of service during the morning peak period but was reduced to every 90 minutes during 2020 due to the stay-at-home restrictions and online school associated with the COVID-19 pandemic. Now that TAMIU has returned to in-person classes, El Metro should reinstate the 2019 schedule (at the least) but should also consider headways of no greater than every 60 minutes instead of 75. Maintaining or increasing the frequency of El Metro's most productive routes is necessary for maintaining riders on those routes as well as attracting new riders.

9.2 PROPOSED NEW/MODIFIED ROUTES

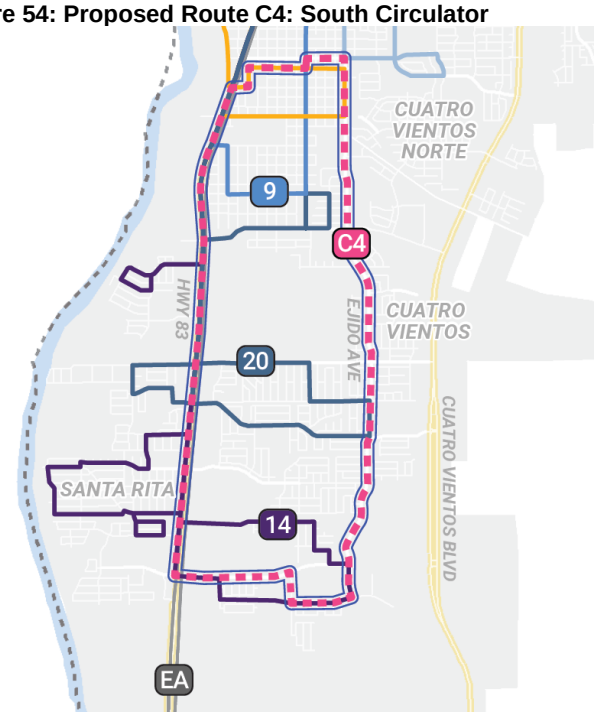
Route C4: South Circulator

Since 2018, El Metro has planned and designed circulator services for certain communities to "foster the redevelopment of urban spaces into walkable, mixed-use, high-density environments." Three of these circulators have been introduced and are currently in operation, with the fourth still in planning stages.

Most circulators provide a greater level of service (frequency of every 30 minutes) compared to many fixed routes that run every 60-90 minutes but are less expensive to ride. The fare is $1 compared to $2 for other fixed routes; however, circulators cost the same amount as fixed-route services to operate per revenue hour, so El Metro should reconsider the fares for their service through a fare study. These inconsistencies in fares cause confusion for riders, particularly when considering that transferring from a circulator to a

fixed-route service makes a trip less expensive than transferring from a fixed-route service to a circulator. El Metro's fourth proposed circulator is shown below in **Figure 54**.

Figure 54: Proposed Route C4: South Circulator



The goals of the South Circulator (C4) are to:

- offer local trips around South Laredo
- fill the gap in the service along S Ejido Ave and in the Cuatro Vientos neighborhood
- provide more frequent service in South Laredo, which is currently served by routes that run every 75-90 minutes on weekdays
- facilitate transfers to routes 9, 10, 14, 19, and 20

The service will operate every 30 minutes using 27-foot LF Champions or similar vehicles. The smaller buses can navigate neighborhoods that were not built with transit in mind; however, given the higher frequency of this route and variety of destinations served, El Metro should monitor the demand on this route and determine if it should be served by a conventional 40-foot bus as ridership grows.

Route 12A Realigned into Route 18: Lakeside

El Metro has received requests for transit service in the Lakeside community, as well as along Jacaman Road. There are a lot of jobs near Jacaman Road and Bob Bullock Loop, including auto shops and dealerships, restaurants, hotels, and athletic facilities (Uni-Trade Stadium and Sames Auto Arena) that will be better served through the introduction of Route 18: Lakeside. In addition, this new route will provide an east-west link that facilitates greater connectivity for the network as riders can transfer to north-south routes to continue their journey to their destination.

To free up resources for the proposed Route 18: Lakeside, and remove service duplication in the existing network, Route 12A: Del Mar Express is proposed to be realigned to Lakeside and covered by other routes that serve the same alignment. Consistent with El Metro and the community's goals of providing coverage to all places, removing service completely from an area is not proposed in this plan. The existing Route 12A alignment will be covered by existing/modified routes 1, 2A, 16 and 18 (proposed), which all provide higher frequency than the existing Route 12A that operates only every 75 minutes.

The service on Route 18 will operate every 60 minutes using a light-duty bus that can more easily serve the Lakeside neighborhood. Similar to the circulator above, this route should be monitored as ridership grows to ensure the small vehicle is the appropriate vehicle to deploy on this route in the long-term. The route alignment for proposed Route 18: Lakeside is shown in **Figure 55**.

Operating costs spent on Route 12A will be redeployed onto Route 18; however, Route 18 will operate using a different vehicle type than Route 12A. The additional bus from the eliminated Route 12A will be used as a spare to improve El Metro's spare ratio. If El Metro is able to increase revenue hours (and operating budget) in the future, El Metro should consider deploying the extra bus saved from 12A onto Route 3: Convent to improve frequency on this north-south corridor that serves many commercial, medical and residential land uses. Route 12A (every 75 minutes) currently overlaps with Route 3 (every 60 minutes) along McPherson from Calle del Norte to International Blvd to provide a combined frequency along that corridor of approximately 30-40 minutes (**Figure 56**). The removal of Route 12A will decrease this corridor's frequency to every 60 minutes. Resources should therefore be monitored to determine if an additional vehicle can be dedicated to the McPherson corridor (Route 3) in the future.

Figure 55: Proposed route 12A realignment to Lakeside (now Route 18)

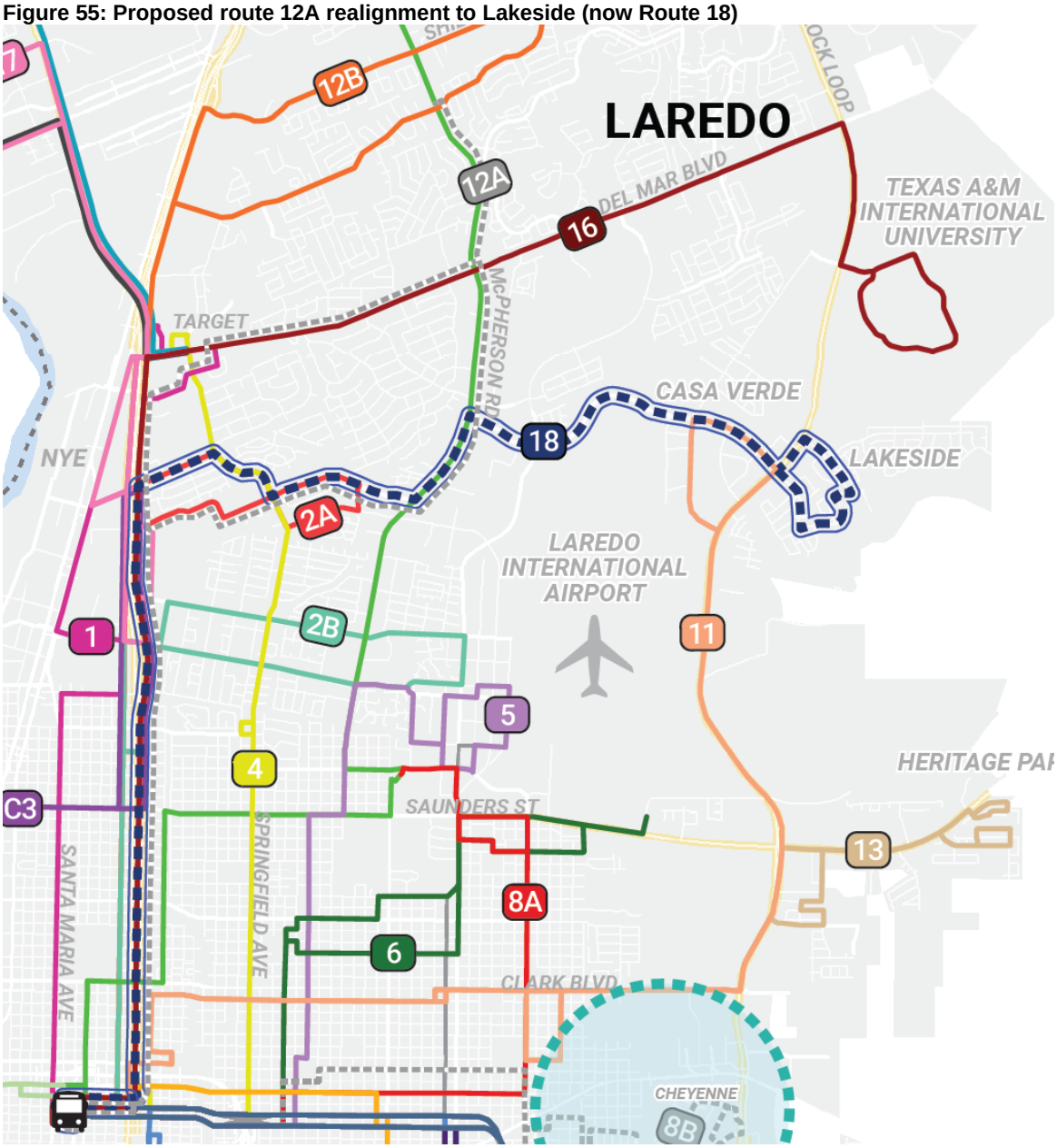


Figure 56: Existing transit schedule at 7210 McPherson (Mercy Ambulatory) bus stop

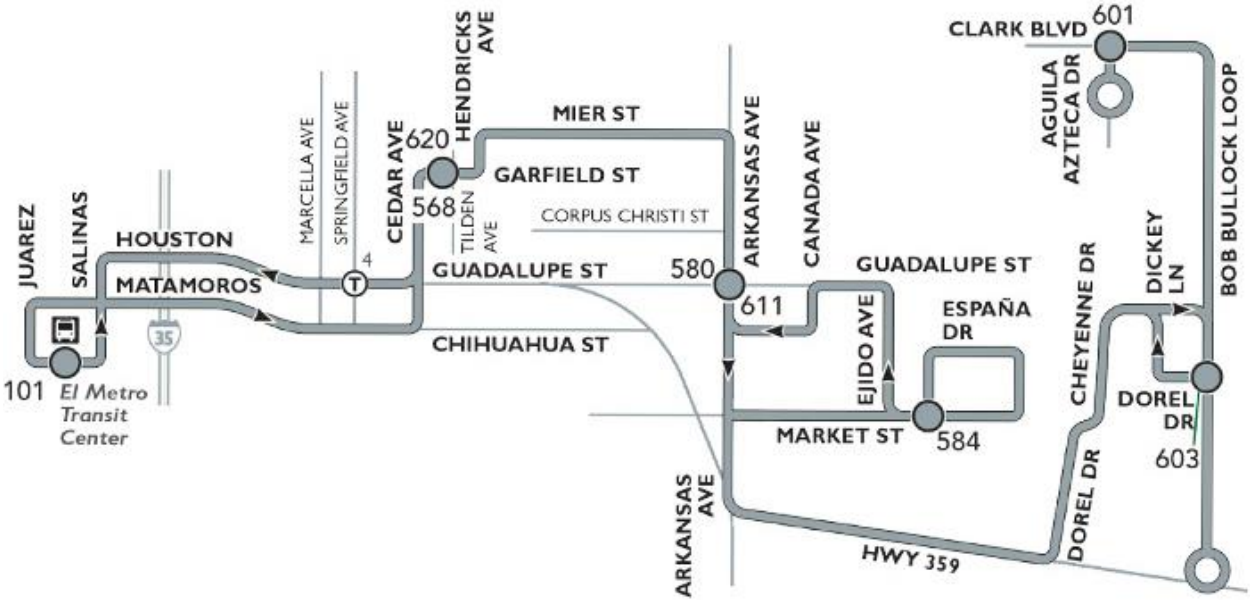
12A	El Metro Transit Center	12:04 PM
3	El Metro Transit Center	12:40 PM
12A	El Metro Transit Center	1:19 PM
3	El Metro Transit Center	1:40 PM
12A	El Metro Transit Center	2:34 PM
3	El Metro Transit Center	2:40 PM
12A	El Metro Transit Center	3:14 PM
3	El Metro Transit Center	3:40 PM
12A	El Metro Transit Center	3:49 PM

9.3 PROPOSED SERVICE SUBSTITUTION

Route 8B: Villa Del Sol/Cheyenne

Route 8B is the lowest-ranked bus route in El Metro's fixed-route system based on total annual ridership and riders per revenue hour (6.2 in 2019 and 3.4 in 2020). In addition, this service only operates at headways of 90 minutes, which is not an attractive frequency for riders and will not help attract new riders to the service. Villa del Sol and Cheyenne are built as auto-dependent neighborhoods and are very difficult for transit to serve effectively, making the route very circuitous and therefore extending the amount of time riders spend in-vehicle in addition to the time already spent waiting for the bus. The existing route alignment for Route 8B is shown in **Figure 57**, illustrating an alignment that is circuitous and confusing for riders.

Figure 57: Existing Roue 8B: Villa del Sol/Cheyenne

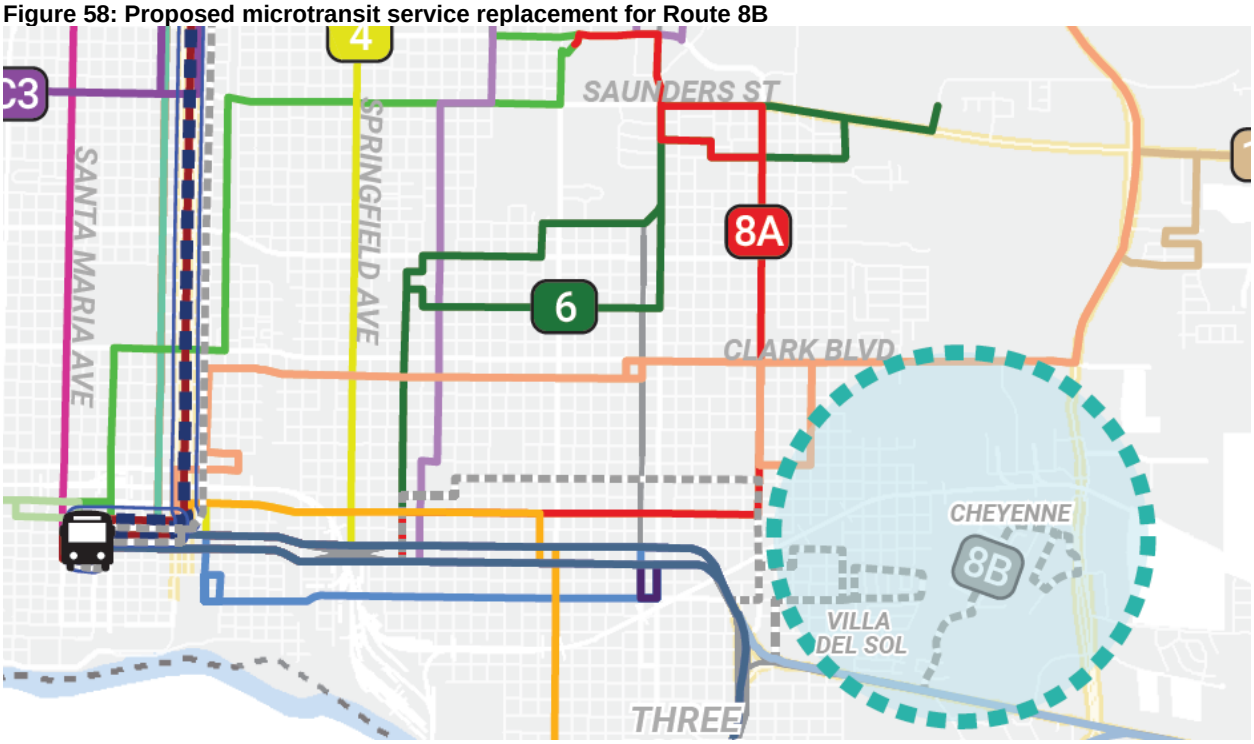


Many peer agencies across North America have introduced innovative ways of service low-density areas with low transit productivity and ridership, including through the introduction of on-demand microtransit

where riders can request trips via their smart phone, online, or by phone and the on-demand service will bring people to designated locations (typically transfer centers) to connect to fixed-route services.

Through this COA, we recommend that El Metro pilots an on-demand rideshare microtransit service in the area shown in **Figure 58** to replace the under-performing Route 8B, while still offering transit options to riders. In fact, microtransit can provide a greater level of service to riders because instead of being tied to a schedule where the bus departs every 90 minutes, riders can request a trip and have a vehicle show up within 15 minutes or less.

Figure 58: Proposed microtransit service replacement for Route 8B



Consider the following scenario:

Alejandro needs to travel from his home in Villa del Sol (116 Soledad Loop) to his shift working at Walmart (2320 Bob Bullock Loop) that requires him to be there at 5pm.

Here are Alejandro's travel options today:

a. **Drive:** It takes 6-12 minutes to get from home to Walmart, depending on traffic, and he has the convenience and flexibility of leaving whenever he wants and arriving by 5pm.

b. **Walk:** The option to walk allows similar flexibility to driving in terms of when you choose to leave and arrive, but it is a long walk of about 50 minutes.

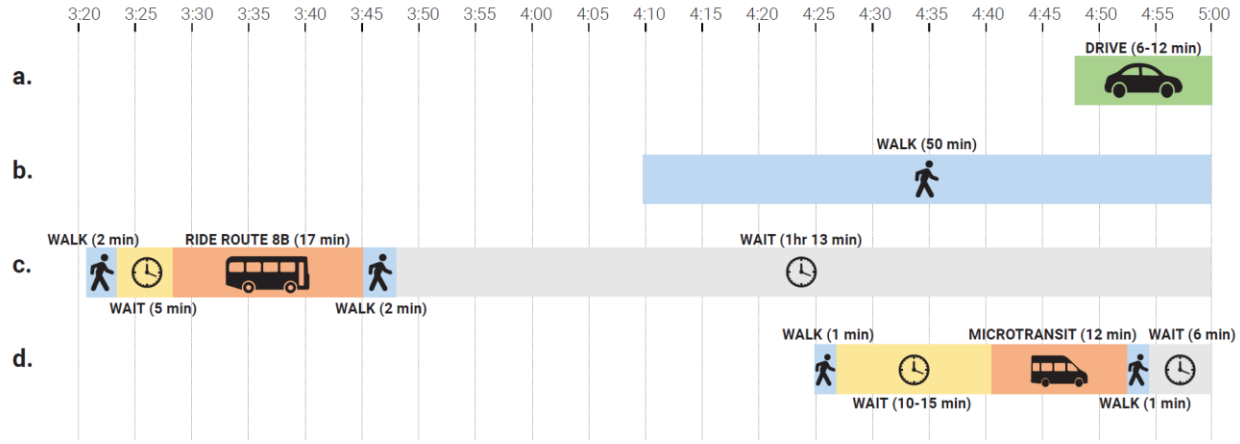
c. **El Metro Route 8B:** Alejandro's trip on the 8B is faster than walking (about 25 minutes including time to walk to the bus and wait for the bus), but because of the scheduled departure times, he needs to take the bus that leaves at 3:28pm and arrive at Walmart at approximately 3:47pm, even though he does not need to be there until 5pm. This option does not provide convenience or flexibility as Alejandro now must wait an hour and 13 minutes for his shift.

With the proposed microtransit service, there is a new option for Alejandro:

d. **Proposed microtransit:** The total travel time (including time spent waiting) would be similar to the 8B, but he has a more flexible departure time. Booking an on-demand trip through microtransit provides a similar level of convenience to driving but for much cheaper than owning a vehicle, which is a great option for Alejandro. He can even book his trip for the same time every Friday (if he has the same shift start time on all Fridays) to eliminate the trip booking step.

These travel options are visualized below in **Figure 59**.

Figure 59: Travel options for sample trip from Villa del Sol (116 Soledad Loop) to Walmart (2320 Bob Bullock Loop)



Additional information about peer microtransit concepts and microtransit in Laredo can be found in the next section.

9.4 MICROTRANSIT CONCEPTS

Alternatives to fixed-route transit, such as on-demand rideshare microtransit, can improve the cost efficiency of providing transit, while also giving riders better service with shorter waiting times. Microtransit typically operates as curb-to-curb or stop-to-stop service, where users are able to request rides as needed instead of following a fixed schedule. Routes are created dynamically and can fluctuate throughout the day.

On-demand transit solutions are often implemented using app-based technology that allows riders to request rides using a smartphone or computer and are commonly deployed in low-density areas that do not have enough demand to support regular fixed-route transit. Microtransit solutions have proven to be successful at replacing low-performing routes in low-density areas because they offer a higher level of service (shorter wait times) for the rider and generally lower operations and maintenance costs for the agency.

Below are some examples of microtransit strategies used by peer agencies in Texas that improve transit in locations where high frequency fixed-route transit service is not feasible. El Metro can leverage these examples in the design of their microtransit service.

DART (Dallas, TX)

DART provides on-demand transit (GoLink) trips within a zone and to or from rapid transit stations. This allows the agency to minimize the costs of long trip distances, while helping the rider complete the first/last mile of their transit trip. Fares for the service are the same as a typical DART fare (per trip, day pass or monthly pass) and can be purchased through the GoPass App (**Figure 60**) or GoPass Tap card (with fare capping). ADA-accessible vehicles are available for riders who specify this need when booking a trip. Another option is that riders can use UberPool for an additional fee, and may result in a shorter waiting time than what GoLink can offer.

Figure 60: GoPass App with Ticket Purchase and Trip Planning

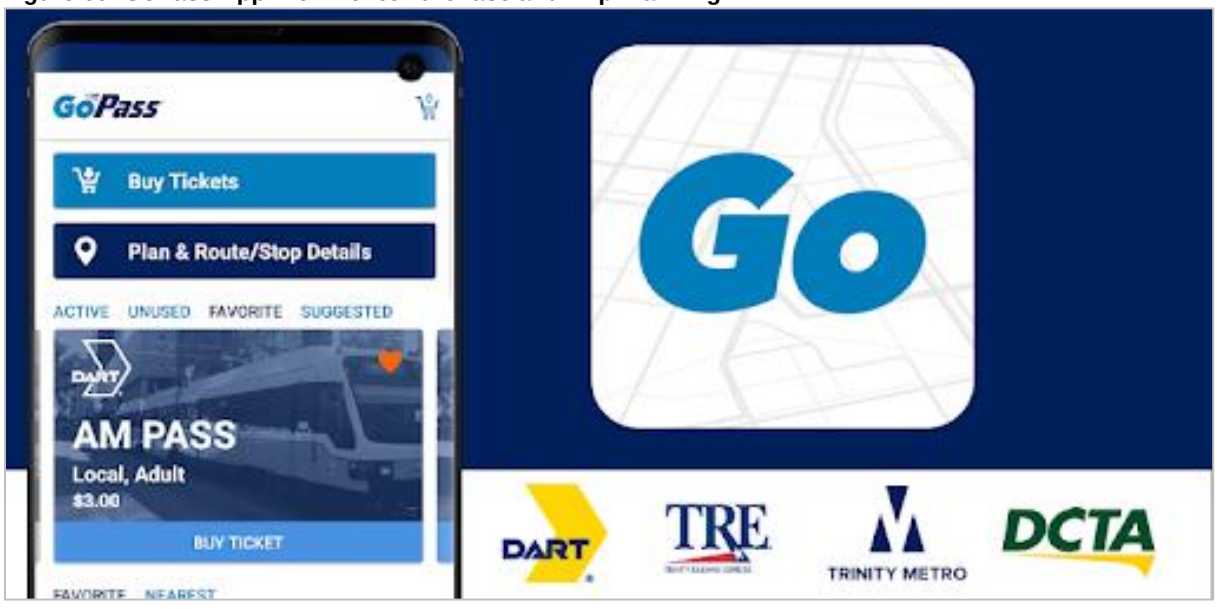
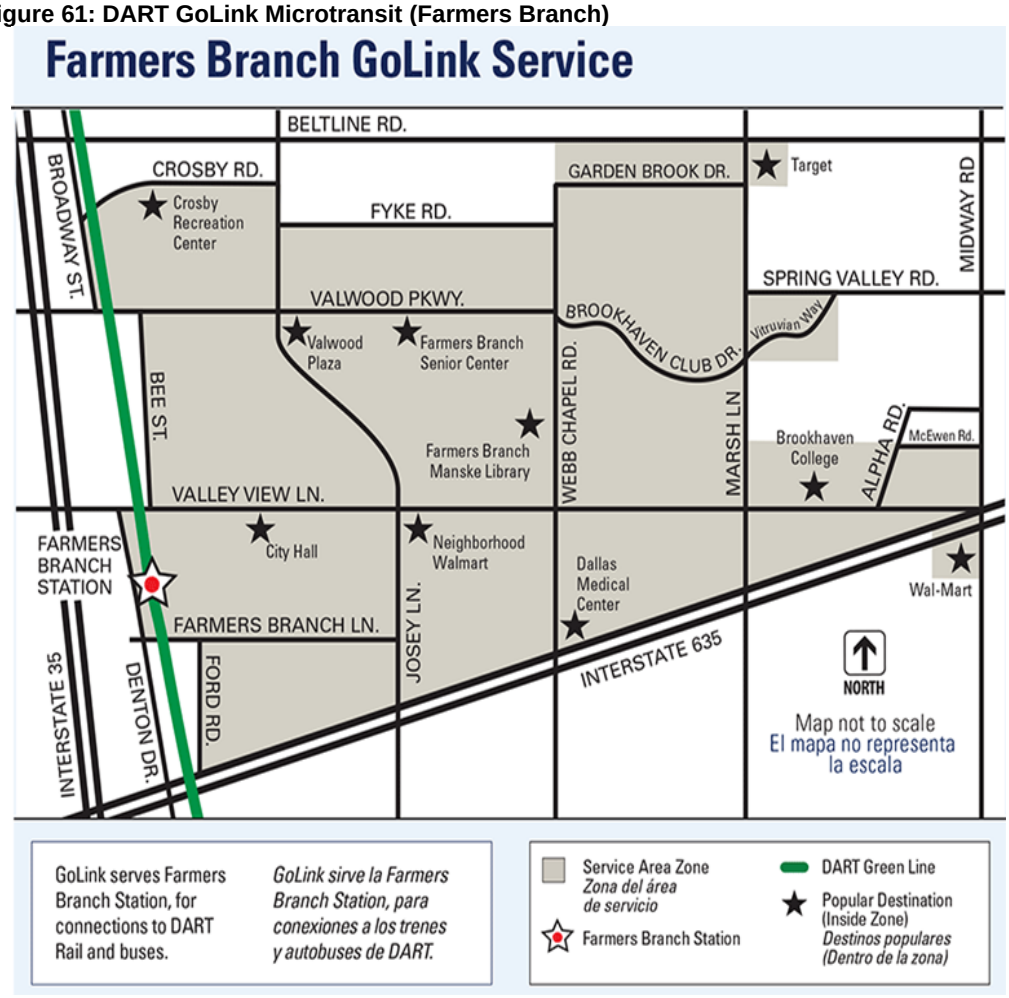


Figure 61: DART GoLink Microtransit (Farmers Branch)



How It Works

Let's explore a few scenarios to see how these mobility options benefit you.

With the GoPass App

John needs to get from his office to Farmers Branch Station. He begins planning a trip in the GoPass app and sees that a GoLink vehicle can drop him off at the station within 25 minutes, and that the fare would be covered by his existing DART pass.

GoPass also provides the option of taking UberPool, which could drop him off at the station within 13 minutes but would cost an additional $1*. Wanting to get there as fast as possible, John pays the extra cost and completes his purchase in the Uber app.

Over the Phone

Liz wants to meet a friend for lunch but needs a ride from her apartment. She does not have the GoPass app, so she calls 214-515-7272 to book her trip.

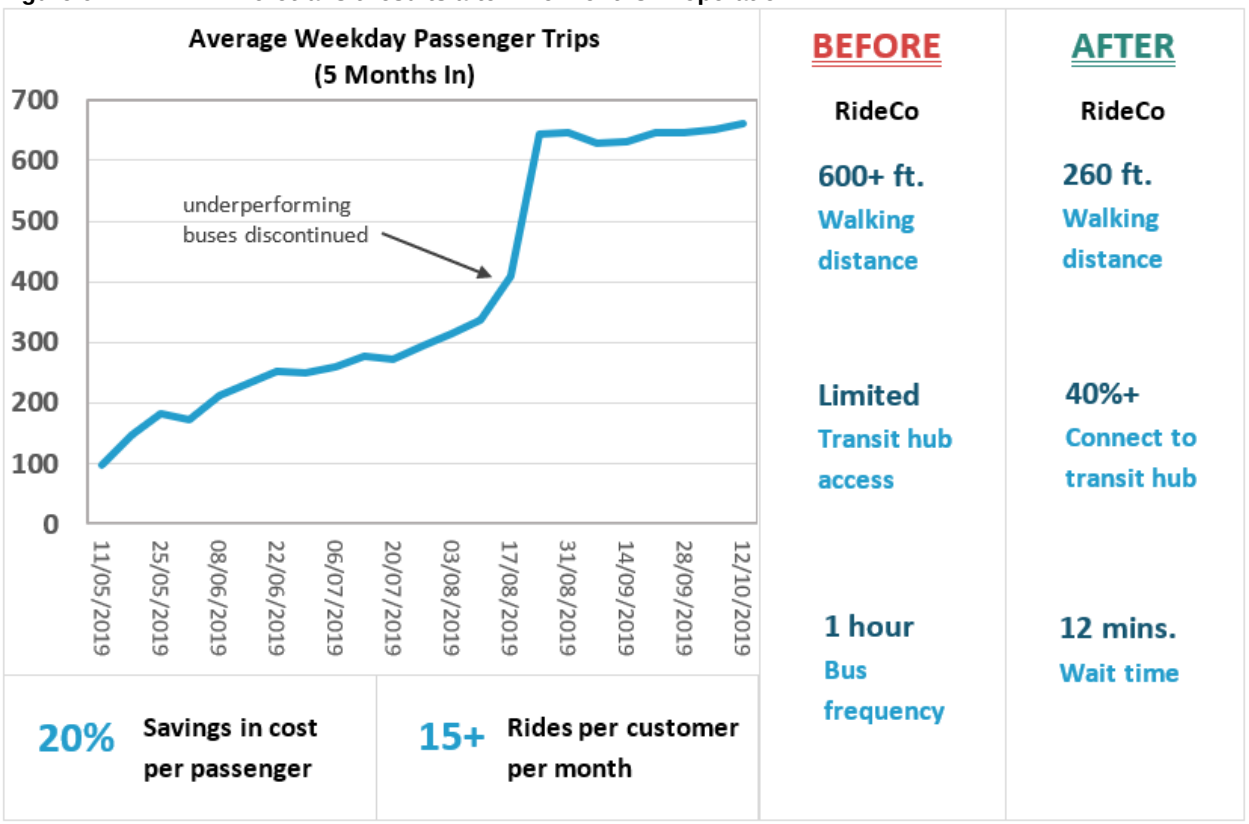
The reservationist tells her she can use a credit card, debit card or GoPass Tap card. Liz chooses to pay with her GoPass Tap card, and the reservationist tells her a GoLink vehicle will arrive in 32 minutes.

VIA Link (San Antonio, TX)

VIA Link was introduced in San Antonio, TX to replace under-performing fixed-route services and provide service within these neighborhoods and to/from higher-order transit stops. VIA Link uses “virtual stops”, which are designated pick-up and drop-off locations within a zone where riders can book trips to and from using a mobile app, either on-demand or pre-scheduled. The virtual stops provide coverage, where everyone in the zone is within a 5-minute walk of a stop.

After five months of operation, the VIA Link program carried over 650 passengers per weekday compared to approximately 400 weekday riders on the fixed-route system (**Figure 62**). Results of this service also indicated that riders had an average wait time of 12 minutes compared to the 60-minute frequency of the fixed-route bus previously in operation, as well as having shorter walking distances to the new virtual stops than the fixed bus stops.

Figure 62: VIA Link microtransit results after five months in operation[15]



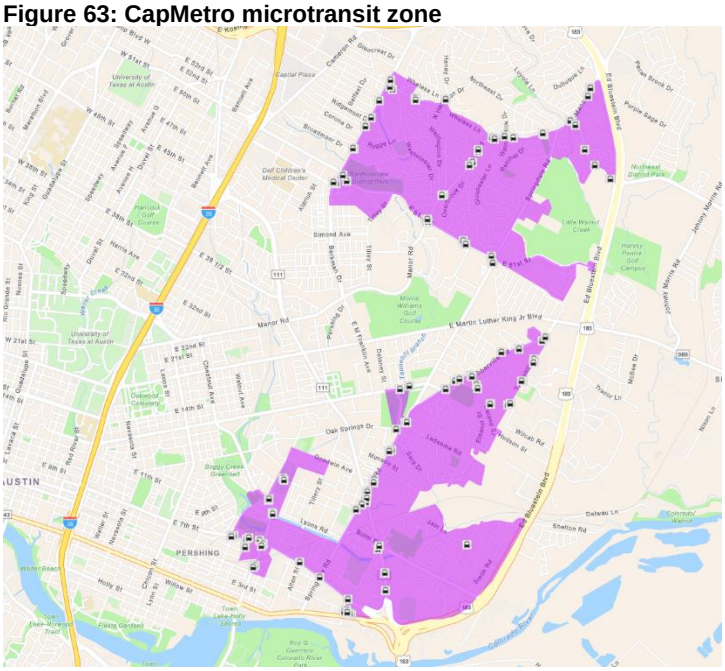
CapMetro (Austin, TX)

A similar on-demand transit service is operated in certain areas of Austin as well (see **Figure** 63 for a sample service area). Riders can request a ride directly from their smartphone and pick-up is a shared-ride service, meaning they may pick up one or two neighbors on the way. Each trip costs $1.25, the same as a Single Ride pass on MetroBus and MetroRapid. All riders need to do is download the app from their phone's

[15] https://blog.rideco.com/via-metro-case-study-microtransit-replaces-buses-in-low-density-area-69b5f6b3815

app store (search “Pickup Capital Metro”), register for an account, book a ride, and CapMetro will try to pick them up within 15 minutes of the request.

Figure 63: CapMetro microtransit zone



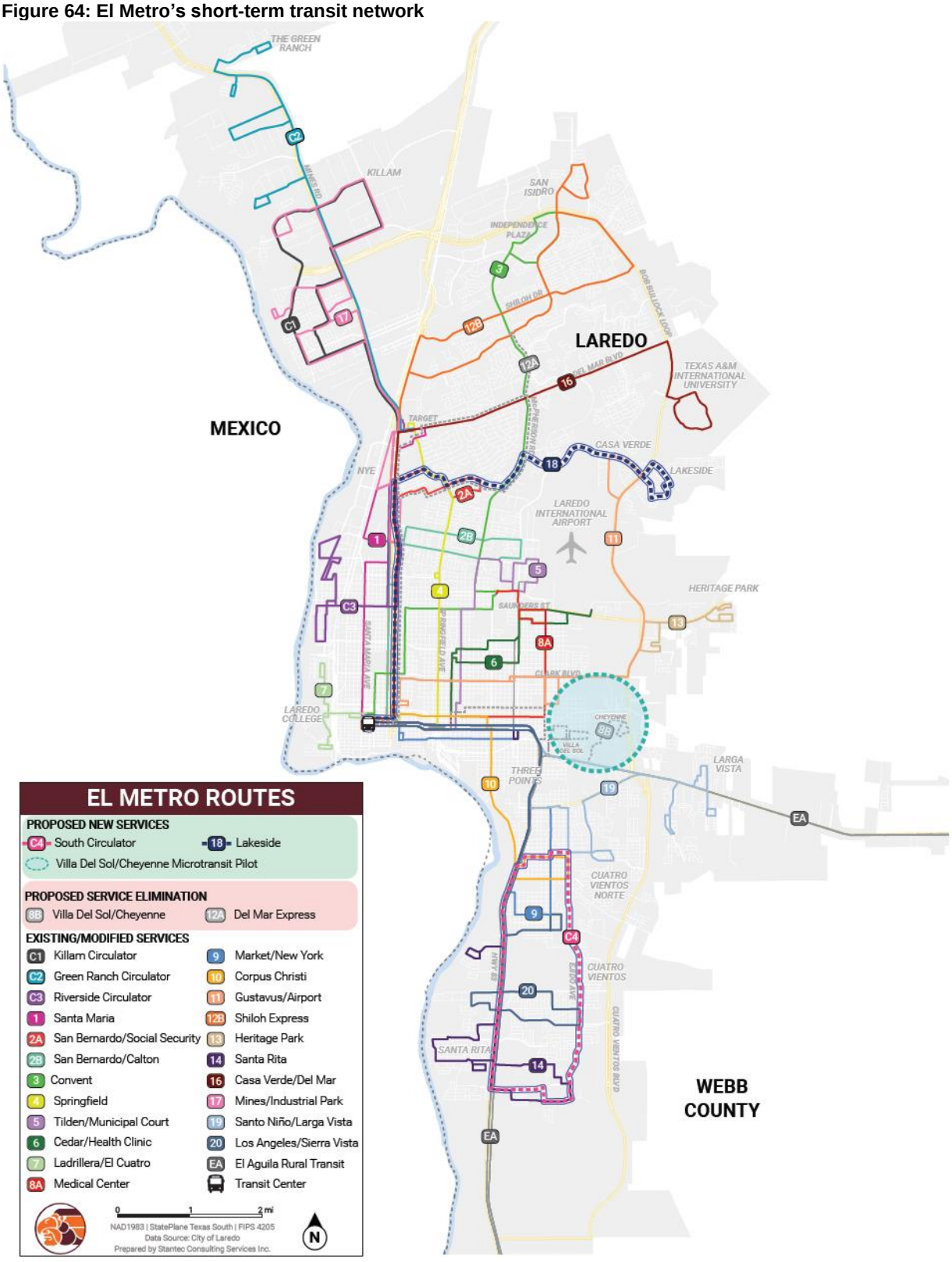
Microtransit in Laredo

Microtransit in Laredo should be strategically implemented in areas where routes are under-performing and/or in areas where land use and development makes it challenging to run productive fixed-route service. Microtransit can also be used in new neighborhoods to obtain a better understanding of potential transit demand in the area before implementing a fixed-route service. Depending on the service concept, collecting ridership data for the microtransit services can help optimize the zones or virtual stops and modify the trip booking parameters (e.g., maximum wait time, maximum travel time, etc.). The recommendations related to microtransit are described further in **Recommendation A4 – Pilot Microtransit Services**.

9.5 PROPOSED SHORT-TERM NETWORK

The proposed short-term network including new routes, modifications, and proposed microtransit is shown in **Figure 64**.

Figure 64: El Metro's short-term transit network



9.6 REMAINING ISSUES WITH THE SHORT-TERM NETWORK

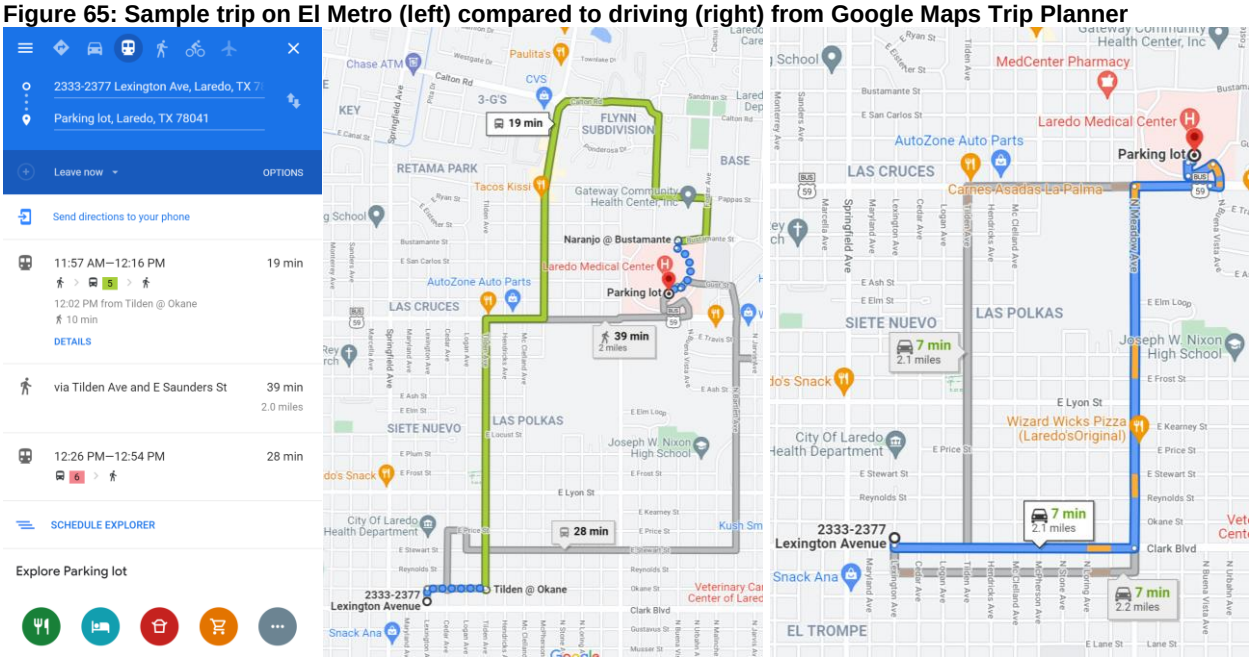
Despite the immediate service changes, issues remain with the network. While longer term design changes to the network structure and underlying service principles are required to shift from a radial structure currently in use to a dispersed, multi-hub strategy to make routing more efficient and trips more viable, there are several things El Metro can start doing in the interim to design a better bus experience. The remaining issues with El Metro's network are described below along with potential steps to address them.

Low Service Levels and Flexibility

The short-term plan continues to 'expand' service by serving new areas and covering more of Laredo, which results in longer alignments, longer travel times for buses, and reduced frequency. Paired with walking trips through environments that are not pedestrian friendly, transit is not an attractive mode choice as it exists today.

Looking at a short trip to Laredo Medical Center in **Figure 65**, the travel time on an El Metro bus only differs from driving by 12 minutes; however, the low frequency of Route 5 makes the overall travel time (including time spent waiting for the bus) much longer than driving. The low frequency of El Metro's service, generally, means that riders have less freedom and flexibility compared to drivers. The two bus routes for this trip—5 and 6—operate at 60+ minute frequencies, meaning if you don't time your trip and/or miss the bus, then you'll need to wait another hour (at least), or you must walk nearly 40 minutes (2 miles).

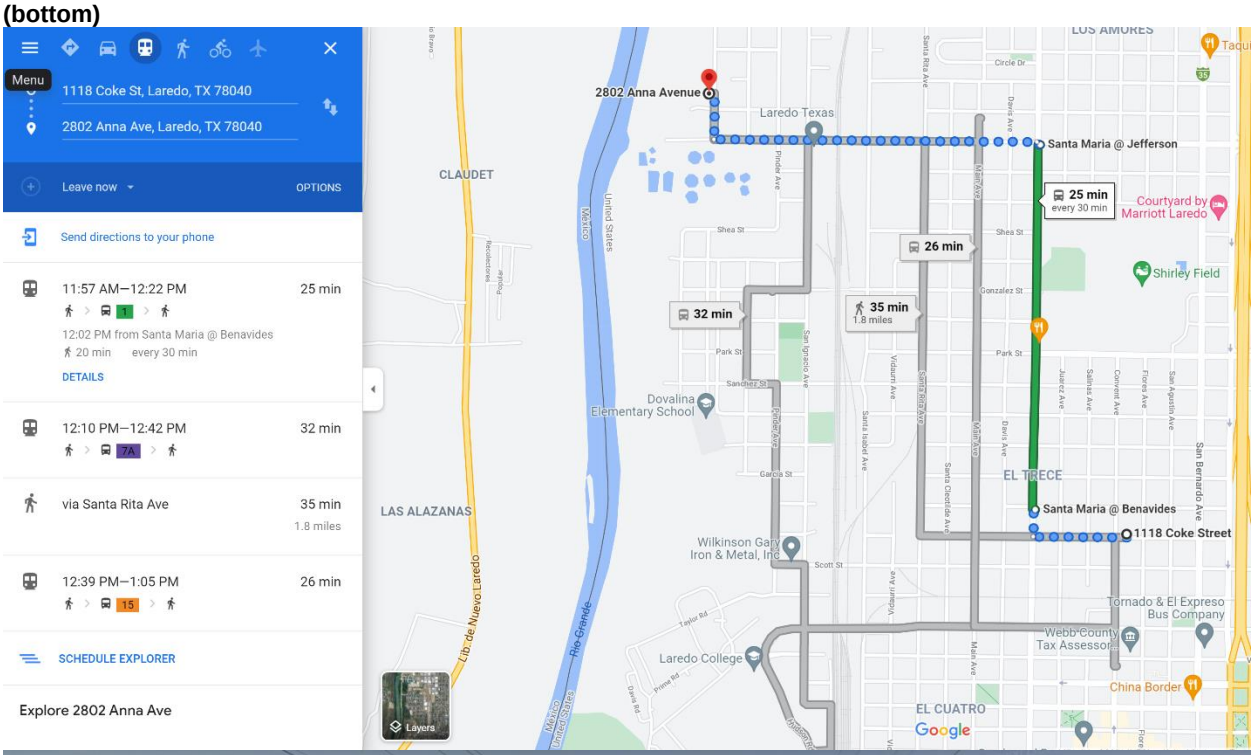
Figure 65: Sample trip on El Metro (left) compared to driving (right) from Google Maps Trip Planner



Consider a trip between a low-income neighborhood and social services located in west Laredo along the border, like the WIC and the Laredo Regional Food Bank. Depending on the route and departure time, riders can expect a door-to-door travel time of 25-30 minutes. The most viable trip involves using Route 1, which comes every 25 minutes but still requires a substantial walk at both ends of the trip, including a walk across a rail crossing with no sidewalks or pedestrian features (**Figure 66**). Frequencies are so low that someone might walk the 1.8 miles or 35 minutes instead of taking transit. For those who have difficulty

walking long distances, or are with young children or carrying groceries, they may have no option but to wait for the bus. This same trip by car takes 6-7 minutes to travel approximately 2 miles.

Figure 66: Sample trip on El Metro from Google Maps Trip Planner (top) and its pedestrian environment (bottom)

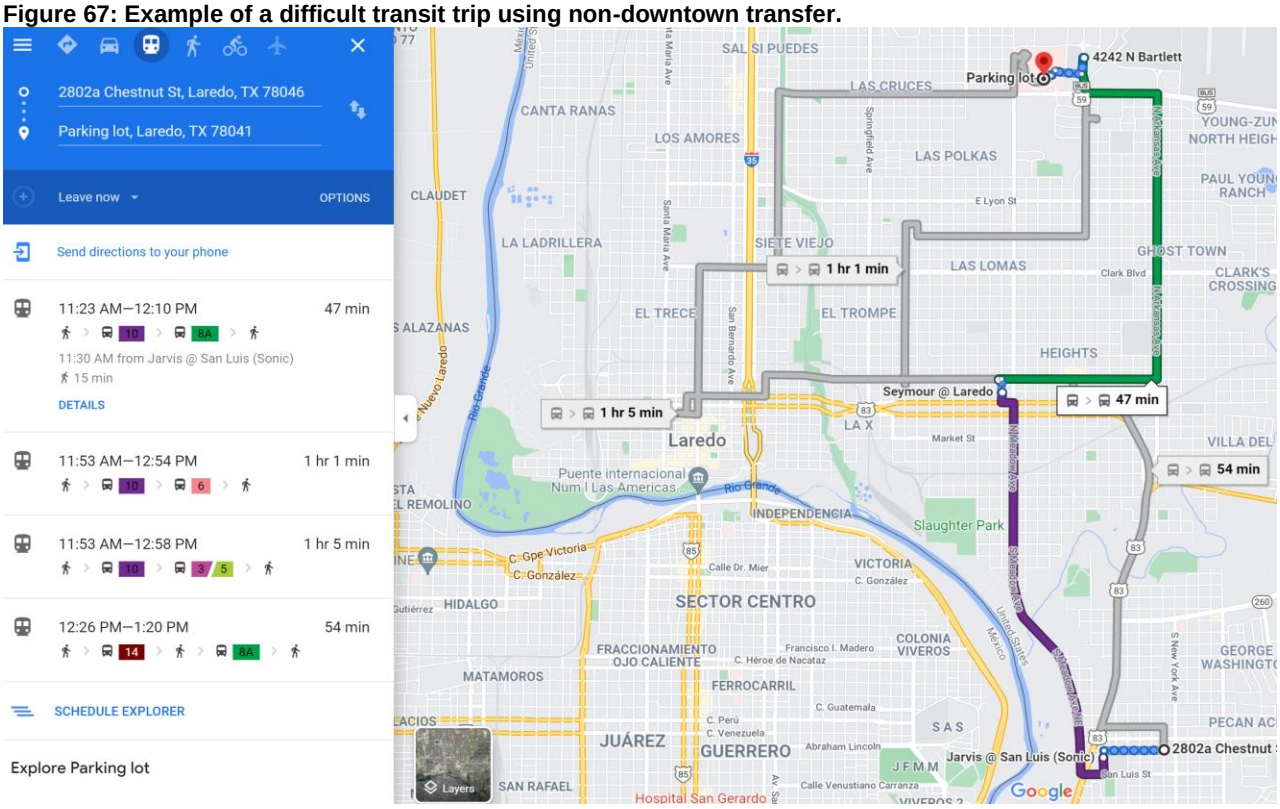


Overall, the low frequency, indirect travel paths, and route redundancy means that El Metro doesn't provide auto-competitive trips. And while this may not be its end goal or objective, it does mean that people who do ride transit need to wait long times, maybe walk, and have really long travel times.

Network of Routes Traveling Downtown

Currently, most routes depart out of the downtown transit center, so most trips require riders to transfer downtown or end their trip at the transit center. However, there are instances where riders could transfer outside of the downtown transit center if the frequency of service were higher or if schedules were better timed. Consider the trip in **Figure 67**.

Figure 67: Example of a difficult transit trip using non-downtown transfer.



This trip shows potential route selection that includes on-street transfers where routes intersect. And while this option could result in a relatively 'direct' trip and reasonable travel time, this option requires several elements:

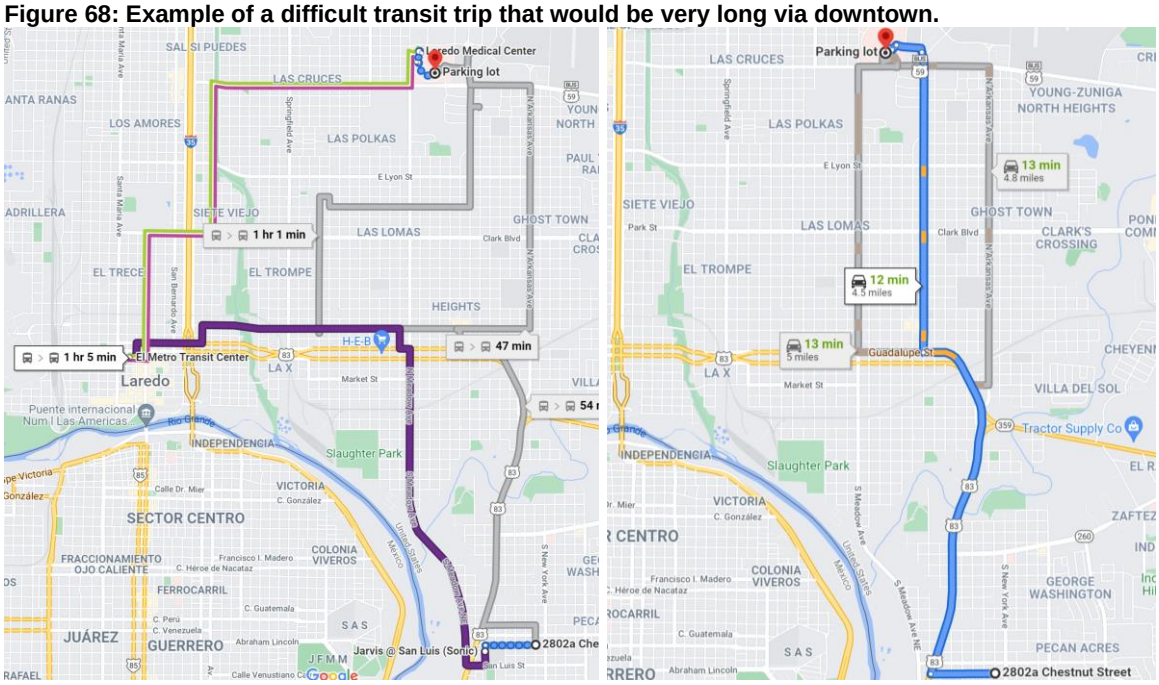
- Buses would have to operate as scheduled, i.e., on-time, because any delays would negatively impact the ability to transfer on street. Considering this specific trip, route 8A comes about once every 60 minutes, so if the bus on route 10 is delayed and the rider misses the connection between 10 and 8A, they would need to wait another hour. As such, this uncertainty would likely discourage riders from making connection on-street.
- Customers would need to understand transferring procedures and have in-depth knowledge of schedules, especially if they don't have trip planning apps.
- The low frequency of service throughout means that schedules would need to be coordinated at key on-street transfer locations (as well as at transit centers) to ensure the wait time between services is reasonable. However, it is challenging for El Metro to coordinate transfers at every point throughout the network. Instead, generally, improving service frequency to every 15-20 minutes on

key corridors would improve transferability by allowing spontaneous travel for riders and reduce the need to coordinate transfer schedules on street.

Taken together, the lack of frequent service and low reliability of bus trips makes on-street connectivity a tremendous challenge. This is unfortunate since on-street transfers between intersecting routes is one of the design tools for transit agencies to provide direct trips that have typically short travel times overall, even though they rely on a transfer between vehicles; this relies on frequent service of the intersecting routes. In the absence of frequent intersecting routes, transit agencies, and El Metro is no different, instead designs pulses of buses at transit centers. El Metro's downtown transit center is where all routes converge, buses wait for passengers to change between routes, and then buses 'pulse' out.

However, the placement of a transit center impacts travel time and directness of routes. Considering the same trip as above, we can see that a more reliable transfer is available at the downtown transit center (**Figure 68**). While this trip provides a timed transfer at the transit center, it requires an out-of-the-way travel route, and increases travel time by another 20 minutes (if all the buses operate on schedule). This same trip by car is slightly less than 15 minutes, meaning that a transit trip is nearly 3.5x to 5x longer than by car.

Figure 68: Example of a difficult transit trip that would be very long via downtown.



Poor Coordination of Pulsing Routes at the Transit Center

Many riders experience challenging and long trips due to inefficient and poorly timed transfers at the downtown transit center. Improved pulsing at timed transfers is needed particularly downtown, and if possible, at on-street intersections where routes intersect.

Timing connections at the downtown transit center can help minimize wait times between connecting bus routes. The idea is that, especially for low-frequency bus networks, buses converge at the transfer location, wait for passengers to change between buses, and then buses 'pulse' out. To achieve convenient pulses, transit agencies need to design routes so that alignments and headways allow several routes to arrive around the same time at a central transfer station. Any interval is possible, but many agencies use hourly and half-hourly pulses.

Importantly, pulsed transfers dramatically improve a traveler's access to destinations because first, wait times are reduced, and second, connecting many routes allows a multitude of potential origin-destinations pairs. However, El Metro's existing central hub—the downtown transit center—provides long wait times between connecting buses (**Figure 69)**. This is due in large part because most El Metro routes operate with unique headways, routes are different lengths, and different start and end points.

An example is shown in **Figure 70** for a trip starting in south Laredo, (in Southview), connecting at the transit center in the middle of the day on a weekday. Depending on the destination you could end up waiting a very long time. Working to better time transfers is a clear immediate need as El Metro tweaks routes and continues to operate a network designed around a central network transfer point in the downtown. As well, on-street transfers which in theory can minimize out-of-direction travel, are unlikely to be practical if El Metro is not timing intersecting bus routes.

Figure 69: Example bus schedule at the Downtown transit Center from Google Maps

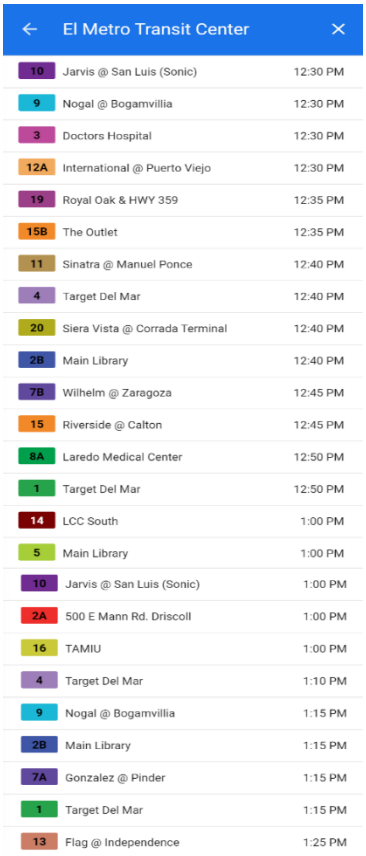


Figure 70: Example midday wait times at the Downtown transit center

If you arrive at the Downtown transit center at 11:40 am on Route 9 from Southview, you would need to wait…			
Wait time	To go to	Leaving at	On route
10 min	Laredo Medical Center	11:50 AM	5
10 min	Social Security	11:50 AM	2
20 min	Mines Rd area	12:00 PM	17
20 min	Laredo Regional Food Bank	12:00 PM	1
20 min	Mall Del Norte	12:00 PM	4
20 min	Sam's Club (4810 San Bernardo)	12:00 PM	1
40 min	Doctor's Hospital (or United HS)	12:20 PM	12B
1 hr 20 min	TAMIU	1:00 PM	16

If you're trying to get to Southview on Route 9 leaving at 1:15 pm from the Downtown transit center, you would need to wait…			
Wait time	Coming from	Arriving at	On route
5 min	Laredo Regional Food Bank	1:10 PM	1
5 min	Sam's Club (4810 San Bernardo)	1:10 PM	1
10 min	Mall Del Norte	1:05 PM	4
15 min	Social Security	1:30 PM	2
20 min	Mines Rd area	12:55 PM	17
20 min	Laredo Medical Center	12:55 PM	5
20 min	TAMIU	12:55 PM	16
20 min	Doctor's Hospital (or United HS)	1:35 PM	12B

Long-term routing changes discussed in a subsequent section can leverage a distributed network of hubs.

10 LONG-TERM NETWORK RECOMMENDATIONS (>3 YEARS)

10.1 PROPOSED STRATEGIES AND FRAMEWORK

The long-term network strategy aims to achieve several of the goals and priorities uncovered through customer outreach and the needs assessment conducted by Stantec. Generally, these recommendations are aimed at:

- Addressing unmet needs that will still be unaddressed after the immediate and short-term service changes (discussed in **Section 9.6**).
- Addressing projected growth in population and jobs. Since 2010, Laredo's population has grown by 12.6%[16]. Looking ahead, the total population of Laredo is projected to reach 450,000 by 2045, or an increase of 67% between 2018 and 2045. Considering that transit mode share stands at less than 2% presently, with improved service and population growth, hopefully El Metro can translate that growth into ridership gains.
- Improving the directness of bus routes to improve travel times, network legibility, as well as reliability.

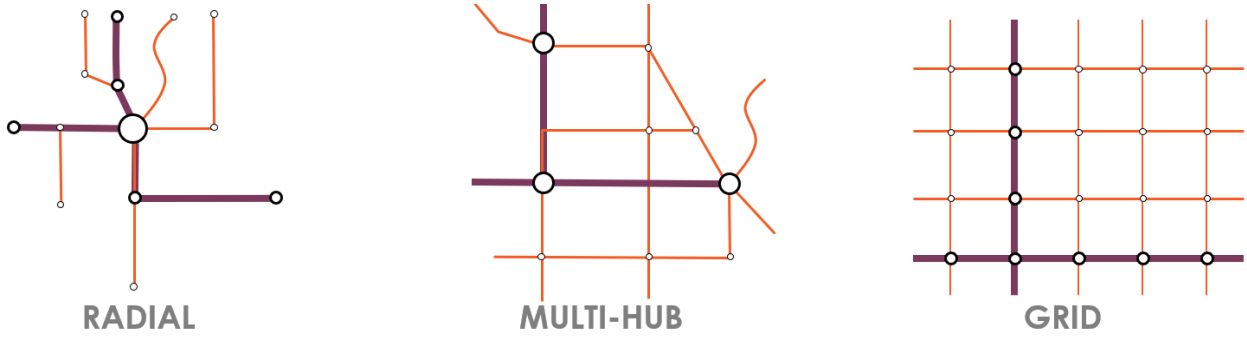
To meet these needs and operate a sustainable transit network, the following long-term strategies are discussed to help pivot El Metro from a collection of routes to an integrated network of mobility services.

Implement Distributed Hubs

El Metro should implement distributed hubs so that not all routes go downtown. El Metro needs to develop a transit hub in the north and in the south of Laredo. This need was identified in previous plans, and currently, the north hub is in planning stages. El Metro recently applied for RAISE federal funding for the construction of the north hub, which would come online in 2023. A south hub would also be needed to facilitate service in south Laredo, although this project is still in nascent stages.

The distributed nature of a hub and spoke network design is facilitated by multiple hubs, rather than relying only on a centralized downtown hub, and can help streamline routing and thus trip making. This scheme can also help improve service frequency on select routes. The schematic below demonstrates our proposed concept (**Figure 71**).

Figure 71: Radial, multi-hub, and grid network designs



[16] https://worldpopulationreview.com/us-cities/laredo-tx-population

In addition to adjusting schedules and route alignments to maximize the matching of running times and pulsing, the long-term network would also leverage pulsing at and between multiple transit hubs, further increasing access to destinations—in other words, shifting to a multi-hub design.

The desired outcome is to:

- Minimize wait times between routes at transfer centers, thus improving the customer experience when transferring and reducing overall door-to-door travel time.
- Improve access to destinations while reducing route complexity. By connecting hubs with frequent service routes, riders can use these core routes to get to a hub and then transfer to another bus route to get to a more local destination. Combined with time transfers, this strategy can provide more direct travel paths and ideally, shorter overall travel times.

Improve Frequency

Currently frequencies are so low, people either wait a long time for a bus (or a transfer), need to live their lives on El Metro's schedule, or walk to their destinations. El Metro needs to improve frequency on key corridors, as well as restructure routes to minimize, as much as possible, deviations, one-way segments, and loops. While some of these features are unavoidable given street network geometry and the siting of destinations and land use choices beyond El Metro's control, El Metro should 'straighten' routes as much as possible. Straightening routes, along with bus stop consolidation, can help increase bus travel speeds, thus reducing cycle time that can help El Metro reinvest in improving route headways.

Frequency should be increased on El Metro's most productive services including routes 1, 2A, and 16. These routes already have a strong ridership base, showing that they serve important destinations and may have the potential to attract new ridership and increase their productivity. It is not uncommon to have a small number of routes carry a great proportion of riders, especially when they serve important destinations like colleges or shopping centers.

Adopt a Layered Approach

In line with the COA goals and layers of service described in **Section 8.3**, the service layers recommended for the COA include the frequent, local, community and on-demand (microtransit) layers, as well as an additional layered called limited-stop express. The limited-stop express layer will operate primarily on the highway network and will connect El Metro's transfer hubs. These routes will stop at major intersections to connect to additional routes but will generally aim to deliver fast service between hubs and key destinations. The frequency of service on these routes will depend on their demand and may vary by route. Depending on the length of the route and cycle times, the headways will range within each layer but should generally follow these guidelines:

- **Frequent:** 10-20 minutes everyday
- **Local:** 20-40 minutes on weekdays, 20-60 minutes on weekends
- **Community:** 40-60 minutes everyday
- **On-Demand Microtransit:** Wait time target of 15 minutes or less
- **Limited-Stop Express:** Varies by route. For example, the two routes leaving the Downtown Transit Center (one connecting to the North Hub and one to the South Hub) should operate on a frequent schedule of 10-20 minutes whereas the route connecting the South Hub to the North Hub along Loop 20 should run every 20-40 minutes.

Reduce Duplication

Reconsider duplication and use overlapping routes to combine and deliver frequent service along corridors. Currently, El Metro operates nearly all service via the downtown transit center. As a result, many streets see platoons of buses that emerge from the transit center, operating in a pack. This overlap of routes is very apparent from the zoom in of El Metro's network map below (**Figure 72**), as well as by the analysis of route duplication in the map in **Figure 73**.

Figure 72: El Metro Downtown routing involves lots of route overlap, but little frequency (left). Bus platoon (right).

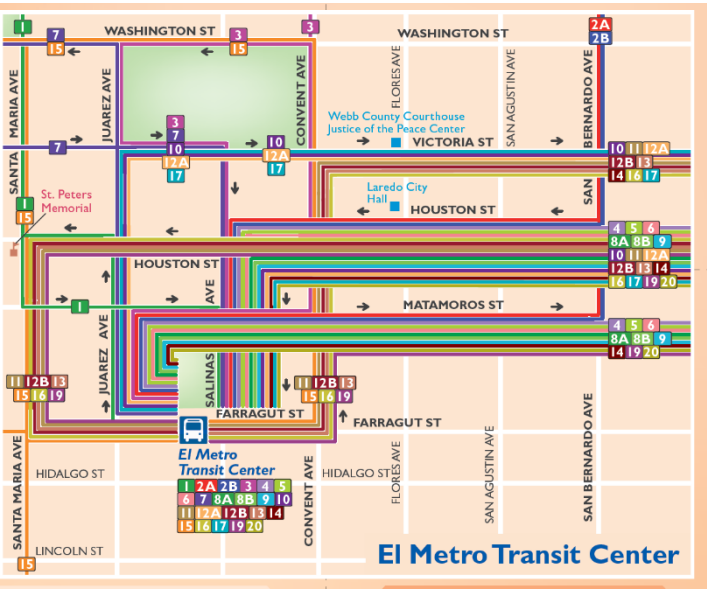
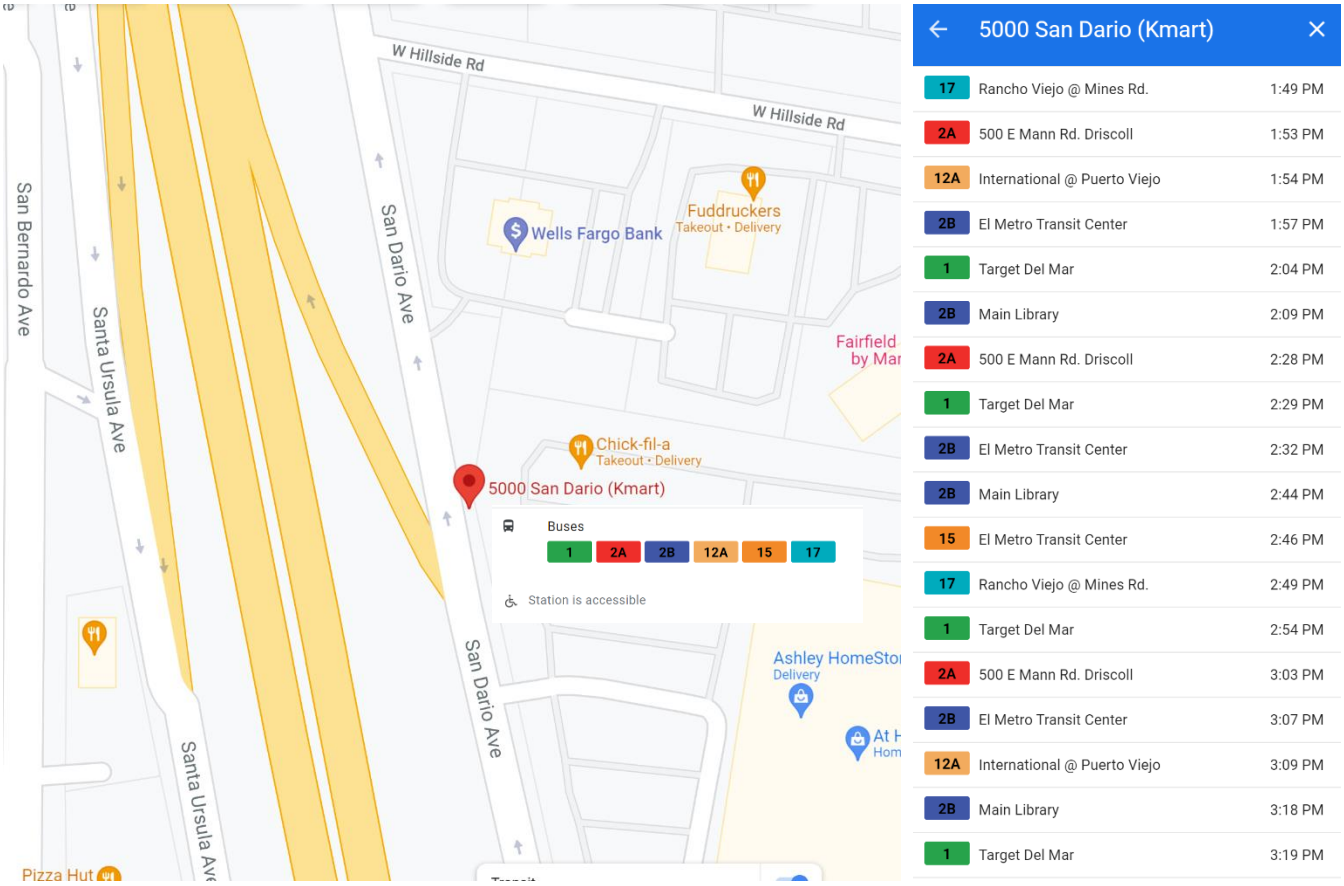


Figure 73: El Metro Transit Service Duplication

Key stretches of corridors like San Dario and San Bernardo, can see several buses per hour, but because they are designed to pulse at the transfer center, this doesn't result in evenly spaced buses or effective frequencies.

Figure 74: Example of current schedule distribution



While some of the short-term route alignment changes reduce some duplication, El Metro, in the long term, should examine how to provide frequent service more effectively along key corridors by either staggering bus routes along the same corridors to produce frequent service, or by connecting distributed transit hubs via frequent routes.

The first option could space out trips from different routes at overlapping bus stops every 15-minutes, for example, however this could impact the ability to pulse routes out of a transit center(s), since the whole point is to have routes converge at similar times. Furthermore, this arrangement may also reduce the legibility and useability of the network. Rather, the second option—operating one frequent service between hubs—may be more convenient for customers and legible to a broader audience. This strategy, however, depends on El Metro deploying and implementing a network of distributed hubs.

Explore a Family of Services Approach

Leveraging all modes operated by El Metro—fixed-route, paratransit (El Lift) and eventually microtransit—can help provide mobility that is fit for purpose. El Metro could look to replace unproductive segments of

routes or service in low-density neighborhoods with subscription trips through El Lift, whereby non-ADA passengers can use this service to connect to high frequency routes at the main transit hubs.

El Lift and El Metro can also be used in combination for a single journey or a round-trip by El Lift customers, depending on the customer's ability and the accessibility of the fixed-route network and of the trip origin(s) and/or destination(s). Transit agencies across North America are embracing this family of services approach to right size trip delivery, whether it's a fixed-route vehicle or a paratransit vehicle, to the location, to the customer, and to the trip. Of course, caution would be needed to ensure that capacity on El Lift is maintained for paratransit customers who depend on paratransit and are truly unable to use fixed-route.

METROLift, the paratransit service provided by the Metropolitan Transit Authority of Harris County, offers a "Feeder Service" that combines METROLift with fixed-route bus and rail service. Riders schedule trips to the nearest Transit Center, rail station or Park and Ride lot where riders can then board accessible conventional vehicles for the remainder of their trip. Trips on this service are free to facilitate seamless transfers and encourage the Family of Services approach.

In the end, not every El Lift customer needs El Lift for every trip, and conditional eligibility along with accessible infrastructure, travel training, and customer support can help El Lift customers rely more often on fixed-route services, thereby reducing the strain on El Lift.

Important policies and strategies to implement this include addressing physical accessibility of bus stops and stations to encourage fixed-route use (as well as pedestrian access), travel training of customers, leveraging schedule technology to integrate fixed-route and paratransit services, eligibility recertification regularity, bus operator accessibility training and continued engagement with riders with disabilities.

10.2 PROPOSED MOBILITY HUBS

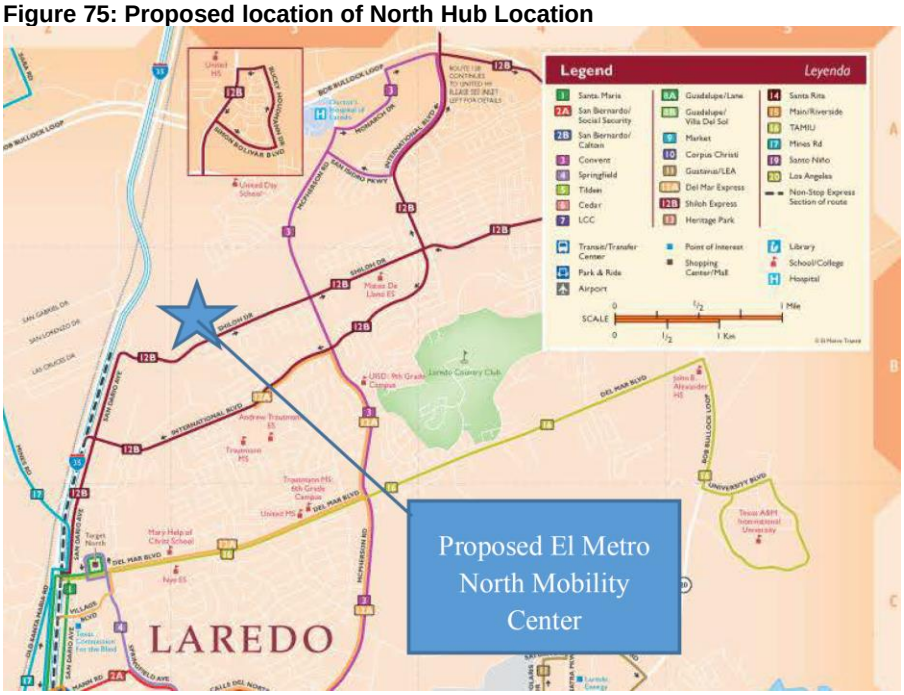
Necessary for the long-term restructuring of El Metro's bus network are a series of mobility hubs or bus transfer facilities that enable El Metro to redesign routes that feed into the hubs—essentially using higher frequency routes along key corridors between the hubs, and less frequent service operating between the hubs and adjacent neighborhoods. With this design approach, in theory, most riders would have no more than one transfer in their journey, and because the hubs would be places designed with customers in mind, they would provide pleasant waiting environments. Moreover, with scheduling adjustments and improvements to frequency, El Metro can work to reduce wait times at transfer centers, so riders spend more of their travel time moving onboard a vehicle, rather than not moving and waiting at a transfer center.

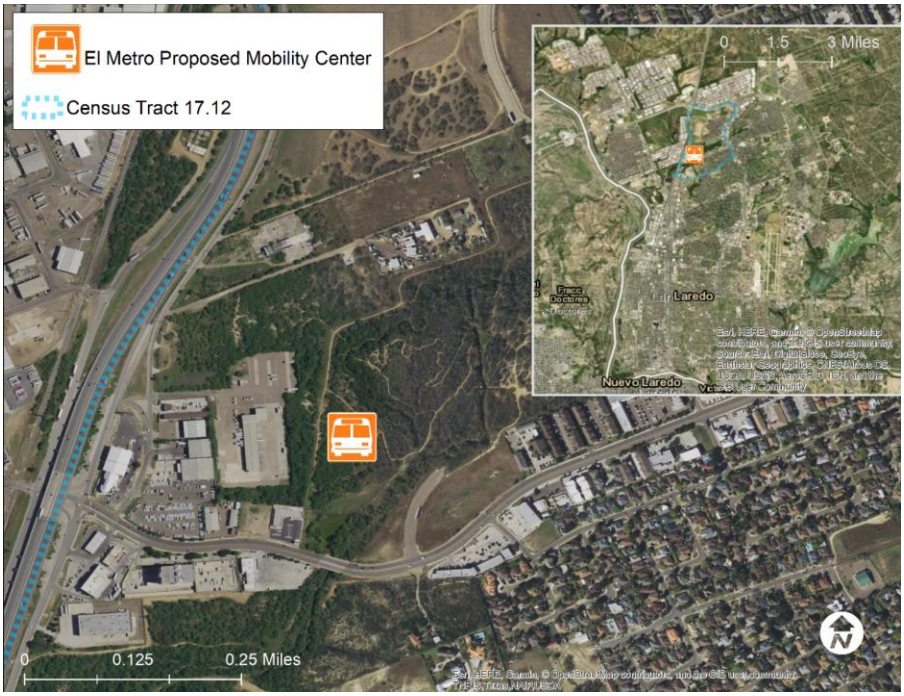
El Metro North Mobility Hub

In the summer of 2021, El Metro applied for a $5 million federal RAISE grant to construct a $6.2 million north transit hub or mobility center. This center will provide connections for El Metro routes, as well as El Aguila regional bus service. El Metro hopes to open the facility in 2023.

The facility is intended to be located near the northwest intersection of Shiloh Drive and Spring Road, and approximately one-quarter mile east of IH-35. This location is approximately 6 miles north of the downtown transit center. Currently, only route 12B operates close to this site, along Shiloh Dr (**Figure 75**). One major intent of this facility is to improve customer safety and provide a dedicated transfer facility in the north, effectively replacing the ad hoc transfer location at the Target parking lot at US 83 and Del Mar Blvd. That site is currently served by routes 1 and 4, as well as by routes 16, 12A, and 12B within walking distance via on-street bus stops.

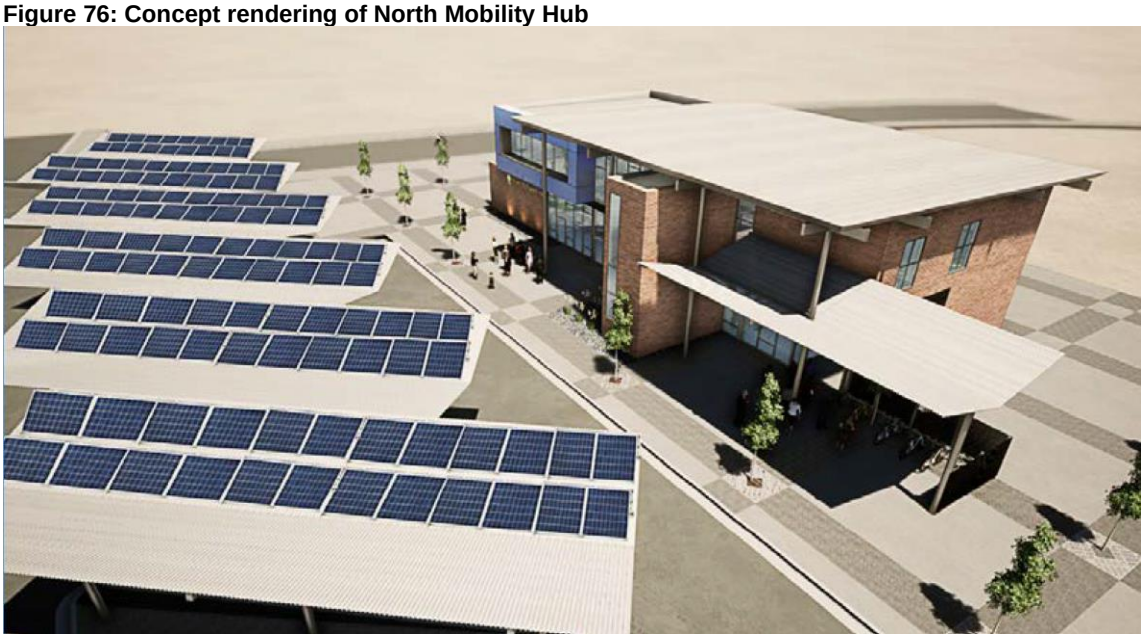
Figure 75: Proposed location of North Hub Location





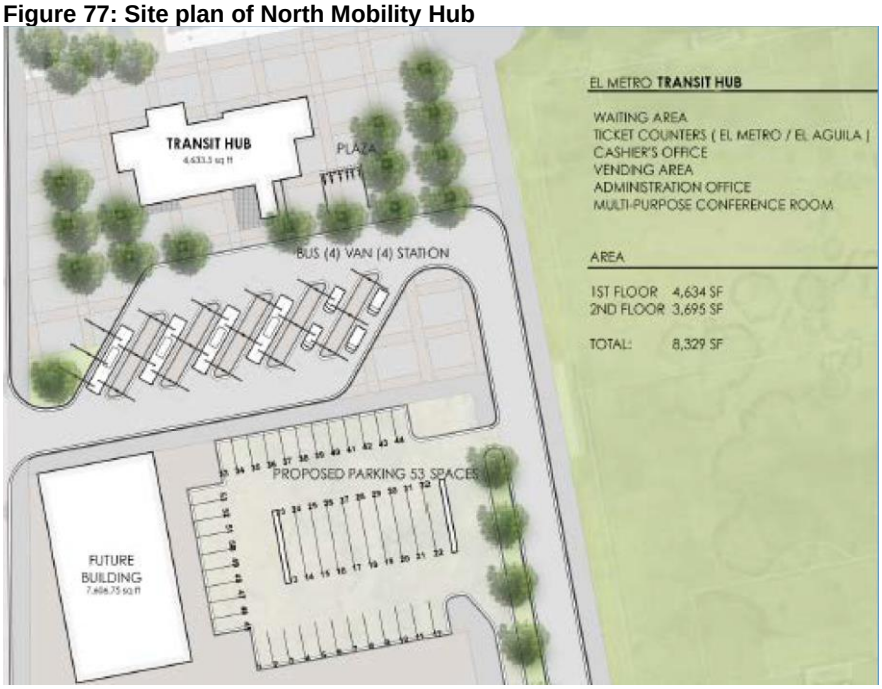
The 8,329 sq. ft. transit center is intended to serve as a mobility hub for customers to transfer between modes, including bus lines, El Metro and El Lift, as well as through a park-and-ride lot. In the future, other multimodal functions can be explored, such as with cycling (through potential bikesharing, bicycle facilities like lockers and parking, connections with bike paths, etc.), and carsharing programs.

Figure 76: Concept rendering of North Mobility Hub



The new hub will have four bus bays for larger transit buses, as well as two bays that can accommodate shorter transit vehicles, such as vans and cutaways. The layout of these bays, together with appropriate scheduling of vehicles, can facilitate passenger transfers (**Figure 77**).

Figure 77: Site plan of North Mobility Hub



As such, El Metro will need to develop a new service plan that will re-route bus line alignments in the north side of Laredo. Stantec recommends that to use El Metro's resources more effectively and to improve the customer experience (along with the new amenities planned for the facility), El Metro should launch a bus network redesign study prior to the opening of the north mobility hub. This study should use the framework outlined here in the long-term network strategies to develop a two-phased approach—the first phase to

realign bus routes serving northern Laredo when the north mobility hub comes online, as well as with other restructured bus routes as needed, and the second phase to realign bus routes in southern Laredo when a south mobility hub opens.

This bus network redesign should be bold and engage the public, customers, and stakeholders across Laredo and should focus beyond incremental changes. As discussed throughout the COA, El Metro should look for opportunities to improve bus line frequencies, connectivity, while straightening routes and rationalizing bus stop removal to balance customer access and bus speed. The opening of the new north hub presents the opportunity for a visionary redesign.

El Metro South Mobility Hub

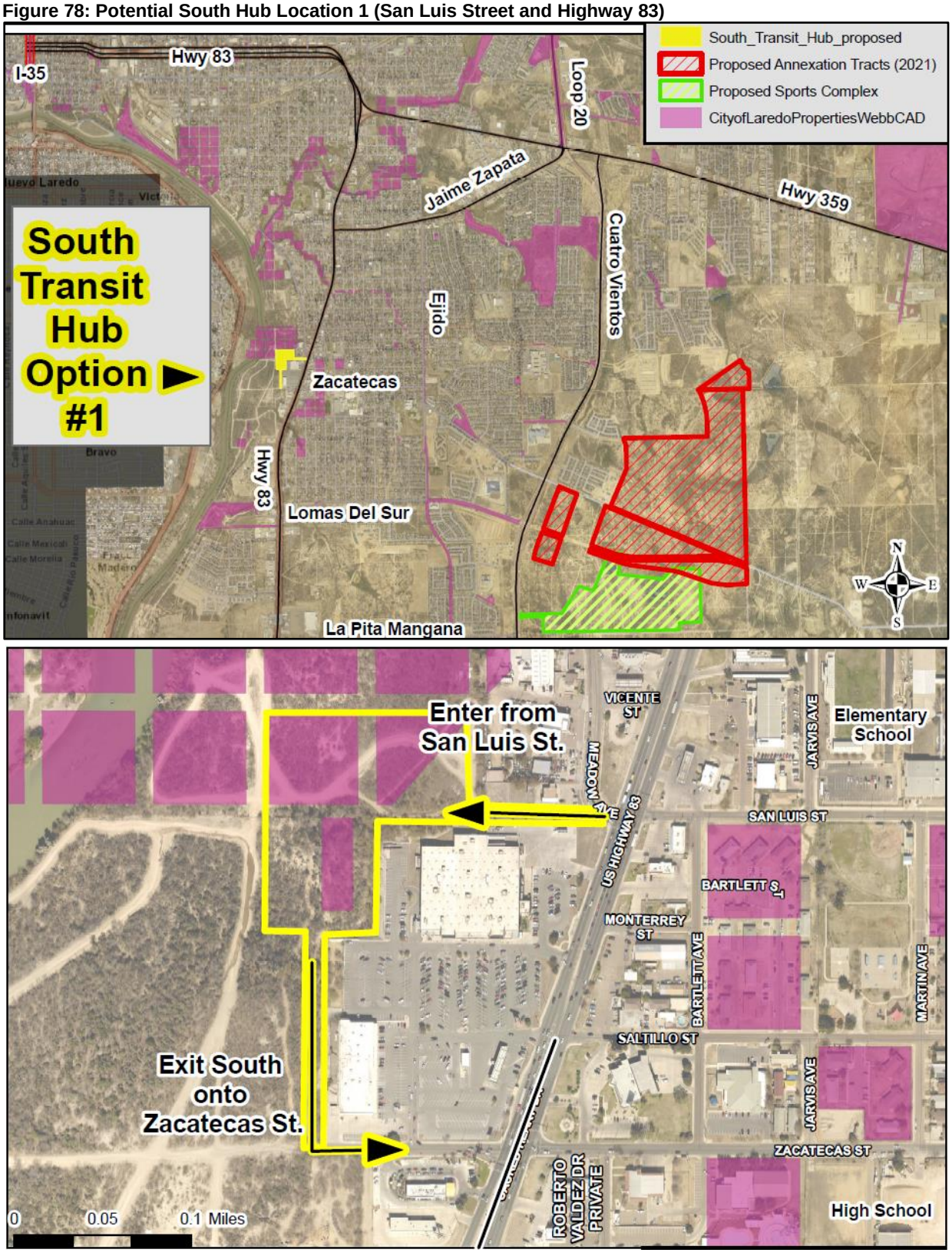
To implement the long-term strategies, a complementary south mobility hub will be needed too. To identify potential south hub locations, Stantec, El Metro staff, and MPO staff developed several criteria to narrow down the possibilities. These criteria include:

- Position in the network. As a hub, it must be located in a place that isn't too close to the downtown transit hub, while it shouldn't be too far south. A central location in South Laredo will allow riders to connect to local fixed routes and circulators without needing to backtrack or go too far out of their way.
- Available land, preferable publicly owned
- Space requirements
- Road access
- Close to potential destinations

The following potential locations were identified using these criteria but will need to be vetted through discussions with the City of Laredo and Council. At this time, the project is at very early stages. Similar to the North Hub, El Metro will also need to apply for funding to construct this hub but has not done so yet:

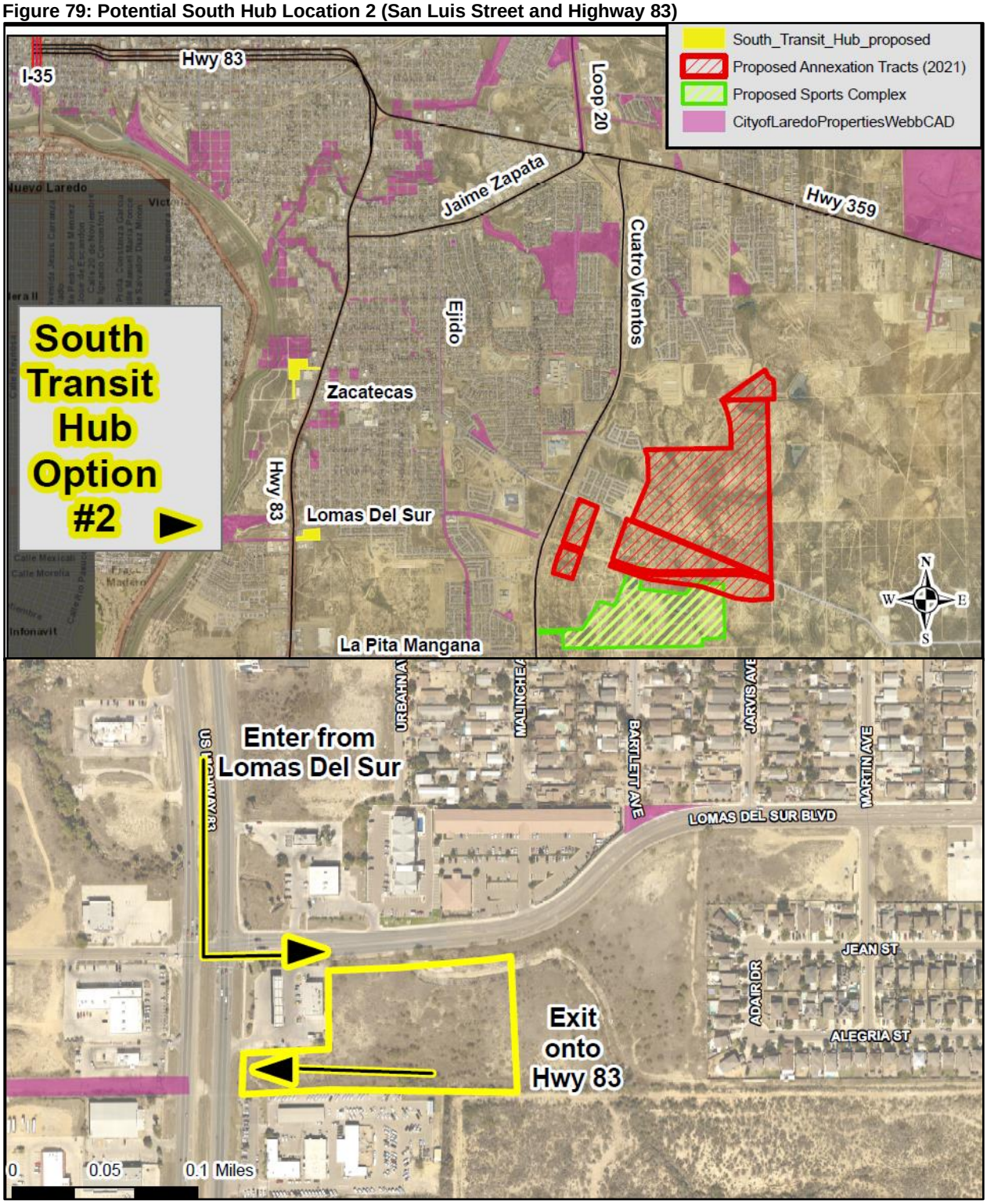
- **Location 1 (preferred): San Luis Street and Highway 83.** This is a strong candidate for the South Hub due to its central location where many of El Metro's existing routes converge. It would be located adjacent to the H-E-B grocery store and pharmacy, which are strong transit destinations and would also allow riders to complete errands before transferring between routes and continuing their journey. The potential location for this hub and bus route into and out of the hub are shown below in **Figure 78**.

Figure 78: Potential South Hub Location 1 (San Luis Street and Highway 83)



- **Location 2: Lomas del Sur and Highway 83.** The second option offers similar benefits of being centrally located; however, it is surrounded by mostly residential land and vacant land, thus having lower transit potential than Location 1.

Figure 79: Potential South Hub Location 2 (San Luis Street and Highway 83)



10.3 PROPOSED LONG-TERM NETWORK CONCEPT

The proposed long-term transit network is shown in **Figure 80** and can also be called the Next Generation or “NextGen” bus network. This is a network *concept* and should act as a starting point for El Metro to redesign routes upon implementation of the new mobility hubs. It is assumed that the North Hub will be constructed first, after which El Metro should realign bus routes to serve the new North Hub and reduce the number of routes traveling to the Downtown Transit Center. Following implementation of the South Hub, El Metro should then redesign the routes that serve the south neighborhoods of Laredo.

The proposed long-term network aims to maintain much of the existing service coverage and therefore use much of the existing bus stop infrastructure, create more direct routes that offer faster travel times, increase frequency on all routes, provide more route options to riders, and fill in coverage gaps with on-demand microtransit where fixed-route services have been shown to be unproductive. This long-term network includes the following:

- North and South Hub (exact South Hub location to be confirmed).
- Routes 1, 2A, and 16 (the most productive routes) increase frequency to every 10-20 minutes, while other routes increase frequency to 20-40 minutes or 40-60 minutes. No fixed-route services should operate less frequently than every 60 minutes, particularly on weekdays.
- A network that more closely resembles a grid of north-south and east-west routes. North-south corridors with continuous and direct service include Springfield Ave and McPherson Ave and east-west corridors include Shiloh Dr, Del Mar Blvd, Saunders St, and Gustavus St/Clark Blvd.
- Limited-stop express routes carrying passengers between the three transit hubs and stopping at major intersections, destinations, or on-street transfer locations. These routes will create greater connectivity throughout the network and provide riders with more route options for their trips. For example, if a rider wants to travel from Independence Plaza to downtown Laredo, they could take modified Route 3 or they could take the new limited-stop express route west along Bob Bullock Loop to the North Hub and transfer to the express route going Downtown. This allows travel to be more flexible for riders, creates greater freedom, and improves access to opportunities.
- Segments of Route 12B, 17, and 16 are maintained; however, they now serve the North Hub where riders can transfer to the frequent limited-stop express route for travel Downtown or other routes. This will reduce the amount of service duplication into the Downtown Transit Center.
- Segments of Routes 14 and 20 are maintained but rerouted to the South Hub instead of continuing to the Downtown Transit Center.

The proposed long-term network concept is symbolized based on each proposed service layer in **Figure 81**, including the frequent (10-20 minutes), local (20-40 minutes), community (40-60 minutes), limited-stop express and microtransit (on-demand).

Figure 80: Proposed Long-Term Network Concept (individual routes)

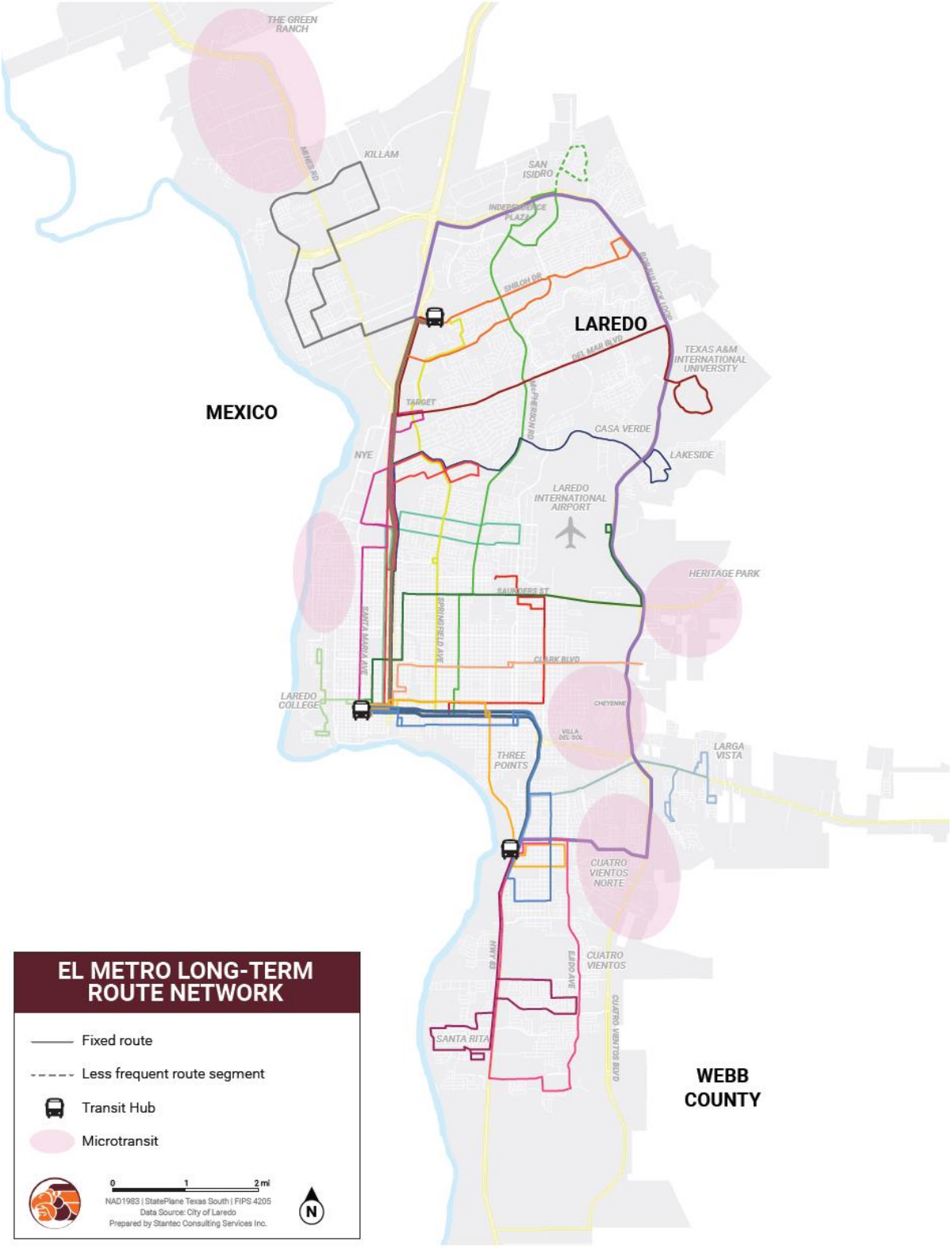
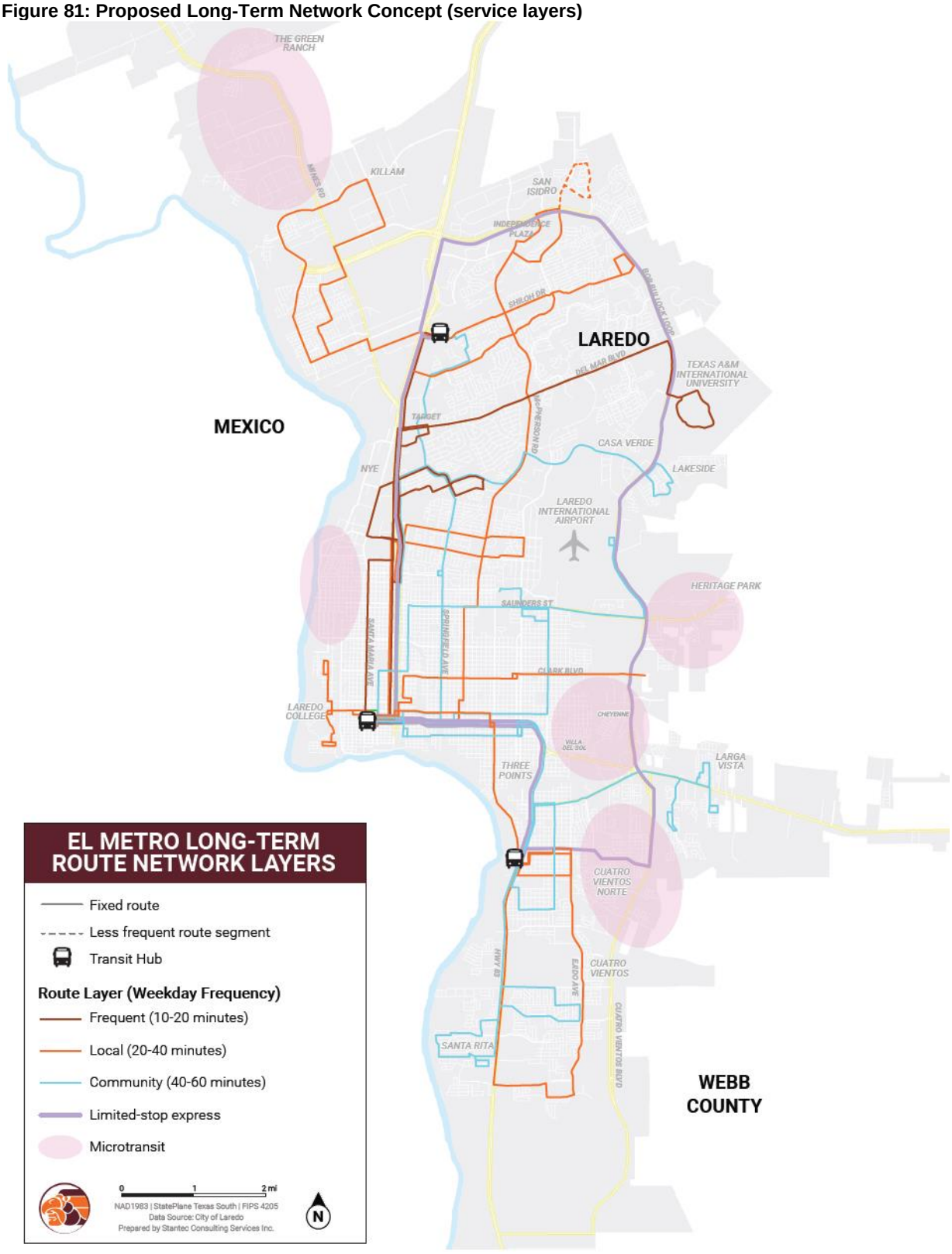


Figure 81: Proposed Long-Term Network Concept (service layers)



11 SUPPORTING RECOMMENDATIONS

Bus route changes, service changes, and other adjustments require ongoing monitoring, as well as supporting strategies and policies to ensure El Metro meets its goal of "[…] *providing safe, reliable, courteous, accessible and user-friendly services to its customers.*"

The key goals that guide the recommended actions aim to:

4. Improve transit service.
5. Enhance the customer experience.
6. Expand El Metro's value to Laredo.

A. IMPROVE TRANSIT SERVICE

A1. Implement Route Adjustments

A1. IMPLEMENT ROUTE ADJUSTMENTS		
2022	2023	2024-2025
• Implement short-term network changes (route adjustments; south circulator). • Identify opportunities to increase frequency on key corridors.	• Examine opportunities to improve weekend service; other off-peak service.	• New services to be identified through process established by service guidelines.

As part of the COA network plan and recommendations, scheduling and runcutting of the short-term network will be conducted to prepare for implementation in spring 2022. At this point, El Metro should monitor the performance of the short-term network (see **A2** and **A3** below) and identify opportunities to increase the frequency of service along the frequent and local corridors included in the long-term plan. The long-term service layers indicate that no route should operate less frequently than every 60 minutes, with some routes operating every 10-20 minutes (frequent layer) or every 20-40 minutes (local layer). El Metro does not need to wait until the implementation of the full long-term network and two new transit hubs to begin increasing the frequency of routes.

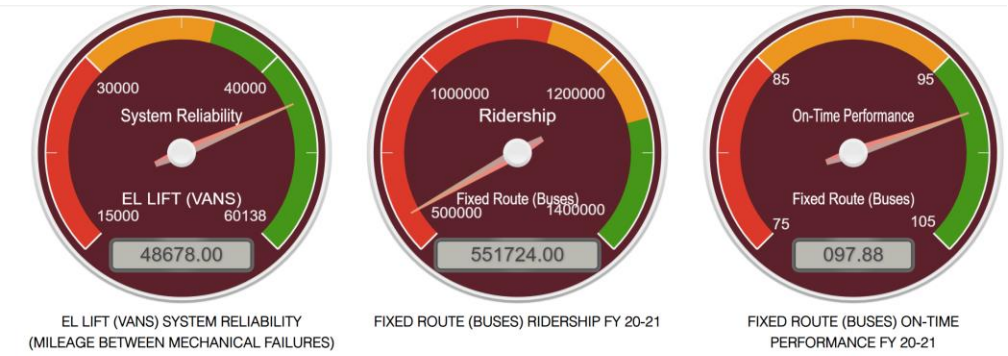
Once the data collection plan and service guidelines are developed (see **A2** and **A3** below), new services and route modifications can be identified and implemented. It is anticipated that completion of these plans will be timed well with the introduction of the new North Hub and can be used to modify routes to serve the new hub, using the long-term network concept from the COA as a starting point (see **Section 10**).

A2. Create a Targeted Data Collection and Usage Plan

A2. CREATE A TARGETED DATA COLLECTION AND USAGE PLAN		
2022	2023	2024
• Develop a data collection and analysis plan to inform decision making.	• Hire IT staff to collect and analyze data. • Procure vehicles equipped with APC-AVL tech.	• Continuously collect, analyze, and use data to inform routing, service levels, and new/removal of service.

El Metro values transparency and accountability. El Metro currently publishes many performance metrics on its dashboard online (**Figure 82**). Many of these statistics, while important especially internally and for Board decision-making, may not be so interesting or useful to customers. For example, while injury stats and mileage between failures are important to report and monitor to understand the safety of the system and effectiveness of maintenance programs, respectively, customers want to know about service levels and reliability.

Figure 82: Sample of El Metro Dashboard stats



EL LIFT (VANS) SYSTEM RELIABILITY (MILEAGE BETWEEN MECHANICAL FAILURES)

FIXED ROUTE (BUSES) RIDERSHIP FY 20-21

FIXED ROUTE (BUSES) ON-TIME PERFORMANCE FY 20-21

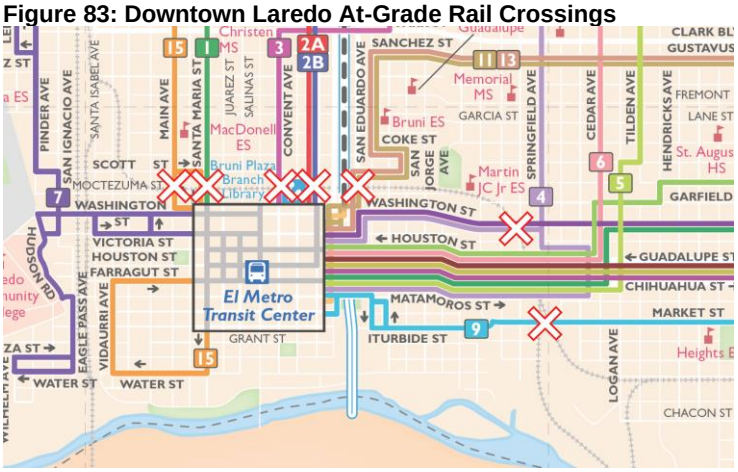
EL LIFT (VANS) RIDERSHIP FY 20-21

EL LIFT (VANS) ON-TIME PERFORMANCE FY 20-21

El Metro reports on-time performance for both fixed-route and paratransit services, as well as ridership figures on the online dashboard (**Figure 82**). While useful for customers, there are several shortcomings here, such as the level of aggregation of these stats (all routes, all time periods, etc.) and reporting period (entire fiscal year rather than monthly or quarterly).

Case in point—we heard repeatedly from stakeholders that train crossings along at-grade tracks disrupt bus reliability and on-time performance. A quick glance at El Metro's dashboard shows that nearly 98% of buses are 'on-time' (**Figure 82**). Relying only on this statistic alone would suggest that, in fact, rail crossings are not an issue to bus reliability. But stakeholder feedback and looking at maps of rail crossings downtown (**Figure 83**) would suggest otherwise. What's the ground truth? Without disaggregated data, we can't investigate these concerns more closely nor devise ways to address them.

Figure 83: Downtown Laredo At-Grade Rail Crossings



More problematic, as revealed by this study process, is the lack of disaggregated and readily available data internally for decision-making. In completing this COA, Stantec requested common data such as stop-level passenger activity, trip level data, actual route travel times, on-time performance at the route level, and other information critical to modern transit operations planning; these data requests all went unfulfilled because of the lack of available data, or accessible data.

El Metro cannot continue this way. If El Metro does, it cannot provide data-driven planning or decision making, and will always plan and develop service in a non-strategic, reactive manner.

To plan more effectively and strategically, El Metro needs a robust data collection plan and needs to execute this plan. This plan, at a minimum, should specify at least annual ride checks, and preferably, twice a year—once during the high season, like an October, and once during the low season, like a July. El Metro needs to develop a sampling plan to capture all routes and all service periods to capture information such as:

- Passenger boardings and alightings by stops (see the example in **Figure 84**). This data helps plan the appropriate amenities and siting of bus stops, helps inform route alignment, identifies trip-level passenger loads to understand if more frequency (or less) or other changes are needed (like service span), etc. The most recent datasets that are comparable to this are from the 2009 COA and the 2016 transit development plans (see **Figure 85**). El Metro needs to collect data and create similar maps, but also route-by-route analyses to understand passenger load profiles, segments that carry few passengers, and so on.

Figure 84: Example route-level profile, providing stop-level passenger activity, passenger loads, and trip level loads and ridership.

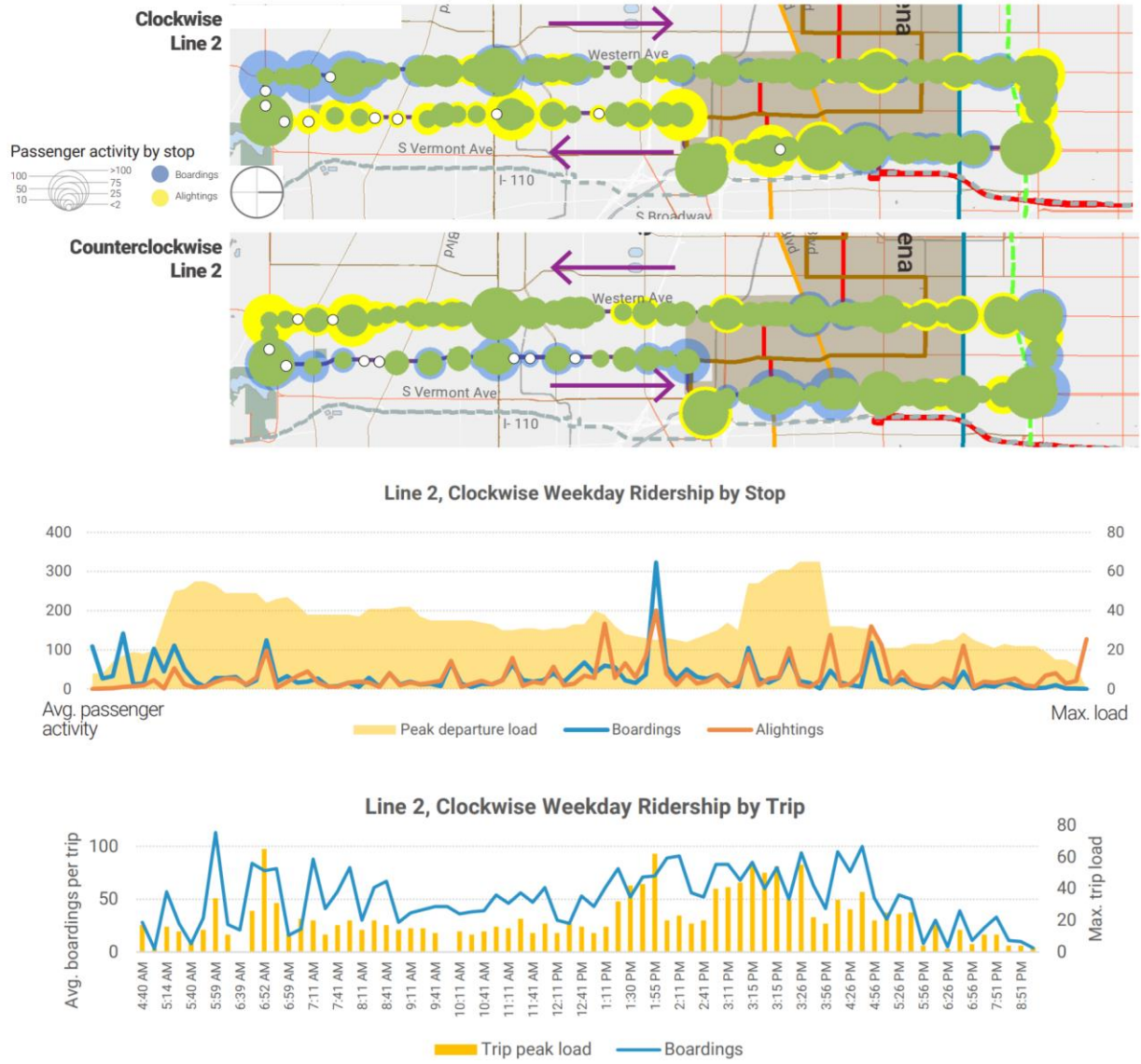
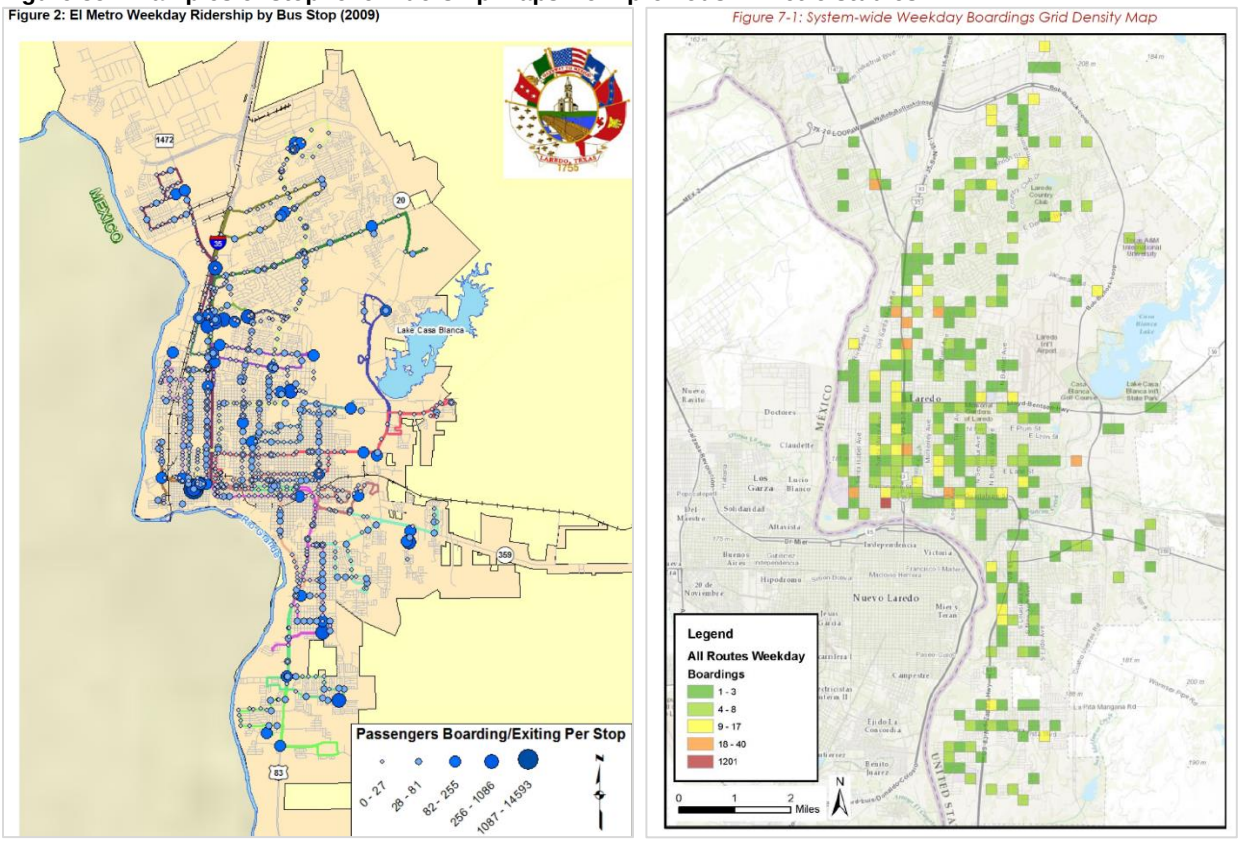
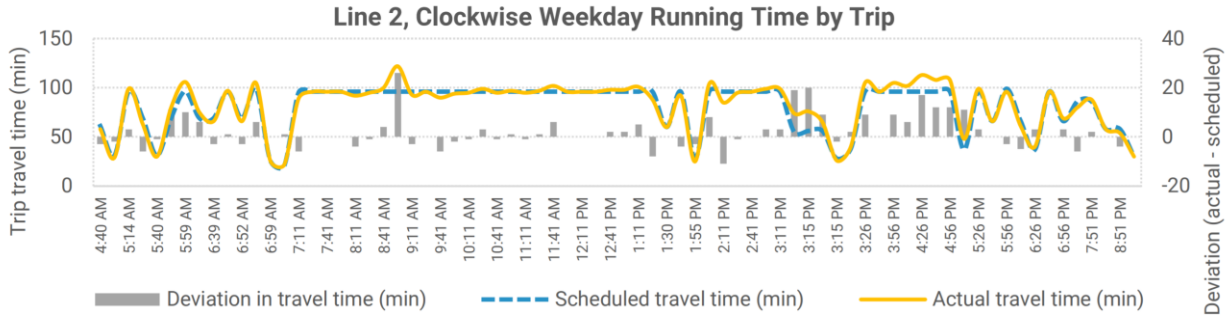


Figure 85: Examples of stop-level ridership maps from previous El Metro studies.



- On-time performance, ideally at each stop (as arrival time, scheduled departure time, and actual departure time), as well trip start and end times. This data can help track trip running time across the day, inform scheduling (like trips that need more or less running time), provide information about dwell times, and provide real-world information for timing points (**Figure 86**). Developing realistic schedules will help improve on-time performance and reliability, as well as identify if routes need additional (or less) layover time, etc.

Figure 86: Example route-level analysis of scheduled vs. actual travel time by trip and travel time deviation.



While ride checks are labor intensive, they provide valuable information as shown by the example route profiles above (**Figure 84** and **Figure 86**) that Stantec compiled for a transit agency in the Los Angeles area using manual ride checks.

To reduce labor costs, this data collection plan should outline future technology needs for El Metro to capture operational data, namely CAD/AVL and APC, as well as plan for their implementation, including tendering, installation, training, data capture and analysis, and calibration.

The upshot of this data collection requirement is that El Metro will need to build internal capacity for planning and technology purposes. Stantec recommends that El Metro hire:

- A transit service and operations planner. This staff would be responsible for developing transit service guidelines, monitoring performance, and developing service updates. They would also work across the organization, particularly with schedulers, operations, and marketing, to ensure that service is efficiently planned, reflective of on-street operations, and is marketed appropriately.
- Transit Systems Manager and appropriate IT staff. To collect and analyze data from future data collection technologies, El Metro needs a qualified IT expert to design storage and analysis protocols. As well, El Metro has adopted a technology-forward approach to service delivery (microtransit, fare collection, etc.), and as such, the IT expert needs to be versed in broad range of transit technologies, and will work with peers at the City of Laredo on IT, as well as respond to requests for data from the public and policy makers.

A3. Develop and Adopt Transit Service Guidelines

A3. DEVELOP AND ADOPT TRANSIT SERVICE GUIDELINES		
2022	2023	2024 and beyond
• Develop transit service guidelines • Adopt and apply transit service guidelines	• Use data to refine service guidelines	• Continuously measure service based on guidelines and adjust as needed. • Identify priority routes/areas for more (or less) service when resources become available (or constrained)

Currently, El Metro responds to service requests from the public, Council Members, and other sources in an ad hoc manner, designing services through an agency-wide effort. Often, many of the requests are addressed when (if) El Metro gets more resources, like vehicles or operators, etc.

A limitation of this approach, however, is that El Metro lacks clear and transparent service standards or guidelines that transit agencies usually develop and apply when determining how to adjust existing service, and how and where to introduce new services. These guidelines provide thresholds, for instance, for the number of residents or jobs (or density) that need to be met before considering transit service, as well as the type of transit service for new areas (frequency, span, vehicle type, etc.).

El Metro does have some basic guidelines in its Title VI policy document, as directed by the FTA. Nonetheless, these standards are limited to general statements like “El Metro will provide service on urban radials at least every 30 minutes on weekdays and Saturdays and 45 minutes on Sundays, and 60-minute service on secondary radials on weekdays and Saturdays and 90-minute service on Sundays”[17], stating that on-time performance should be at least 90% (no more than 5 minutes late), that stops should be no more than 3 city blocks apart, and that amenities at bus stops should be dictated by “the number of customer

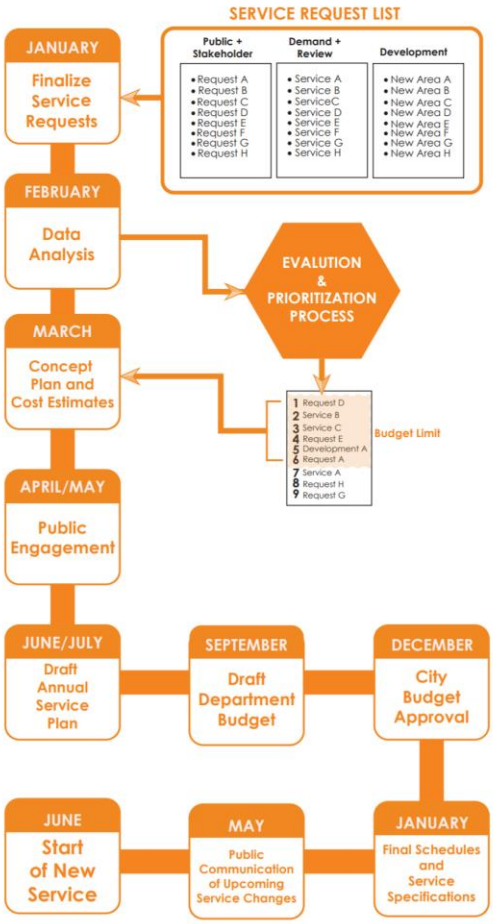
[17] Interestingly, most routes do not meet this vehicle headway standard.

boarding's (sic) at stops along the routes." These general statements aren't really helpful in guiding *where* El Metro should provide service, and *what* levels of service should be provided.

Instead, we recommend that El Metro develop more robust and helpful transit service guidelines. Developing these guidelines will be especially important as the city continues to implement the Viva Laredo city plan. For example, as the city implements extraterritorial jurisdiction and annexation, at what point do these new developments justify fixed-route transit service? Developing transit service guidelines can provide clear answers to these and other questions, helps prioritize service changes and requests, informs the public and developer about El Metro's vision for transit, and can help align El Metro with the city's future development goals. El Metro needs to rationally consider service requests, alterations, and define 'design rules' for how and where to introduce service, and how to monitor and evaluate existing services for adjustment.

The graphic in **Figure 87** provides an example of the process El Metro can adopt for addressing service requests. First, all service requests would be compiled for analysis and evaluation. The criteria for analysis and evaluating the service requests come from the transit service guidelines, and can be criteria like estimated ridership vs. cost for service, density and diversity of land use, safety of bus operations, etc. The service requests are then prioritized based on their score in the evaluation process; requests are then refined based on the analysis and public/stakeholder engagement and feedback. Depending on funding levels, the highest ranked service proposals are adopted for implementation, and inserted into the annual service plan. Finally, El Metro rollouts the service changes along with the necessary marketing and outreach to promote and advertise the changes leading up to the new service period.

Figure 87: Example a process for evaluating, prioritizing, and implementing service requests.



By developing a service standards document, El Metro will be able to show the community how it handles service requests to avoid any semblance of favoring one neighborhood over another, for example, as well as demonstrating why it provides service (and what kind of service) in some places and not in others. This type of decision documentation can help explain and shape the design of services like circulators, microtransit, and frequent services. Importantly, a clear and concise service guidelines document will align with El Metro's commitment to transparency and accountability.

While some agencies have long or complex standards and indicators, El Metro needs a simple set of indicators and metrics, define how service should be introduced, and should update these metrics periodically to account for actual performance and community input. This list can provide a monitoring program whereby El Metro reports these metrics quarterly to the Board. Some key metrics should include:

- Service standards:
  - Vehicle load
  - Policy headway
  - On-time performance
  - Service span
  - Stop spacing and area coverage
- Performance metrics:
  - Boardings per revenue hour and per revenue mile

    - Operating cost per boarding
    - Farebox recovery ratio
    - Complaints per 10,000 boardings
    - Miles between vehicle failures
- Service policies:
    - Transit amenities
    - Vehicle type assignment to route/service class

Some good examples of transit service guidelines or service standards include Santa Monica Big Blue Bus[18], LA Metro[19], Vancouver's TransLink[20], and Austin's Capital Metro[21].

Finally, related to service guidelines and data collection, El Metro needs a dedicated transit service and operations planner whose main role would be to plan service, develop the guidelines, evaluate service proposals and requests, and lead overall planning efforts. This staff would work with operations and service delivery staff, and importantly, would be a liaison with the City's planning and transportation departments and the MPO.

A4. Pilot Microtransit Services

A4. PILOT MICROTRANSIT SERVICES	
2022	2023 and beyond
• Pilot microtransit in 2 areas	• Monitor and refine microtransit areas • Expand the number of microtransit zones

El Metro has proposed microtransit as an on-demand rideshare service for short trips delivered with small vehicles. Designed thoughtfully for meeting a specific mobility need depending on the neighborhood and travel market (using concepts described in **Section 9.4**), microtransit can work hand-in-hand with El Metro's fixed-route bus network.

We recommend that El Metro:

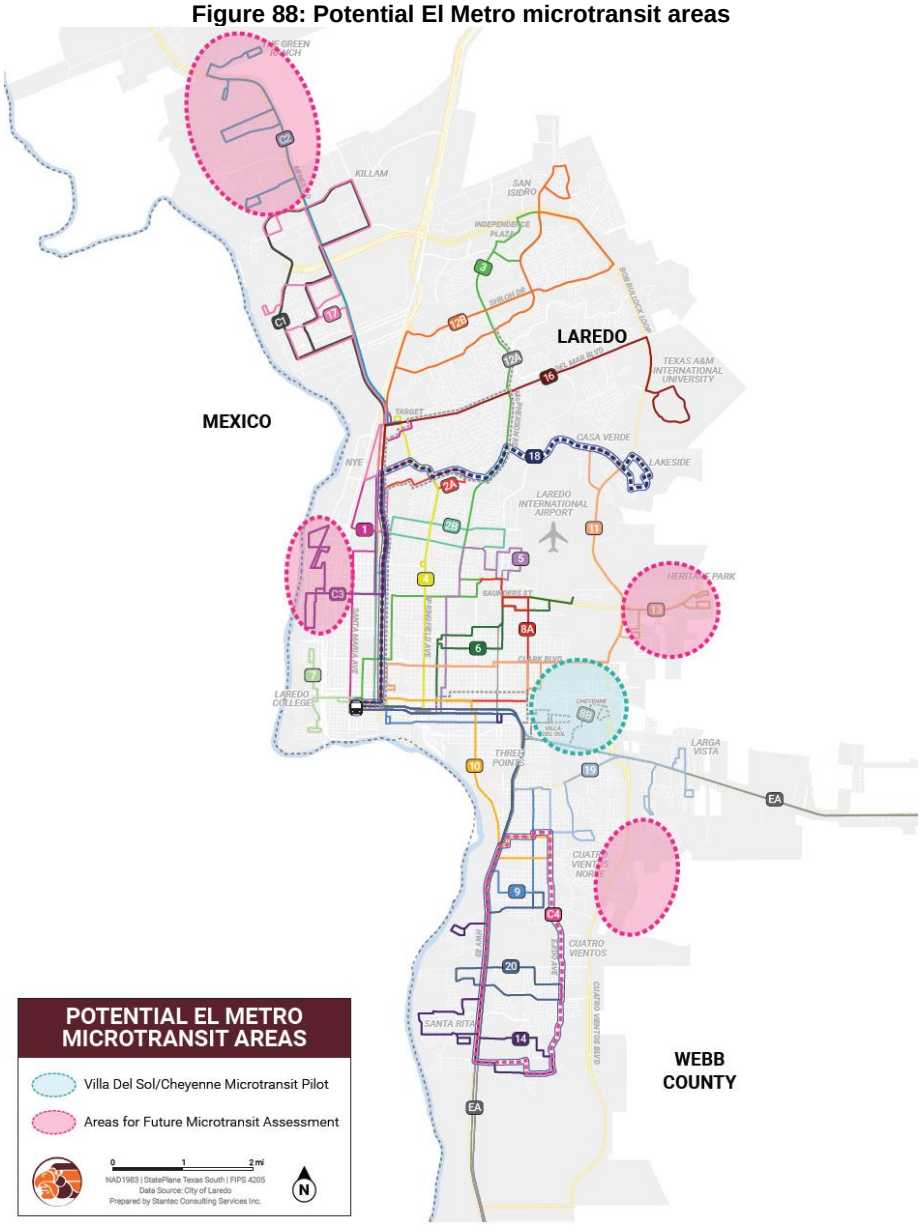
- **Strategically implement microtransit pilots** in areas with low-performing fixed-route services or new auto-oriented neighborhoods with no transit. Neighborhoods with the potential for microtransit include:
    - *Southeast of Bob Bullock Loop and E Saunders St (Heritage Park, San Jose, Woodlands, Ponderosa Hills).* This area is currently served by Route 13 which is one of the least productive routes in the system (12.9 boardings per revenue hour in 2019 and 6.7 in 2020). This route has circuitous loops that slow down service.
    - *Riverside/Canta Ranas/La Ladrillera*. These neighborhoods were previously served by Route 15, which was the second worst route in terms of productivity after Route 8B, and had 8.8 boardings per revenue hour in 2019 and 5.1 in 2020. Route 15 was eliminated in 2021 and replaced with a circulator, Route C3: Riverside. The circulator service should be monitored and replaced with microtransit if this service continues to be unproductive.

[18] https://www.bigbluebus.com/uploadedFiles/Content/Newsroom/News/BBB_Service%20Design%20Performance%20and%20Evaliation%20Guidelines_%202015.pdf
[19] http://media.metro.net/projects_studies/nextgen/images/nextgen-report-tsp-final.pdf
[20] https://www.translink.ca/-/media/translink/documents/plans-and-projects/managing-the-transit-network/transit-services-guidelines-public-summary.pdf
[21] https://www.capmetro.org/docs/default-source/plans-and-development-docs/service-changes/capital-metro_service-guidelines-and-standards.pdf?sfvrsn=df9fdacb_2; in particular, Capital Metro's density thresholds for service provision on p. 5 demonstrates the effective use of boundaries for providing service to a region.

Circulators still operate along a fixed route, which is difficult in these neighborhoods that do not have good street connectivity, and with a fixed schedule every 40 minutes, which is a low level of service.

- *Mines Road north of Killam Industrial Blvd.* There are many industrial parks and employment destinations off of Mines Road that are not connected to one another, making it difficult for transit to serve. In addition, industrial parks have specific demand periods that are not consistent throughout the day and are related to work shifts, which can be more successfully served by an on-demand service.
- *New auto-oriented developments east of Cuatros Vientos Blvd (Loop 20).* Recent developments in Laredo have been built with cars in mind, with fragmented street networks and low-density developments. Microtransit can be deployed in these locations to provide service where fixed-route cannot operate. Depending on the amount of ridership in these new neighborhoods, El Metro can consider introducing fixed-route service (circulator or conventional) using data from the on-demand service.
- The areas for potential microtransit services are shown below in **Figure 88**.

Figure 88: Potential El Metro microtransit areas



- **Monitor and evaluate productivity of circulator services to determine if microtransit would be more effective.** As indicated in the existing conditions assessment, circulators are similar to traditional fixed-route services because they have similar operating costs and operate along a fixed route with a fixed schedule. Circulators should be implemented sparingly, only in neighborhoods where there are many short local trips being made between destinations that are difficult to serve with a 40-foot bus (for example, entering into the driveway loop of a seniors residence). Instead, microtransit provides a lower cost solution for the agency while also adding value to the customer. If data from circulators shows very low performance and the cost per hour is still high, consider replacing the circulator with a microtransit solution. It is expected that C1: Killam Circulator and the proposed C4: South Circulator will provide useful connections between common destinations that will be more productive than the C2 and C3 circulators, which should be monitored more closely.

- **Provide accessibility and language options** for trip booking and service operation. Trip booking and microtransit information (and apps) should be administered in English and Spanish and should be available by smartphone app, website browser, and a dial-in option for those with a telephone but no internet or smartphone. In addition, trip booking must allow a passenger to indicate if they use a mobility device and require an accessible vehicle. As well, booking platforms should be designed for accessibility for persons who are blind or have low vision.

- **Engage with the public to promote the service and encourage ridership**. Before the pilot starts, El Metro staff should spend some time at the Transit Center spreading the word about the new microtransit service, and should give operators a flyer with information on it on the routes that are near the service area. For example, operators on Route 8B should hand out information to riders before the Villa del Sol/Cheyenne microtransit service is introduced and again once it has launched. A "frequently asked questions" page should also be posted on El Metro's website to answer common questions about how the service works.

El Metro should roll out microtransit in 2 zones in 2022 to pilot the service, learn from implementation, and refine the service. Expansion to more areas, as deemed appropriate along with fixed-route service adjustments are recommended in 2023 and beyond.

A5. Establish a Transit Priority Infrastructure Task Force

A5. ESTABLISH A TRANSIT PRIORITY INFRASTRUCTURE TASK FORCE				
2022	2023	2023	2024	2025
	• Establish task force. • Develop recommendations	• Begin implementation.		• Study need for BRT.

Cities like Los Angeles and Houston, in addition to redesigning bus routes and focusing on key routes and frequent service, realize that in order to drive up ridership and improve the customer experience, bus travel must be made faster and more reliable. Scheduling and operations management can only do so much—the reality of operating buses in mixed-traffic on surface streets means that bus riders are at the mercy of traffic. In Laredo, while a relatively small city, does experience some heavy traffic, particularly along key routes like US-83, Loop 20, and others as trucks and other freight use these routes between the US-Mexico border. Moreover, at grade train crossings with unpredictable schedules can disrupt bus reliability and riders' schedules.

Infrastructure to support bus priority and improve reliability and bus operations can be costly, but it doesn't need to be. In fact, several changes are more policy-oriented than infrastructure-oriented. El Metro can take incremental steps, with easy wins first and build up to more challenging projects over time as it addresses reliability issues, builds trust and relationship with partners who control rights-of-way and infrastructure, and throughout community engagement.

Table 9 below provides an overview of potential 'tools' for speeding up buses and improving reliability.

Table 9: Transit priority toolkit.

Theme	Strategy	Description	Benefits	Primary responsibility	Secondary responsibility	Ease of implementation	Impact on reliability	Impact on travel time
Bus operations	Stop relocation	• Moving near-side stops to farside, where feasible • Adjusting stop location in relation to bike facilities (like at intersections)	• Reduce buses stopped at red light phase • Reduce bus travel times	El Metro	City, ROW owner	Easy	Low	Low
	Stop rebalancing	• Removing low use stops • Creating consistent and longer distances between stops	• Reduce the frequency of bus stopping (and dwell time) • Reduce bus travel times	El Metro	NA	Easy to medium	Low	Medium
	Layover parking enhancements	• Ensuring layover parking is well located near route termini, have operator amenities, accommodate buses and reduce conflict with other users	• Optimizing layover times and cycle times • Managing route headways and on-time performance • Optimizing capacity for buses at locations of multiple route termini	El Metro	AHJ	Easy to medium	Medium	Medium
	Reducing cash payment and implementing all-door boarding	• Passenger paying with cash slow dwell times • On heavily used routes, passenger activity through the front door can be substantial	• Encouraging non-cash payments speeds up passenger boarding • All-door boarding reduces the time for passenger boarding/alighting (may need to install validators at all door, or issue proof of payment)	El Metro	NA	Easy to medium (depending on policy)	Medium	Medium to high
Traffic Control Strategies	Bus movement exception	• Allowing buses to make turns that may be restricted to other vehicle	• Can result in more direct routing, and reduce travel times	El Metro and DOT		Medium	Low	Low
	Transit Signal Priority (TSP)	• At key intersections along busy streets, prolonging the green phase (or truncating a red phase) for approaching buses at an intersection	• Increase travel speeds • Reduce stoppage at red lights	El Metro	DOT	Medium	Low	Medium

Theme	Strategy	Description	Benefits	Primary responsibility	Secondary responsibility	Ease of implementation	Impact on reliability	Impact on travel time
	Queue jumps	• Early green phase for buses only and short lane to allow buses to 'jump' ahead of queued vehicle	• Reduce travel times (reducing delay at traffic light)	El Metro	DOT	Medium	Low	Low
Bus stop infrastructure	Stop hatching	• Painting very visible hatching in the bus stop zone (along with enforcement and education) to minimize illegal parking at bus stops	• Reduces illegal parking and allows buses to serve bus stops, rather than need to pull up next to illegally parked vehicles	DOT	El Metro	Easy	Low	Low
	Bus stop lengthening	• Lengthening bus stops that have multiple overlapping routes to improve bus docking at the stop and passenger transfers	• Reduces delay of buses waiting to pull into a stop (improves general traffic flow) • Improves passenger transfers	El Metro	DOT, AHJ	Medium	Low	Low
	Bus bulb-outs	• By extending the curb, the bus can stop in the moving lane • Eliminates the need of the bus to pull out of and back into traffic lanes	• Improves reliability • Reduces dwell time	El Metro	DOT	Medium	Medium	Medium
Bus lane	Curbside lane	• Located in the right lane, only buses are allowed in these lanes, reducing traffic impacts on bus movements and at stops • In some instances, cars can enter to turn right (if so, then bus stops should be farside of these intersections) • Can be all-day or during certain hours of the day	• Typically installed on corridors with heavily used routes, reduce travel time • Reduce variability of running time	DOT, El Metro	Police	Hard	Medium to high	High

Theme	Strategy	Description	Benefits	Primary responsibility	Secondary responsibility	Ease of implementation	Impact on reliability	Impact on travel time
		• Enforcement and education are needed						
	Offset bus lanes	• Bus lane is the lane adjacent to the right lane so that cars can still park • Typically, these lanes operate at all times • Enforcement and education are needed	• Typically installed on corridors with heavily used routes, reduce travel time • Reduce impact from right-turning vehicles (unlike curbside lanes) •	DOT, El Metro	Police	Hard	High	High
	Red-colored pavement	• Along with signage and striping, red-colored pavement provides visibility to bus-only lanes and transit	• Helps deter illegal parking and driving in the lane	DOT, El Metro	Police	Medium	Medium	Medium

Some of the tools listed above are strategies El Metro can undertake in the short-term, such as bus stop consolidation. Others require a more wholistic and strategic approach, as well as partnerships with key champions, like the MPO and City planning, engineering, and public works departments, among others.

Stantec recommends the following approach to bus priority strategies and infrastructure planning:

- Establish a “bus reliability task force” whose goal is to identify and implement projects aimed at speeding up buses and improving reliability for customers. The task force should be led by an El Metro staff who champions bus priority in the Laredo community. The task force should include representation from stakeholders at the MPO, the City, and TxDOT, as well as residents/bus riders, and businesses. Having a broad buy-in and consensus will be paramount for the more challenging projects.

- The task force should develop a strategic plan that lists priority areas for improvements, and potential solutions for each. These projects should be classified in phases.

    - El Metro should use other recommendations in this current COA Plan to align with the goals and projects for the bus priority plan, such as incorporating route changes, the north mobility hub, marketing and branding opportunities, and bus stop improvements, among others.

    - The plan should identify key corridors for eventual BRT or bus-only infrastructure, like dedicated lanes and bus stops/stations. These corridors should also be identified for pilots such as tactical bus projects that can be as simple as putting pylons to mimic bus only lanes, testing all-door boardings, etc. These proof-of-concept cases can help build support for eventual BRT or other more costly infrastructure in Laredo.

- Upon plan adoption, El Metro should begin implementing key projects as specified by the plan.

- El Metro should evaluate the performance of the interventions on travel time, reliability, and ridership using the data collection strategy it develops, as well as adjusting service as per the transit service guidelines. The transit service guidelines should be adjusted as needed based on the outcomes of infrastructure and priority policies.

Having a strategic plan that outlines the goals and purposes of interventions, with a focus of moving people, will make El Metro a strategic and pragmatic mobility provider.

Finally, as we heard from several stakeholders, rail crossings from freight trains are erratic and disrupt bus schedules and the customer experience. Of course, freight, cargo, and shipping are essential functions to Laredo as a chief port for goods and logistics. Moreover, these freight rail crossings disrupt not only buses, but passenger vehicles too, as well as freight trucks as well. In other words, the consequences of the many at-grade crossings go beyond El Metro and its customers—these impact the community at large.

While El Metro can do little to mitigate the impacts of rail crossings, such as trying to reduce route alignments that interface with the rail tracks or liaising with rail companies to try to understand freight schedules and plan around them, the truth is very little can be done. In fact, if El Metro wants to provide more service on key corridors (i.e., more frequency), the impacts of these rail crossings will only grow.

As such, Stantec recommends that a subcommittee of the bus reliability task force be tasked with studying the rail crossing issue in-depth, compiling data to demonstrate the impacts of the rail crossings on bus service and bus customers, such as passenger delay, crashes, costs, etc. Together with broader

stakeholder engagement, a **grade separation feasibility study** should be conducted to identify the most problematic locations, potential treatments and benefits to grade separation. This strategy would go beyond El Metro and involve the City, the MPO, TxDOT, FRA, and private industry.

A6. Develop NextGen Bus Plan

A6. DEVELOP NEXTGEN BUS PLAN				
2022	2023	2024	2025	2026
• Develop a new network to account for North and South hubs.	• Open North Hub. • Rollout new routes.	• Adjust routing as needed. • Develop South hub design. • Apply for funding.	• Open South Hub. • Rollout new routes.	• Adjust routing as needed

As described throughout **Sections 9** and **10**, El Metro needs to undertake short-term service planning changes, and in the longer term, redesign its bus network to work with first the north hub and then the south hub, as well as to incorporate routing changes to serve new developments, accommodate population and job growth, and align with new service delivery methods, like microtransit.

Stantec recommends that El Metro launch a NextGen bus planning effort to redesign the bus network. Unlike the service changes captured in this plan, the NextGen study will flesh out the service concepts in **Section 10** to take full advantage of the new hubs El Metro hopes to build. Furthermore, this recommendation works in tandem with several other recommendations, such as the marketing and branding strategy (since the planning effort will require broad outreach), service guideline development (which will inform the service strategy), hiring a dedicated planner, and so many others.

The NextGen bus plan should use data collected from El Metro's data collection plan to design the network from blank slate approach, and incorporate feedback from customers and the public, along the same lines as the City's Viva Laredo plan. The NextGen study should plan for two key phases—the first, to reorient the bus routes in north Laredo for when the new mobility hub opens, and the second, to reorient the bus routes in south Laredo for when a hub in the south opens.

Furthermore, the NextGen bus plan should seek to improve frequent service on key corridors and incorporate the service guidelines El Metro designs. Marketing and branding of the planning effort, as well as the resultant network will be important for building interest and buy-in. A frequent network, for example, can be marketed as a chief benefit of the plan and use graphics such as the one used by Cap Metro in Austin (top in image on the left) and TriMet in Portland, OR (bottom in image on the left) that emphasizes the flexibility of 15-minute or better service.

A7. Address Shortcomings with El Lift

A7. ADDRESS SHORTCOMINGS WITH EL LIFT		
2022	2023	2024
• Refine software parameters to improve efficiency of trip booking • Train dispatchers and schedulers on optimized software • Increase shared trips.	• Targeted travel training of conditionally eligible riders. • Leverage investments of improved accessibility of bus stops and fixed-route service infrastructure.	• Explore opportunities for increasing the use of fixed-route of riders with disabilities (trip-by-trip eligibility).

RouteMatch software (now Uber RouteMatch) was implemented in 2017 to schedule and book El Lift trips and to provide an online platform for riders to schedule their own trips more efficiently. However, El Metro's staff indicated that dispatchers are frequently manually scheduling trips because the trips scheduled through RouteMatch do not always "make sense", which suggests that perhaps the RouteMatch software is not being leveraged to its full potential. El Metro should work with RouteMatch to review the existing parameters and optimize the network to balance in-vehicle time, shared rides, miles traveled and other parameters to ensure trips are logical and do not send riders on excessive and illogical detours. Once optimized, dispatchers and schedulers should be trained on how to improve trip matching and scheduling within RouteMatch to reduce the amount of manual scheduling required. It also appears that the online booking system is not well used by customers, and many choose to call into customer service to book their trips. While it is important to provide an option for riders without computer literacy to book trips, people should be encouraged to use the online booking system provided by RouteMatch as often as possible to reduce the amount of time El Metro's staff needs to be booking dial-in trips.

Another recommendation is related accessibility for the conventional transit network so that El Lift riders who are willing to take conventional transit for some of their trips are able to do so. A rider may choose to use El Lift for scheduled doctor's appointments, for example, but may choose to take a spontaneous trip to the mall using the fixed-route system. One way to support this practice is to offer travel training to customers who are candidates for conventional use. Since El Metro already provides a travel training program to teach customers how to use the bus, El Metro should use the El Lift customer database to identify potential candidates based on their eligibility criteria. Identifying customers with greater mobility for targeted travel training can help convert paratransit trips to fixed-route trip and therefore reduce the operating cost per trip for that rider's journey.

In addition to travel training, training operators on sensitivity and accommodation for users with disabilities may help the agency deliver better service to customers and encourage use of conventional services. Additionally, operators may be encouraged to take note of any accessibility limitations related to El Metro services they observe, such as improper sidewalk infrastructure or lack of spaces aboard the bus for users with mobility devices, for example, and communicate such limitations to management. This can aid in the development of improved El Lift – El Metro integration and can open the door for exploring strategies such as Family of Services and co-mingling, where El Lift registrants can use El Metro services in some instances and vice versa. Strategies such as these, if appropriate in Laredo, will also require tailored internal and external communications strategies to ensure the operators and the public are aware of the opportunity and how it benefits them. As the accessibility of El Metro's fixed-route services is improved, and with the assistance of travel training, riders should be encouraged to try fixed-route services where possible.

El Metro currently uses the "conditional eligibility" criteria for riders who are able to take conventional transit under certain circumstances; however, this eligibility category is not applied on a trip-by-trip basis. Once there have been improvements to the accessibility of the physical infrastructure of the fixed-route system, driver sensitivity training is complete, and travel training has been promoted, El Metro can begin to apply conditional eligibility rules to each trip depending on the eligibility criteria. For example, a customer with a visual impairment that prevents them from traveling independently at night would be conditionally eligible to take El Lift only at night when their visibility is very low and would be asked to take conventional transit during the day.

B. ENHANCE THE CUSTOMER EXPERIENCE

B1. Develop bus stop program

B1. DEVELOP BUS STOP PROGRAM			
2022	2023	2024	2025 and beyond
• Develop accessibility program for bus stops. • Work with marketing plan to improve stop visibility/signage.	• Address bus stop accessibility • Develop bus stop consolidation plan.	• Removal/ consolidation of bus stops.	• Install more shelters and accessible benches. • Implement stop signage refresh.

Bus stops are often the first point of interaction between customers and a transit system. Ensuring that bus stops are accessible, pleasant, and safe waiting environments helps build trust and satisfied ridership. Improving the customer experience even before they board a transit vehicle can help grow ridership from different market segments.

El Metro's network has over 1,000 bus stops. Currently, based on El Metro-provided data, about 67% of bus stops are deemed "accessible", 21% have a bus pad, and 66% have a ramp (assume a curb cut). Beyond accessibility, from a 2016 study of El Metro's infrastructure, 64% of stops had no infrastructure other than a sign, 36% had a bench (with or without a shelter), and 16% had a shelter (all sheltered stops have benches). Clearly, El Metro can do better to provide a better and more dignified experience for its customers.

El Metro is launching a program called ADA Bus Stops and Bicycle Plazas Enhancement Project phase I that will enhance 17 bus stops with canopies, pads, lighting, bike racks and repair kits, and so on.[22] Stantec recommends that El Metro expand this program for its bus stops to work together with other aspects of the recommendations, including service standards (incorporating passenger boarding thresholds to inform amenities, etc.), accessibility improvements, bus speed improvement strategies (through bus stop balancing), and marketing and branding (by refreshing the looks of bus stops and using stop infrastructure itself to market El Metro and transit services in Laredo).

Key aspects of the bus stop improvement program should include:

[22] https://www.cityoflaredo.com/budget/budget_presentations/2020-2021/assets/transit.pdf

- A strategy for consolidating bus stops, that is, ensuring consistent spacing between stops to balance bus speeds and convenient access for passengers.
- Ensuring stops are accessible for customers of all abilities. An accessibility infrastructure checklist that should be applied to bus stops for targeted improvement. Furthermore, based on the data collected including stop usage as well as feedback from El Metro's accessibility committee, the plan should develop a prioritized list of stops that need accessibility improvements. These improvements should work together with travel training and other policies that will help El Lift riders use El Metro for more trips.
- Finally, the plan should outline improvements like shelters to protect customers from the elements, and more seating to make sure customers are comfortable while waiting for a transit vehicle. Working together with the City, El Metro can also enhance the placemaking and urban design qualities of key bus stops, such as improved lighting, larger sidewalks, bike racks and repair kits, and information regarding transit connections.

B2. Conduct a fare strategy and revenue study

B2. CONDUCT A FARE STRATEGY AND REVENUE STUDY		
2022	2023	2024-2025
• Pilot fare promotions, like free ride Fridays, discounts for cyclists using transit, and others.	• Launch next generation fare study for policy review, fare media, and revenue generation (parking, etc.).	• Implement fare changes

Fare policy, fare collection, and payment methods all contribute to the financial sustainability of a transit system. Fare policy is important for several reasons, including generating farebox revenue and shaping transit demand, while fare collection methods can influence the customer experience by making it easier or harder to pay and thus easier or harder to ride transit. During the pandemic, like most transit agencies, El Metro suspended fare collection.

El Metro's fare policy was recently modified to remove the transfer fare penalty of 75¢ during peak hours (6-9 am and 3-6 pm) and 50¢ during off-peak hours; transfer fares are still collected for riders transferring between fixed-routes and circulator routes. Otherwise, El Metro's last fare revision occurred during November 2018. El Metro's removal of the transfer fare is meant to curb fare evasion and likely increase the sales of multiuse fare products it now offers, such as the 2-hour pass, daily pass, weekly pass, and monthly pass. Nonetheless, based on data provided to Stantec, most riders still pay with cash. Cash processing requires substantial labor on El Metro's end, and cash fares also slow down buses, so in addition to El Metro encouraging the purchase of passes to boost fare revenue, there are also positive knock-on impacts to bus operations by trying to minimize cash use.

Overall, El Metro's fare table is rather straightforward, segmented by rider type as well as peak and off-peak fares for seniors and riders with disabilities. However, El Metro needs streamline fare information on its website, for example, by removing duplicate lines of bus pass information, while clarifying that circulators have a different fare and require a transfer fare when changing to a non-circulator route.

Furthermore, El Metro's fares are on the more expensive end of the spectrum compared to peer transit agencies (**Table 10**). El Metro provides below average service compared to population it serves, while also

being the costliest per one-way trip, as well as for a monthly pass. El Metro's one-way fare is the same as the People Mover in Anchorage, but El Metro provides about one-third less service per person and has about one-quarter less ridership.

Table 10: Fixed-route fare analysis peer summary

Agency Name	Service Area Population	Annual Ridership[23]	Revenue hours per capita	Regular fare (one-way trip)	Regular fare (monthly pass)	Farebox recovery ratio
El Metro	**254,042**	**2,517,520**	**0.59**	**$2.00**	**$120.00**	**27.7%**
City of Brownsville (Brownsville Metro)	181,860	1,491,403	0.33	$1.00	N/A	17.8%
City of Lubbock (Citibus)	209,839	3,442,579	0.69	$1.75	$50.00	47.3%
City of Santa Clarita (Santa Clarita Transit)	252,271	2,137,959	0.53	$1.00	$34.00	12.0%
City of Visalia (Visalia Transit)	164,128	1,236,081	0.76	$1.75	$30.00	12.8%
Municipality of Anchorage (People Mover)	202,396	3,410,108	0.88	$2.00	$60.00	12.7%
		Average	0.63	$1.58	$58.80	21.7%

We can examine affordability by understanding the cost burden of transit relative to hourly minimum wage. **Table 11** below summarizes one-way fare, local minimum wage, and the proportion of minimum wage that a one-way fare consumes.

Table 11: Regular fare and minimum wage peer analysis

Agency Name	Regular fare (one-way trip)	Minimum wage	Pass price as a percent of one hour minimum wage
El Metro	**$2.00**	**$7.25**	**28%**
City of Brownsville (Brownsville Metro)	$1.00	$7.25	14%
City of Lubbock (Citibus)	$1.75	$7.25	24%
City of Santa Clarita (Santa Clarita Transit)	$1.00	$13.00	8%
City of Visalia (Visalia Transit)	$1.75	$13.00	13%
Municipality of Anchorage* (People Mover)	$2.00	$9.89	20%

With the lowest minimum wage and highest per-pass price, a rider making minimum wage would spend 28% of one hour's wage on one bus trip. Acknowledging that things like minimum wage are out of the control of El Metro, El Metro should still be sensitive to low-income riders (40% of riders in the survey indicated household incomes below $20,000, compared to 18% of non-riders) and pass affordability for those who are low income but do not qualify for any of the reduced fare categories.

Given the above analysis, it is understandable that higher value fare products aren't used to any significant extent—spending $120 at the beginning of the month is a hefty cost and requires that a rider make at least

[23] Fixed-route ridership only

60 bus trips in a month (i.e., 2 trips every day for 30 days) for the pass to be worthwhile. In essence, El Metro is not providing a discounted fare product.

In order to boost fare revenue, El Metro should conduct a fare policy study to develop a framework for fare prices, fare products, as well as fare revenue media and collection. This study should also examine open and next generation payment systems, and help El Metro rationalize the fare table in a strategic way. Furthermore, the study should also examine other revenue strategies, including partnering with businesses and schools for fare discounts like commuter passes (currently, El Metro offers students a discounted pass but students pay out of pocket—in many communities, transit agencies work with school administration to develop pass programs that provide passes to students, embedding the cost in tuition or other mechanisms), as well as revenue generation from advertising, and the El Metro Transit Center parking garage.

In the near term, El Metro can pilot different fare incentives. For example, AC Transit in Oakland, CA offered fare-free Fridays in September as a welcome back to school as well as to encourage ridership as service was restored from COVID reductions; El Metro may wish to conduct a similar program. Another idea includes discounts for riders using bicycles as a way to encourage cycling and active transport.

B3. Improve accessibility for all ages and abilities and improve customer service

B3. IMPROVE ACCESSIBILITY FOR ALL AGES ABILITIES AND IMPROVE CUSTOMER SERVICE			
2022	2023	2024	2025 and beyond
• Develop training plan for operators with input from accessibility advisory committee. • Develop customer service training plan for operators.	• Rollout training for operators on accessibility and customer experience.	• Bus stop accessibility improvements	• Continual training refresher sessions.

Expanding the universal accessibility of transit services, infrastructure and information enhances the ability of current customers to use transit and can potentially turn on new customers to the system. Further, in addition to federal requirements, making the fixed-route transit system including bus stops, vehicles, and trip planning information more accessible to all ages and ability can help transition customers from El Lift to El Metro, thus freeing up resources on El Lift for customers who truly need the service. El Lift trips cost 11x the cost of a El Metro trip per rider. Moreover, over 90% of El Lift riders felt that El Metro was not accessible enough to use for their journeys.

This recommendation works alongside the bus stop study recommendation as well as transit priority infrastructure, among others. The infrastructure planning should identify and prioritize stops that have critical barriers to access and should engage the El Lift accessibility committee when designing the assessment and criteria for accessibility improvements.

Furthermore, training operators to be sensitive and responsive to customers with accessibility needs is a necessary component to whole system accessibility—infrastructure is only one part of the equation—policy and training is needed to take full advantage of infrastructure investments.

El Metro should, alongside its accessibility committee and operators, develop a training program that can rolled out through refreshers regarding operating procedures for accessibility as well as customer service. As ambassadors of El Metro's brand, operators represent El Metro to riders, potential customers and the broader community. Ensuring they are excelling at customer service should be as important as driving safely.

B4. Improve trip planning ability

B4. IMPROVE TRIP PLANNING ABILITY	
2022-2023	2024-2025
• Improve customer information -- Update route map and materials online. • Improve bus tracking. Update GTFS feed regularly.	• Coordinate with marketing and branding strategy to create unified look for schedules, maps, etc.

Staying relevant and attracting new ridership for transit agencies now hinges on exploiting technology for providing customer information and trip planning capabilities. Trip planning through online schedules or third-party apps is often the first interaction a potential rider has with a transit system. If schedules are confusing or unclear, it is possible that potential riders will choose not to make a transit trip or will try to make a trip but will be unsuccessful due to outdated information. These experiences may result in a new rider choosing not to try transit again.

Static schedules are uploaded to El Metro's website and the static GTFS feed is shared with Google Maps to allow riders to search transit directions to their destination. Google Maps is a useful tool; however, El Metro must ensure that service changes are reflected in the information that riders find online. In October 2020, El Metro modified schedules in response to the COVID-19 pandemic and subsequent ridership decline. As of November 2021, the GTFS feed shared with Google Maps still reflected pre-pandemic schedules from 2019.

Below is an example of the Google Maps schedule for Route 16 Casa Verde/Del Mar leaving at 8:30AM from the Transit Center to TAMIU (**Figure 89**). The Google Maps trip planner shows trips departing at 8:30, 9:00, 10:00, 10:30 and 11:30; however, the schedule in operation only has trips during that same period at 8:30, 10:00 and 11:30 (**Figure 90**), meaning the 9:00 and 10:30 trips shown in Google will not arrive at the Transit Center, which may cause frustration from passengers, cause them to be late, and/or result in them finding an alternative mode of transportation.

Figure 89: Sample trip on Route 16 departing from the Downtown Transit Center to TAMIU in Google Maps Trip Planner, November 2021

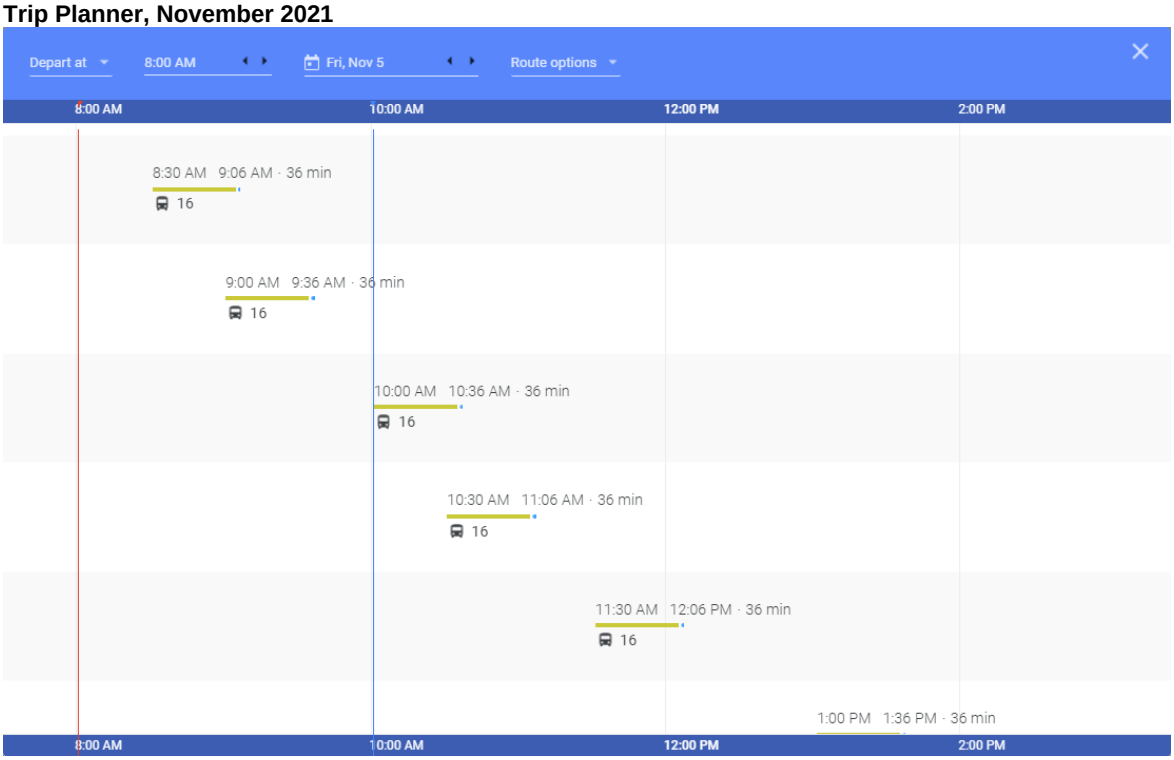


Figure 90: Route 16 schedule departing from the Downtown Transit Center on El Metro's website, November 2021

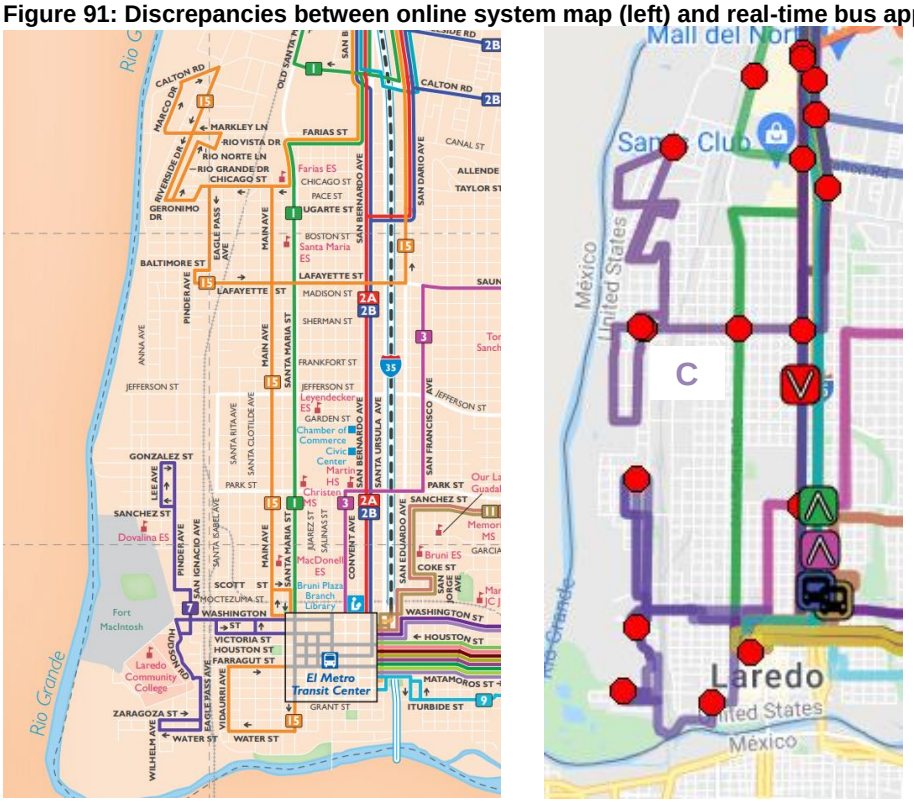
MONDAY–FRIDAY / lunes-viernes

from/desde Transit Center			
El Metro Transit Center	319 Del Mar	Del Mar & Alexander HS	TAMIU
101	**814**	**836**	**990**
7:00	7:15	7:30	7:35
8:30	8:45	9:00	9:05
10:00	10:15	10:30	10:35
11:30	11:45	12:00	12:05
1:00	1:15	1:30	1:35
2:30	2:45	3:00	3:05
4:00	4:15	4:30	4:35
5:30	5:45	6:00	6:05
7:00	7:15	7:30	7:35
8:30	8:45	9:00	9:05

to/a Transit Center				
TAMIU	Casa Verde & Palos (Bibliotech)	Del Mar & Alexander HS	Del Mar & Springfield	El Metro Transit Center
990	**1120**	**849**	**853**	**101**
7:40	7:48	8:04	8:12	8:25
9:10	9:18	9:34	9:42	9:55
10:40	10:48	11:04	11:12	11:25
12:10	12:18	12:34	12:42	12:55
1:40	1:48	2:04	2:12	2:25
3:10	3:18	3:34	3:42	3:55
4:40	4:48	5:04	5:12	5:25
6:10	6:18	6:34	6:42	6:55
7:40	7:48	8:04	8:12	8:25
9:10	9:18	9:34	9:42	9:55

Similarly, new circulators were introduced in 2021 that are not part of the Google Maps trip planning app. It is possible, then, that riders are not aware of these new services and are not aware that Route 15 (fixed-route) was replaced with the C3 Riverside Circulator. These changes are also not shown on the overall network map posted on the website, and the only place these changes are shown is in the real-time bus app online (**Figure 91**).

Figure 91: Discrepancies between online system map (left) and real-time bus app (right)



Currently, El Metro leverages its GPS technology to provide live-arrival information through its real-time map available on the transit agency website. The functionality and user interface appears somewhat limited, as it relies on the user either sending an email to El Metro or following a series of steps on the transit agency website to find the information they are looking for.

Immediate recommendations

- Improve customer information by updating the GTFS feed with the correct set of schedules and updating the online route map

Short-term recommendations

- Improve customer information by updating the GTFS feed and online schedules and route map with the new short-term network changes
- Explore third-party mobile applications for easier communication of live-arrival data to improve functionality and user interface. This would rely on El Metro first generating a dynamic (real-time) General Transit Feed Specification (GTFS) feed that can be picked up by third party platforms such as Google Maps and Transit App. This opportunity would allow the platform developers to do what they do best – building apps to communicate information cleanly and clearly, using simple user interfaces – while also allowing El Metro to focus on its core business of providing effective and efficient transit services to residents and workers in Laredo.
- As part of the marketing plan (discussed below), develop a branding strategy that creates a uniform look for schedules, maps, and the website to help enhance communication and brand recognition.

C. EXPAND EL METRO'S VALUE TO LAREDO

C1. Implement a marketing plan to enhance brand recognition

C1. IMPLEMENT A MARKETING PLAN TO ENHANCE BRAND RECOGNITION			
2022	2023	2024	2025
• Identify quick wins for improved brand visibility, marketing, and community partnerships. • Implement quick wins.	• Develop a branding and marketing strategy • New Marketing staff (or planner/marketer) will lead this effort. • Improve website.	• Implement strategies and recommendations from marketing plan (new bus stop signage, etc.)	• Refresh El Metro's brand.

Sometimes, people don't ride transit service because they aren't aware of its benefits, the destinations it serves, or maybe they've heard negative things from others about the service. Raising the El Metro brand equity in the community is crucial to supporting El Metro's mission.

We recommend that El Metro develops a marketing plan to improve brand equity and awareness in the community. Leveraging route changes, the launch of new microtransit, and other 'eye catchers' all provide excellent opportunities to broaden the visibility of El Metro as a brand of mobility services in the community. However, without a guiding vision of the marketing strategy, as well as a unifying look and feel to the messaging and material, El Metro will continue to reactively market itself.

Instead, El Metro must develop an actionable marketing plan, and as well, hire for either a dedicated marketing role, or ensure that the planning role include marketing functions too. Several transit agencies employ marketing and planning staff with complementary roles and responsibilities since they go hand-in-hand with one another.

The marketing plan, among other things, should describe:

- A vision for the brand of El Metro that aligns with its mission
- Immediate, short-term, and long-term objectives and actions to meet these objectives
- Develop branding guidelines for El Metro materials and content across media and platforms

As demonstrated in Stantec's survey, customers have diverse reasons to use public transit. Indeed, the opportunity to leverage these reasons as real considerations exist to position transit as "cool" choice. There is a new generation of customer with a latent demand for public transit but the value proposition of El Metro has not been sufficiently established. El Metro could embark on a public education campaign that prompts answers to the overarching question...*Why is El Metro the Cool Choice?* Some possible answers include:

- Economic impact of reducing regional congestion – *traffic costs money*
- Environmental benefit – *keeping community clean*
- Lifestyle benefit – *we drive, you enjoy life*

An example is shown from King County Metro's recent "Just One Trip" campaign trying to entice perspective customers to give King County Metro a chance for just one ride on the premise they will be hooked afterwards (**Figure 92**).

Figure 92: Transit advertising from King County Metro

Transit marketing does not need to be elaborate nor a cost-driver for the agency to be effective. At Fort Saskatchewan Transit (FST) in Alberta, Canada, the agency made replica bus stop signs that contained user information and placed them all over the city to raise awareness for its services. Below, the replica sign is shown at the entrance of a local superstore (**Figure 93**). The cost of the replica signage was reportedly under $500 and was "homemade" entirely by city employees.

Figure 93: Guerilla and street marking

From its experiences, Stantec believes nothing is more effective at attracting discretionary riders than being in the community promoting the message. This is a simple solution to educate would-be riders about transit and raise awareness. Oftentimes, people are interested in trying transit but intimidated at the prospect of the "first ride".

Shown below, again in Fort Saskatchewan, is a community festival where one of FST's buses is parked and used as a "free attraction" for families - bus bowling (**Figure 94**). This fun and innovative approach to community engagement was well received and is believed to be directly linked to new ridership. In the Laredo context, community engagement activities could coincide with important community events.

Figure 94: Cooperative marketing for transit at community events.

Guerilla and street marketing will be particularly important given the routing changes this plan recommends. Stantec recommends that El Metro partner with local high schools and TAMIU to recruit volunteers and form “street teams” to assist with engagement efforts.

Local business and organizations can help promote El Metro through use of their own media opportunities such as shelf talkers in grocery stores, digital screens in retailers, kiosks at shopping centers and inserts in company/organization communications.

Suggested messaging opportunities for local business partners could include:

- Sponsorship and/or advocacy of El Metro and public transit
- Promotional discounts for those who ride El Metro and show a valid transit pass

While the messaging is focused on service, the underlying intent for El Metro is that the agency has wide support in the community it serves. Here is an example of a very successful cooperative marketing relationship between Famima, a bakery, and LADOT transit service in Los Angeles (**Figure 95**).

Figure 95: Cross-promotion of transit use and retailers.

In this example, customers are given a discount for showing their monthly transit pass at the bakery, can purchase transit fare media at the store and are shown on a map how to get to the business using the transit routes that serve the location. A similar approach could be used in Laredo to partner with local businesses, particularly those downtown, that would be mutually beneficial both to transit and the business. The marketing strategy should outline different business groups who could partner with El Metro for things like promotions and discounts, as well as potential bulk purchases of commuter bus passes as well.

Marketing to internal transit staff cannot be overlooked

In speaking with front-line staff, we found that they are proud supporters of the organization, however they require more support on how to communicate positive impact of El Metro to the public. They are also seeking a feedback mechanism so that their experiences can help improve the quality of service and communications to riders.

It is important to consistently inform and train staff on how to communicate with transit's customers. For ease of education and information distribution, this can be produced as a series of actionable online self-help and or guidance systems that both staff and riders can refer to that enable front line staff to act as ambassadors of the new El Metro brand and its services. This online portal could be called – "*It's Our El Metro" Employee Engagement Program*. Here is an example of *BC Transit's Employee Engagement Action Plan* (**Figure 96**).

Figure 96: Internal marketing, BC Transit.

In summary, El Metro would benefit from overhauling its identity and the method it communicates to current and prospective customers. A modern visual and written presence would elevate customer interest and experience. Establishing a “transit is cool” culture should be the primary focus of future marketing efforts.

New branding and marketing must be supported with a properly funded effort, with the services of a marketing agency/consultancy procured to guide the efforts and produce content. Experience has shown that the most successful transit programs in North America that have steady ridership growth invest between 2-5% of their operating budgets on marketing.

We appreciate that financial resources are finite. From our experiences at numerous transit agencies across North America, Stantec has seen and proven that investments in marketing translate into sustained, as well as new ridership. A marketing investment for transit in Laredo should be scalable, economical, and results-oriented to build interest in transit.

Immediate recommendations

- Identify quick wins for improved brand visibility and marketing, and community partnerships. Execute quick wins.

Short-term recommendations

- Retain marketing agency/consultancy with transit expertise. This firm would assist El Metro to develop a marketing plan, undertake a branding review and devise a future action plan.
- Hire a planner/marketing role or a dedicated marketing expert to lead the development of the marketing plan working with the marketing agency/consultancy.

- Develop a marketing plan that is pragmatic, provides clear direction and outlines an actionable implementation plan for market. At a minimum, the marketing plan should contain the following components:
    i. Vision and Objectives
        i. Identify business objectives
        ii. Audience analysis
    ii. Marketing Strategy
        i. Branding recommendations
        ii. Marketing medium evaluation
        iii. Tactical recommendations including:
            1. Building awareness
            2. Guerilla & Event Marketing
            3. Community Outreach
            4. Digital marketing / social media
            5. Cooperative Marketing
            6. Employee engagement
    iii. Measuring Return on Investment
        i. Establish KPIs/Performance metrics
    iv. Budget
    v. Implementation plan

C2. Implement a working group of El Metro staff and city partners

C2. IMPLEMENT A WORKING GROUP OF EL METRO STAFF AND CITY PARTNERS			
2022	2023	2024	2025 and beyond
• Working with the MPO, City, and others, establish transit working group to foster transit-first vision in Laredo. • Examine improved opportunities for connections with El Aguila and Greyhound.	• Require developers to include travel demand strategy. • Enhance integration with cycling by launching a Bike+Transit study.	• Expand biking parking at major bus stops/transfer areas. • Collaborate with the City on Active Transportation campaigns.	• Working with Owners having jurisdiction, determine ways to regulate parking supply/price to encourage more transit use. • Collaborate with the City and other stakeholders to beautify key bus stops.

El Metro is an important part of the mobility landscape of Laredo as nearly 9,000 riders use transit on a typical weekday before the pandemic; however, for commuting trips, transit mode share is less than 2%. We know from our survey and past surveys that while commuting trips are important, they only accounted for about 33% of trips on El Metro; together with the low transit mode share, this finding indicates there is room for growth for trips of non-work purposes. But apart from the many things that El Metro has control over that help attract more riders, there are several things that El Metro doesn't directly control that have a crucial impacting on shaping transit demand.

Elements like land use and density limits, parking minimums, site design, roadway width and weight restrictions, among others, are beyond El Metro's direct control. However, these elements factor into a

customer's decision to use transit, impact the ability to provide transit service in the first place, and influence how productive and cost-effective transit could be.

For Laredo to truly achieve its vision and goals in the Viva Laredo Comprehensive Plan, development decisions need to be made with transit and active transportation in mind. Planning at the human scale for mixed-use development means that rather than dispersing and separating complementary land uses like retail and housing which makes vehicle use next to obligatory to get anywhere in a reasonable amount of time, bringing destinations closer together can foster transit use. Removing parking minimums, leveraging connections with cycling infrastructure, and pricing parking appropriately are all ways to help build the attractiveness of public transit.

El Metro routinely collaborates with other City departments when examining service requests or planning service for recent developments or developing active transportation projects. However, El Metro needs to leverage these connections to promote a 'transit first' culture internally among City staff and with other partners like the MPO and TxDOT. Only by having a seat at the table with a champion for transit service and transit customers can El Metro help shape policy and development so that new retail opportunities provide convenient access to bus stops with frontage along a street with a bus line for example, or so that new residential developments occur with street designs that facilitate rather than detract the ability of a bus to service this development.

El Metro can also leverage ongoing work to improve active transportation in Laredo, particularly cycling since it can extend the reach of people traveling by transit. El Metro's vehicles are already equipped with bike racks, and El Metro should ensure that all vehicles have function bike racks with slots for three bikes to maximize the number of riders who can bring their bikes on board. El Metro also has a program for integrating bike parking at transit stops (Bike and Ride Plazas), and together with the recommendation for a bus stop study, it should continue rolling out bike parking across its network.

The 2017 Laredo comprehensive plan, Viva Laredo, provides a vision and framework for the city, its values and priorities, to guide land use development and policies, transportation infrastructure development, and investment priorities. Viva Laredo generally provides recommendations and policies geared toward improving transit-land use coordination, such as:

- Requiring newly annexed areas of outer Laredo to pay a Transit Impact Development Fee to fund expansion of transit to these outlying areas.
- Encouraging transit access between the downtown core, new mall, universities, and industrial lands
- Implementing transit innovations such as bus-only lanes, queue jump lanes, and traffic signal priority to speed up transit service.

Robust community engagement revealed the desires of more frequent and reliable service: "**Invest in Transit.** Residents emphasized the need to improve northbound/southbound transit time. Many spoke passionately to improve the frequency, reliability and perception of public transit as extremely important. Many advocated to extend the transit route service hours. Several comments suggested smaller buses for El Metro. A rethink of the El Metro system should be considered to improve reliability to get people to where they need to go and change the perception of this vital service for the City. Having a reliable, easy to use transit choice can increase ridership."

El Metro is specifically called out as responsible department for several policies related to mobility and land use, along with Planning & Zoning, Engineering, and Building Development Services. The COA provides similar recommendations underscoring the importance of collaboration between transit and land use decision makers.

Below are the goals from Viva Laredo that the El Metro COA plan directly address/supports:

Goal 1. Land Use Patterns Overall Goal: Encourage development that creates complete, compact neighborhoods to conserve environmental resources, spur economic investment, maintain social fabric, reduce the cost of providing infrastructure and services, and reclaim abandoned areas.

Goal 2. Downtown & Inner City Revitalization & Historic Preservation Overall Goal: Create a more vital downtown and downtown neighborhoods with residential options of all kinds, quality places to shop, dine and recreate while preserving, renewing, and evolving historic buildings, districts, and landscapes for the use and enjoyment of future generations.

Goal 3. Urban Design Overall Goal: Create places and destinations for people by improving the public realm and focusing on the comfort and interest of the pedestrian, cyclist, and transit user.

Goal 4. Mobility Overall Goal: Create a multimodal transportation network throughout Laredo that provides access to opportunity, improves public health, reduces carbon emissions, and provides civic recreational opportunities while efficiently moving pedestrians, cyclists, transit, motor vehicles, cargo, and freight.

Goal 5. Housing Overall Goal: To provide varied housing opportunities for Laredoans with diverse economic backgrounds and housing preferences while at the same time creating strong regional housing markets that include a robust urban core and infill strategies that balance the need for new affordable housing and complete, healthy, and accessible communities throughout all of Laredo.

Goal 7. Health Overall Goal: Improve the overall physical and mental health of Laredo citizens by increasing the quality of life in the region

Goal 9. Economic Development Overall Goal: Build greater industry diversification, increase access to good-paying jobs, and enhance the capacity for entrepreneurship through a commitment to utilizing economic development tools and further private sector engagement.

El Aguila and Greyhound interface with El Metro at the downtown transit center. El Aguila provides lifeline mobility services for residents in rural sections of Webb County, and Greyhound provides intra- and interstate connections. El Metro should continuously engage with El Aguila and Greyhound to ensure that schedules align as much as possible to facilitate transit connections, particularly for El Aguila riders who are more likely reliant on El Metro once they arrive in Laredo. In the fare study we recommend, El Metro can also explore opportunities to facilitate transfers between El Metro services and El Aguila and Greyhound, for example, by providing free transfers to customers with valid El Aguila or Greyhound tickets.

Overall, this action serves to enhance El Metro's voice in the community by demonstrating its essential role in mobility and land use develop in Laredo. Additional staff such as a planner and marketer (or combined role) will be an important piece to implementing this action.

C3. Implement partnership programs for passes and transportation.

C3. IMPLEMENT PARTNERSHIP PROGRAMS		
2022	2023	2024 and beyond
• Develop a long list of potential partners, like schools, business, events, and others that would benefit from bus service. • Narrow down the list.	• Design a partnership strategy by stakeholder group (can leverage the marketing strategy/plan development)	• Implement partnership strategies, like discounts, bus pass promotions, event shuttles, etc.

Transit service cannot exist in a vacuum; transit relies heavily on the community it serves and on collaboration with partners, partners that can act as advocates for transit in the community. In the stakeholder meetings that were held as part of the COA process, stakeholders suggested that El Metro collaborate with partners to offer incentives that get people to try transit, for example by offering free or discounted transit to/from major attractions or businesses in the community. This would encourage potential riders to use El Metro for the first time and may turn non-riders into riders through this exposure. However, offering free or discounted rides does come at a cost, which is where these partnerships are important.

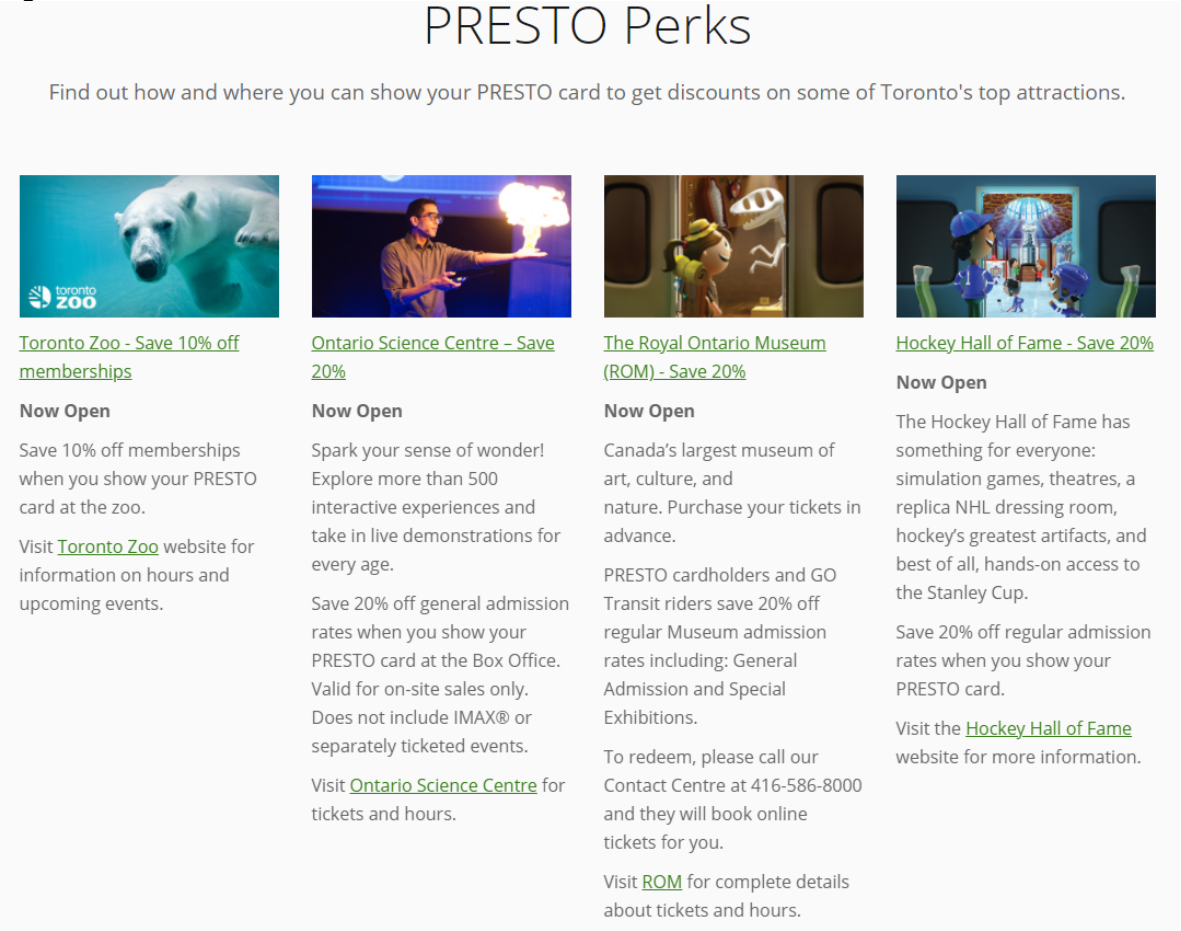
Local businesses, hotels, or attractions will likely be willing to contribute if it will attract more people to their event or business.

El Metro needs to establish working relationships through a dedicated staff member (see transit planner/marketing specialist in **C4** below) with local businesses, colleges, and attractions to promote transit at events and expand collaboration. El Metro should begin by developing a list of potential partners that would benefit from these programs and develop a partnership strategy as part of the marketing plan described in **C1**.

One mutually beneficial program that El Metro should consider is an **employee pass program**, where an employer can purchase bulk transit passes from El Metro at a reduced fare to give to their employees. Benefits for the employer include reduced traffic congestion and parking constraints, contributions to sustainability goals of the company, and a tool for recruitment and retention of employees. El Metro also benefits from this program by receiving an additional consistent stream of revenue, greater ridership and productivity, and a positive reputation in the community.

El Metro can also collaborate with local business by developing **loyalty programs that offer discounts at local businesses when presenting a bus pass**. As shown in **Figure 97** below, Metrolinx, the regional transit provider for the Greater Toronto and Hamilton Area, collaborates with major attractions including the Toronto Zoo, Science Centre, museums and stadiums to offer discounted admissions fees to its patrons. Similar to the employee pass program, this partnership is beneficial to the attraction because it reduces the demand for parking, contributes to a sustainable community, attracts new visitors, and develops loyalty with its patrons by offering reduced fees, while also generating revenue and ridership for the local transit agency. San Diego MTS is operating a program with local business where transit riders who collect 10 stamps after making purchases at participating stores or restaurants can earn a free monthly pass. This program is geared to attract ridership as a step toward COVID-19 recovery.

Figure 97: Discounted admissions fees at local attractions for transit riders in the Greater Toronto Area



C4. Expand El Metro's internal resources and capacity

C4. EXPAND EL METRO'S INTERNAL RESOURCES AND CAPACITY		
2022	2023	2024 and beyond
• Hire at least two key staff: a planner/marketing role; Transit Systems Manager	• Develop a Strategic Plan that provides a vision and path for the agency, including an analysis of roles, staffing, etc. Hire dedicated marketing staff. Hire dedicated grants/funding staff.	• Develop and launch training programs for staff in technical roles, with appropriate refreshers.

El Metro's staff is small, but flexible and effective. For instance, many staff are involved not only in their specific roles or tasks but collaborate across the agency to 'pitch in' as needed, whether this involves service planning, handling customer comments and feedback, organizing outreach, and more challengingly, contributing to very technical tasks such as maintaining the WiFi system and running preventative maintenance on ticket vending machines. However, to truly modernize El Metro and provide exceptional customer service, more clearly defined roles and responsibilities are necessary to avoid duplication of effort and potential slowdowns in processes by requiring that all staff have a say in tasks that may be beyond their scope.

Morale is good among El Metro staff, evidenced by the low turnover of the dedicated and core team. While El Metro has managed to operate with this approach, there are clear gaps it must address through hiring and training, particularly in expertise related to technology and service planning.

Since each of El Metro's staff is responsible for many tasks across the agency and is therefore 'spread thin', El Metro must hire key positions that can alleviate the workload for some of its existing staff members so that each team member can concentrate on the core duties of their role. The following two positions are necessities for the El Metro team: Transit Planner/Marketing and Manager of Transit Management Systems (TMS).

Transit Planner/Marketing Specialist

The service planner would develop service standards, monitor service, and develop service changes. While El Metro staff currently all play a role in planning service, a dedicated staff member who can lead service planning, as well as collaborate with planning staff at the MPO, TxDOT, and the City would help formalize processes like service changes and service reviews. The primary role of the transit planner is to maintain performance metrics and make service changes; however, its secondary role is to assist with marketing and communication to ensure existing riders are informed about service changes and can be a representative for El Metro at special events to help attract new riders to El Metro's services.

Below is a list of responsibilities and qualifications required for this position, which is not a comprehensive list but can provide El Metro with a starting point for this job posting.

Responsibilities

- Maintain transit performance measures by determining data requirements, coordinating data collection, and analyzing data.
- Perform or coordinate data collection and analysis required for effective transit planning including but not limited to stop-level ridership counts (ride checks) and APC data (when available), ridership surveys, and running time data.
- Compile and report data to organizations such as the National Transit Database (NTD) and the Federal Transit Administration (FTA).
- Design new transit routes as part of "NextGen" transit network following implementation of new transit hubs in north and south Laredo and coordinate with the Assistant General Manager of Operations to develop new schedules.
- Liaise with local and regional planners and develop a working group with the MPO and the City to ensure public transit is coordinated with land use and active transportation planning and other planning initiatives.
- Provide input into land use plans, development proposals, subdivision plans and other initiatives that impact Laredo's transportation system.
- Lead the planning and development of transit service changes and expansion.
- Conduct a bus stop study that addresses bus stop infrastructure, signage and accessibility needs, consolidates unused stops, and balances bus stop spacing.
- Develop a marketing plan to enhance brand recognition, marketing, and community partnerships.
- Attend special events on behalf of El Metro to promote transit services and develop partnerships with schools, employers, and major events.

Qualifications and Experience

- Successful completion of a university degree in planning, engineering or related field, or a combination of education, training, and work experience in transit/transportation planning.
- Experience in transit planning, transportation planning, and/or data analysis.
- Knowledge of transportation and land use foundational concepts.
- Demonstrated proficiency in computer applications such as Microsoft Word, Excel, Access and Outlook, with experience managing spreadsheets and databases.
- Excellent communication and customer service skills.
- Education or experience related to marketing or communications would be considered an asset.

Transit Systems Manager (TMS)

With the growing demand from customers and regional plans to become more technology forward, such as through advanced fare systems, trip planning and real-time arrival information, El Metro needs staff with technology and electrical expertise. For instance, to repair and troubleshoot fare vending machines, El Metro needs technicians who are conversant in these technologies, while the acquisition of data from AVL systems, for instance, requires a data technician to mine and process the data to derive meaningful operating insights.

Responsibilities

- Provide quality and client focused technology support, data and business processes related to Transit Systems Management (TMS).
- Support the installation of hardware and software upgrades and new equipment configurations.
- Provide system support for the development, implementation, operation and maintenance of specialized Intelligent Transportation Systems (ITS) and related applications.
- Provide instruction to El Metro staff on the use of technology and answer technology related inquiries by internal or external parties.
- Participate in technology projects related to mandated programs and systems.
- Develop and maintain technology documentation materials.

Qualifications and Experience

- Successful completion of a community college diploma or university degree in information technology (IT), computer sciences or related field, or a combination of education, training, and work experience in information technology.
- Demonstrate experience analyzing and resolving technical issues for Intelligent Transportation Systems such as Computer Aided Dispatch/Automatic Vehicle Location system (CAD/AVL), Automatic Fare Collection system (AFC), Transit Signal Priority system (TSP), Passenger Information System (PIS), and Scheduling system.
- Demonstrated knowledge of systems development processes using databases and programming languages.
- Knowledge of transit and/or transportation industries.
- Knowledge of system development life cycle, including trends in the use of current information technology specific to Transit Management Systems, business processes and the local operating environment.
- Ability to support and maintain client software applications including troubleshooting and training of others.
- Excellent communication and customer service skills.

Other Staffing Challenges

Other deficiencies at El Metro are related to mechanics and bus operators, which are in line with national trends that have seen bus operator shortages in both the school bus and public transit industries:

- Mechanics who are trained with maintaining not only diesel-powered buses, but CNG, gasoline, and hybrid electric buses as well. Moreover, with the eventual transition to zero-emission buses, mechanic training for battery-electric buses will be required as well.
- Operators are in short supply. Despite paying relatively high salaries, El Metro has difficulty recruiting operators, although when they are hired, retention is high.[24] The lack of operators means more overtime shifts, driving up the cost of revenue service.

Addressing staffing gaps remains a challenge without more financial support to hire and train staff. However, El Metro could seek creative ways of addressing these needs. For instance, its function as a transportation hub in Texas means that there are many diesel technicians in the area. While it may be difficult for El Metro to compete with the private sector, El Metro could partner with local colleges and vocational schools to design a program where students work for El Metro in a training capacity. Moreover, for electrical technicians or even a planner, El Metro could partner with a City department(s) who may also need a similar role to develop a shared-role or rotation approach (e.g., 50% of their time with El Metro, 50% of their time with another department). Regardless, it is clear that El Metro needs more specialized staff to better address the growing needs of its customers and the Laredo community.

Finally, El Metro can also consider hiring a specialist who is well versed in applying for grants and funding, especially FTA funding. As El Metro relies mainly on local and federal funding, being more successful at winning competitive FTA funding opportunities will help set up El Metro for long-term success. Similar to other roles, this role could also be shared with the MPO as needed since many grants will require MPO involvement.

[24] See this publication for more on operator shortages nationwide and ideas about making the job more attractive: https://transitcenter.org/wp-content/uploads/2019/08/BusDriving.pdf

12 IMPLEMENTATION & PERFORMANCE MONITORING

12.1 IMPLEMENTATION

Table 12 summarizes the proposed actions and recommendations discussed in the previous sections, listed by goal, that El Metro should undertake over the next 5 years. Several action items will require multiple years to complete.

Table 12: Proposed actions and recommendations

	2022	2023	2024	2025	2026
A. Improve Transit Service					
A1 **Implement route adjustments/service changes**	Implement short-term network changes (route adjustments; south circulator). Identify opportunities to increase frequency on key corridors.	Examine opportunities to improve weekend service; other off-peak service.	New services to be identified through process established by service guidelines.		
A2 **Create targeted data collection and usage plan**	Develop data collection and analysis plan to inform decision making	Hire IT staff to collect and analyze data. Procure vehicles equipped with APC-AVL tech.	Continuously collect, analyze, and use data to inform routing, service levels, and new/removal of service		
A3 **Develop and adopt transit service guidelines**	Develop transit service guidelines. Adopt guidelines.	Use data to refine service guidelines.	Continuously measure service based on guidelines and adjust as needed. Identify priority routes/areas for more (or less) service when resources become available (or constrained).		
A4 **Pilot microtransit services**	Pilot microtransit in 2 areas	Monitor and refine microtransit areas Expand the number of microtransit zones			
A5 **Establish a transit priority infrastructure task force**		Establish task force; develop recommendations	Begin implementation		Study need for BRT
A6 **Design NextGen bus network**	Develop a new network to account for North and South hubs.	Open North Hub; rollout new routes	Adjust routing as needed. Develop South hub design; Apply for funding	Open South Hub; rollout new routes	Adjust routing as needed
A7 **Address shortcomings with El Lift**	Refine software parameters to improve efficiency of trip booking. Train dispatchers and schedulers on optimized software. Increase shared trips.	Targeted travel training of conditionally eligible riders. Leverage investments of improved accessibility of bus stops and fixed-route service infrastructure.	Explore opportunities for increasing the use of fixed-route of riders with disabilities (trip-by-trip eligibility).		
B. Enhance the Customer Experience					
B1 **Develop bus stop program (stop balancing, signage needs, infrastructure and accessibility needs)**	Develop accessibility program for bus stops. Work with marketing plan to improve stop visibility/signage.	Address bus stop accessibility. Develop bus stop consolidation plan.	Removal/consolidation of bus stops.	Install more shelters and benches. Implement stop signage refresh.	
B2 **Conduct a fare strategy and revenue study**	Pilot fare promotions, like free ride Fridays, discounts for cyclists using transit, and others.	Launch next generation fare study for policy review, fare media, and revenue generation (parking, etc.).	Implement fare changes		
B3 **Improve accessibility for all ages and abilities and improve customer service**	Develop training plan for operators with input from accessibility advisory committee. Develop customer service training plan for operators.	Rollout training for operators on accessibility and customer experience.	Bus stop accessibility improvements	Continual training refresher sessions.	
B4 **Improve trip planning ability**	Improve customer information -- Update route map and materials online. Improve bus tracking. Update GTFS feed regularly.		Coordinate with marketing and branding strategy to create unified look for schedules, maps, etc.		
C. Expand El Metro's Value to Laredo					
C1 **Implement a marketing plan to enhance brand recognition**	Identify quick-wins for improved brand visibility, marketing, and community partnerships. Implement quick-wins.	Develop a branding and marketing strategy. New Marketing staff (or planner/marketer) will lead this effort. Develop new website.	Implement strategies and recommendations from marketing plan (new bus stop signage, etc.)	Refresh El Metro's brand.	
C2 **Implement a working group of El Metro staff and city partners**	Working with the MPO, City, and others, establish transit working group to foster transit-first vision in Laredo. Examine improved opportunities for connections with El Aguila and Greyhound.	Require developers to include travel demand strategy. Enhance integration with cycling by launching a Bike+Transit study.	Expand biking parking at major bus stops/transfer areas. Collaborate with the City on Active Transportation campaigns.	Working with Owners having jurisdiction, determine ways to regulate parking supply/price to encourage more transit use. Collaborate with the City and other stakeholders to beautify key bus stops.	
C3 **Implement partnership programs for passes and transportation with schools, employers, events, etc.**	Develop a long list of potential partners, like schools, business, events, and others that travel demand and would benefit from bus service. Narrow down the list.	Design a partnership strategy by stakeholder group (can leverage the marketing strategy/plan development)	Implement partnership strategies, like discounts, bus pass promotions, event shuttles, etc.		
C4 **Expand El Metro's internal resources and capacity**	Hire at least two key staff: a planner/marketing role; Transit Systems Manager	Develop a Strategic Plan that provides a vision and path for the agency, including an analysis of roles, staffing, etc. Hire dedicated marketing staff. Hire dedicated grants/funding staff.	Develop and launch training programs for staff in technical roles, with appropriate refreshers.		

12.2 MEASURING PERFORMANCE

To monitor the implementation of the plan, we propose several key performance indicators (KPIs). The KPIs are objective measures of performance against each of the goals. Several of these are already captured by El Metro for NTD reporting and are proposed for inclusion in El Metro's service guidelines. Many of the KPIs can also be monitored by the MPO given the regional significance of KPIs—per capita VMT, transit mode share, and partnerships with local stakeholders—that also align with many of the goals in the Metropolitan Transportation Plan 2020-2045 such as Goal 3 – *Promote an efficient network and system operations to maintain travel time reliability and reduce congestion in moving people and goods within and throughout the region* and Goal 5 – *Develop an integrated and connected transportation network that encourages vibrant, affordable, and equitable communities*.

Table 13 lists the three goals of the COA and their related KPIs for monitoring.

Table 13: KPIs and COA Goals

B. IMPROVE TRANSIT SERVICE
• Increase average speed • Improve frequency and span of service • Increase access to destinations
B. ENHANCE THE CUSTOMER EXPERIENCE
• Increase ridership and boardings per revenue hour • Increase customer satisfaction and on-time performance • Increase vehicles in good state of repair • Increase percent of stops and vehicles that are ADA-compliant • Decrease travel cost as a share of income
C. EXPAND EL METRO'S VALUE TO LAREDO
• Increase transit mode share • Increase operating and capital funding per capita/decrease net cost per passenger boarding • Increase partnerships with local stakeholders • Increase fare programs with local employers and school districts • Increase percent jobs and population within ½-mile of frequent transit service • Decrease per capita VMT

13 FUNDING

To implement the recommendations in this report, El Metro will need to continue to rely on the funding it currently receives, as well as look to other sources of funding or revenue. Below we outline sources that are currently funding El Metro's operations and capital infrastructure, as well as others that El Metro can explore.

Generally, Texas transit agencies are funded by a blend of federal, state, and local dollars; fare revenue, in El Metro's case, makes up about one quarter of operating revenue.

13.1 FEDERAL TRANSIT FUNDING

Funding for baseline and recommended improvements will require assistance from both federal, state, and local funding sources for implementation. In FY18-19, federal assistance provided about 22% of El Metro's operating funds ($3.466 million) and about 10% of capital funds.

Because of the massive impact of COVID-19 to transit operators, Congress appropriated two rounds of stimulus to support transit operators; El Metro received $8.753 million in 5307 American Rescue Plan funding, just under $10 million in 5307 Coronavirus Aid, Relief, and Economic Security (CARES) Act funding and $1.5 million in Coronavirus Response and Relief Supplemental Appropriations Act (CRRSSA) funding. El Metro is able to use 5307 funding for both capital and operating expenditures. **Table 14** lists El Metro's federal grant revenues.

Table 14: El Metro's federal grants in FY2020-2021

Funding Source	Amount
5307 CARES Act	$9,998,345
5307 American Rescue Plan	$8,753,532
5307	$3,515,783
5307 CRRSAA	$1,529,460
5339 Bus and Bus Facilities	$381,215
5310 Elderly and Disabled	$300,000
Total	**$24,497,726**

Table 15 lists current federal funding programs as potential sources for El Metro; all sources listed are helping to fund the existing El Metro system or have been available to El Metro in the past.[25] The current focus and mandate of the FTA currently is social equity and improving the mobility of marginalized groups—El Metro, should emphasize in its grant applications the intended benefits to low-income and racialized communities.

[25] https://www.transit.dot.gov/grants?combine=&field_grant_type_target_id=All&page=0

Table 15: Federal transit funding programs

Grant or fund	Competitive or formula	Capital or operating	Notes	Application	Potential examples for El Metro
5307 Urbanized Area Formula Grant	Formula Flow through from MPO	Capital for region with population greater than >200k; can use for operating with approval from FTA	Requires local match Requires local match New components of this program include: Route Planning Restoration Program	Mainly for capital projects, as well as for funding operations	
5310 Enhanced Mobility of Seniors And Individuals With Disabilities	Formula Flow through TxDOT	Both	Requires local match	Funding operations and infrastructure related to programs for seniors and persons with disabilities	Improving accessibility of bus stops Acquiring paratransit vehicles
5339 Bus and Bus Facilities	Both, depending on component of grant program	Capital	Requires local match	Funds vehicle purchases and upgrades to or new bus-related facilities	Purchase new buses Eventual transition to ZEB (Low No Component) Acquire bus-related tech (AVL-APC?)
5314(a) Technical Assistance & Standards Development	Formula	Training	Provides funding for technical assistance programs and activities that improve the management and delivery of public transportation and development of the transit industry workforce.		
20005(b) Pilot Program for Transit-Oriented Development Planning	Competitive	Planning		The Pilot Program for TOD Planning helps support FTA's mission of improving public transportation for America's communities by providing funding to local communities to integrate land use and transportation planning with a new fixed guideway or core capacity transit capital investment.	To fund projects together with MPO to implement Viva Laredo goals of increasing density, etc. to support transit use
Mobility for All Pilot Program Grants (through 3006(b))	Competitive	Both		This funding opportunity seeks to improve mobility options through employing innovative coordination of transportation strategies and building partnerships to enhance mobility and access to vital community services for older adults, individuals with disabilities, and people of low income	Funding microtransit or other service in low-income areas

Grant or fund	Competitive or formula	Capital or operating	Notes	Application	Potential examples for El Metro
5303, 5034, 5305 Metropolitan & Statewide Planning and Non Metropolitan Transportation Planning	Formula	Planning		Provides funding and procedural requirements for multimodal transportation planning in metropolitan areas and states. Planning needs to be cooperative, continuous, and comprehensive, resulting in long-range plans and short-range programs reflecting transportation investment priorities.	Funding for projects like the NextGen bus study
5312 Integrated Mobility Innovation	Competitive	Planning, capital and operating		The IMI demonstration program supports the transit industry's ability to leverage and integrate mobility innovations with existing services, while examining the impact of innovations on agency operations and the traveler experience.	Developing new fare payment system Microtransit
5314(b) Human Resources & Training	Formula	Training		Under this new program, FTA may make grants or enter into contracts for human resource and workforce development programs as they apply to public transportation activities.	Operator training for accessibility and customer service Staff training on IT, planning, accounting, etc.
Helping Obtain Prosperity for Everyone Program	Competitive	Planning	Requires 10% local match	The HOPE Program supports projects that will improve transit services or facilities in areas of persistent poverty through planning, engineering, or development of technical, or financing plans for projects.	
Better Utilizing Investments to Leverage Development (BUILD) Transportation Grants Program (formerly TIGER)	Competitive	Capital	Requires local match	US DOT's Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants program funds investments in transportation infrastructure, including transit.	New south hub construction Bus stop improvements
Areas of Persistent Poverty Program	Competitive	Planning	Requires local match	The Areas of Persistent Poverty program supports President Biden's Build Back Better initiative to mobilize American ingenuity to build modern infrastructure and an equitable, clean energy future.	Developing new service plans
American Rescue Plan Act of 2021	Competitive	Operating and capital		$30.5 billion in federal funding to support the nation's public transportation systems as they continue to respond to the COVID-19 pandemic and support the President's call to vaccinate the U.S. population.	
Access and Mobility Partnership Grants	Competitive	Capital	Requires local match	Access and Mobility Partnership Grants seek to improve access to public transportation by building partnerships	

Grant or fund	Competitive or formula	Capital or operating	Notes	Application	Potential examples for El Metro
				among health, transportation and other service providers. This program provides competitive funding to support innovative projects for the transportation disadvantaged that will improve the coordination of transportation services and non-emergency medical transportation services.	
Accelerating Innovative Mobility	Competitive	Planning, Capital, and Operations		AIM will drive innovation by promoting forward-thinking approaches to improve transit financing, planning, system design and service. The AIM Initiative also supports innovative approaches to advance strategies that promote accessibility, including equitable and equivalent accessibility for all travelers.	
Flexible Funding Programs (CMAQ – 149, Surface Transportation Block Grant – 133, National Highway Performance Program – 119)	Formula	Capital		These programs provide funding mainly for highway, but can be programed for certain transit infrastructure needs if they improve air quality and improve the condition of transit assets (like buses, as well as investments like ITS)	

13.2 STATE TRANSIT FUNDING

The Texas state legislature appropriates state funding each biennium to support urban and rural public transportation. While larger urban areas with metropolitan transit authorities (MTA) that serve places with populations greater than 200,000 people do not receive state funding for transit, Laredo, despite its population exceeding 200,000, receives state funding. MTAs, instead, levy local sales taxes to fund transit—Laredo has both a local sales tax (0.25%, more in the next section) and receives state dollars for transit through a statutory exception.[26]

The state formula funding for urban transit districts like El Metro is based on a 50-50 combination of population and performance on four indicators that track local investment, operating efficiency, service effectiveness, and per capita ridership. In FY18-19, El Metro received $671,000 in state funding, which made up slightly over 4% in operating revenue.

As state transit funding goes, Texas provides a small amount relative to other large states. As the nation's second largest state in terms of population with over 29 million people, the state appropriated $70 million per biennium in FY2019; this amounts to $35 million per year or about $1.20 per capita on transit. California—the nation's most populous state at nearly 40 million people—in FY20-21 contributed $1 billion[27] for transit, or about $25 per capita, nearly 21 times as much per person compared to Texas. While differences in geography and policies of course play a role, it's nevertheless interesting to observe this disparity considering the continued urbanization and the needs of public transit in both of the nation's largest states.

13.3 LOCAL TRANSIT FUNDING AND FARE REVENUE

Apart from state and federal contributions, local contributions in various forms accounted for slightly over 46% of operating funds and just over 90% of capital funds in FY19. The final piece of El Metro's operating funds comes from fare and other directly generated revenue which made up nearly 28% of operating expenses in FY2019.

General fund contributions

As an organization of the City of Laredo, the City is the largest single funder of El Metro operations and capital. General funds are appropriated on at least an annual basis for operating El Metro's services, as well as for certain capital investments. The amount varies from year to year following the cycles of municipal booms or busts. This source is particularly important for matches required by many of the FTA grant programs summarized in **Table** 15.

Taxes

Laredo benefits compared to other Texas transit agencies of comparable size from a local sales tax of 0.25% as well as a state funding. 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 1%, and 2) one-half of 1% following voter approval in a referendum. The local share of the State's sales tax for all uses cannot exceed 2%. As a matter of comparison, the chart below in **Figure**

[26] https://comptroller.texas.gov/economy/fiscal-notes/2021/apr/transit.php
[27] https://lao.ca.gov/Publications/Report/4149

98 from the TTI shows how Laredo's sales tax compares to other transit agency's sales tax rates.[28] Laredo is the lowest compared to the other agencies that benefit from sales tax. To increase beyond 0.25%, however, a voter approved referendum is needed.

Figure 98: Texas transit agencies with sales tax for transit (Source: TTI).

Table 1. Texas Metropolitan Areas with Approved Local Option Sales Tax for Transit.

Type of Authority or Governmental Entity	Principal City or County	Agency	Sales Tax Rate (Percent)
Metropolitan rapid transit authorities (Texas Transportation Code, Chapter 451)	Houston	Metropolitan Transit Authority of Harris County (Houston METRO)	1.00%
	San Antonio	VIA Metropolitan Transit San Antonio Advanced Transportation District*	0.50% 0.25%
	Austin	Capital Metropolitan Transportation Authority	1.00%
	Corpus Christi	Regional Transportation Authority	0.50%
Regional transportation authorities (Texas Transportation Code, Chapter 452)	Dallas	Dallas Area Rapid Transit (DART)	1.00%
	Fort Worth**	Fort Worth Transportation Authority	0.50%
Municipal transit departments (Texas Transportation Code, Chapter 453)	El Paso	El Paso Mass Transit Department	0.50%
	Laredo	Laredo Transit Management, Inc.	0.25%
Coordinated county transportation authority (Texas Transportation Code, Chapter 460)	Denton County–Denton, Lewisville	Denton County Transportation Authority	0.50%

* Revenues generated from the 0.25 percent sales tax in San Antonio are dedicated to advanced transportation projects in that city.

** The City of Grapevine dedicates a part of the municipal sales tax (0.375 percent) to fund the TEX Rail commuter rail service in Grapevine. The City of North Richland Hills provides funding from available sources to equal to 0.375 percent municipal sales tax to fund TEX Rail commuter rail service in that city.

Source: (*9*)

The sales tax provided slight over $2.9 million in operating revenue during FY18-19.

Fare revenue

Fare revenue comes from different sources, not just cash contributed directly at the farebox, although this makes up most of El Metro's fare revenue. While in the past El Metro didn't offer bulk fare purchase options like weekly or monthly passes, it does now. Nonetheless, pass usage, while potentially offering discounts to riders and stable revenue to El Metro, are not used to any significant extent, likely because these products are so expensive as an upfront cost for many riders, most of whom are lower income. Moreover, these bulk pass products offer little discount compared to single ride passes, and riders would need to make at least 2 trips every day for a month, for instance, to make a monthly pass 'worth it'. Combined with less than compelling and useful bus service, it is understandable that most riders continue to pay cash for single fares.

[28] https://policy.tti.tamu.edu/finance/prc-report-sources-of-funding-for-funding-transit-in-texas/

Furthermore, student U Pass are used throughout the country to generate revenue and ridership from student markets. El Metro does not have a direct U Pass arrangement with TAMIU nor other schools, instead offering students discounted term passes for purchases. However, El Metro should explore the potential for U Pass programs particularly with TAMIU and Laredo Community College for both the stable revenue and ridership it can generate.

Similar to a U Pass, an Eco Pass or commuter benefit pass is a bulk purchase arrangement with employers to offer employees discounted bus passes. El Metro needs to explore this avenue as a potential way to grow ridership and fare revenue.

Action **B2** calls for a comprehensive study of fare and revenue generation that El Metro should undertake as it redesigns its bus network to ensure that fare policy serves the goals of the network, as well as exploring ways to boost revenue to re-invest in operations.

Ancillary revenues

Apart from taxes, government grants and funding, and fare revenue, transit agencies—including El Metro—leverage ancillary revenues from advertisement contracts and other sources. El Metro generated $80,000 in advertisement revenue or about 0.4% of total operating revenues.

El Metro also generates revenue through the downtown transit center, which includes parking stalls for over 400 vehicles. El Metro has 305 long-term contracts for parking, as well as revenue from the tenants in the transit center. In FY18-19, El Metro generated $625,000 in revenue from the transit center, slightly below 7% of total operating costs. As part of Recommendation B2 to conduct a fare and revenue study, El Metro needs to explore whether it can extract additional parking revenue by examining local parking demand and competitiveness with nearby parking facilities.

While not currently used by the City of Laredo or El Metro, the following opportunities should be examined as part of the fare and revenue study (Recommendation B2) to uncover additional ways to bring in revenue:

- Vehicle fees: 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 is determined 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: As a funding arrangement that leverages the future property tax revenues within a redeveloped area, a TIF district can help lower the costs of redevelopment, infrastructure or other community improvement projects. A TIF district can help finance transit improvements, such as the south mobility hub for instance. However, its use for operating funding is limited.

- Development-based transit enhancements: This involves including fees for bus shelters, sidewalks, and other transit-related infrastructure in the development application or site plan approval process. El Metro can collaborate with City and County staff on establishing this process, which along with Action 3.02 of requiring developers to include travel demand management strategies for new developments, can both fund necessary infrastructure to make transit more attractive to use, while better coordinating land use and transit development.

14 INVESTMENT SUMMARY

The COA plan calls for initiatives to improve transit services for current and future customers. Several initiatives will require capital investments, as well as operating investments, together with staff labor to conduct and manage programs.

Table 16 and **Table 17** provide a summary of capital and non-capital items, respectively. El Metro will need to further refine operating cost estimates depending on annual service plans it develops. Furthermore, cost items not listed in the table below include training costs which are difficult to gauge and will vary by training program, as well as any potential software licensing fees, and staff labor as part of different projects and initiatives.

Table 16: Capital costs

Capital requirement	Actions supported	Est. cost	Comments
Automatic passenger counters	A1 Implement route adjustments A2 Create targeted data collection and usage plan A3 Develop and adopt transit service guidelines A6 Develop NextGen bus plan B1 Develop bus stop study C4 Expand El Metro's internal resources and capacity	$5,000-10,000 per bus	• Depends on the numbers of counters required per bus (one over each door) and total acquired • El Metro should require that new bus purchases include APC and contract with a vendor to supply them, train staff, calibrate the counters, and assist with data collection and analysis • Ongoing monthly licensing costs vary by vendor
Buses	A1 Implement route adjustments A4 Pilot microtransit services A6 Develop NextGen bus plan B3 Improve accessibility for all ages and abilities	$500,000 per 40-ft bus (CNG) $125,000 per smaller van	• El Metro should look to acquire low-floor cutaways and vans if possible. These units cost ~1.5x the cost of a high-floor equivalent, but have improved accessibility and shorten boarding and alighting times. • The short-term service plan does not require additional vehicles to provide service. El Metro, apart from regularly replacing buses according to their asset management plan, may require fleet expansion depending on long-term service changes.
Stop improvements	B1 Develop bus stop study B3 Improve accessibility for all ages and abilities. Improve customer services	$10,000-15,000 per bus stop for basic improvements[29]	• El Metro will continue improving key stops and as part a bus stop improvement program, and should develop a priority list of stops and their needed improvements and develop a budget based on the number of stops targeted in a fiscal year.

[29] https://www.cityoflaredo.com/budget/budget_presentations/2020-2021/assets/transit.pdf

Capital requirement	Actions supported	Est. cost	Comments
	C1 Implement a marketing plan to enhance brand recognition	$40,000 per bus stop for more robust engineering and infrastructure	
Transit center – North and South Hubs	A1 Implement route adjustments A6 Develop NextGen bus plan B3 Improve accessibility for all ages and abilities. Improve customer services	$6,000,000-7,000,000	• El Metro's North Mobility Hub is estimated to cost $6.2 million to build. • A South Hub could cost around the same, but will depend on the complexity of construction, the quality of amenities, and future labor costs.

Table 17: Non-capital costs

Item	Actions supported	Est. cost	Comments
Bus operators and mechanics	A1 Implement route adjustments A4 Pilot microtransit services A6 Develop NextGen bus plan	$70,000 per full-time operator $34,000 per part-time operator	• Service improvements and potential restricting of routes may require additional operators. • Microtransit will require additional operators.
New staff, including transit planner/marketing specialist, transit systems manager, and grant specialist	A1 Implement route adjustments A2 Create a targeted data collection and usage plan A3 Develop and adopt transit service guidelines	$45,000-85,000 per full-time staff	• Salary will vary based on the role and experience

Item	Actions supported	Est. cost	Comments
	A5 Establish a transit priority infrastructure task force A6 Develop NextGen bus plan B1 Develop bus stop study B4 Improve trip planning ability C1 Implement a marketing plan to enhance brand recognition C2 Implement a working group of El Metro staff and city partners C4 Expand El Metro's internal resources and capacity		
Marketing and advertising	A1 Implement route adjustments A6 Develop NextGen bus plan B4 Improve trip planning ability C1 Implement a marketing plan to enhance brand recognition	TBD	• El Metro should identify a robust marketing and advertising budget particularly to inform customers of upcoming service changes and opportunities to participate in various planning activities (like the NexGen bus plan). • As resources become available, El Metro should advertise its service more broadly throughout Laredo.
NextGen bus study	A6 Develop NextGen bus plan	$150,000-250,000	• El Metro can hire a consultant to lead the bus network redesign effort that will capitalize on longer infrastructure investments, namely the North and South hubs, as well as bus priority facilities.
Bus stop study	B1 Develop bus stop study (stop balancing, signage needs,	$50,000-70,000	• El Metro can hire a consultant to audit bus stops, identify deficiencies and identify and develop and improvement program that works to leverage El

Item	Actions supported	Est. cost	Comments
	infrastructure and accessibility needs)		Metro's current ADA Bus Stops and Bicycle Plazas Enhancement Project Phase I[30].
Fare policy study	B2 Conduct a fare policy strategy and revenue study	$60,000-85,000	• El Metro should hire a consultant to conduct a fare review and develop a strategy for a rational fare table, identify next generation technology for fare collection, and develop strategies for ancillary revenue generation.
Marketing study	C1 Implement a marketing plan to enhance brand recognition	$100,000-150,000	• El Metro should hire a consultant to conduct a branding and marketing plan to support improved brand recognition and attract more riders.
Strategic plan	C4 Expand El Metro's internal resources and capacity	$70,000-120,000	• El Metro should hire a consultant to conduct a strategic business plan that sets out the vision and priorities of the agency, while defining roles and responsibilities for more efficient work flows.

[30] https://www.cityoflaredo.com/budget/budget_presentations/2020-2021/assets/transit.pdf

15 APPENDICES

Appendix A Viva Laredo Comprehensive Plan Summary
Appendix B Street Connectivity Index Methodology
Appendix C COA Outreach Summary

Appendix A VIVA LAREDO COMPREHENSIVE PLAN SUMMARY

VIVA LAREDO COMPREHENSIVE PLAN SUMMARY

The City of Laredo Comprehensive Plan provides the basis for public policy in Laredo regarding physical and economic development. Viva Laredo establishes priorities for public-sector action while at the same time providing direction for complementary private-sector decisions. This comprehensive plan provides a flexible framework that can be updated, revised, and improved upon over time to stay relevant to the issues the city must confront, as well as the ambitions the city chooses to pursue. The comprehensive plan's goals and policies serve as a tool to evaluate new development proposals, direct capital improvements, and to guide public policy in a manner that ensures Laredo continues to be the community that its residents want it to be.
During the public engagement phase 5 main goals were identified:

1. Make Downtown Great
2. Create Attractive Walkable Destinations
3. Complete the Streets
4. Plan New and Improved Public Spaces
5. A Prosperous (But Still Affordable) City

The plan is divided into chapters. Each chapter concludes with goals and policies that set a broad policy direction and identifies specific actions that will enhance the city's quality of life, respect its natural environment, and support complementary economic growth and development. Each chapter is divided into four sections:
1. Conditions. A discussion of existing conditions.
2. Community Concerns. Consensus concerns expressed by community members as part of the public involvement process of meetings, charrettes, online engagement, focus groups, and interviews that were conducted during the planning process.
3. Strategies. Policy discussions and recommendations with illustrative plans and renderings that articulate strategies to be accomplished through city actions and partnerships among local governmental agencies, private sector businesses, community organizations, and neighborhood residents.
4. Goals and Policies. Each goal summarizes the desired end-state for a particular subject based on the community's vision. Each goal has a set of policies. Policies identify actions and principles that provide the best course of action for regulations and procedures to achieve stated goals and for the desired actions by the greater community.

Public Engagement

The City of Laredo Comprehensive Plan was created with support from Laredo's residents, public officials, and city staff through a series of public events such as town hall meetings, a New Urbanism Film Festival as public kick-off event, plus 3 rounds of 12 interactive focus groups that were formed to address the main community concerns, ranging from Arts and Culture, International Trade/Logistics, Philanthropy, Housing, Education, Health and Wellness, International Border Relations, Economic

Development, Mobility and Transportation, among others. After the public kick-off, a charrette (public design workshop) was conducted with over 1,200 participants. Next, the citizens had the chance to comment online on the Comprehensive Plan Draft that was announced publicly during a street-party exposition with the main goals for the plan. The Viva Laredo website had 35,000 visitors along with hundreds of electronic residential and business surveys completed.

Below are the goals and policies for themes within each element that support the Unified Development Code assessment undertaken in this process:

1. LAND USE PATTERNS	
Goals	
1.4	The city will use the limited authority granted by Texas law to regulate the subdivision of land within its ETJ in order to shape future growth in accordance with Viva Laredo.
1.5	The regional economy depends on manufacturing and the storage and transportation of goods crossing the border. The City of Laredo will designate ample land that is well-suited for industrial facilities and will ensure that industrial facilities do not adversely affect the health, safety, or welfare of the community.
Policies	
1.4.2	Future subdivisions also need to be interconnected with each other and with a suitable regional road network. This comprehensive plan's Major Thoroughfare Plan needs to be improved with a more tightly interconnected road network for the ETJ so that future subdivisions will not create isolated pods of development that are unlikely to become an integrated part of Laredo.
1.4.3	The City of Laredo should maintain a separate annexation policy that defines areas where voluntary annexations would be considered upon petition by affected landowners. The following criteria should be considered for potential future voluntary annexation: a. Must be contiguous with the existing city limits; b. The landowners must agree to build all local, collector, and arterial roads at their expense and must submit a general development plan for the area; and c. The landowners must pay water and sewer impact fees plus an additional per-unit annexation fee toward fire, police, libraries, and recreation centers. d. Permit a lower impact threshold when new development meets higher standards for complete, compact, connected neighborhoods. **e. Require a Transit Impact Development Fee (TIDF)** levied on new development to offset new development's impacts on the transit system. Revenue generated by the fee is directed to El Metro and is to be used to fund capital and operations. This annexation policy should require creating a commitment to mixed use development on the larger tracts in the development agreements that accompany formal annexation. The city may use economic incentives for landowners where it deems appropriate to accomplish the vision of the plan.
1.5.5	The city should develop direct transit access from the downtown to the industrial zones to facilitate workers crossing the border to get to their jobs.

2. DOWNTOWN	
Goals	
2.3	Improve downtown's streets until they become Laredo's premiere public spaces.
2.14	Incorporate adequate parking for private cars into new development while providing infrastructure for alternative modes of transportation, bike parking, transit or trolley access, and comfortable pedestrian access.
Policies	
2.3.2	Maintain and improve the downtown street network by providing multiple routes and pathways for vehicular and pedestrian movement. a. Downtown streets, particularly within the Central Business District, are to be maintained first and foremost for pedestrians, transit vehicles, and deliveries. Private automobiles will be accommodated to the greatest extent possible consistent with this priority. b. Streets should not be permanently closed or dead-ended or converted to one way traffic except in cases of overriding public necessity or to allow the creation of pedestrian-only public spaces. c. Seek opportunities to reopen former streets to bring more economic vitality to surrounding properties. d. Convert one-way streets back to two-way streets to increase the economic viability of businesses and to make downtown more intuitively navigable for residents and visitors as per the Proposed Downtown Circulation Pattern found in this chapter.
2.3.3	Improve downtown streets to become more multimodal and appealing to pedestrians, with ample shaded sidewalks and on-street parking. a. Improve safety and encourage pedestrians and transit users by managing vehicular speeds on downtown streets, using measures such as: i. Narrower travel lanes; ii. Changes in paving; iii. Restoration of two-way vehicular travel; iv. Artfully designed traffic calming measures; and v. Timing of traffic signals to reward managed steady vehicular speeds. b. Provide on-street parking on at least 50% of all downtown streets. c. Redesign downtown streets using pedestrian-friendly thoroughfare section assemblies from the thoroughfare plan in the Mobility Chapter. Design arterials using guidance in the ITE recommended practice, Designing Walkable Urban Thoroughfares: A Context Sensitive Approach. d. Turn traffic signals to four-way stops in off-peak times when long red wait times on empty streets discourage downtown visitors.
2.14.1	Create a downtown parking strategy plan that continues to utilize and improve upon the provision of on-street parking, public parking lots and garages, and shared private parking spaces, with clear signage to inform the public of all transportation and parking options.
3. URBAN DESIGN	
Goals	
3.1	Coordinate land use and transportation policies while making Laredo more walkable, bikable and memorable.
3.7	The City of Laredo wishes to create complete networks of multimodal streets with ample shaded sidewalks and frequent on-street parking.
Policies	

3.1.1	Determine desired land use, including a varied mix of uses; then design the transportation infrastructure that supports the desired land use.
3.1.4	Implement transit connections between major destinations, including downtown, the new mall, the universities and the neighborhoods in South and North Laredo.
3.7.1	Street networks should contain multiple paths for vehicular movement and should be designed using the following principles: a. New neighborhood streets should connect to the existing street network in all adjoining areas when practical. b. Bend new streets with restraint. Bending streets creates deflected vistas, but exaggerated curves are disorienting and difficult to connect to adjoining street networks. c. Challenging intersections can calm traffic, such as pinwheel intersections, small roundabouts, triangular intersections, and staggered intersections. d. Dead-end streets and cul-de-sacs should be allowed only when required by topographic or geographic constraints or when conditions on adjoining property prevent existing or future connections.
4. MOBILITY	
Goals	
Land Use and Transportation Coordination	
4.1	Create a coordinated, efficient, and more affordable multimodal transportation system that supports, complements, and meets the needs of different types of places throughout the City. Land use patterns and connections among different land uses are key elements defining the form and character of places.
Policies	
4.1.1	Transportation planning and development, expansion, and investment in transportation facilities should be coordinated with the growth in the region.
4.1.2	New and modified thoroughfares will match the existing or proposed character of land along their paths as well as serving their essential functions in the regional road network. a. In urban areas, multimodal transportation design will become the norm to enhance neighborhood character, safety, and walkability. Character and function will be more important than capacity, and the street network will be sized to yield smaller blocks with greater “people moving” capacity. b. Existing Suburban areas are likely to maintain a predominately automobile-dependent development pattern. Thoroughfares will have sidewalks and bike lanes will be provided where travel speeds are higher
4.1.3	Safe and attractive transportation choices among all modes should be encouraged through street patterns that consider multimodal transportation alternatives and access to and circulation between adjacent neighborhoods, parks, and commercial and employment nodes.
4.1.4	New roadways and widening of existing roadways should utilize context-sensitive design to minimize impacts on historic buildings, neighborhoods, parks, and sensitive natural areas
Complete Streets	
4.2	Laredo’s thoroughfares will form a well connected network of complete streets that support driving, walking, bicycling, and public transit.
Policies	

4.2.1	Street design standards should provide safe, accessible, and meaningful travel choices – driving, walking, bicycling, and public transit.
4.2.2	Where optimal street connectivity cannot be or has not been provided, non motorized connections should be added to reduce walking and bicycling trip lengths.
4.2.3	In urban areas, walkability will be prioritized with wide sidewalks, shade, alleys, and street-facing access to adjacent land uses. a. Widen sidewalks where appropriate and feasible. b. Plan regularly spaced drought-tolerant trees along streets. c. Provide street lights that improve safety for drivers, cyclists, and pedestrians while maintaining a dark sky. d. Curb radii should be small to discourage drivers from turning corners quickly and to shorten pedestrian crosswalk lengths. e. Alleys should be included when possible so that buildings may be serviced from the rear, driveways and curb cuts can be minimized, and parking can be consolidated at midblock locations. f. Provide safe and convenient crosswalks at intersections, and at mid-block crossings where feasible and needed.
4.2.4	In urban areas, most new streets should have on-street parking in order to increase access to properties while calming traffic. Except on multiway boulevards, medians should be limited to short segments so that vehicular access to properties is not overly restricted.
4.2.5	New streets and redesigned streets should be two-way (unless they are designed as a narrow, slow speed, one-way streets).
4.2.6	The City wishes to achieve high levels of landscaping and other aesthetic improvements on all thoroughfares including those maintained by the county and state.
4.2.7	Continually update the Citywide plan that establishes priority locations for sidewalks, sidewalk repairs, and sidewalk improvements, prioritizing areas near schools, parks, transit stops, mixed residential and commercial districts, and other areas with high or potentially high levels of pedestrian activity.
Street Conversions	
Goals	
4.3	The City of Laredo will improve its thoroughfares over time as opportunities are found to increase transit service and improve connectivity, walkability, bikeability, and economic benefits to surrounding areas
Policies	
4.3.1	The City will consider multiway boulevards for major travel corridors to balance regional through traffic, local traffic, other travel modes, and access to adjoining land.
4.3.2	The City will study and implement the conversion of Downtown's one-way street couplets to two-way operation.
4.3.3	The City will consider the use of roundabouts at intersections to calm traffic, increase safety, eliminate traffic lights, and create sites for public art and monuments on local and collector streets.
4.3.4	The City will incorporate "green infrastructure design" and similar light-imprint and low-impact principles for stormwater management and landscaping in streets that it builds and requires others to build.

Improve Connectivity	
Goals	
4.4	Reduce service disparities and achieve equitable access to all types of facilities and transportation modes
Policies	
4.4.1	Gaps in the street system should be eliminated by providing for network connectivity. The existing grid network should be preserved and extended where feasible to increase overall connectivity.
4.4.2	New residential, commercial, and mixed-use developments that require construction or extension of roadways should include a multimodal network. The use of cul-de-sacs and dead-end streets and local residential loops should be minimized.
4.4.3	New development should be encouraged to connect to the existing street network through collector streets, which should tie into the existing network at multiple points to improve trip distribution and emergency access. Street stubs for future connections should be required
4.4.4	Access management strategies should be applied based on the functional characteristics of the roadway, surrounding land uses, and roadway users. Curb cuts along public streets should be minimized. Internal connections between parking lots should be encouraged.
4.4.5	When considering closure of public streets, alleys, and other rights of way, affected City departments and utility providers should consider the integrity of the City's street network, pedestrian and vehicular safety, emergency access, the ability to provide utility services, impacts on health and safety, and the welfare of the community.
4.4.6	Adding lanes to increase traffic capacity should be considered only after the street exceeds an established threshold of full capacity and all other alternative approaches have been considered. Improvements to the street network should increase vehicle dispersion and circulation.
4.4.7	Ongoing regional transportation planning efforts should be supported to coordinate planning, operations, and funding priorities and to identify existing and future transportation corridors that should be linked across jurisdictional boundaries.
4.4.8	New roadway projects and major reconstruction projects should preserve desirable existing trees where possible or plant new street trees where necessary. Multi-lane roads should be enhanced with landscaped medians when possible.
4.4.9	Bridge monitoring, maintenance, and rehabilitation should be coordinated with the TxDOT and the Federal Highway Administration. Bridge improvements, including provisions for all travel modes, should be considered when roadway investments are being pursued.
Future Thoroughfare Plan	
Goals	
4.5	Implement the Future Thoroughfare Plan that integrates all major travel modes and carries out the goals and policies of Viva Laredo.
Policies	
4.5.1	The City of Laredo will use the Future Thoroughfare Plan that appears in Viva Laredo as the City's official Thoroughfare Plan.

4.5.2	The City of Laredo will use the Future Thoroughfare Plan that appears in Viva Laredo as the City's official Thoroughfare Plan.
4.5.3	Capacity and redundancy should be created by a densely interconnected network rather than by achieving high capacities on individual arterial streets
4.5.4	Economically vital cities require multiple transportation modes and cannot hope to maintain free flowing traffic during all peak periods.
4.5.5	The character of each thoroughfare should be based on the physical context the thoroughfare is passing through in addition to its role in the larger network.
4.5.6	Limited-access freeways disrupt the healthy functioning of cities and should be the thoroughfare type of last resort when planning the City's network.
4.5.7	The regional transportation network must respect the human and natural environment and minimize or eliminate negative impacts such as bisecting or isolating communities, inducing suburban sprawl, or interfering with arroyos and other natural systems.
4.5.8	Implement a public announcement and mandatory waiting period for the deletion of any road appearing in the future thoroughfare plan.
Bicycle and Pedestrian Circulation	
Goals	
4.6	Enhance and connect the bike and pedestrian circulation system throughout Laredo.
Policies	
4.6.1	Bicycle and pedestrian circulation, access, and safety should be enhanced, especially along corridors, Downtown, in activity and employment centers, within densely-developed areas, at transit stations, and near schools, libraries, and parks.
4.6.2	A continuous bicycle and pedestrian network should be provided within and between existing and new developments to facilitate safe and convenient travel. New subdivisions, mixed use developments, and large-scale commercial developments should include safe pedestrian walkways or multi use paths that allow direct links between roadways and major destinations, transit stops, and schools.
4.6.3	New development, redevelopment, street reconstruction, and resurfacing projects should include bicycle and pedestrian facilities as appropriate for the roadway character. Existing development should be retrofitted with connections where possible.
4.6.4	Where possible, and especially where pedestrians are prioritized, tools such as protected left turns, pedestrian head start, raised crosswalks, curb extensions, medians, pedestrian refuge islands or mid-block crossings, and restricted right turns on red should be used to improve pedestrian and bicycle movements and safety.
4.6.5	Safe and convenient pedestrian and bicycle facilities should be maintained and should be universally accessible, adequately lit, and properly designed to reduce conflicts between motor vehicles, bicycles, and pedestrians.
4.6.6	Pedestrians and bicyclists should be accommodated on bridges, interchanges, and over- and underpasses, where permitted by law. Bicycle lanes and wide sidewalks should be included in all new bridges, and over- and

	underpasses.
4.6.7	The City's greenways and trails network should be treated as part of the City's transportation network and connections should be planned for accordingly.
4.6.8	Infrastructure that encourages students to walk or bike safely to school should be supported. The City should continue to coordinate with the Laredo MPO to partner with schools, the Laredo Police Department, Webb County and the TxDOT to identify funding and opportunities to enhance walking routes to school.
4.6.9	Primary building entrances should front onto publicly accessible, easily discernible, and Americans with Disabilities Act-compliant sidewalks that lead directly from the street to the building entrance without parking lots in between.
4.6.10	Roadways and rail corridors should be retrofitted with bicycle and pedestrian facilities such as multi-use paths, cycle tracks or bike lanes, bike boxes, and bike detectors.
4.6.11	The City should continue to coordinate with the Laredo MPO to work with partners to identify creative funding solutions for bike and pedestrian infrastructure, including partnerships with the Webb County, Webb County-Laredo Regional Mobility Authority, and the TxDOT, parks and recreation partnerships, and public-private partnerships.
Bike Plan Network	
Goals	
4.7	Vigorously expand bicycle facilities throughout Laredo to create a full network of connected, safe, and attractive bikeways and supporting facilities for both transportation and recreation.
Policies	
4.7.1	Continue developing and maintaining a system of bicycle lanes, bicycle routes, and multi-use pathways in accordance with Viva Laredo.
4.7.2	Investigate the possibility of a local bicycle share program in the City that places bicycles for rent at automated stations at key areas beginning with the Downtown and university areas
4.7.3	Fund a bicycle and pedestrian coordinator position to be the steward of the bicycle master plan and all of its individual components.
4.7.4	Use best practices in physical design (i.e. bikeway width, type, signing, and advanced bicycle facility types) to create safer bikeways. Train select City staff to design bikeways.
4.7.5	Enhance the safety and visibility of the bicycle network through the implementation of safety and wayfinding signage improvements along all current and future bikeways.
4.7.6	Continue the regular street sweeping program, with priority given to bicycle lanes and primary bicycle routes.
4.7.7	Bicycle facilities such as secure racks, personal lockers, and showers should be encouraged in new and redeveloped office and employment centers to facilitate bicycling and walking as viable alternative modes for commuting to work.
Bicycle Outreach	
Goals	

4.8	Encourage increased bicycling by promoting health, recreation, transportation, tourism opportunities, and environmental benefits.
Policies	
4.8.1	Make Laredo a safer City for bicycle riders through measures such as: a. Work with the Laredo Police Department to address bicycle-vehicle safety measures through increased awareness of bicycle related traffic laws and enforcement of existing and new laws. b. Provide on-going training for City of Laredo police officers regarding bicycle safety laws and issues. c. Advocate for bike safety as a prominent part of state driver's requirements, and for the creation of a volunteer bike patrol group.
4.8.2	Create and distribute print and online versions of the Laredo Bike Master Plan on an annually updated basis, to include wayfinding, safety, and facility type information.
4.8.3	Develop a Laredo bicycle programs website to store and disseminate all bicycle-related information, including bicycle traffic statistics.
4.8.4	Identify the most common conflicts between bicycle and motor vehicle users and create strategies to educate all roadway users.
4.8.5	Increase awareness of bicycle options and safety through training, public events, public service announcements, educational materials, and partnerships.
4.8.6	Promote bicycling for commuting, running errands and other short trips and socializing through social media/web-based communication tools and traditional communication outlets to position bicycling as a viable option for people who are interested in bicycling, but concerned about safety.
4.8.7	Continue to foster and implement Safe Routes to School programs.
Street Design, Complete Streets, and Age-friendly Design	
Goals	
4.9	Ensure safety for users of all transportation modes, with attention to the most vulnerable users, including people with disabilities, those using mobility devices, the young, and the elderly.
Policies	
4.9.1	The majority of the City's streets should be designed as public spaces that are scaled for pedestrians and should be enhanced with appropriate street trees and landscaping.
4.9.2	Complete street design standards that provide mobility for all types of transportation modes and users should be promoted on all streets.
4.9.3	New roadway projects and major reconstruction projects should provide appropriate and adequate right-of-way for safe and convenient movement and amenities for all users, including bicyclists, pedestrians, transit riders, and motorists.
4.9.4	When reviewing traffic impact analyses for infill and redevelopment, level of service measurements should consider all modes of transportation, including bicycles, pedestrians, and transit, in addition to automobile level of service.

4.9.5	Complete street amenities should be designed with all users in mind, with multimodal amenities appropriate for the type of roadway.
Transportation Safety, Traffic Calming, and Neighborhood Traffic	
Goals	
4.10	Support a safe, multimodal transportation network for all users, and include consideration of traffic calming, bike and pedestrian crossings, and crash analysis.
Policies	
4.10.1	Safe routes for motorists, transit riders, bicyclists, and pedestrians should be provided. The City should work with its partners to improve the multimodal system to enhance safe transportation options across modes.
4.10.2	Traffic calming measures should be incorporated into the design of new or retrofitted local and neighborhood streets, within schools and parks, and around pedestrian-oriented business areas. Pedestrians and bicyclists should have safe, convenient, well-marked means to cross streets.
4.10.3	Feasible solutions to lessen the impacts of major street improvements on local streets should be developed with neighborhoods on an individual project basis.
Transportation Demand Management	
Goals	
4.11	Establish demand management procedures as a cost-effective alternative to increasing capacity. A demand management approach has the potential to improve the natural environment, public health, placemaking, and economic development that also extends the life of transportation infrastructure.
Policies	
4.11.1	Incentivize a mix of uses at key nodes of activity, including Downtown, the universities and new development sites.
4.11.2	Programs that increase vehicle occupancy should be encouraged. Employer Based transportation demand management programs should be supported.
4.11.3	An integrated, multimodal transportation system that offers safe and attractive choices among travel modes should be promoted.
4.11.4	Conduct el Metro Ridership Service Survey.
Air Quality	
Goals	
4.12	Improve the region's air quality through more sustainable and energy-efficient transportation and land use practices.
Policies	
4.12.1	Encourage compact land uses and urban design patterns that increase travel choices, reduce reliance on single-occupant vehicle travel, and reduce the overall number of vehicle-miles traveled.

4.12.2	Invest in bus service, rapid transit service, and high-capacity transit to reduce pollution and greenhouse gas (GHG) emissions while better serving the traveling public.
4.12.3	Take steps that can reduce the travel frequency, distance, and duration of single occupant vehicle trips.
4.12.4	Implement intelligent transportation systems (ITS) to reduce congestion and facilitate cross-border travel.
Parking Management	
Goals	
4.13	The City will strategically manage the amount, location, and physical form of on-street and off-street parking to help achieve the goals of Viva Laredo.
Policies	
4.13.1	The effective supply of parking can be increased by building more spaces or by reducing demand. a. Where parking supply needs to be increased on valuable land, parking garages may be constructed provided they are lined with habitable or storefront space to shield the garage from view and to provide a safe, interesting environment for pedestrians. b. As part of a long-term strategy, land devoted to surface parking lots in existing developed areas should be reduced through shared parking strategies, reduction in parking demand, and infill development on unneeded parking lots.
4.13.2	As part of the development and redevelopment process, the following policies should be followed: a. Shared on-street parking spaces are preferred to separate parking lots for each user. b. New parking lots should be placed behind or on the side of buildings instead of between buildings and the street. c. Do not provide more parking than is likely to be needed. d. Provide suitable loading zones for deliveries.
4.13.3	The amount of land devoted to surface parking should be minimized through measures such as parking decks and underground parking, shared parking, flexible ordinance requirements, improved parking standards, the implementation of transportation demand management plans, and provision of public transit to reduce parking needs.
4.13.4	Parking and development that encourages multiple destinations within pedestrian-connected areas should be encouraged. This will decrease single purpose trips for the user, saving time and miles driven and increase the economic potential for businesses located near other businesses.
4.13.5	A parking program and management strategies should be established at existing and planned transit stations.
4.13.6	On-street parking and drop-off areas should be located adjacent to sidewalks and building frontages to maximize on-street parking turn-over and for customer convenience. Excessive parking between sidewalks and building fronts should be discouraged.
4.13.7	Shared-use parking should be encouraged for land uses where peak parking demands occur at different times of the day, reducing the overall total number of spaces needed. Parking lots should be sized and managed so that spaces are frequently occupied.
4.13.8	Parking lots should include vehicular and pedestrian connections between and through lots. Parking facility quality should be considered equally with the quantity of parking spaces. Parking lot design should minimize pedestrian conflicts, make use of appropriate landscaping, and properly manage stormwater

4.13.9	The capacity of existing parking facilities should be optimized through tools such as small vehicle, motorcycle, and bicycle spaces, allowing motorcycles to share spaces, reducing the minimum parking space area requirement for low-turnover spaces such as residential and employee parking, and removing equipment and storage from parking spaces.
4.13.10	Single-occupancy automobile trips should be discouraged through parking supply and/or pricing strategies in areas where supply is limited and alternative transportation modes are available.
Public Transportation	
Goals	
4.14	Make a Metro Transit Master Plan and turn it into the most used Citywide transit system in Texas.
Policies	
4.14.1	Review routes and operations to plan for the future and ensure El Metro Transit is meeting the needs of the community in the most efficient way possible.
4.14.2	Promote quality transit services that enhance mobility options, meet the needs of City residents and visitors, focus on transit dependent households, and incorporate age friendly elements.
4.14.3	Where opportunities exist, right-of-way for future transit should be reserved. New development and redevelopment should provide transit easements for planned alignments, rail stations, and bus stops within existing and planned transit corridors as appropriate.
4.14.4	Local and regional bus service along key corridors should be enhanced. Transit efficiency, including improved frequency of routes and transfer time, should be promoted within the El Metro Transit system.
4.14.5	Bus shelters, seating, lighting, trash receptacles, and related elements should be provided at transit stop locations. New developments located within planned transit corridors should coordinate with El Metro Transit to provide bus stop facilities at appropriate locations.
4.14.6	The use of transit facilities should be encouraged through enhancing the bike and pedestrian network near transit stops and sufficient sidewalk infrastructure should be installed near all transit stops. Where necessary, enhancements to make sidewalks compliant with the Americans with Disabilities Act (ADA) should be prioritized.
4.14.7	Features such as traffic signal priority, queue jumps, and exclusive transit lanes to improve transit reliability should be encouraged, where possible.
4.14.8	Transit-oriented development should be encouraged. Planning for transportation, transit stop locations, public spaces, density, and land use should be coordinated, and high density, mixed-use development patterns should be encouraged around express bus lines, the transportation center Downtown, and any future transit stations.
4.14.9	The possibility of returning the Downtown streetcar to Laredo should be considered.
Commercial Transport & Port Freight Mobility	
Goals	
4.15	Enable the safe and efficient movement of goods via rail, truck, and air. A reduction of the impacts of rail and

	truck operations on adjacent neighborhoods and sensitive lands is also important.
Policies	
4.15.1	The safe and efficient movement of truck traffic in, around, and through the City via designated truck routes should be properly managed.
4.15.2	Infrastructure improvements and the use of emerging technologies that facilitate the clearance, timely movement, and security of trade, including facilities for the efficient intermodal transfer of goods between ships, trucks, rail, and air modes, should be supported.
4.15.3	Roadway and railway design and retrofit, to include complete streets upgrades, should balance the needs of freight movements along with the needs of all other types of transportation.
4.15.4	The City encourages the expanded use of railroads for regional and international shipment of goods due to the fuel efficiency of rail transport and the heavy burden that trucks place on the system.
4.15.5	The relocation of major rail yards away from intensely developed areas could allow that land to be reclaimed for redevelopment, drainage improvements, parks, and civic spaces.
4.15.6	Preserve the ability and opportunity to transform any abandoned and underused railroad rights-of-way for other valuable uses.
4.15.7	The City should explore all opportunities for intercity passenger rail to other metropolitan areas such as San Antonio, Austin, and Corpus Christi.
4.15.8	The City should create a port master plan including a study of the ports economic impact to be updated yearly
Global Trade and Airport	
Goals	
4.16	The Laredo International Airport will increase its role as a welcoming gateway for passengers, as an intermodal hub for incoming and outgoing goods, and as a center for related economic activities that serve the City and the region.
Policies	
4.16.1	Utilize and improve El Metro Transit connections to the airport to improve passenger access to the airport and maximize the value of airport property for related purposes.
4.16.2	The City supports new mixed-use development and redevelopment on and around airport land.
4.16.3	Incorporate the Laredo International Airport Plan into the Port Plan. (See Policy 11.3.6).
Ports of Entry	
Goals	
4.17	Strengthen multimodal connections with Nuevo Laredo for binational mobility, commerce, economic development, familial bonds, tourism, and convenient routine travel between the two cities and countries.
Policies	

4.17.1	Continue to manage the Ports of Entry as an integrated network to balance traffic flow and travel needs (employment, commerce, and tourism) while minimizing traffic in surrounding areas.
4.17.2	Provide meaningful alternatives to single-occupant vehicles at all Ports of Entry, including pedestrians, bicyclists, and restoration of public transit.
4.17.3	The need for and feasibility of an additional international point of entry in south Laredo should be explored.
4.17.4	Support the creation of additional public rest areas with bathrooms and showers where truck drivers can rest during federally mandated rest periods between shifts.
5. HOUSING	
Goals	
	NO PUBLIC TRANSIT RELATED GOALS YET
Policies	
6. SUSTAINABILITY	
Energy and Atmosphere	
Goals	
6.4	Develop Laredo in a way that requires less automobile use for access to daily needs, which will help to reduce the prevalence of greenhouse gases. Strive to continue to meet the national ambient air quality standards for all pollutants.
Policies	
6.4.1	Promote new development that encourages a sustainable lifestyle such as walking, cycling, the use of public transit, and reducing the dependence on automobiles.
6.4.2	Consider the energy efficiency of proposed development when land use and development decisions are made. This would include energy consumed by buildings and their users as well as energy used by commuting and vehicle trips generated due to new development.
6.4.3	Emphasize infill and higher density development located in walkable areas, and areas served by public transit, to reduce dependency on automobiles.
6.4.7	Promote citywide car and van pooling systems, and implement other forms of transit to connect major destinations, such as downtown or the universities.
6.4.13	Consider an increase of local gasoline tax to be earmarked for funding El Metro and improving El Metro's level of service.
6.4.14	Direct additional and new environmental impact fees to El Metro.
7. HEALTH	
Environmental Risk Factors	

Goals	
7.2	Reduce exposure to environmental risk factors.
Policies	
7.2.1	Reduce risk of injury and fatality due to vehicular accidents. a. Lower design speeds on existing and proposed streets and highways. i. Retrofit streets to be more pedestrian friendly. ii. Include on-street parking and street trees as barriers between pedestrians and moving travel lanes and which increase visual friction to discourage speeding. iii. Include wide sidewalks and narrower travel lanes. b. Convert signalized or geometrically complex intersections to modern roundabouts or fully-circulating intersections in order to reduce or eliminate turn-lanes, slow traffic while improving flow, and reduce the incidence of broadside and head-on collisions. c. Increase the frequency of crosswalks and increase signal time in favor of pedestrians crossing streets, especially multi-lane arterials and other major streets. d. Minimize crossing distance at intersections with pedestrian refuges, bulb-outs, speed tables, and other strategies. e. Promote the use of woonerfs, shared spaces, curbless streets, and stripe-free zones as ways to create very traffic calmed residential streets that need less right-of way than conventional streets. f. As silent hybrids and electric vehicles become more common, expand the city's use of Audible Pedestrian Signals (APS) to assist blind pedestrians at intersections and crosswalks.
7.2.2	Reduce exposure to air pollution. a. Minimize VMT through increased walking, cycling, and transit usage. Strategies to accomplish this are found in the Land Use Patterns, Mobility, and Urban Design Chapters. b. Work with federal entities to reduce bridge congestion, especially by means other than road widening which would increase polluting idling.
Physical Activity	
Goals	
7.3	Encourage physical activity through the design of the built environment.
Policies	
7.3.1	Study existing neighborhoods for deficiencies. a. Determine if residents can easily walk to retail, especially a grocer, where they may obtain daily necessities. b. Determine if residents are less than a five minute walk from public facilities such as schools, parks, libraries, and transit stops. c. Work with communities to increase density, connectivity, and completeness (mixture of uses).
7.3.2	Adjust land development regulations and zoning policies in order to make neighborhoods more complete, walkable and connected.
7.3.3	Improve existing and new streetscapes so that traffic speeds are reduced and pedestrians' and cyclists' comfort and safety is increased. a. Utilize the Complete Streets approach to pedestrian and bike accommodation.
7.3.4	Design new neighborhoods to be amenity-rich, mixed-use, interconnected, dense, and compact.

	Neighborhoods should be able to supply most of life's daily necessities on foot or on bike, with easy access to transit service. Streets should be designed with low-design speeds.
7.3.5	Integrate walkable neighborhood design according to techniques and policies described in Land Use Patterns and Urban Design Chapters.
7.3.6	Work with Parks and Leisure Services Department, and TxDOT where appropriate, to increase pedestrian and cyclist connectivity across natural and man-made barriers such as freeways, ravines, river beds, canyons, and arroyos. Provide a shorter and more convenient route for non motorized traffic across barriers.
7.3.7	Work with Parks and Leisure Services Department, and TxDOT where appropriate, to invest in a recreational infrastructure that provides not only recreational walking, jogging, and cycling, but also may provide an alternative to car trips. Such infrastructure may include trails (multiuse, hiking, equestrian, jogging), cycle tracks, bike lanes, parks, and restored or conserved wild areas. Use the Rio Grande and stream networks as multi-use recreational amenities.
7.3.8	Work with Parks and Leisure Services Department to integrate fixed, durable outdoor fitness equipment in parks that allow for flexibility and resistance training.
7.3.9	Encourage workplace fitness by including fitness centers within or in close proximity to employment centers.
7.3.10	Encourage employers to remove subsidies for parking and provide financial incentives to cycling, transit, and walking as a commuting alternative.
7.3.11	Encourage the inclusion of showers, lockers, and changing areas at places of employment.
7.3.12	Create "visitable" building types for the disabled that also satisfy the goal of creating walkable street frontages.
7.3.13	Create safe routes to school using mapping tools, the planning of street networks, and walkable and multimodal street designs.
7.3.14	Encourage schools to provide open campuses. At a minimum, recreational fields should be open to the community after school hours and on weekends.
Basic Nutritional Needs	
Goals	
7.5	Create a food system in which city residents can meet their proper nutritional needs.
Policies	
7.5.2	Initiate research, policies, and programs that increase food security, improve health outcomes, and create social and economic opportunities to attempt to ensure that every resident has access to fresh, healthy, and affordable food. a. Perform Community Food Assessments to determine where "food deserts" exist in Laredo. Target food deserts as areas to start focusing food production, farmers' markets, and small community-based grocers.
Access to Health Care	
Goals	
7.8	Improve access to medical care.

Policies	
7.8.1	Distribute primary care offices, clinics, and laboratories, amongst the various districts and neighborhoods that make up the city. Encourage consolidation of major medical facilities to create efficiencies in providing care.
7.8.2	Locate medical care providers and human services at transit locations. a. Encourage medical providers to locate at stations or bus stops with reduced parking footprints.
7.8.3	Allow access by emergency response vehicles without sacrificing walkable, traffic-calmed street designs.
8. PARKS	
Trails, Linear Parks, and Greenways	
Goals	
8.5	Increase park connectivity, recreation offerings, and bicycle and pedestrian networks through the development of a Trails Master Plan.
Policies	
8.5.1	Develop a Trails Master Plan for the City, including the ETJ as part of the planning area. Work with Webb County to identify opportunities for collaboration.
8.5.2	The Trails Master Plan should not only connect existing parks and open space to residential areas, but be integrated into other bicycle and pedestrian planning efforts. This should encourage and promote connections to key destinations, like schools.
8.5.3	Modify park land dedication ordinance to include trail system dedication requirements to correspond with the design criteria for shared-use paths.
8.5.4	Define "proximity" criteria in the trail system dedication requirements for purposes of creating a City Trail System Fund for the implementation of trail projects. Amend development regulations to provide connections to existing and proposed trails found in a Trails Master Plan. Tailor so that a maximum number of Laredo residents have close proximity to parks and trails.
8.5.5	Adopt design standards for multi use trails building upon the trail classes established in the 2008 Parks Master Plan.
9. ECONOMIC DEVELOPMENT	
Goals	
	NO PUBLIC TRANSIT RELATED GOALS YET
Policies	
10. EDUCATION, ARTS AND CULTURE	
Goals	

	NO PUBLIC TRANSIT RELATED GOALS YET
Policies	
11. GLOBAL INITIATIVES	
Planning in both Laredos	
Goals	
11.2	Maintain alignment between both cities' Comprehensive Plans.
Policies	
11.2.2	Create a plan for a Cross-Border Heritage Tour of both cities.
11.2.3	Encourage the addition of a bi-national committee to the Metropolitan Planning Organizations and its counterpart in Nuevo Laredo.
11.2.4	Provide input on international crossing facility planning on the Federal level to promote pedestrian friendly approaches to duty free shopping areas, nearby local restaurants, and shaded public rest areas.
11.2.5	Develop a bi-national conference, thus building upon both cities' vision of improvement and revitalization.
11.2.6	Organize Bike Plan programs that envision bi-national routes.
Trade	
Goals	
11.3	Participate in the support of innovative strategies for alleviation of long border wait times, infrastructure improvements, public safety, economic development, border inspection and national security at the international border.
Policies	
11.3.6	Develop a Laredo Port Plan and Plan Implementation Commission to include railroad, airport, bridge, and port connectivity expansion studies together with Nuevo Laredo. Include a supply chain management study and port economic development and diversification strategy.

ACTIVE TRANSPORTATION PLAN

The Active Transportation Plan provides a shared vision for a future transportation network in Webb County that considers all modes of traffic and has recently been adopted by the City of Laredo. It identifies the priority infrastructure needed to create this future network, with an emphasis on linking neighborhoods and providing better access to transit. The Active Transportation Plan aims to improve mobility in the region by focusing on safety, equity, and accessibility. Laredo's current and future active communities deserve a safe, connected, and substantive connected network that provides a balance of utilitarian and recreational facilities. The Plan will assist the City and County in decision making, resource allocation, design, implementation, and maintenance of the proposed multi-modal network. This Plan recognizes bicycle and pedestrian infrastructure improvements contribute to healthy communities, and supports walking and biking as sustainable modes of travel. The Laredo & Webb County Area MPO encourages the development and enhancement of a well-connected and safe pedestrian and bicycle network. The planning team engaged the community and collaborated with multiple City and County organizations and agencies, both public and private, to develop the Active Transportation Plan. 1.3.1 Elements of a Successful Plan A successful active transportation plan should support goals of the community it serves, determined by a thoughtful community input process and careful analysis. The following three fundamental elements are the foundation of a successful plan:

- Developing a high-quality network
- Fostering the culture and appeal of walking and bicycling
- Defining clear implementation tasks and responsibilities, including resources

The Active Transportation Plan incorporates these three fundamental elements to ensure the recommendations and strategies outlined by the Plan are genuinely supported by the community. Engaging residents and stakeholders throughout the development and implementation of this Plan helps achieve the community's vision and will facilitate the implementation process.

CHAPTER 4: RECOMMENDATIONS	
4.3 Interconnected Transit Solutions	
Recommendations	
3.A	Create a policy requiring development to reserve space for bus stops and loading bay (bus turnouts).
3.B	Enhance transit stops to provide secure bicycle parking.
3.C	Study the potential for a partnership between El Metro and El Aguila to develop a transit hub in South Laredo to serve urban & rural routes.
3.D	Improve transit user experience by integrating wayfinding and route awareness tools.
3.E	Study the potential for a partnership between El Metro and a third-party micro mobility provider allowing for a multi-pass program.
3.F	Prioritize bus stop improvements to the highest demand routes.

4.4 Last Mile & Micro Mobility Solutions	
Recommendations	
4.A	Collaborate with a third-party micro mobility provider to establish a bike share program in Laredo.
4.B	Study the potential for a partnership between El Metro and a third-party micro mobility provider allowing for a multipass program.
4.C	Encourage availability of e-scooters and extend the areas where they are utilized to include strategic locations Citywide. • Expand service and place stations at strategic locations such as regional parks and local university and college campuses.
4.D	Enhance transit stops to provide secure micro mobility hubs.
4.E	Classify micro mobility types and designate standards of use
4.6 Other Recommendations	
Recommendations	
6.A	Collaborate with partners to launch the Bicycle 101 safety education campaign for cyclists and drivers.
6.B	Improve data collection inventory to facilitate decision-making and prioritization and location of projects.
6.C	Partner with schools to educate students about the benefits of active transportation and safety awareness.
6.D	Promote Safe Routes to School activities in partnership with local schools.
6.E	Initiate Bike to Work/School Day and secure funding for annual promotion
6.F	Organize an Active Transportation Sub-committee of the MPO to provide ongoing recommendations to the Policy Committee.
6.G	Hold an annual Active Transportation summit bringing together MPO, City, and all relevant organizations to review progress on completion of this plan and discuss new opportunities.
6.H	Develop a detailed funding and finance plan for priority projects listed in the recommendations of this plan.
6.I	Provide resolutions for adoption to City of Laredo and the Laredo & Webb County Area MPO for recommended percentage of total budget to be spent on active transportation infrastructure (with separate allocations for each category) and incorporated into the Capital Improvement Plan (CIP) and Transportation Improvement Program (TIP).
CHAPTER 6: COMPLETE STREETS POLICY	
Recommendations	
A	Establish a Complete Streets Program to promote an ongoing effort to ensure Complete Streets principles are incorporated into design, construction, and maintenance of the City's transportation system.
B	Create a Complete Streets handbook, which contains regulations, guidelines for completion of streets on the construction or reconstruction of the streets. Developers shall be able to refer to this with the construction or

	reconstruction of streets. This enables the streets to be safe and accessible to users of all ages and abilities;
C	Adopt design standards for the completion of streets, such as a Complete Streets matrix that provides the necessary compliance for street areas. This Complete Streets design matrix shall ensure the correct and necessary metrics for maintaining, constructing, or reconstructing streets;
D	Improve public rights-of-way in compliance with Americans with Disabilities Act (ADA) accessibility guidelines;
E	Set minimal requirements for streets with compliance metrics such as (ADA) measures and Texas Department of Transportation measures;
F	Develop performance-based measures to monitor Complete Streets performance and support improved data collection and evaluation. Not all streets will become a Complete Street, but applying certain performance measures will enhance the longevity and accessibility of the street;
G	Create an adopt-a-street program such as initiating a group of volunteers to help maintain the landscaping aspects of the streets and collaborate with local neighborhood groups. Incorporating an adopt-a-street program will ensure streets are properly maintained and collaborating with neighborhood groups can ensure neighborhood streets are safe and accessible;
H	Make Complete Streets practices a routine part of everyday operations and procedures. Including Complete Streets practices in operational functions such as street maintenance enhances the longevity of the streets for all users;
I	Integrate the Complete Streets Policy into capital improvement planning.
J	Promote safer street designs at high-crash intersections as a way to reduce accidents and fatalities; target and fund complete street projects at or near these intersections. Creating safer crosswalks, wider sidewalks, and having proper signage will assist with reducing the risk at these particular locations;
K	Apply Complete Streets Policy guidelines for new streets and major repairs of streets for projects that do not exceed a targeted cost; this includes reconstruction, retrofit, and resurfacing of existing streets;
L	Require new developments to implement Complete Streets on roads that provide access to trails and parks. Providing residents access to trails and parks from neighborhoods will create the connectivity for the City;
M	Approach every transportation improvement and project phase as an opportunity to create safer, more accessible streets for all users. These phases include, but are not limited to: planning, programming, design, right-of-way acquisition, construction, construction engineering, reconstruction, operation and maintenance.

Appendix B STREET CONNECTIVITY INDEX METHODOLOGY

One measure of street connectivity is the gamma index. The gamma index measures network connectivity by comparing the number of edges (or street segments) that exist between vertices (or intersections) to the number of total possible edges between those vertices. Gamma scores range from 0 to 1, where 0 represents a completely disconnected network and 1 represents a network that has the maximum number of connections possible. The formula for calculating gamma is as follows:

$$\gamma = \frac{\mathrm{e}}{3(\mathrm{v}-2)}$$

Where:

e = the number of edges (or street segments) between vertices; and

v = the number of vertices (or intersections)

Appendix C COA OUTREACH SUMMARY

- BLANK PAGE LEFT INTENTIONAL -

COMPREHENSIVE OPERATIONAL ANALYSIS
OUTREACH SUMMARY

November 2021

TABLE OF CONTENTS

EL METRO TRANSIT

Claudia San Miguel, General Manager
Monica Garcia, AGM Administration, Utility Maintenance and Capital Projects
Eddie Bernal, Planning and Grant Manager
Sandy Esparza, Operations / Mobility Manager
Rosa Soto, AGM Operations, Union Relations

LAREDO MPO

Juan Mendive, City of Laredo MPO
Graciela Briones, Cityo of Laredo MPO
Julio Nino, Cityo of Laredo MPO

STANTEC

Sasha Pejcic, Project Manager
David Verbich, Deputy Project Manager
Michele Colley, Transit Planning Lead

ABLE CITY

Frank Rotnofsky, Partner/ Principal in Charge
Mario Pena, Partner/ Principal in Charge
Leslie Aboumrad, Project Manager
Paola Fernandez, Community Engagement Coordinator
Brenda Tijerina, Community Engagement

PARTICIPATING STAKEHOLDERS

Individuals on sign-in sheet

Vanessa Perez, Councilwoman District 7
Alyssa Cigarroa, Councilwoman District 8
Kristina Hale, Assistant City Manager
Kirby Snideman, Former City of Laredo Planning Director
Regina Portillo, Office of Councilwoman District 8
Alexis Solis, LISD
Adrian Dominguez, TAMIU
David Arreazola , Laredo College
John Porter, Environmental Services Department
Jesus Saavedra, TxDOT
John Orfila, City of Laredo Public Works
Arturo Dominguez, Custom Brokers Association
Bolivar Bolanos, TxDOT
Omar Costilla, TxDOT
Juan Rodriguez, STDC
Henry Brewer, STDC
Robert Martinez, Webb County El Aguila
Gloria Saavedra, Engineering Department
Norma Zamora, First Transit

TIMELINE

Project Chartering

Viva Laredo Review and Summary

ROUND 1

General public outreach
Survey opens April 2021

Stakeholder Technical Meeting
Virtual via Zoom - April 20th, 2021

Stakeholder Leadership Meeting
Virtual via Zoom - April 20th, 2021

Focus Group Meeting
Virtual via Zoom - April 22th, 2021

Public Meeting
Virtual via Zoom - April 29th, 2021

ROUND 2

Survey Closes
July 9th, 2021

El Metro Riders Pop-up
El Metro Transit Center - July 5th, 2021

Stakeholder Technical and Leadership Meeting
El Metro Transit Conference Room - July 29th, 2021

Student/Youth Pop-up
TAMIU Student Center - August 23rd, 2021

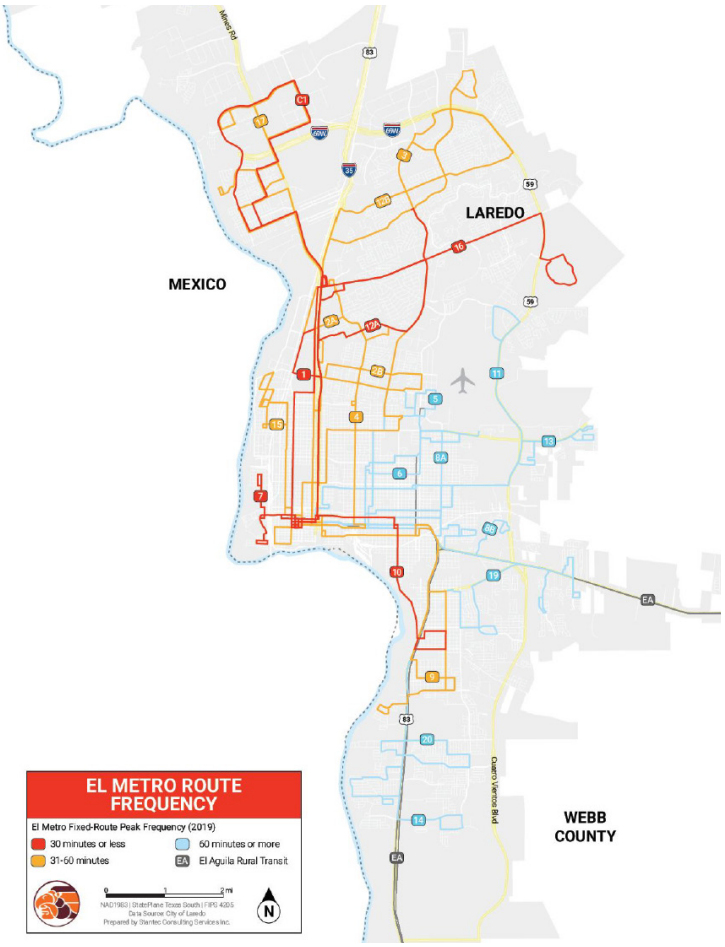
ROUND 3

El Metro Riders Pop-up
El Metro Transit Center - October 19th, 2021

Stakeholder Technical and Leadership Meeting
El Metro Transit Conference Room - October 19th, 2021

FIRST ROUND OF ENGAGEMENT

At the start of the project, the team hosted a conference via Zoom on April 20th 2021, with key project stakeholders, such as El Metro staff and city staff to review the proposed project plan and goals. The team presented the project approach and the main network characteristics the process would focus on such as street connectivity, network barriers, and frequency vs coverage.



KEY TOPICS

COVERAGE

"suggest to focus on the west. Mines Road area, Green Ranch, south side of Mines Road, La Bota and other warehousing districts - extend services in that area"

ADA & ACCESSIBILITY

"The micro-transit pilot program will be ADA compliant and offer curb to curb transit"

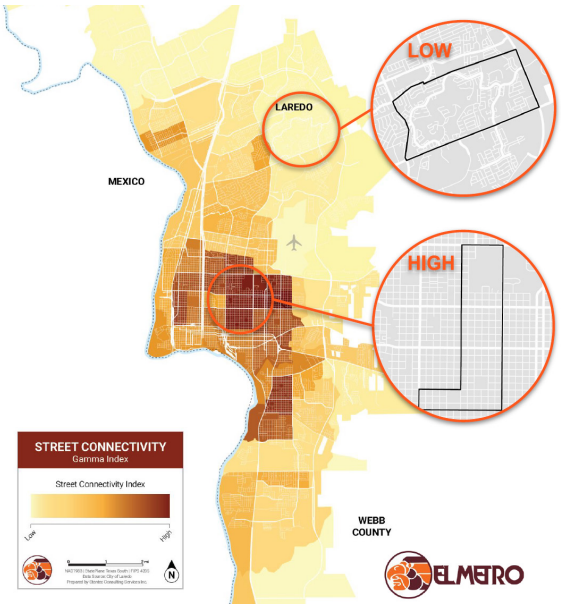
FARES

"Regarding the Micro-Transit pilot - Will ridership increase? What will be the cost?"

"the expectation is that the ridership will increase. The cost might be base on the distance, but still working on establishing the new fare."

"The micro mobility pilot program will be an opportunity to relieve stress from El Lift"

The team met with City of Laredo leadership stakeholders, to provide an initial understanding of opportunities and collaboration between El Metro and policymakers. Successful transit builds on relationships and requires collaboration to ensure that the transit agency isn't working alone. Several factors are outside the direct control of El Metro, such as, challenges with sidewalks, land use code that supports transit, pedestrian infrastructure, bus stop accessibility, challenges with rider and public safety on buses and bus stops, reliability of service related to traffic, bus priority, and rail crossings, student ridership, dense, walkable, and diverse development.



KEY TOPICS

COVERAGE

"Look for potential location for transit hubs"

ADA & ACCESSIBILITY

"Are seniors and paratransit are included in the Comprehensive Operational Analysis?"

FREQUENCY

"the challenge with low frequency is connecting people to hubs"

FUNDING

"The Active Transportation Committee can bring up the conversation of funding to the committee"

"the coordination between the rural (El Aguila) and urban (El Metro), and an easy transfer from El Aguila with El Metro. This partnership can be a main target to receive more funding from TxDOT"

SAFETY

"High traffic areas are not as safe because of a lack of sidewalks, speed of vehicles, not being able to cross crosswalks because of vehicles not watching out for pedestrians"

OTHER

"Land use that supports transit. Having a bus stop or bus bay that supports transit is not the only answer, the land use has to coordinate with bus route planning "

FOCUS MEETING

The design team invited project stakeholders, community leaders, community advocates, and neighborhood leaders to a focus group conversation. The conversation started with a brief presentation of the project process, goals, and vision. Following the presentation the group broke up into based on the following topics, Mobility for all stages of life and Accessibility, Community development, Active Transportation and Advocacy, Health and Wellness. Each conversation had facilitators that started the conversation with questions on how to encourage transit use and what barriers stop non riders from using El Metro.

KEY TOPICS

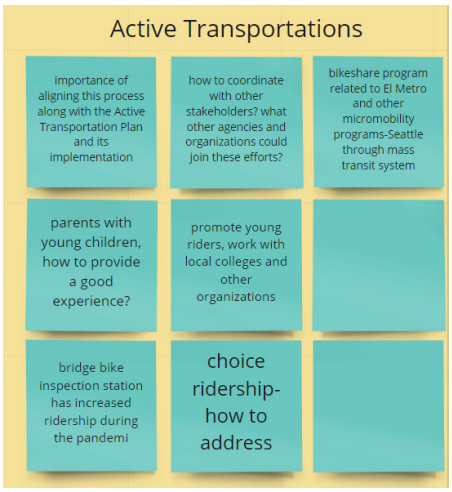
"Provide a safe and inviting experience for youth "

"Educational and marketing camping that shows non-riders how to use El Metro and provide user guides for those that feel intimidated by using transit"

"Partnerships with bike share and micromobility programs to promote more multi-modal transit"

"Align El Metro plans with the Active Transportation Plan"

"An app where you can purchase fares and use as a digital pass"



PUBLIC MEETING

The team finalized the first round of engagement on April 29th 2021, with a Zoom town hall/public meeting. The team introduced the project process and goals and invited the public to voice their concerns, comments and feedback with regard to El Metro. The team wanted to hear from riders and non riders, specifically on their experience using public transit, familiarity with El Metro's services, and how to encourage more ridership.

KEY TOPICS

ACCESSIBILITY

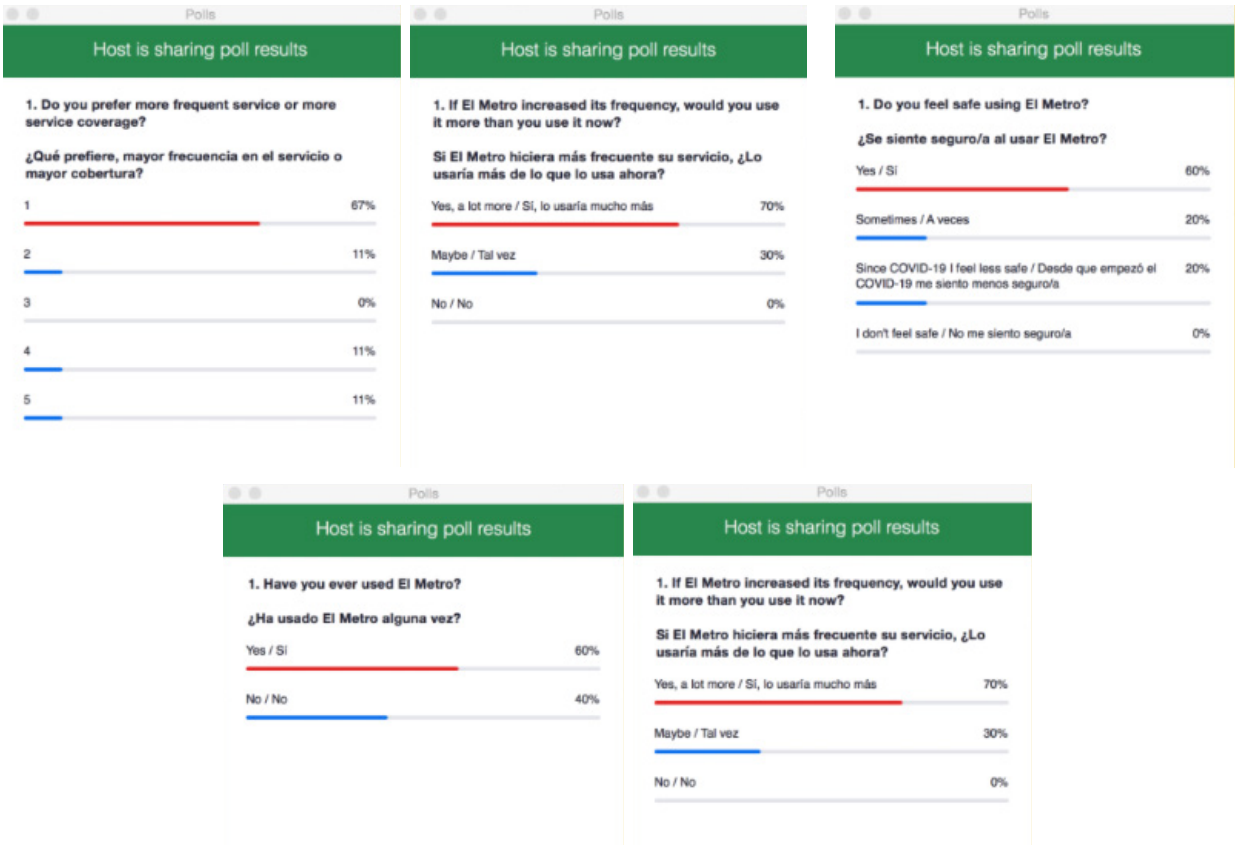
"El Metro to be more accessible to people with disabilities"

YOUTH

"Youth is less interested in driving. How can El Metro cater to a youth that is more open to use public transit as their main mode of transit"

SAFETY

"I feel unsafe or vulnerable walking to the bus stop, I feel safe inside the bus but not on the sidewalk or the bus stop "

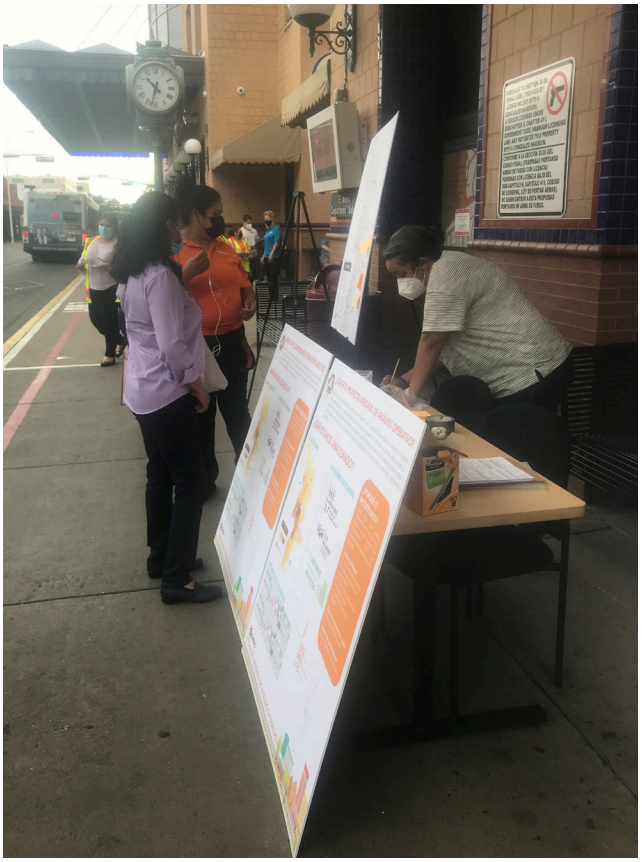


- BLANK PAGE LEFT INTENTIONAL -

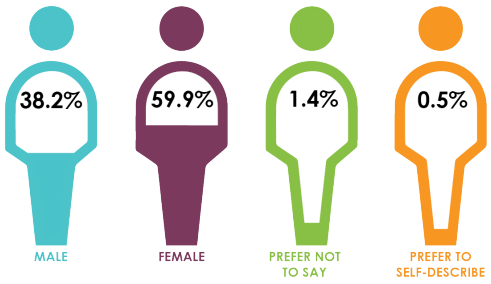
SURVEY REPORT

During April 2021 to July 2021, a survey was conducted to El Metro riders, non-riders and El Lift riders to receive feedback on how to improve El Metro's services. Over 370 (230 El Metro Riders, 118 Non-riders and 22 El Lift riders) surveys were collected during this time; 68% of responded surveys were in English and 32% in Spanish.

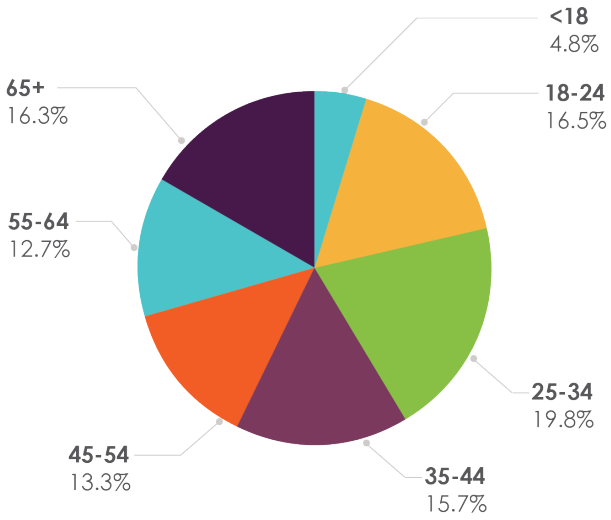
The online survey was promoted on El Metro's website and social media channels, as well as in-person during a pop-up session at the Transit Center. Riders were given the opportunity to complete the survey in-person at the pop-up with a member of the project team or fill it out online.



An overview of the demographics of survey respondents is shown below (Figure 1). Overall, the majority (59.9%) of the respondents (among El Metro, and El Lift, and non-riders) identified as women. Respondents spanned from 18 to over 65; the majority of survey respondents fell under the 25-34 (19.8%) and +65 (16.3%) age brackets.



Gender of Respondents



Age of Respondents

Figure 1 - Demographics Table

Variable		All Respondents	El Metro Riders	El Lift Riders	Non-riders
Age	18 and under 18-24 25-34 35-44 45-54 55-64 65+	4.8% 16.5% 19.8% 15.7% 13.3% 12.7% 16.3%	5.7% 18.3% 11.8% 13.5% 13.1% 16.2% 21.4%	n/a 4.8% 9.5% 4.8% 23.8% 33.3% 23.8%	6.7% 15.1% 37.0% 21.8% 11.8% 2.5% 5.0%
Gender	Female Male Prefer not to say Prefer to self-describe	59.9% 38.2% 1.4% 0.5%	55.0% 42.4% 1.75% 0.9%	57.1% 32.9% n/a n/a	68.9% 30.3% 0.8% n/a
Household income	Less than $20,000 $20,000 - $40,000 $40,000 - $60,000 More than $60,000 Prefer not to say	32.8% 10.4 11.0% 15.5% 29.9%	40.0% 10.7% 8.8% 4.9% 35.6%	54.5% n/a n/a 9.1% 36.4%	18.5% 10.9% 16.0% 35.3% 19.3%
Car access	0 1 2 >2	25% 28.2% 28.2 18.6%	37.6% 28.7% 22.1% 11.6%	33.3% 46.7% 13.3% 6.7%	4.3% 25.0% 39.7% 31.0%
Smartphone Access	Yes No	84.3% 15.7%	82.0% 18.0%	61.9% 38.1%	96.6% 3.4%

Half of respondents (49.8%) who responded as riders of El Metro bus service, use El Metro 3-5 days a week. 33% of riders use El Metro at least 5 days per week and 19% indicated that they use El Metro 3-4 days per week (see Figure 2). Of the 41 riders who indicated they use transit 3-4 days or at least 5 days, 38% stated that they exclusively depend on El Metro. The most common trip purpose for riders is for work (33.2%), followed by personal errands (23.3%), school (14.3%), shopping (17.2%) and recreation (11.9%). Respondents who responded to using El Metro most days of the week also responded to not having access to a car (38%). Thus, if El Metro was not available, their remaining choices would be to walk or get a ride from a family member to get to their destinations. As a result, these respondents depend solely on El Metro services to move around.

Figure 2 - El Metro Riders Respondents - Riders Frequency

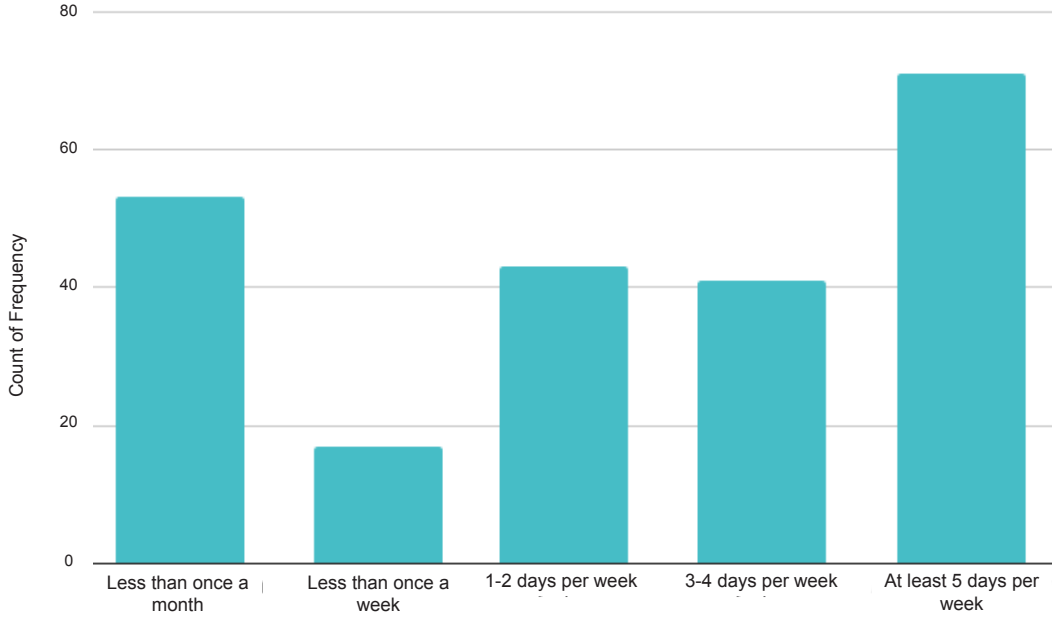
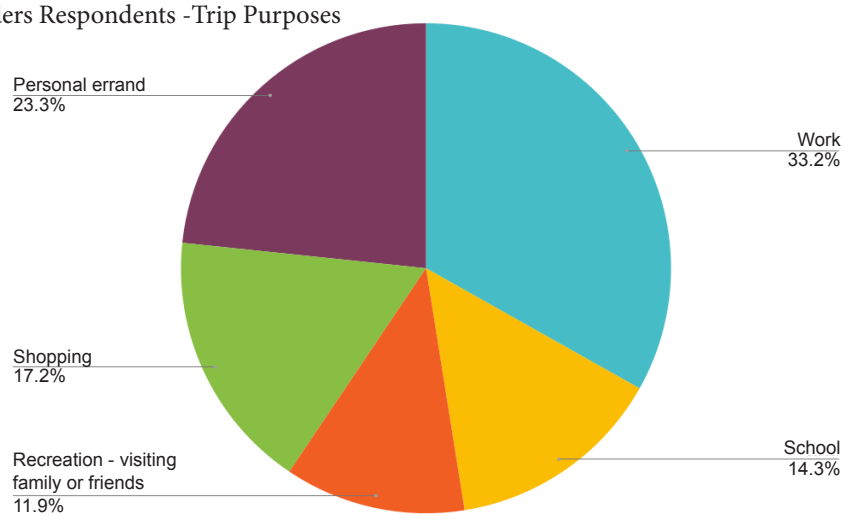


Figure 3 - El Metro Riders Respondents -Trip Purposes



When asked, "Which other forms of payment would you use if El Metro would offered them?" Younger respondents within 18-34 years of age responded that they would like more payment methods specifically digital forms of payment, suggesting "paying through an app", or "a digital pass." Meanwhile, older El Metro riders, when asked the same question, responded that they are satisfied with current payment options. In most cases, those who responded "satisfied" with current payment options are over the age of 65 and use the El Metro Senior-Disability card.

Figure 4 - Payment Types

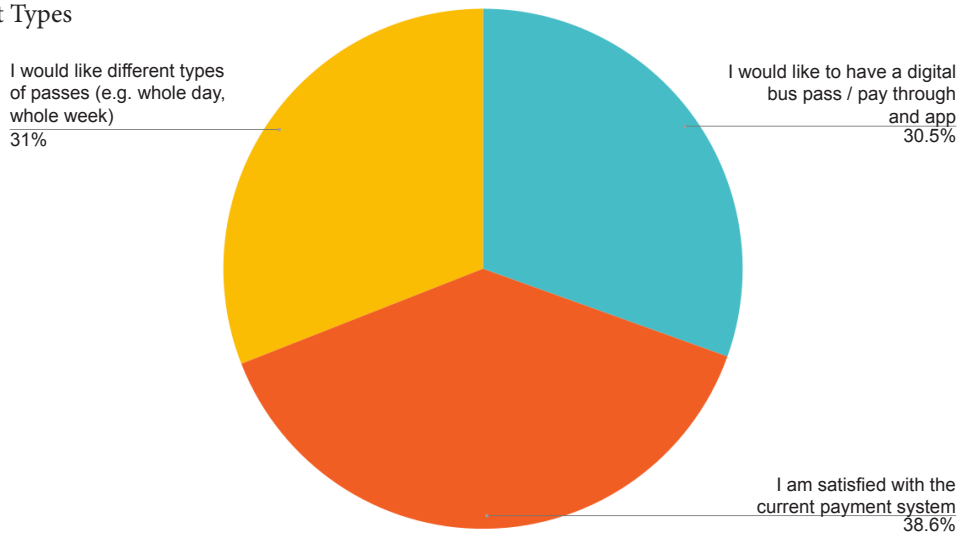
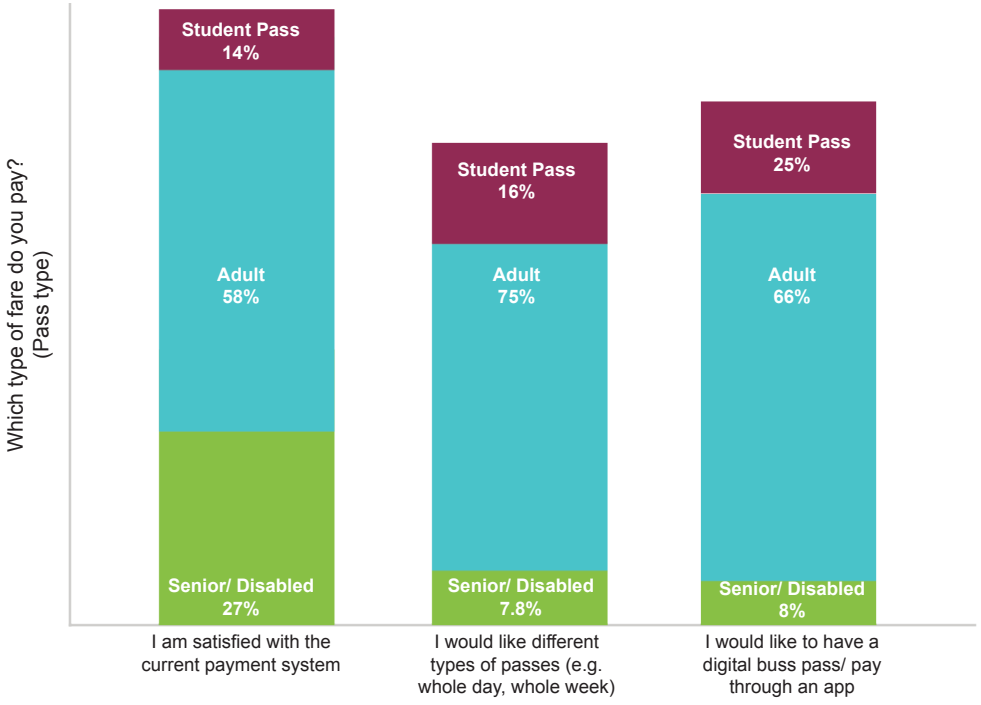


Figure 5 - Payment Types vs Current Fare Payments



Regarding hours of operations, results show dissatisfaction with existing options. Respondents mentioned that they would like longer hours on weekends, especially on Sunday. Respondents who responded 'satisfied' in the 65+ age bracket mentioned that if they missed a bus they could wait for the next one because they had no urgency to get to their destination.

Figure 6 - Hours of Operation

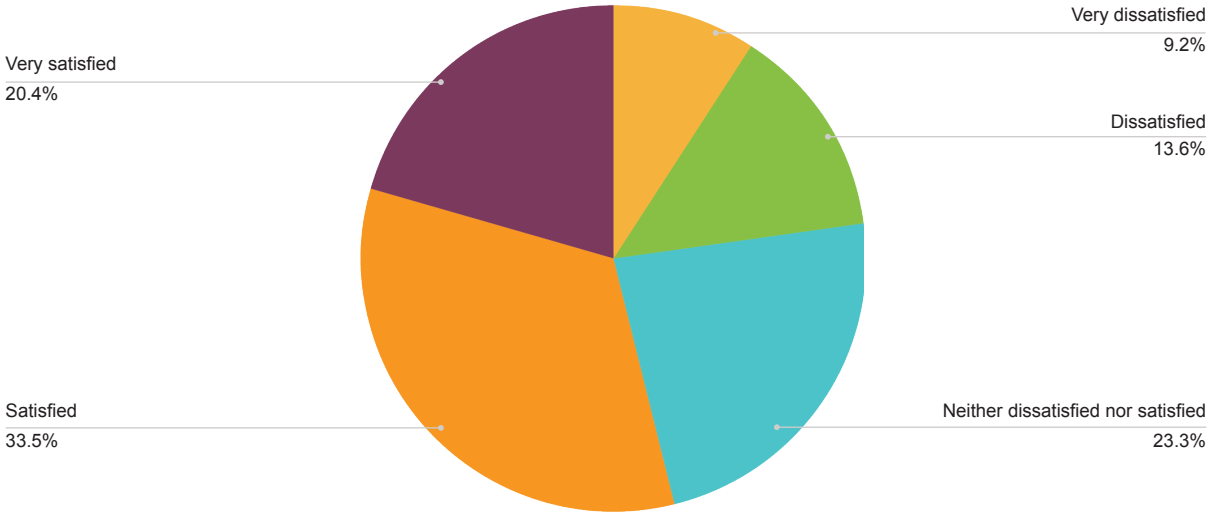
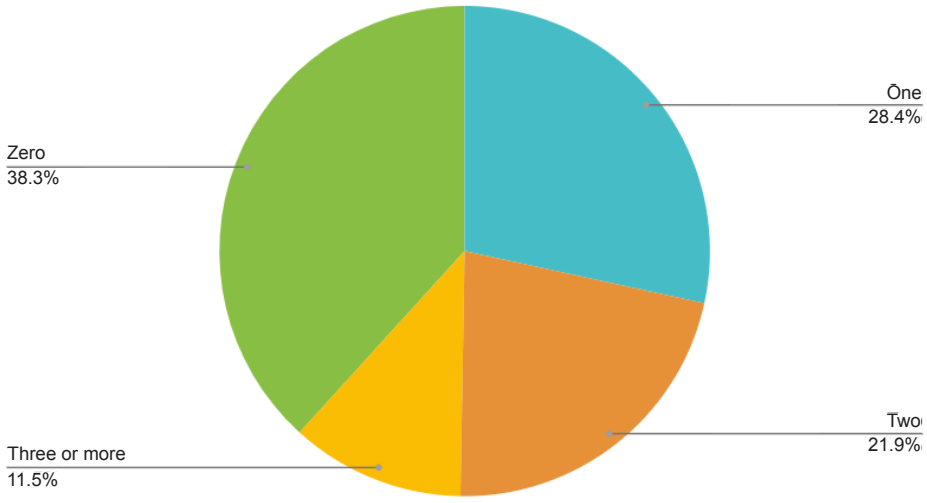


Figure 7 - El Metro Riders Access to a Personal Vehicle



Designing a bus services often requires trade-offs; when asked to choose between route coverage and frequency, approximately 60% of respondents responded that they prefer frequent bus services, even though it may require walking farther. Approximately 40% prefer bus stops closer to their destination, even though bus services might be less frequent (Figure 8). When asked to choose between travel time and transfer trade-offs, respondents were split, with 53.3% preferring shorter travel time, even though it may require to transfer between routes, and 46.7% preferred traveling on one bus even though routes would be indirect and travel time might be longer (Figure 9).

Figure 8 - Frequency vs. Coverage

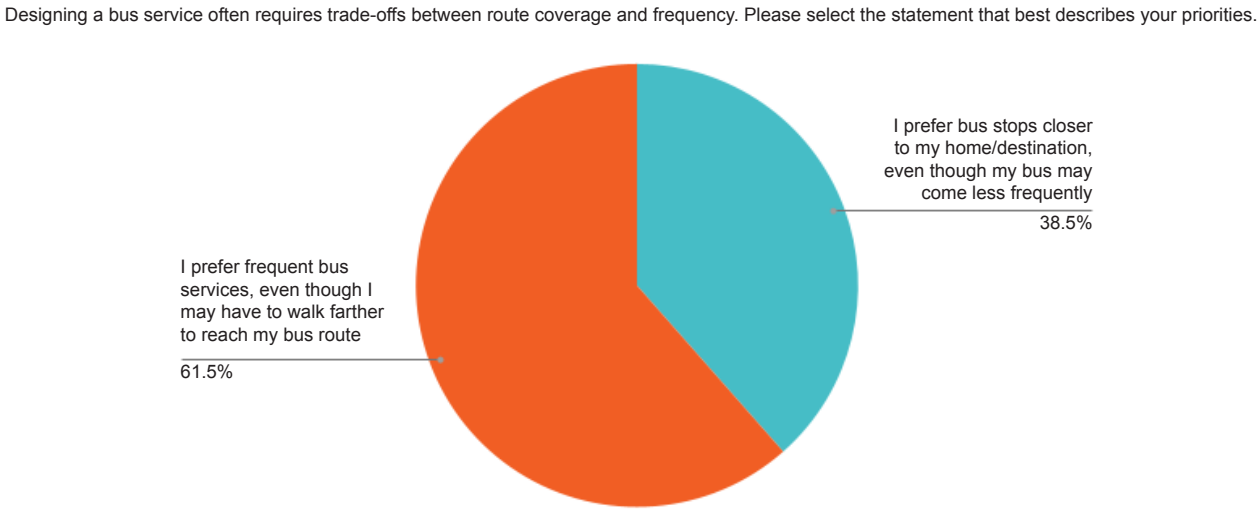
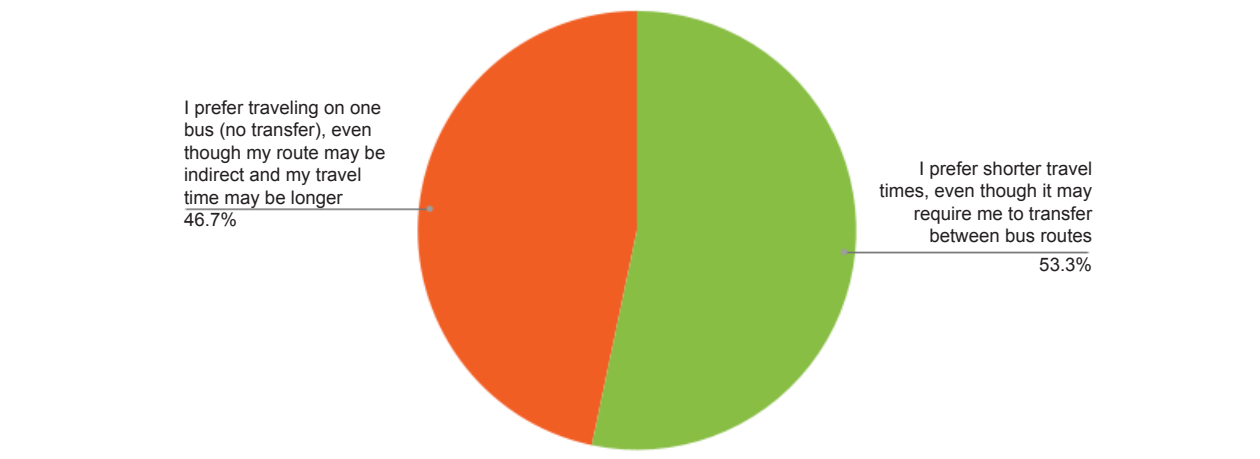


Figure 9 - Travel Time vs Transfers



Finally, when asked how satisfied riders are with the overall experience with El Metro, respondents generally responded satisfied on safety, comfort, and cleanliness.

With the help of El Metro, a small sample of El Lift riders were surveyed (21 riders). These surveys were conducted via phone by El Metro.

The vast majority of riders responded to using El Lift for medical appointments (76%), as well as using El Lift services 1-2 days a week. Those who responded to using El Lift less than once a month often responded to using El Lift for errands, shopping, or recreation.

Figure 10 - El Lift User Frequency

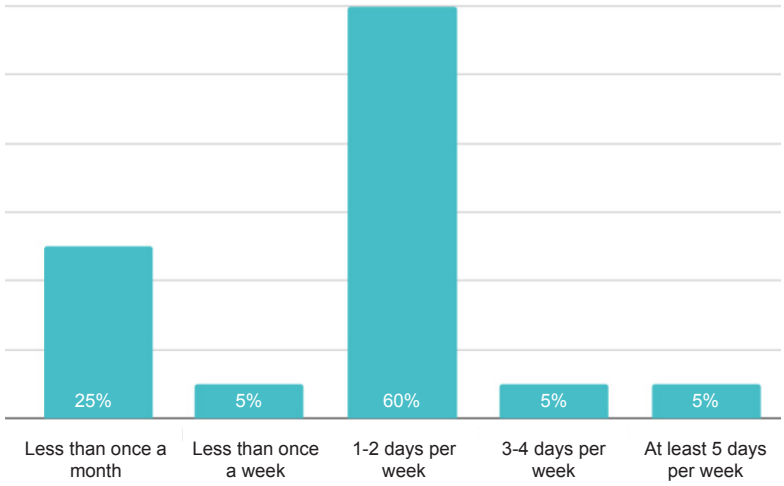
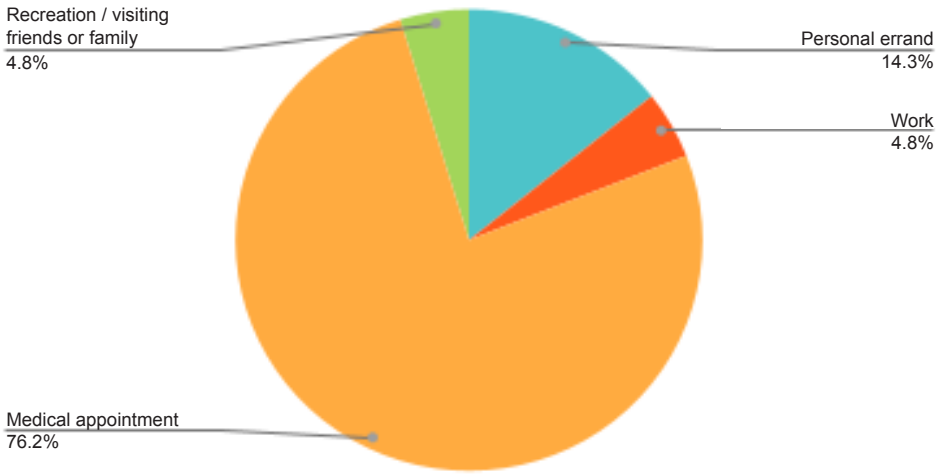


Figure 11 - El Lift Purpose of Trip



Respondents reported that if El Lift was not an option, they would have to rely on rides from friends or family since they do not feel El Metro bus services are accessible and are unable to travel by bus services due to their disabilities. Additionally, respondents who responded to relying exclusively on El Lift had less vehicles accessible to them; 46% had access to one vehicle; 33% had no vehicle access.

Figure 12 - What prevents you from using El Metro bus service?

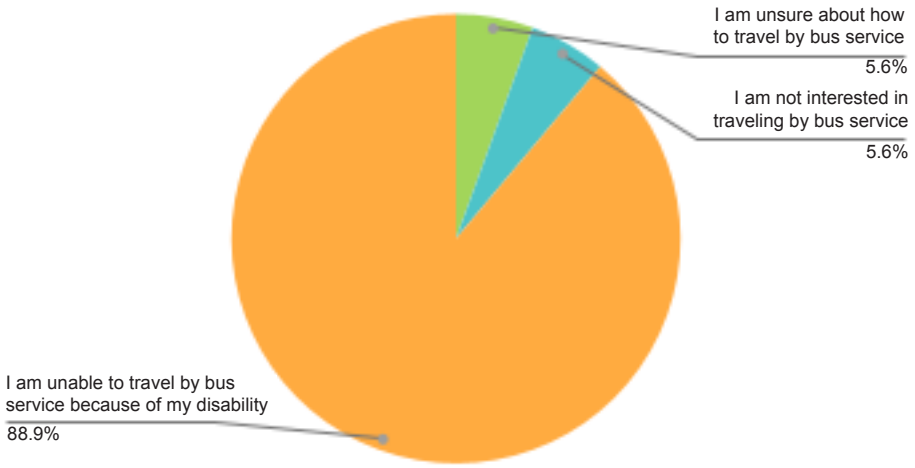
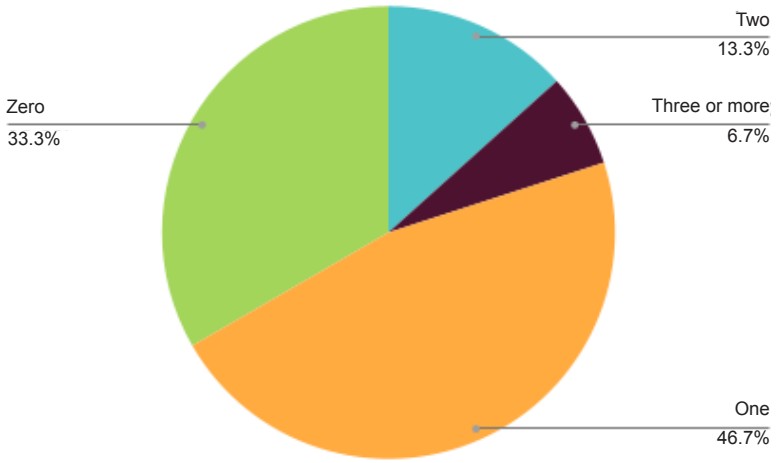


Figure 13 - How many vehicles are available in your household?



Overall, 54% of survey respondents identified themselves as non-riders, meaning they have not used El Metro in the past two years, or have never used El Metro. When asked why they have not used El Metro services, the main reasons were the following: 30% have access to a vehicle and prefer to drive, 17.7% felt the bus trip would take too long, and 17.4% do not know how to use El Metro services. The vast majority of non-riders (95%) have access to a vehicle and prefer to drive.

Figure 14 - If you do not use El Metro, why not?

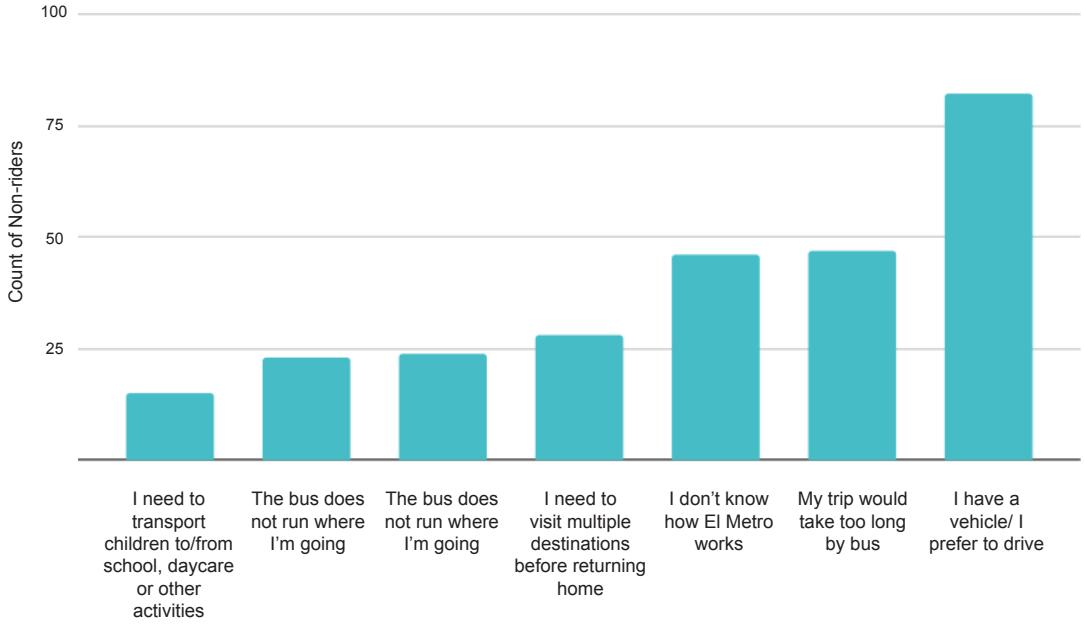
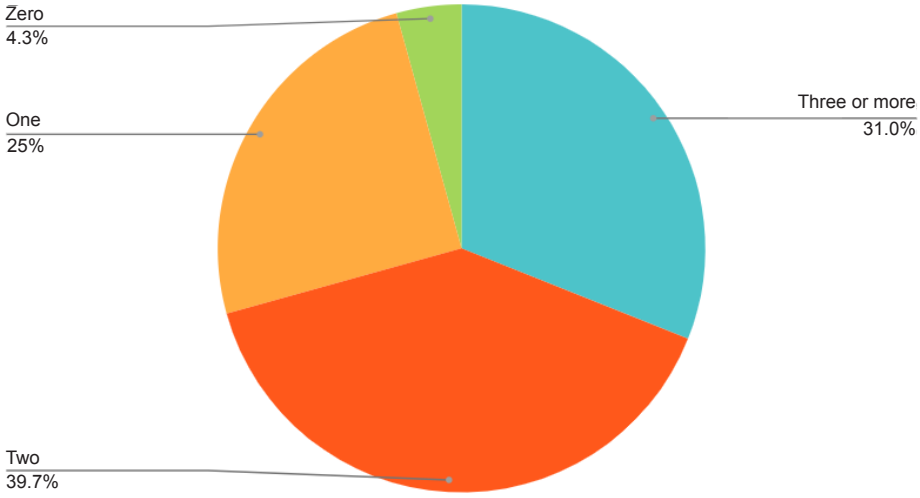


Figure 15- How many vehicles are available in your household?



When asked if they knew where the closest bus stop to their home or work was located, 70% of respondents said that they knew where the closest stop was located. Additionally, 77% of respondents who identified as non-riders responded that if their typical mode of transit was not an option they would use El Metro services. This indicates that there is potential for ridership growth if improvements are made to El Metro's services.

Figure 16 - If your typical method of travel was not available, would you ride El Metro bus services?

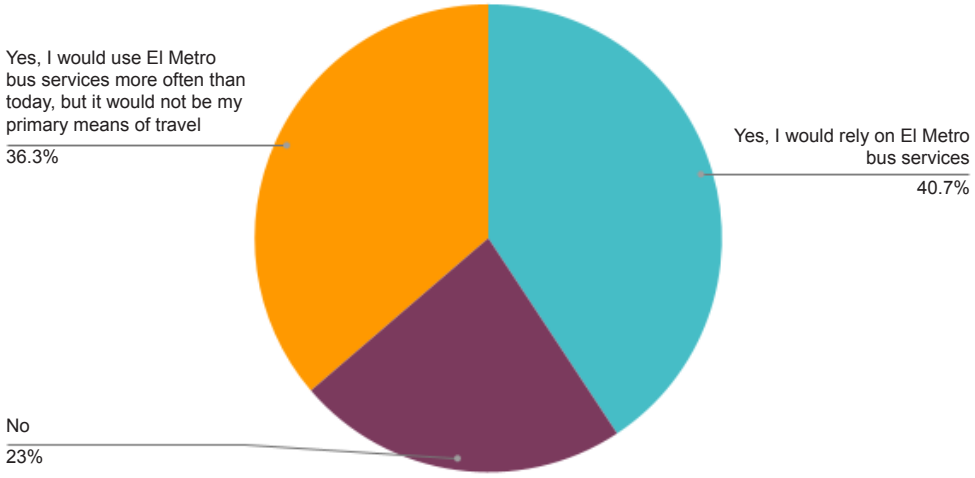
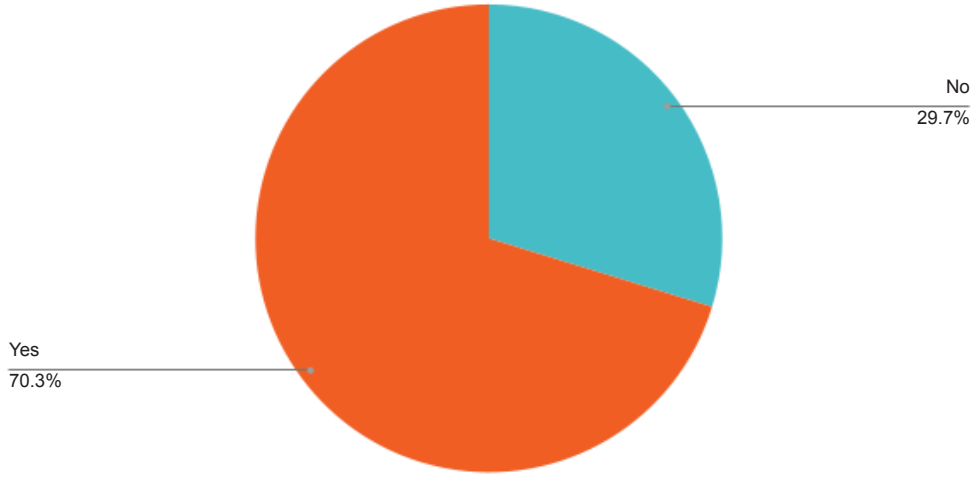
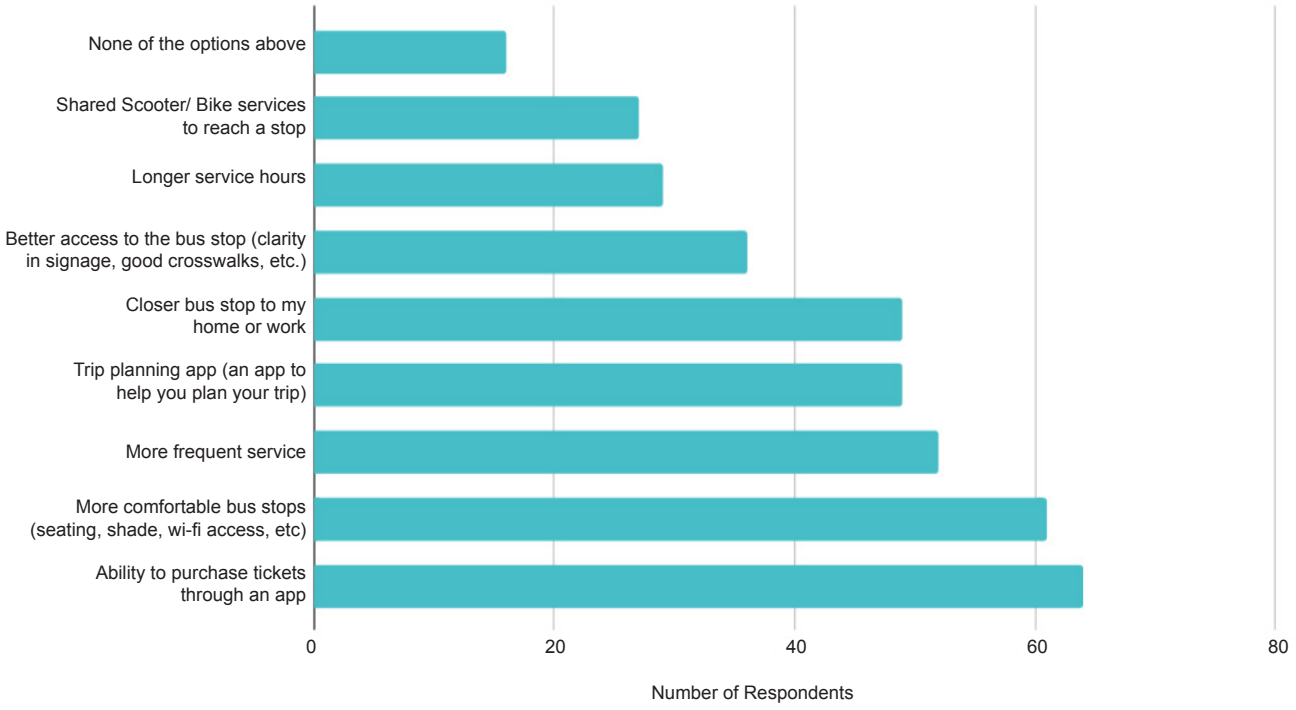


Figure 17- Do you know the location of the bus stop nearest to your home?



When asked what would motivate or incentivize them to use El Metro services, non-riders suggested that they are more likely to become choice riders if El Metro had a trip planning and fare purchasing app (12.8%), more frequent service (13.6), and closer bus stops to work and home (12.8%). Overall, non-riders are not familiar with how to use and ride El Metro, and they suggested marketing campaigns or educational videos on how to purchase passes, pay fares and find their route.

Figure 18- What change, if any, could cause you to use El Metro bus services more often?



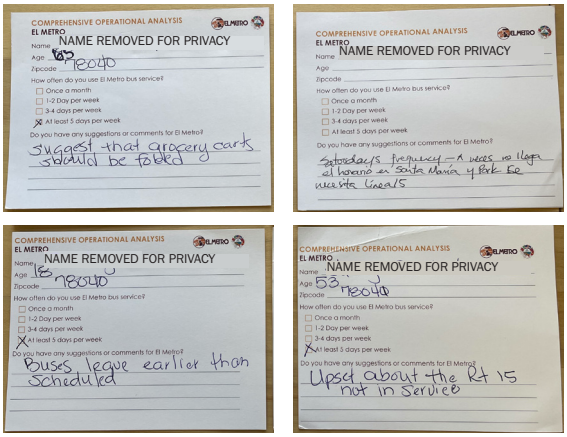
SECOND ROUND OF ENGAGEMENT

EL METRO RIDERS POP-UP

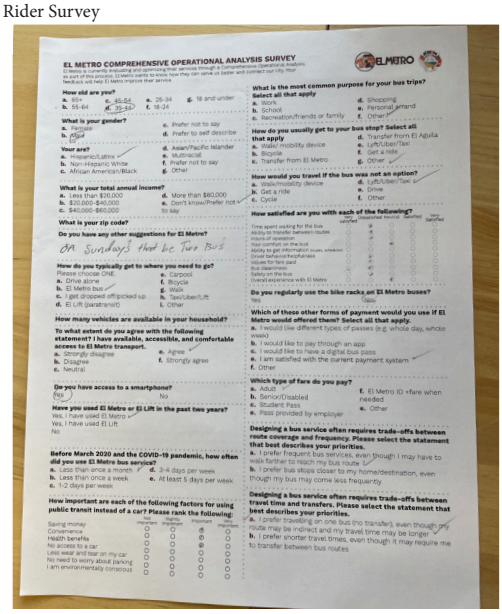
The Able City team held an El Metro rider pop-up at the El Metro Transit Center on Tuesday July, 5th 2021 from 9 am to 2pm. They engaged riders of El Metro while they were waiting to board or while boarding El Metro buses.

The pop-up was conducted to increase the response rate of the rider survey. After the first months of the survey being live, the team realized that most respondents where non-riders, and younger audience that were digitally literate. Because of this finding, the team took printed surveys to the El Metro transit station downtown and surveyed and interviewed riders and non-riders in person. After that effort, the survey response rate increased 60%. Additionally, visualizations of existing routes and network map were used as interactive visuals. Riders were asked to place a sticker on the routes they ride the most, and to leave feedback on their experience riding El Metro.

El Metro Comment Cards



El Metro Rider Survey

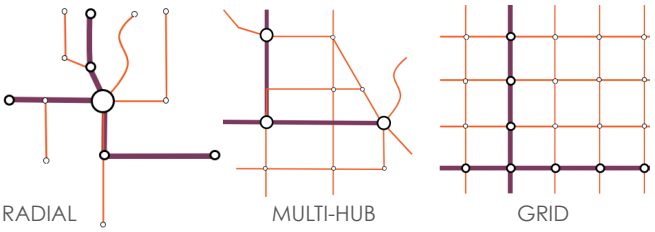


STAKEHOLDER MEETING LEADERSHIP AND TECHNICAL

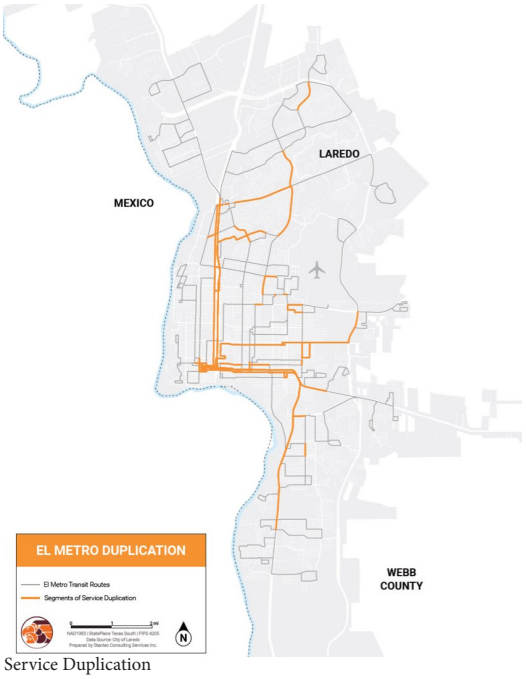
The second round stakeholder meeting took place in the El Metro Board Room on July 29th, 2021. The stakeholder meeting included members of the leadership and technical committees. Those present included council members, El Metro executive leadership, representatives of City of Laredo Public Works, Laredo MPO, El Aguila Rural Transit, City of Laredo Engineering Department, and South Texas Development Council.

The Able City team presented the findings of the first round of community engagement, from both public meetings and focus group meetings. The outreach brief concluded with an overview of the survey. The presentation also included an update on the comprehensive operational analysis by the Stantec team. Stantec presented findings from the Gaps Analysis and potential opportunities such as; unmet transit demands, propose network simplicity, service duplication, fare assessments, infrastructure needs, transit service guidelines, staff needs, and more. The Stantec team shared their analysis on the existing network plan and suggested a multi-hub network plan for Laredo.

After the presentation, the team opened up the floor to questions and comments from the stakeholders. These were the main topics discussed:



Network Planning



Service Duplication

KEY TOPICS

INFRASTRUCTURE

Public Works mentioned that newer roads are not designed to accommodate the weight of El Metro's buses. El Metro responded that Public Works and El Metro should coordinate so that Public Works can use the Comprehensive Operational Analysis to build and design streets that support transit.

FREQUENCY AND COVERAGE

El Metro mentioned that they are going to propose a circulator program provide local connections around north and south Laredo.

Riders mentioned low frequency service on Sundays is a pain point. El Metro responded that they are aware of those frustrations, and that the reason that Sunday service is limited is due to budget constraints. A Council Member suggested that microtransit might be an option for Sundays since it is an on-demand service.

CHOICE RIDERS

Target choice riders by creating marketing campaigns and educational resources to encourage choice riders to try and become riders of El Metro.

On Monday, August 23rd from 10 am to 2 pm, the Able City team put together a student focus group at Texas A&M International University at the Student Center building. That same day El Metro was present on campus signing up students to El Metro reduced fare student passes.

The Able City team put together interactive activities to engage students. The first activity focused on answering 3 questions: Have you used El Metro? Do you know how to use El Metro? Are you aware the El Metro offers a reduced fare for students?

Students were given a green dot for "yes" and red dots for "no" to answer all the questions. After answering those 3 questions with the green and red stickers, if they answered yes to "Have you used El Metro?" they were given an "I love El Metro because..." card, and prompted to write why they love, or why they ride El Metro. If students answered no to this question, they were given a "I don't use El Metro because..."card and prompted to write what discourages them from riding El Metro.

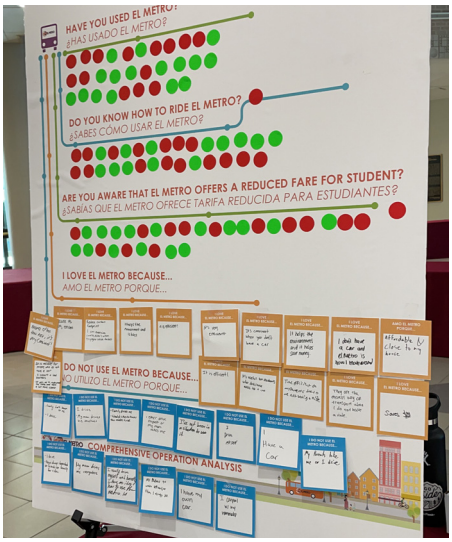
The second activity was to plot on a map of Laredo with a yellow dot where they live and with a blue dot to mark their work location, if applicable. As shown on the map most yellow dots are located within a 10-15 walk from an El Metro route, most students were not aware that they live or work at such a closed distance to an El Metro line.

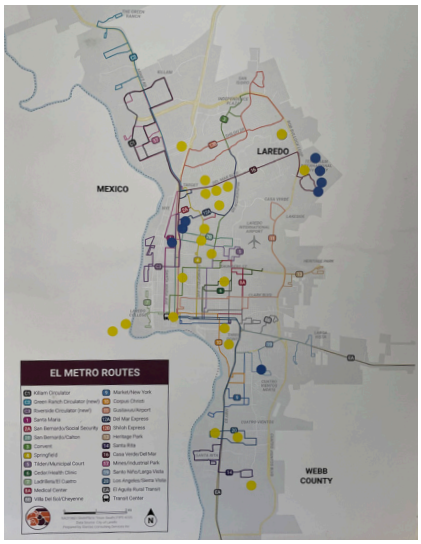
Both questions "Have you used El Metro?" and "Do you know how to use El Metro?" had split answers.
Below are some of comments from students on why the love El Metro and why the have not used El Metro.

Have you used El Metro?
- 18 Yes
- 15 No

Do you know how to use El Metro?
- 14 Yes
- 19No

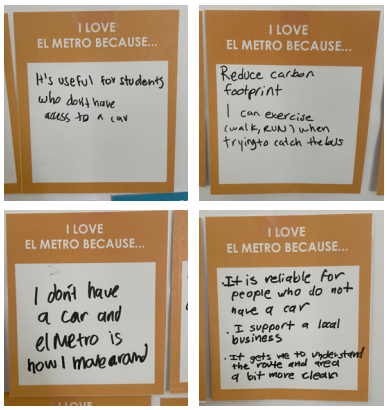
Are you aware El Metro offers a reduced fare for students?
- 16 Yes
- 16 No



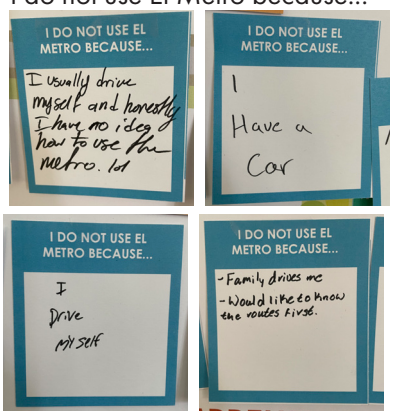


Yes No Where do you live? Where do you work?

I love el metro because...



I do not use El Metro because...



THIRD ROUND OF ENGAGEMENT

EL METRO RIDER POP-UP

On Monday, October 19th from 8 to 11:30 am, the Able City team set up outside the El Metro Transit Center at Farragut Street. The goal was to inform riders of the proposed changes of the network plan and get feedback on the microtransit pilot program. The team engaged with over 30 El Metro riders and received feedback and comments through the engagement activities.

El Metro riders were given red and green stickers, and were directed to the overall El Metro proposed network plan, where the team would show an overview of the changes to routes 18 Lakeside, C4 South Circulator, 8B Villa del Sol/Cheyenne, and 12A Del Mar Express. Riders were then directed to the first engagement board showing the proposed new services. Riders showed support to both routes, but most enthusiasm was for C4 South Circulator. Riders were excited to see a route connecting south Laredo and connecting existing routes 9, 20, and 14.

Second, riders were directed to the proposed modified routes. Riders were asked "will these questions impact your commute?" and "Do you agree or support the proposed changes?". Riders responded with 77% support on realigning 12A Del Mar Express, and 90% support the proposed substitution of route 8B Villa del Sol with a microtransit pilot.

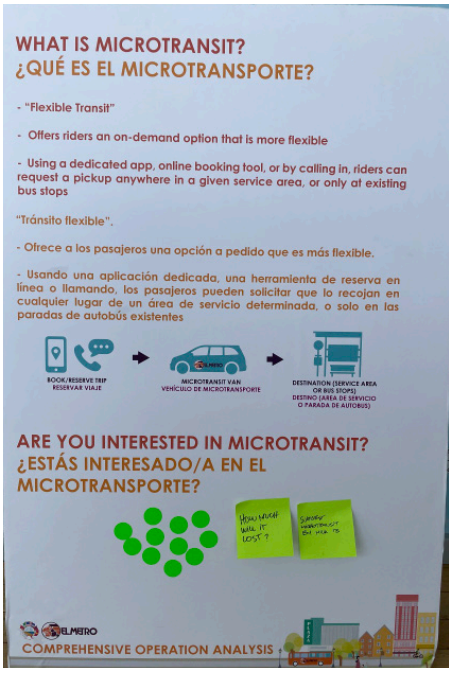
When explaining to riders the replacement of route 8B Villa del Sol/Cheyenne, the team explained that the route had little to no ridership, which is the main reason for the recommendation to replace it with a microtransit pilot. The team mentioned that El Metro has received approval from City Council to explore microtransit, and that the area that 8B serviced would be a potential location for this pilot program. Majority of riders were not familiar with microtransit, but after the team shared the benefits of this program, riders showed full support for this program and excitement to use it if available to them.

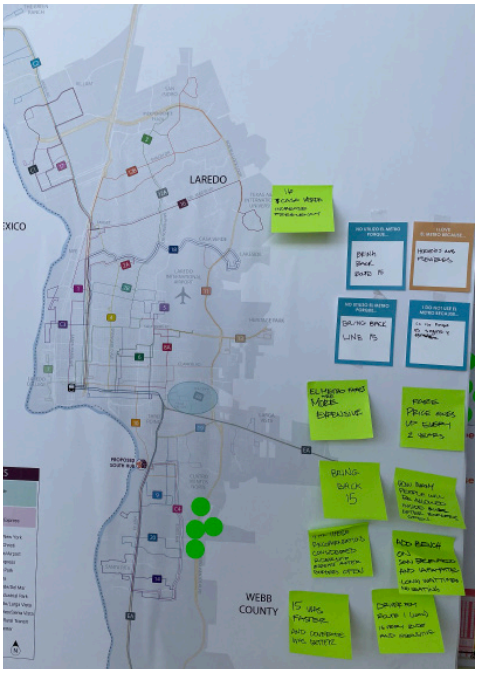
Questions asked to riders

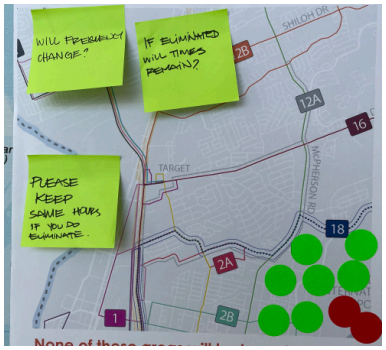
Are you interested in microtransit?
- 100% Yes
- 0% No

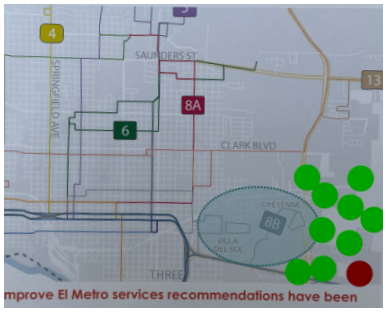
Do you support proposed elimination of 12A?
- 77% Yes
- 23% No

Do you support proposed elimination of 8B?
- 90% Yes
- 10% No









STAKEHOLDER MEETING LEADERSHIP COMMITTEE

The final stakeholder meeting took place at the El Metro Board Room on October 19th, 2021. The final meeting included El Metro executive leadership, Laredo MPO Staff, and City of Laredo Engineering Department. Goal

Stantec presented the proposed Network Plan, and divided their recommendations into short-term and long term needs. The short-term recommendations included the addition of Route C4 South Circulator, realignment of route 12A Del Mar Express to create the new route 18 Lakeside, and service substitution of route 8B Villa del Sol/Cheyenne with a microtransit pilot.. The long term needs included recommendations of a North and South Hub to facilitate transfers between bus lines and a better waiting experience for customers.

To facilitate implementation, Stantec divided recommendations into 3 key supporting categories:

- Improve Transit Service
- Enhance Customer Experience
- Expand El Metro's Value to Laredo

The team's goal for the final stakeholder meeting was updating stakeholders on the process but most importantly inviting them to support and collaborate with El Metro in the implementation process and in their pursuit to continue providing safe, reliable, courteous, accessible and user-friendly services.

KEY SUPPORTING RECOMMENDATIONS

Improve Transit Service

- Route adjustments/service changes
- Microtransit services
- Data collection and usage plan
- Transit service guidelines
- Transit priority infrastructure
- NextGen bus network
- North and South hubs

Enhance Customer Experience

- Bus stop study
- Eliminate transfer fare and launch fare study
- Accessibility improvements
- Trip planning improvements

Expand El Metro's Value to Laredo

- Marketing plan
- Working group of El Metro staff and city partners
- Partnership program for events, schools, etc.
- Expand El Metro's internal resources and capacity

- BLANK PAGE LEFT INTENTIONAL -