San Marcos Five-Year Transit Plan

Draft Final Report

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NYGAARD

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Table of Contents

Table of Figures

1 EXECUTIVE SUMMARY

INTRODUCTION

San Marcos has experienced significant population growth over the past 15 years. Enrollment at Texas State University has steadily increased, resulting in new student housing on-campus and throughout other areas of the city. New retail centers, residential developments, and educational facilities have changed how people travel within the community. During this period of relentless growth, public transit in San Marcos has essentially remained the same in terms of funding and service levels.

The Capital Area Rural Transportation System (CARTS) began providing flexible general public paratransit service to residents of San Marcos in the 1980s. After determining a need for a more extensive system, CARTS introduced fixed-route bus service to San Marcos in 1996. In 2001, CARTS opened the San Marcos Station, an intermodal facility serving local bus, CARTS regional transit, Greyhound, and Amtrak.

In March 2012, the results of the 2010 U.S. Census were released and San Marcos was designated as an urbanized area, which also included the City of Martindale, and unincorporated portions of Hays, Caldwell, and Guadalupe Counties, with a population of 52,826. The significance of the designation is the allocation of federal and state funds to the urbanized area for public transportation. The City of San Marcos called a Transit Conference to determine the best path for the new urbanized area. All political subdivisions within the urbanized area participated and voted to have CARTS create a combined Urban/Rural Transit District and allowing the City of San Marcos to appoint a member to the CARTS Board of Directors.

In November 2013, CARTS contracted with Nelson\Nygaard Consulting Associates to develop a Five-Year Strategic Plan for Transit Development. A Steering Committee comprised of technical staff was assembled to provide direction and feedback throughout the planning process. The Steering Committee included members of CARTS, City of San Marcos, Texas State University, TxDOT, and the Texas Transportation Institute. At the onset of the planning process, the Steering Committee convened and established the following goals and objectives:

- Conduct a comprehensive evaluation of the entire transit system
- Understand the needs of existing and potential customers
- Develop recommendations to optimize bus service
- Provide a framework for sustainable system growth
- Ensure alignment with the recently adopted local and regional plans
- Increase ridership by improving the attractiveness and practicality of transit service

PLAN DEVELOPMENT

The San Marcos Five-Year Transit Plan was developed in three phases. CARTS and City of San Marcos staff were closely involved throughout this process. The following summaries include key tasks and identify important findings for each phase of the planning process.

Comprehensive Service Evaluation

The initial phase of the study included a comprehensive evaluation of the entire transit system and service area. Socio-economic and demographic characteristics of the San Marcos area were analyzed to identify concentrations of high transit demand. Commute patterns and employment characteristics were also examined. Ridership for each route, trip, and bus stop in the system was evaluated to measure the performance existing service. Schedule reliability was also assessed for each trip. The evaluation process also included extensive field work in which the alignment of each bus route were reviewed.

A number of important findings were during the comprehensive service evaluation process:

- Residential densities have increased in several areas
- A significant number of bus stops do not have signage and are not accessible
- Several route segments exhibit low productivity
- One-way streets near San Marcos Station increase travel time
- Several routes operate along narrow, residential streets
- A high percentage of customers must transfer to reach their destination
- Most trips arrive and depart on-time

Community Engagement

An extensive outreach effort was made to engage the community and determine the needs and preferences of customers. This phase of the project included surveying customers at San Marcos Station, creating a project website, conducting an online survey, and hosting a series of public meetings and stakeholder workshops.

During this process, a wide range of feedback was provided from existing riders, community representatives and other citizens. The following comments were expressed throughout the community engagement process:

- Bus stops lack signage and amenities (seating and shelter from sun)
- Buses are usually on-time and drivers are excellent
- Improved frequency is more important than service to new areas
- Later service is needed for employees with evening/night shifts
- Weekend service is needed
- Bus service should be better marketed to the community

Service Recommendations

Findings from the comprehensive service evaluation and community engagement process were summarized in an existing conditions report that served as a basis for service recommendations.

Service recommendations are divided into two categories:

- System route restructure
- System service expansion

System restructure recommendations include a series of route changes that reallocate service from unproductive corridors to areas with greater transit need and higher ridership potential. Restructure recommendations also seek to reduce inefficiencies that have developed over time due to changes in development, traffic, and infrastructure.

System expansion recommendations require additional funding to increase the number of service hours and number of vehicles. Expansions recommendations are intended to build upon restructure recommendations.

2 PLAN REVIEW

The San Marcos Transit Plan considers direction from adopted short-range plans with a transit element. The most relevant and important information from each plan is summarized below.

VISION SAN MARCOS COMPREHENSIVE PLAN

San Marcos City Council adopted the Vision San Marcos Comprehensive Plan in March 2013. The planning effort included continuous community outreach and serves as a guide for development and growth over the next 20 years. Plan elements include economic development, environmental protection, land use, neighborhoods and housing, parks and public spaces, and transportation.

The land use element included development zones, in which new development and redevelopment should be directed. Downtown and Midtown were identified as zones that would best accommodate high-density mixed-use development. The downtown development zone encompasses the historic downtown square as well as San Marcos Station. The plan mentions the need to improve connectivity and access between focal points of the city, including Texas State University.

The midtown development zone straddles the I-35 corridor immediately northeast of downtown and currently includes a mix of retail, multi-family residential, and potential infill areas. The plan envisions increased high-density development and redevelopment within this zone due to its proximity to downtown, Texas State University, and the San Marcos River. The plan also calls for increased transit options in the midtown development zone.

The land use element also places an emphasis on infrastructure that supports mobility and alternative modes of transportation such as transit and bicycling. A specific goal requiring all developments to dedicate adequate right-of-way to accommodate all modes of transportation is an important step in supporting and embracing transit, bicycling, and pedestrian activity.

The transportation element of the plan includes a goal of creating a multimodal transportation network to improve accessibility and mobility, minimize congestion, and reduce pollution. This goal includes a focus on non-vehicular transportation improvements and the creation of a sidewalk master plan to support pedestrian mobility. The plan also acknowledges that sidewalks are complementary to public transit.

The combined goals and objectives of the Vision San Marcos Comprehensive Plan provide a detailed guide on how the City of San Marcos should grow and evolve over the next two decades. An increased emphasis on multimodal transportation, including increased transit options, is essential to achieving the overall vision.

SAN MARCOS YOUTH MASTER PLAN

The City of San Marcos adopted a Youth Master Plan in 2013 after a series of community conversations and with the guidance of a Youth Master Plan Steering Committee. Core principles

of the Youth Master Plan include investing time early, taking full advantage of community support, and promoting leadership. The Youth Master Plan also includes priority areas for action to address issues faced by San Marcos youth.

The need to improve transportation options was a topic of discussion at each community conversation session, which reveals the value placed upon it by youth and parents. One of the six priority areas for action calls for increased and improved availability and access to developmental activities, opportunities, and programs.

This goal also included action steps that included convening transportation leaders to discuss how to improve connectivity and integration with school, university and CARTS bus systems. Additional action steps include added evening and weekend transit service and keeping transit fares affordable for young people.

TEXAS STATE CAMPUS MASTER PLAN UPDATE

The Texas State University Master Plan was updated in November 2011 as a result of increased enrollment, expanding faculty research, and changes in the financial outlook of the university. The Master Plan Update includes a more detailed focus on issues such as transportation and student housing needs.

The Master Plan Update includes a direction to continue replacing on-campus surface parking with parking garages to free space for new buildings and open spaces. In an effort to reduce on-campus parking demand and promote transit, Texas State University constructed a second bus terminal within the core area of campus. Additional improvements to campus transportation infrastructure include new bus stop signage and shelters.

Over the next several years, Texas State University will continue to maximize its limited land and replace aging student housing with new, high-density student housing.

CAPITAL AREA REGIONAL TRANSPORTATION COORDINATION COMMITTEE (RTCC) PLAN

The Capital Area Regional Transportation Coordination Committee (RTCC) adopted a Coordinated Plan in February 2012 for the ten-county Capital Area Council of Governments (CAPCOG) region as required by the Texas Department of Transportation (TxDOT) and the Federal Transit Administration (FTA). The mission statement of the RTCCC is to foster the development of a seamless public transportation system that achieves efficiencies, eliminates duplication, increases coordination, and addresses service gaps.

 Although the RTCC Plan included community feedback from cities and towns across the entire ten-county region, specific transit issues were reported across the region. The top three strategies of the RTCC Plan include expanding transit service to the entire region, maintaining and increasing service as the region continues to grow, and addressing unserved destinations within existing transit service areas.

3 EXISTING TRANSIT SERVICES

FIXED ROUTE SYSTEM OVERVIEW

San Marcos Transit operates 10 local bus routes in the San Marcos using five buses. Each route operates Monday-Friday between 7:00 a.m. and 6:00 p.m. Service does not operate on major holidays that occur on weekdays.

Routes 1, 3, 5, 7, and 8 depart San Marcos Station at the top of the hour and operate for 30 minutes. Routes 2, 4, 6, 10, and 11 depart San Marcos Station at the bottom of the hour and operate for 30 minutes. Each route is paired with another route, creating a 60 minute cycle time. Timed connections can be made at San Marcos Station with four of the nine other local routes every 30 minutes. Connections with other local routes at San Marcos Station require a wait time of approximately 30 minutes.

Route 12 is a rural connector route connects the communities of Redwood and Martindale with San Marcos. Route 12 operates a one hour loop three times per weekday at 6:30 a.m., 11:30 a.m., and 5:30 p.m. Figure 1 shows the alignments of Routes 1 – 12 and average daily ridership for each bus stop.

A Senior Shopper shuttle operates on Tuesdays and Thursdays between three senior living complexes (Mariposa, La Vista, and Springtown Villa) and Wal-Mart (Tuesdays) or HEB (Thursdays) in San Marcos. There is one trip per day between each residential location and the shopping destination.

San Marcos Transit currently has 167 bus stops with regular ridership activity. Approximately 45% of boardings take place at San Marcos Station, which serves as the primary connection point. Few connection points are present elsewhere in the system due to the radial route design.

A one-way fare costs $0.50 and includes a free transfer to other routes at San Marcos Station. Persons registered with a disability, seniors (60+), and K-12 students (with school ID) may ride for $0.25. Children under 5 years ride free with an adult. A multi-ride ticket may be purchased for $10 (20 one-way fares) so that riders do not have to carry exact change.

Fixed-Route Fleet

Nine 18-passenger (2-wheelchair) capacity cutaway buses are dedicated to the San Marcos Transit fixed-route service. Six vehicles provide service Monday through Friday. A seventh vehicle operates the Senior Shuttle route only Tuesday and Thursday. Two vehicles are available as spares. Six of the buses are six years old, two are four years old, and one is nine years old.

Figure 1   San Marcos Transit System Map
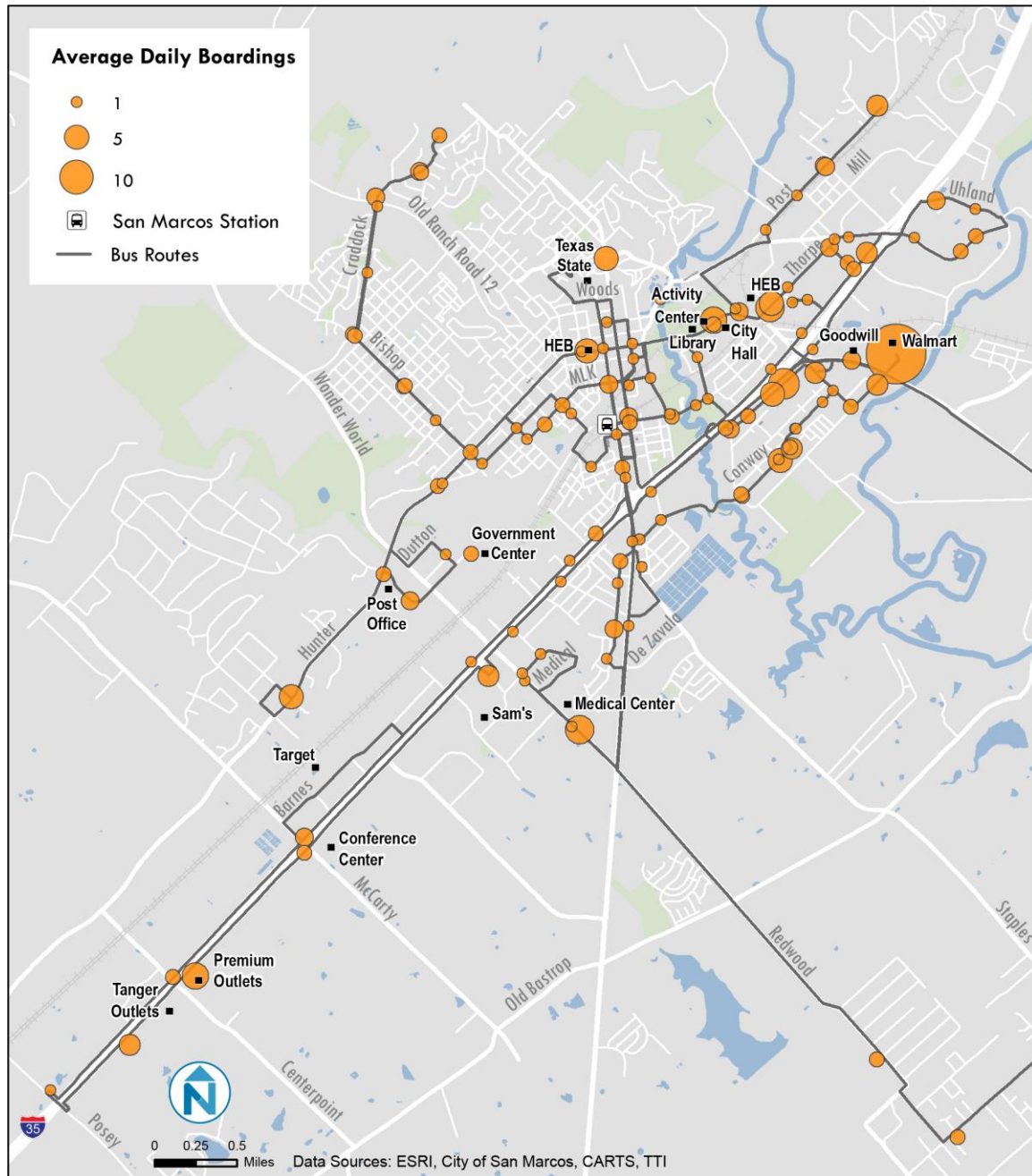
Performance Characteristics

There were over 128,000 boardings on San Marcos Transit between September 2012 and August 2013. On average there are 520 boardings per day on all routes, with an average system productivity of 9.1 boardings per hour. Figure 2 reports daily boardings, daily revenue hours, and boardings per hour by route. Route 4 carries the most passengers daily, with 71 boardings on average, closely followed by Route 7 and Route 3, shown in Figure 3. The Senior Shuttle and Route 12 have the fewest daily boardings but also operate less service. All routes except for Route

12 and the Senior Shopper operate just under five and a half hours per day. As shown in Figure 4, the productivity ranking of all routes is driven by their daily boardings due to similar levels of service hours. Despite operating less service, Route 12 is the least productive route, though the data available at the time of writing for Route 12 is based on August 2013, when the market may not have fully matured.

Figure 5 shows the percentage of on time arrivals at the station by route. On time is defined as arriving between 0 and 5 minutes after the scheduled time. In most cases an arrival within 5 minutes of the scheduled time would ensure a connection to other routes. On average, routes arrive on time 78.5% of the time. Route 7 has the lowest percentage of on time arrivals with about 40% of trips arriving on time at the transit center. Figure 6 shows the systemwide boardings by time of day. Trips that occur at the half hour (e.g. 7:30 a.m.) were considered part of the hour time period (e.g. 7:00a.m.). Ridership steadily increases between 7:00 a.m. and 12:00 p.m., after which it declines with the exception of the 4:00 p.m. trip.

Figure 2   Performance Characteristics by Route

Route	Description	Daily Boardings	Daily Hours	Boardings per Hour
Route 1	Bishop Street	47	5.5	8.5
Route 2	Post Road	49	5.5	8.8
Route 3	Uhland Road	66	5.5	12.0
Route 4	The Marketplace	71	5.5	12.9
Route 5	Conway Street	57	5.5	10.3
Route 6	Medical Center	38	5.5	7.0
Route 7	The Outlet Malls	67	5.5	12.2
Route 8	Hunter Road	41	5.5	7.5
Route 10	Texas State University	34	5.5	6.1
Route 11	Hotel-Motel-Motel Shopper	32	5.5	5.8
Route 12	Redwood-Martindale	11	3.0	3.6
Senior Shopper	Wal-Mart & HEB	8	--	--
Daily Total		520	58.0*	9.1*

*Note: Daily Total Hours and Boardings per Hour do not include boarding data for the Senior Shopper shuttle. Due to the nature of the Senior Shopper shuttle service, exact hours operated vary from day to day.

Figure 3   Average Daily Boardings by Route
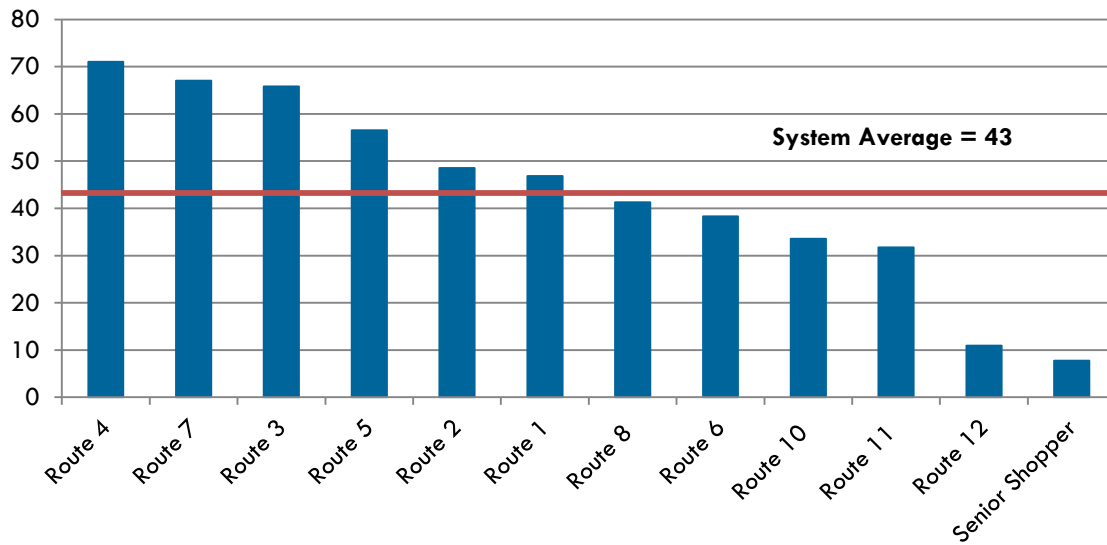
Figure 4   Boardings per Hour by Route
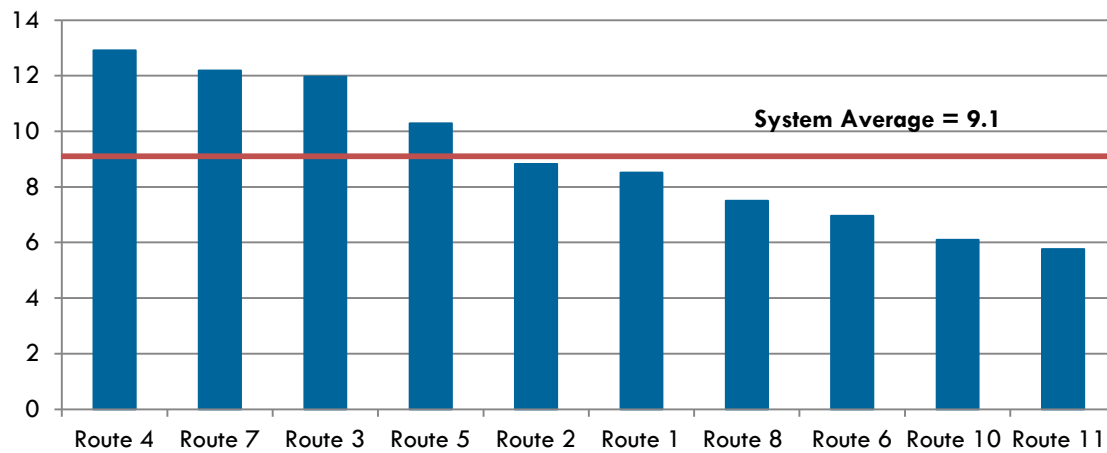
Figure 5   Percent of Trips Arriving On Time at Station
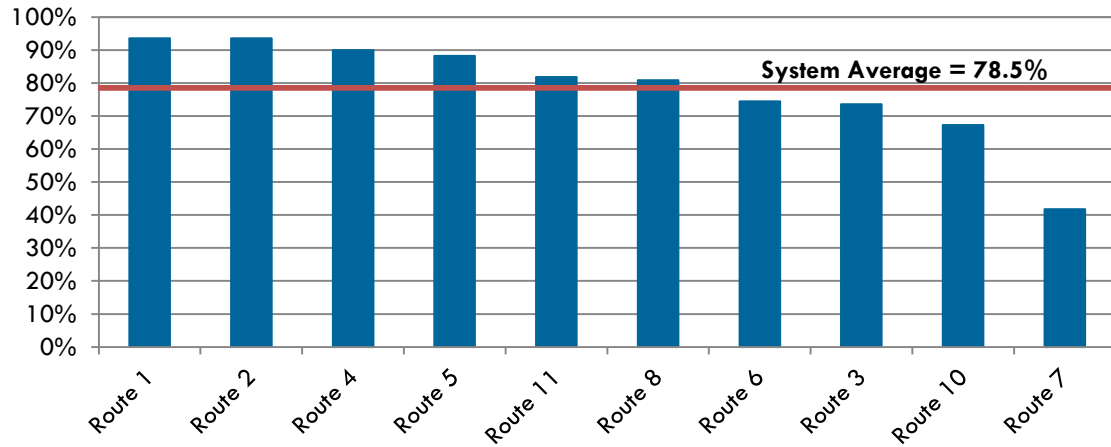
Figure 6   Systemwide Boardings by Time of Day
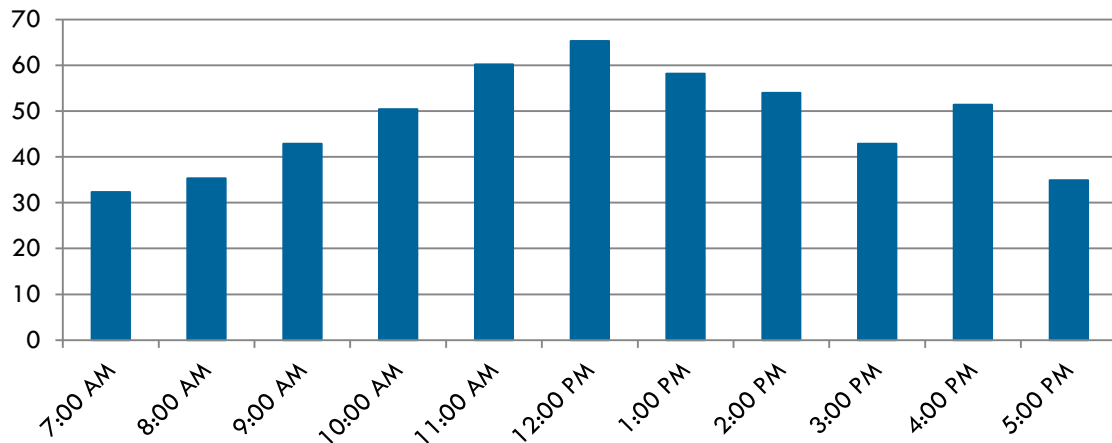
HISTORICAL RIDERSHIP

Fixed-route ridership in San Marcos has increased steadily since its inception. Figure 7 depicts system ridership data for fiscal years 2011-2013 based on operator daily counts.

Figure 7   Historical Fixed-Route Ridership
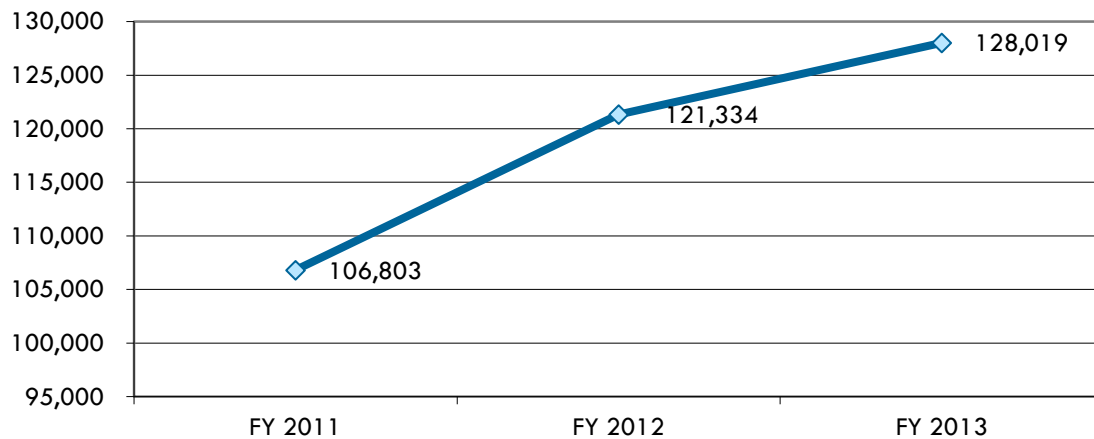
PARATRANSIT

With its transition to an urbanized area transit grant funding recipient, San Marcos Transit is in the process of reorganizing the existing paratransit service, focusing on ADA complementary paratransit service. The existing demand response service has evolved from curb-to-curb services that commenced over 30 years ago as part of the CARTS regional service. The current service has the following operating parameters:

- Open to residents with a disability or over 60 years old
- Operates 7:00 a.m. to 6:00 p.m. weekdays
- Service to anywhere within the San Marcos city limits
- Fares set at twice the fixed route fares ($1.00 base fare, $0.50 discount fare)

Customer registration is completed using the discounted fare application form which simply requires a medical professional validation of the applicant's disability. The Federal Transit Administration's complementary ADA paratransit requirements are essentially met as the current service provides an equivalent service (in terms of hours of operation, coverage area and fare) to the fixed-route service, and San Marcos Transit does not have capacity constraints leading to denials or trip purpose limitations. San Marcos Transit is in the process of developing an approved ADA paratransit plan and an updated eligibility process to formally document adherence to the ADA regulations.

Paratransit Fleet

Five 16-passenger (4-wheelchair) capacity cutaway buses are dedicated to the San Marcos Transit paratransit service. Three vehicles provide service Monday through Friday. A fourth vehicle operates only Monday through Wednesday when demand is higher. A fifth vehicle is available as a spare. Four of the buses are four years old and one is seven years old.

Paratransit Ridership

The paratransit program provides over 17,000 rides per year (Figure 8). Figure 9 highlights major trip generators for the paratransit system as observed during a sample month of operation (April 2013). The Senior Center is by far the most popular destination. Other top trip generators include Fresenius Dialysis Center, Mariposa Apartment Homes, Retreat of San Marcos, Hays Nursing Center, Wal-Mart, and the Scheib Mental Health Center.

Figure 8   **San Marcos Transit Paratransit Annual Ridership**

Fiscal Year	Annual Ridership
2011 - 2012	17,441
2012 - 2013	17,256

Figure 9   Popular Paratransit Trip Destinations
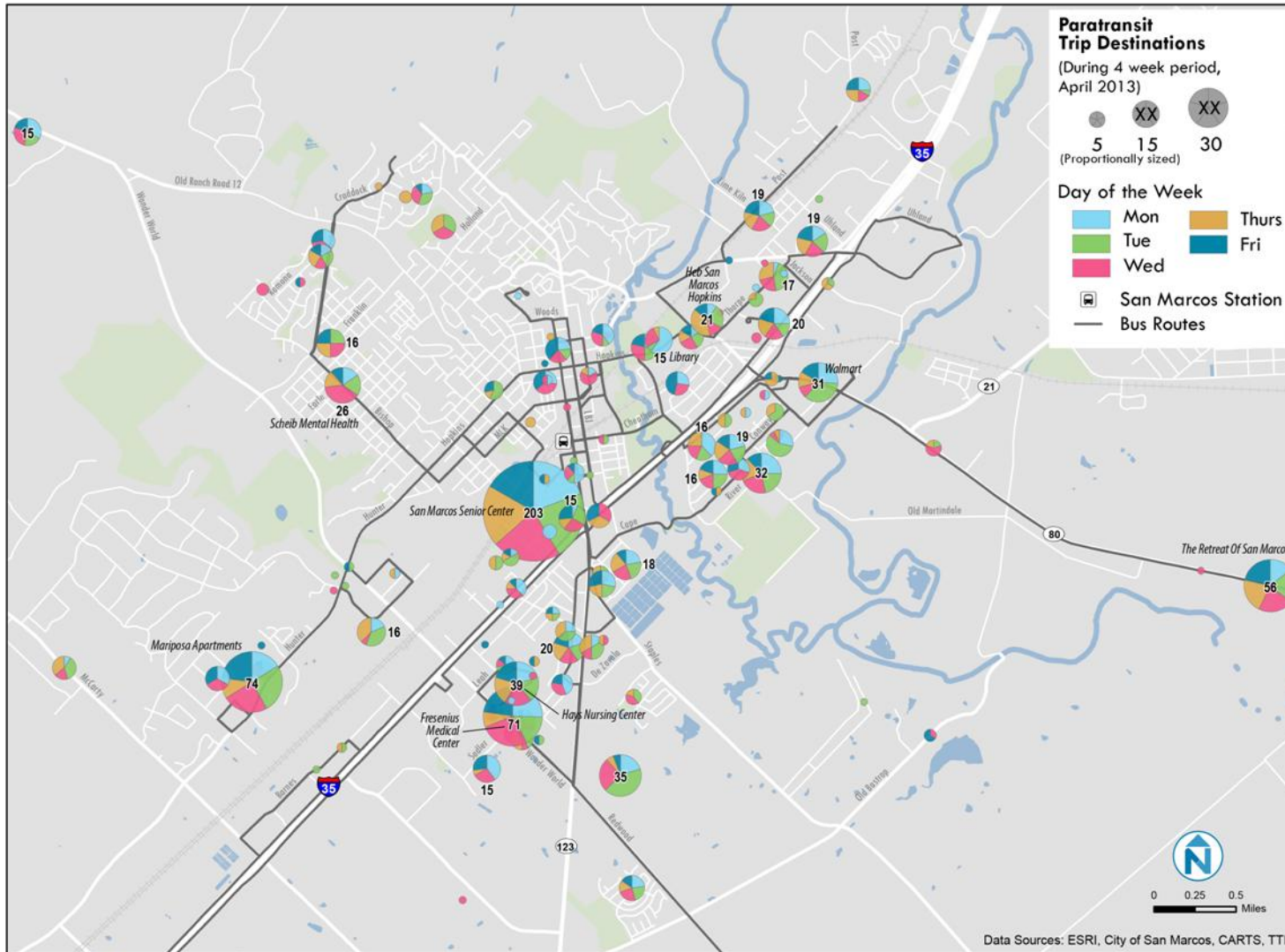
4 DEMOGRAPHIC & SOCIOECONOMIC ANALYSIS

This chapter provides information on demographic information including population density, employment density, senior density, youth and student density, rental density, density of households below the poverty line, and zero vehicle households. Data are from the 2010 US Census, 2007-2011 American Community Survey 5-year estimates, 2011 US Census Longitudinal Employer-Household Dynamics (LEHD), Texas State University, CARTS, and the Texas A&M Transportation Institute (TTI). The following paragraphs provide explanation of Figure 11 to Figure 19.

Population density in San Marcos is highest near the Texas State University campus, along Craddock Ave north of Old Ranch Road 12, east of I-35 in the Blanco Gardens neighborhood, and along Post Rd (Figure 11). Since 2000, the most significant population increases have taken place on the Texas State University campus, near the Central Texas Medical Center, along Aquarena Springs Drive east of I-35, and at the Gary Job Corps Center.

Employment density is most highly concentrated in downtown San Marcos with more than 10 jobs per acre in many areas (Figure 12). Employment is also highly concentrated along I-35 throughout San Marcos. The employment centers along I-35 are primarily retail locations, including shopping centers and outlet malls.

Figure 13 shows the number of jobs in the top four job sectors, according to the North American Industry Classification System (NAICS). Over half of all jobs in the area are concentrated in four sectors: Education Services, Retail Trade, Accommodation and Food Services, and Health Care and Social Assistance.

The total number of jobs by sector for Census Blocks with over 200 jobs is shown in Figure 13. Educational Services jobs, which are the largest sector of employment in San Marcos, are concentrated around the Texas State University campus. Retail Trade jobs are concentrated around the Premium and Tanger outlet malls as well as near Wal-Mart. Health Care and Social Assistance employment is concentrated near several large hospitals including the Central Texas Medical Center and the San Marcos Treatment Center. There are a number of social service agencies in downtown San Marcos including Workforce Solutions, the Hays Caldwell Women's Center, Hays County Victim's Services, Casa, and Community Health Services.

The concentration of seniors aged 65 and over is highest near the Central Texas Medical Center and in the senior housing around Hunter Road and Wonder World Drive (Figure 14). Other concentrations of seniors are found in Hughson Heights, Blanco Gardens, and Millview East neighborhoods. Areas with high concentrations of seniors are served by San Marcos Transit route, although Route 1 may not be within walking distance of all seniors in Hughson Heights.

Figure 10   San Marcos Employment by NAICS Industry Sector, 2011

NAICS Industry Sector	Count	Share
Educational Services	7,117	19.5%
Retail Trade	6,201	17.0%
Accommodation and Food Services	4,496	12.3%
Health Care and Social Assistance	4,157	11.4%
Manufacturing	2,810	7.7%
Transportation and Warehousing	2,051	5.6%
Public Administration	1,719	4.7%
Construction	1,407	3.8%
Other Services (excluding Public Administration)	1,189	3.3%
Professional, Scientific, and Technical Services	1,134	3.1%
Administration & Support, Waste Management and Remediation	998	2.7%
Wholesale Trade	814	2.2%
Finance and Insurance	553	1.5%
Real Estate and Rental and Leasing	499	1.4%
Information	474	1.3%
Arts, Entertainment, and Recreation	393	1.1%
Management of Companies and Enterprises	253	0.7%
Utilities	247	0.7%
Agriculture, Forestry, Fishing and Hunting	38	0.1%
Mining, Quarrying, and Oil and Gas Extraction	8	0.0%

The highest concentration of youths aged 18-24 can be found near the Texas State University campus, along Post Road, along Craddock Ave, in the multifamily housing off of Aquarena Springs Drive east of I-35, and at the Gary Job Corps Center (Figure 15). The San Marcos Transit system serves the areas with the highest concentrations of youth populations with the exception of the San Marcos Municipal Airport. Figure 16 shows the density of Texas State University students per acre in addition to the distribution of their residential locations. Students are generally clustered around the Texas State University campus, particularly along the Route 1 alignment.

The density of rental housing in San Marcos is highest in downtown San Marcos, along Aquarena Springs Drive east of I-35, and in the Millview East and Sierra Circle neighborhoods (Figure 17). Many of the areas with the highest concentration of rental housing are served by San Marcos Transit.

The highest densities of Households under the poverty line are in downtown San Marcos and east San Marcos, particularly between Post Road and Aquerena Springs Drive (Figure 18). Downtown is well-served by San Marcos Transit service, while Routes 2 and 3 serve a number of low-income areas east of downtown. The Texas State University campus also has a relatively high density of low-income households, but is not served by San Marcos Transit.

Zero-vehicle households are most highly concentrated west of downtown, between Thorpe Dr and I-35, in the Rio Vista neighborhood, and near the Central Texas Medical Center (Figure 19). There

are very few zero vehicle households in some of the areas with high concentrations of students. Some of the area immediately west of the Texas State University campus has moderate density of zero vehicle households and is not served by San Marcos Transit service.

Figure 11   Population Density by Census Block (2000 and 2010)
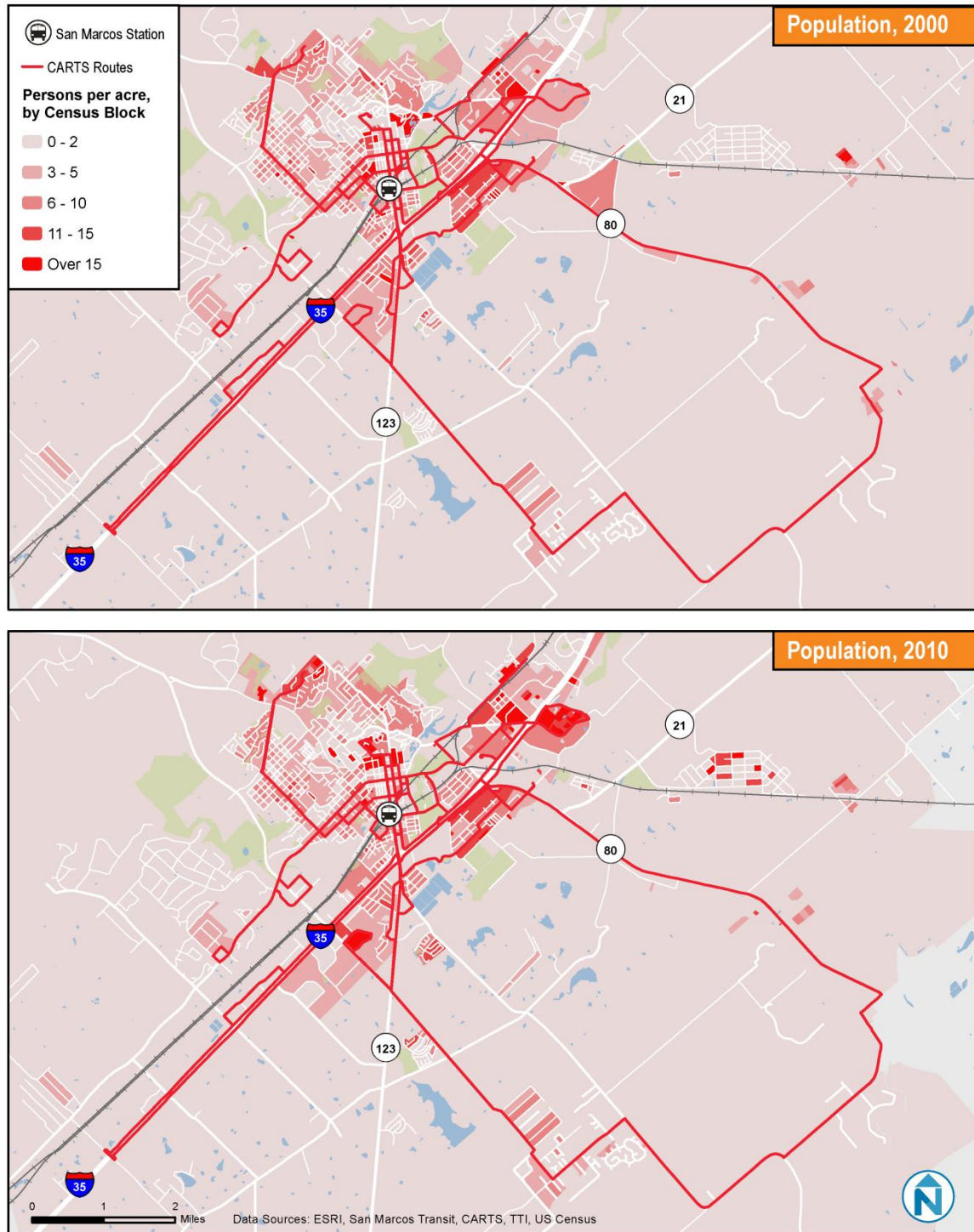
Figure 12   Employment Density by Census Block (2011)
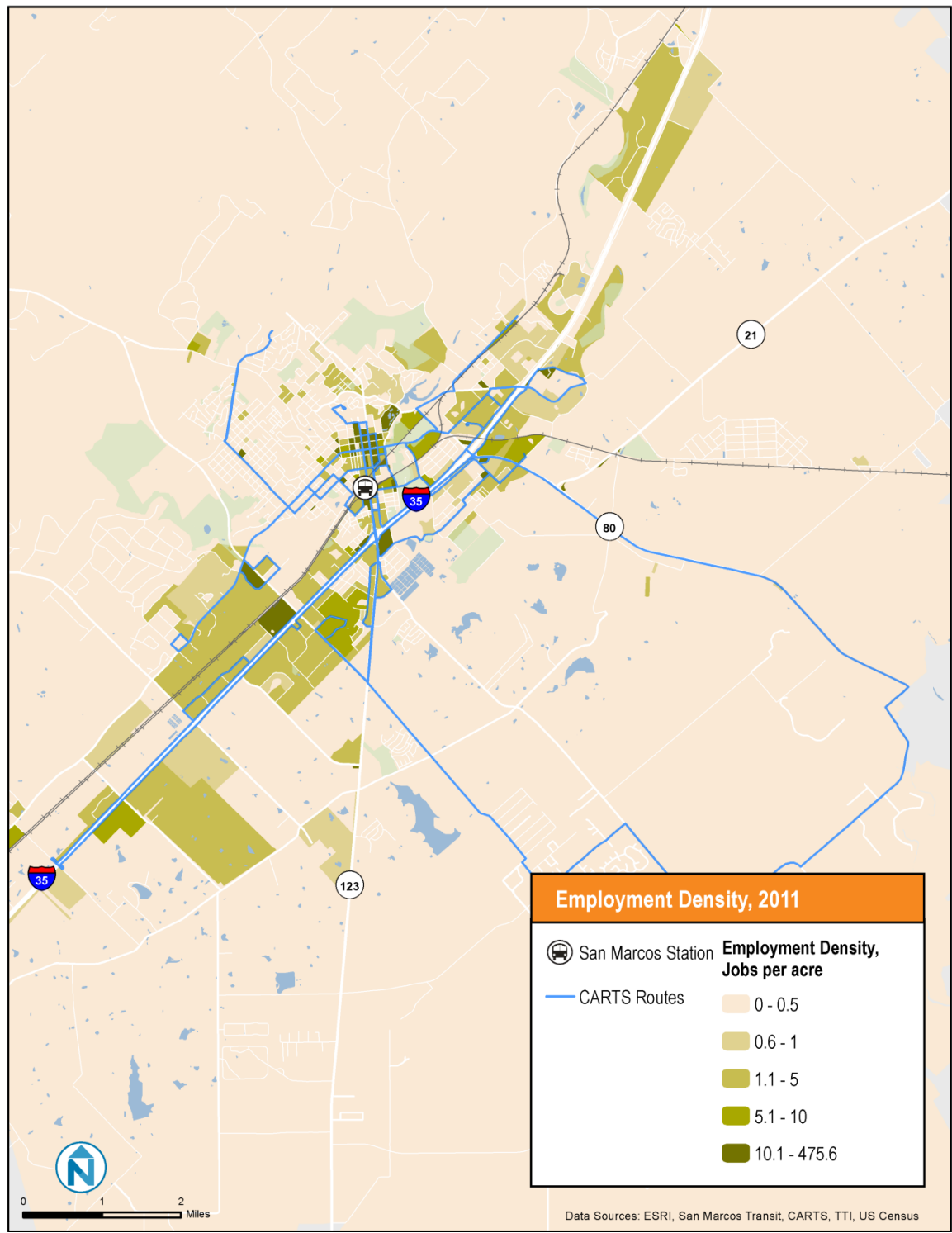
Figure 13   Number of Jobs by NAICS Sector (2011)
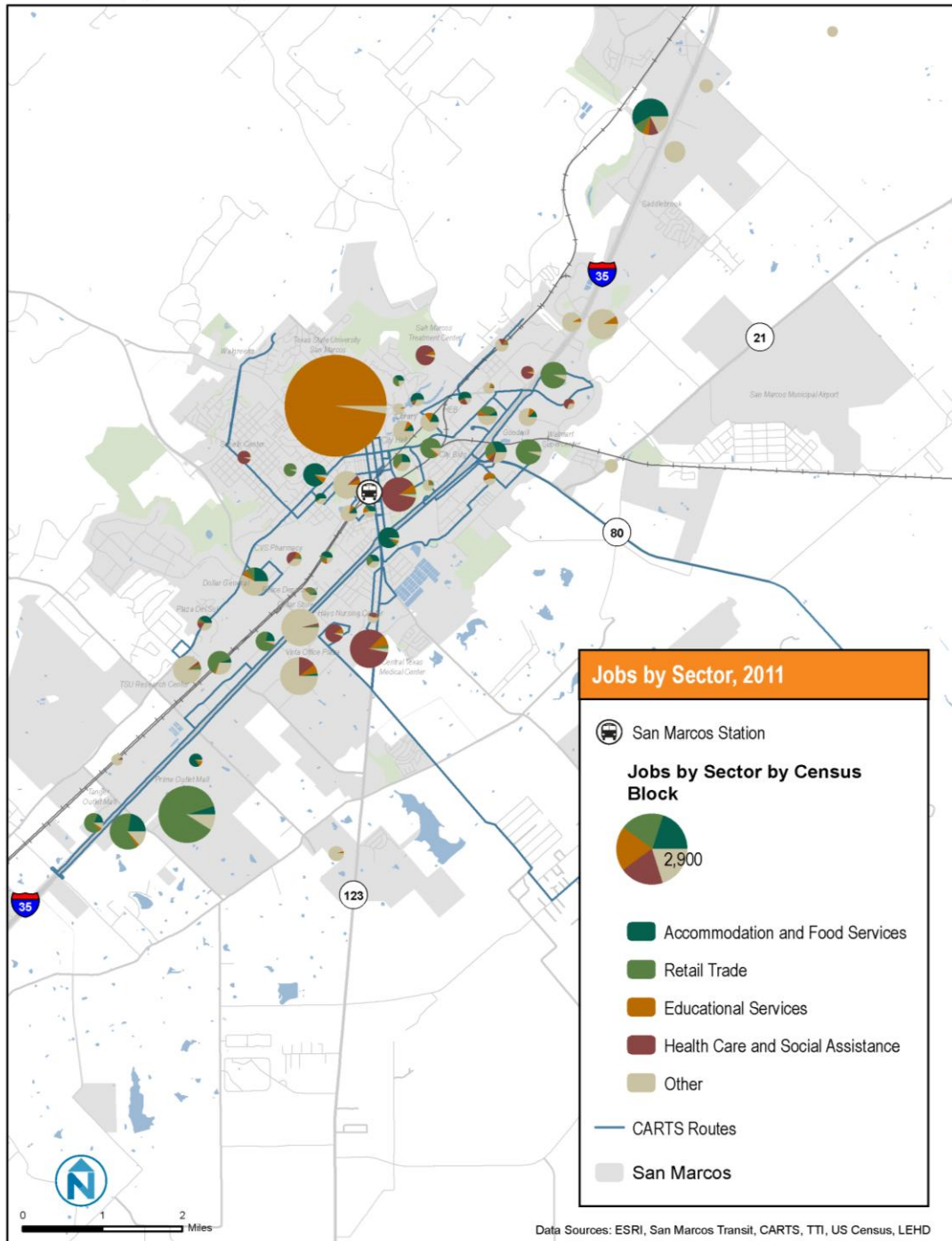
Figure 14   **Senior Density by Census Block (2010)**

Senior Density, 2010

San Marcos Station

CARTS Routes

Persons aged 65+, by Census Block

0.0 - 0.5

0.6 - 1.0

1.1 - 1.5

1.6 - 2.0

Above 2

Data Sources: ESRI, San Marcos Transit, CARTS, TTI, US Census
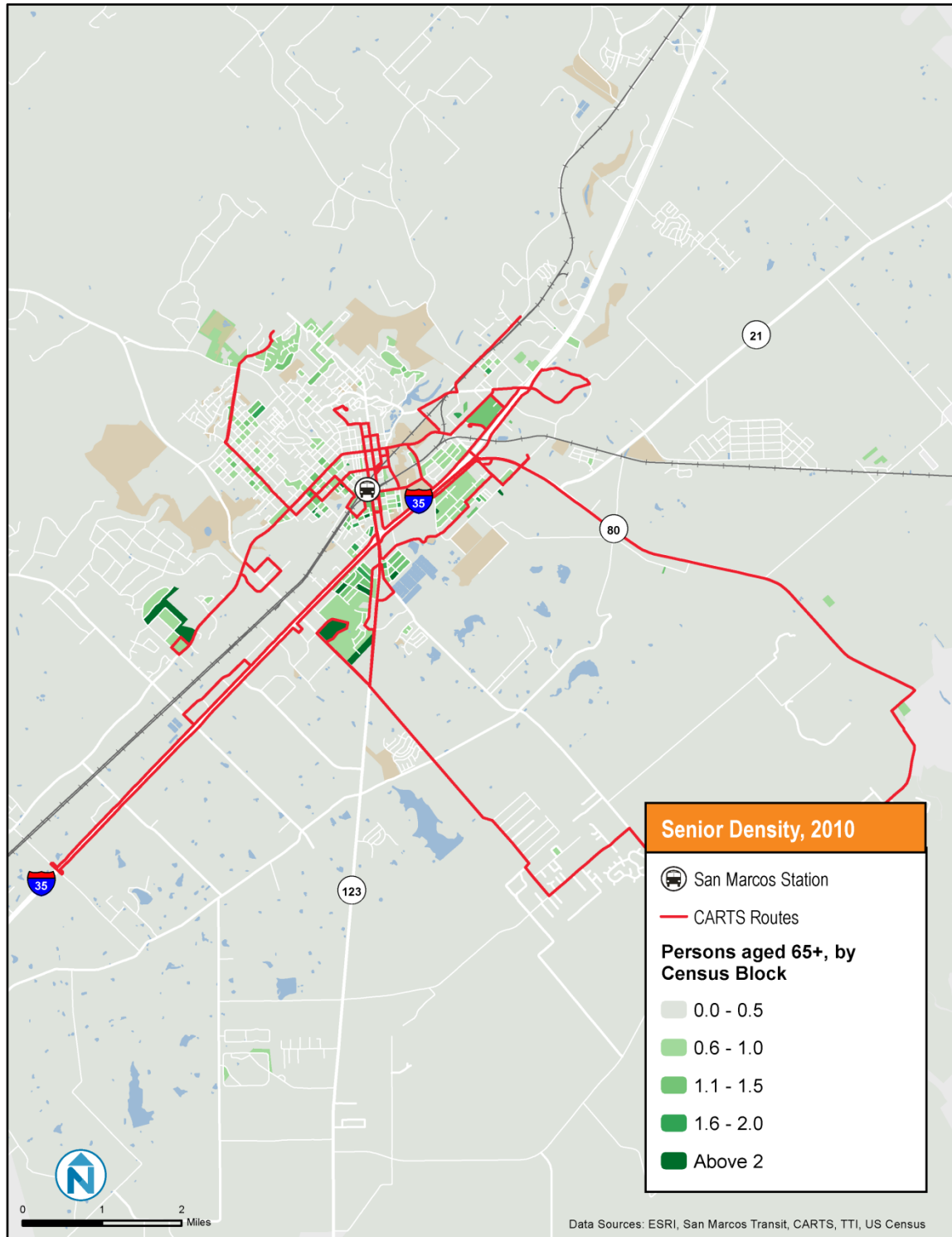
Figure 15   Youth Density by Census Block (2010)

Youth Density, 2010

— CARTS Routes

San Marcos Station

Persons aged 18-24 per acre, by Census Block

0 - 2

3 - 5

6 - 10

11 - 15

Over 15

Data Sources: ESRI, San Marcos Transit, CARTS, TTI, US Census
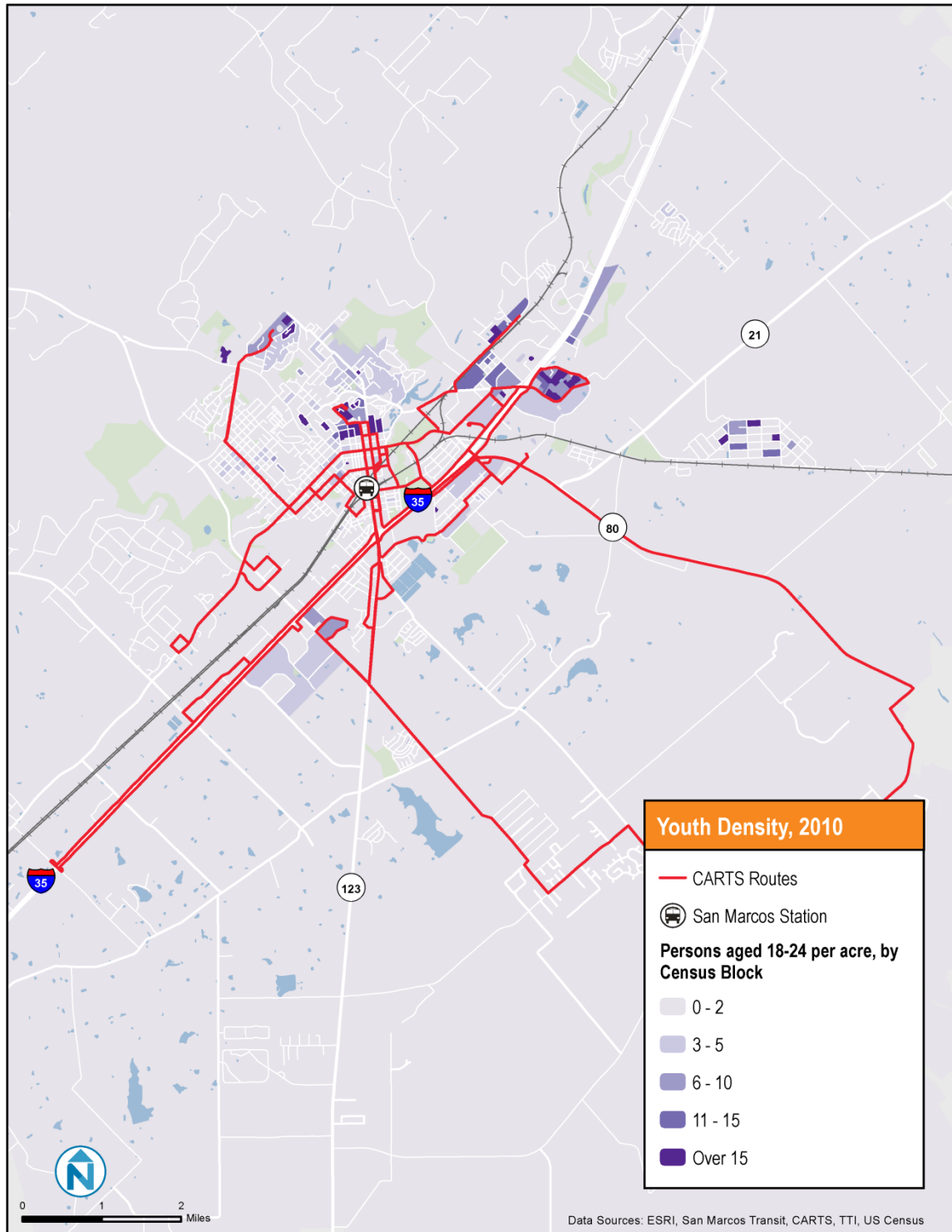
Figure 16   Density and Distribution of Texas State University-San Marcos Students (2011)
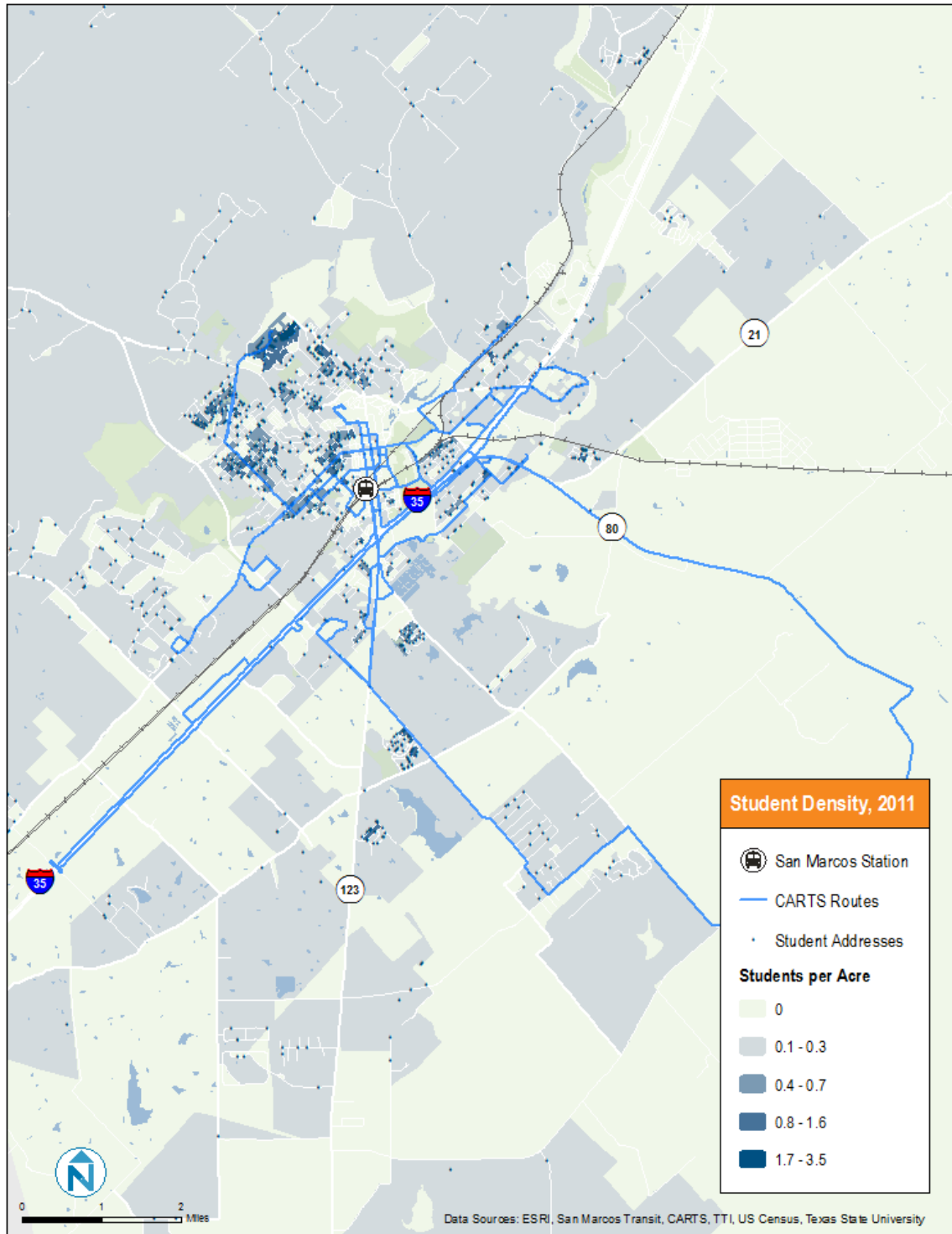
Figure 17   Density of Rental Households by Census Block (2010)
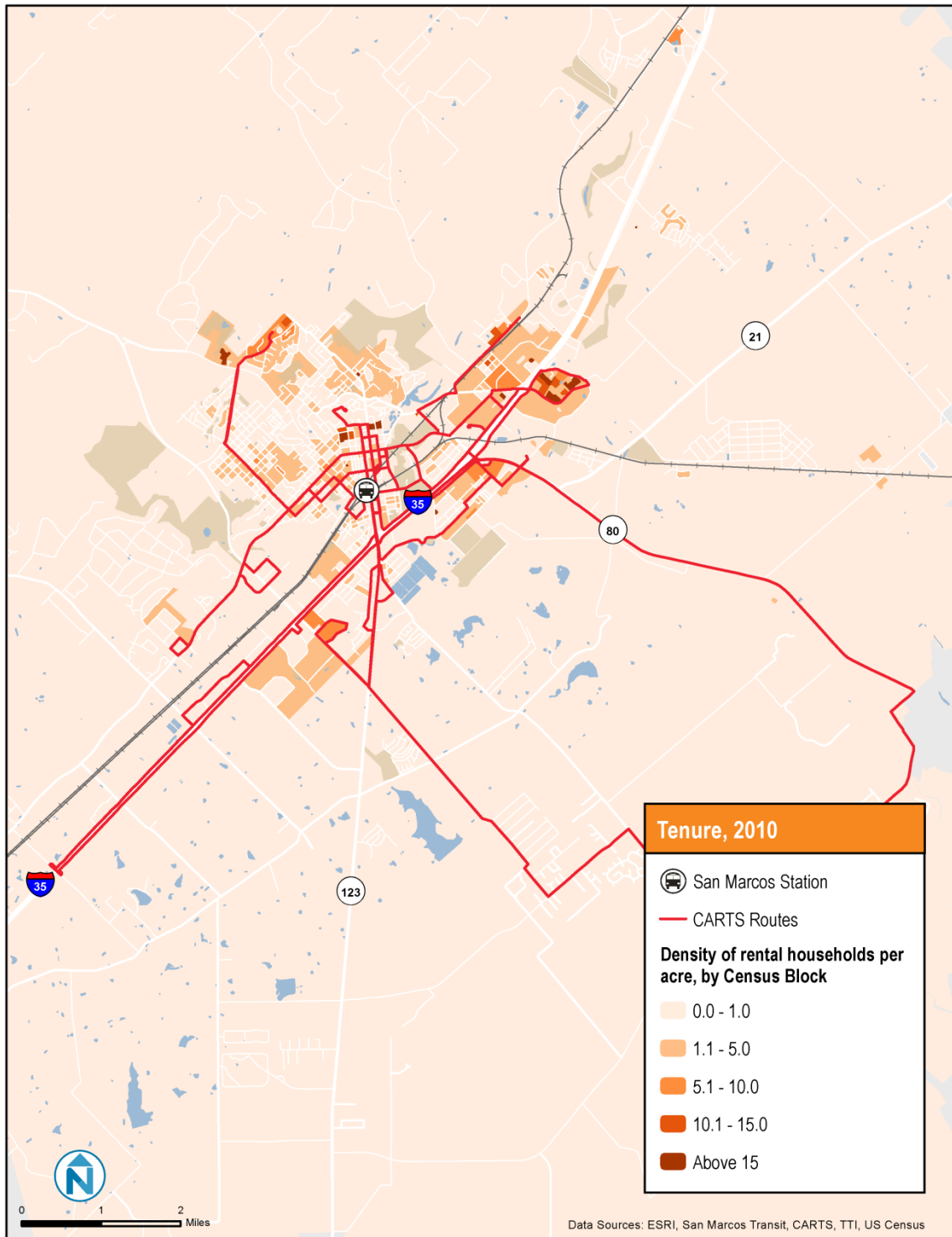
Figure 18   Poverty Density by Census Block Group (2007-2011)
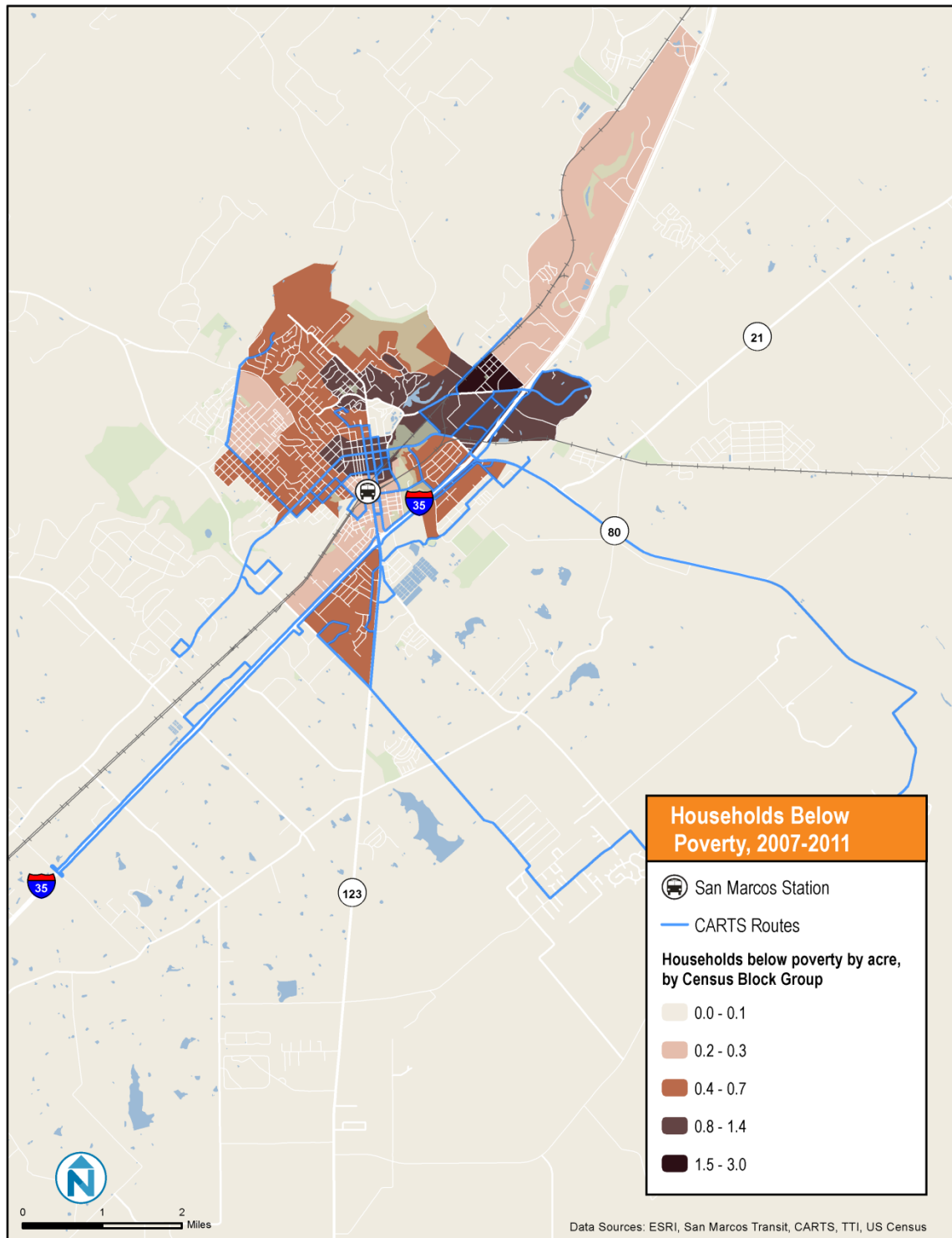
Figure 19   Density of Zero-Vehicle-Households by Census Block Group (2007-2011)
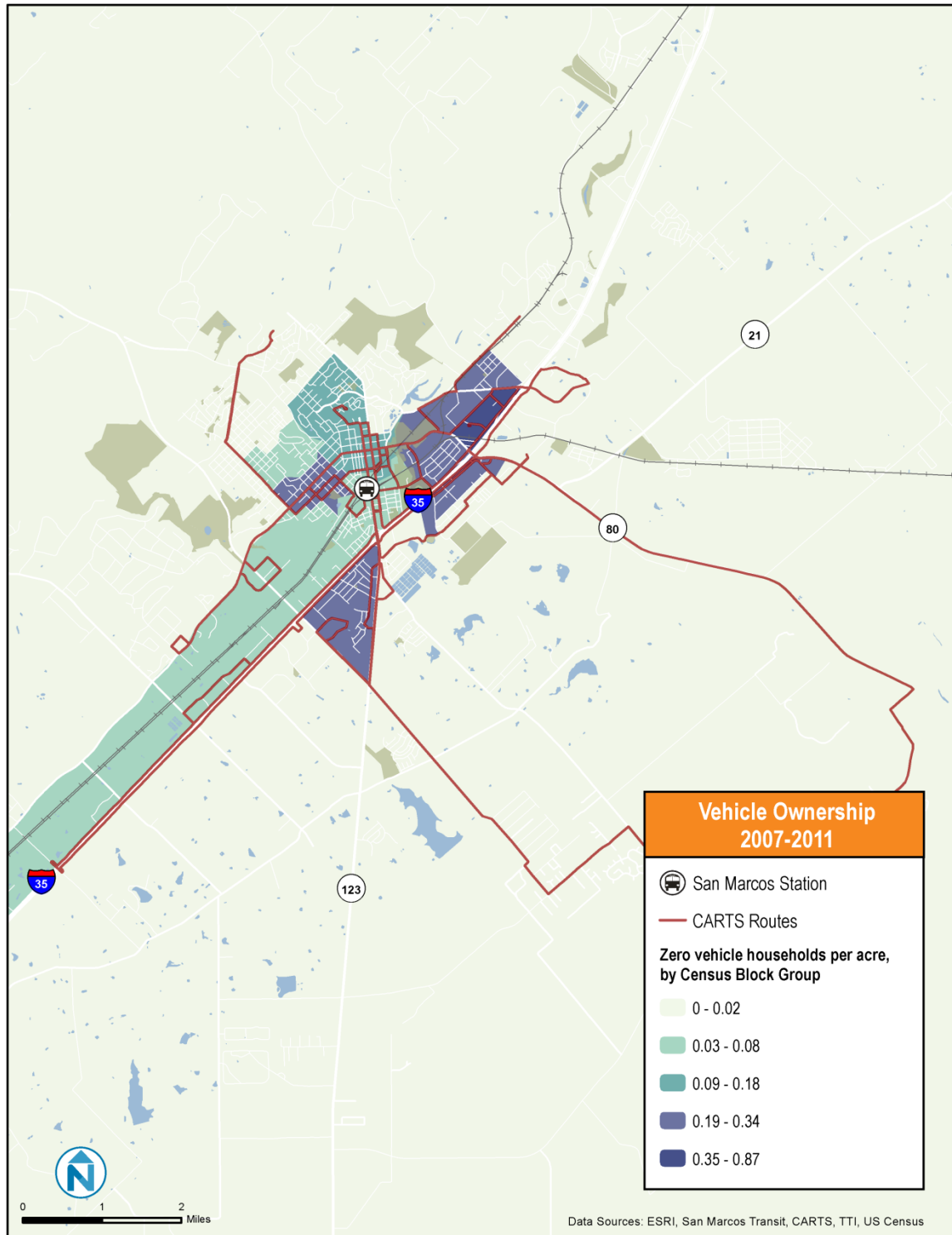
5 MARKET RESEARCH

INTERCEPT SURVEY

An intercept survey was conducted at the San Marcos Station and on board several CARTS routes on December 10, 2013. The survey instrument can be found in Appendix C of this report. A total of 40 responses were collected.

Figure 20 shows the number of trips that respondents reported taking each week. The average number of trips per week was 6.2 trips. A majority of respondents (58%) reported making five or less trips per week, while only 5% reported making 11 or more trips per week.

Figure 20   Intercept Survey Reported Trips per Week
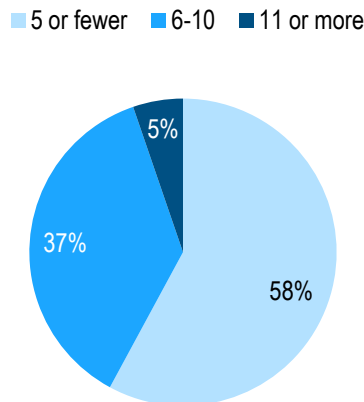
The survey asked respondents to indicate the origin and destination of their transit trip, shown below in Figure 21. The most popular destinations mentioned included the outlet malls, Wal-Mart, Walgreens, and San Marcos Station.

Figure 21   Intercept Survey Origin and Destinations
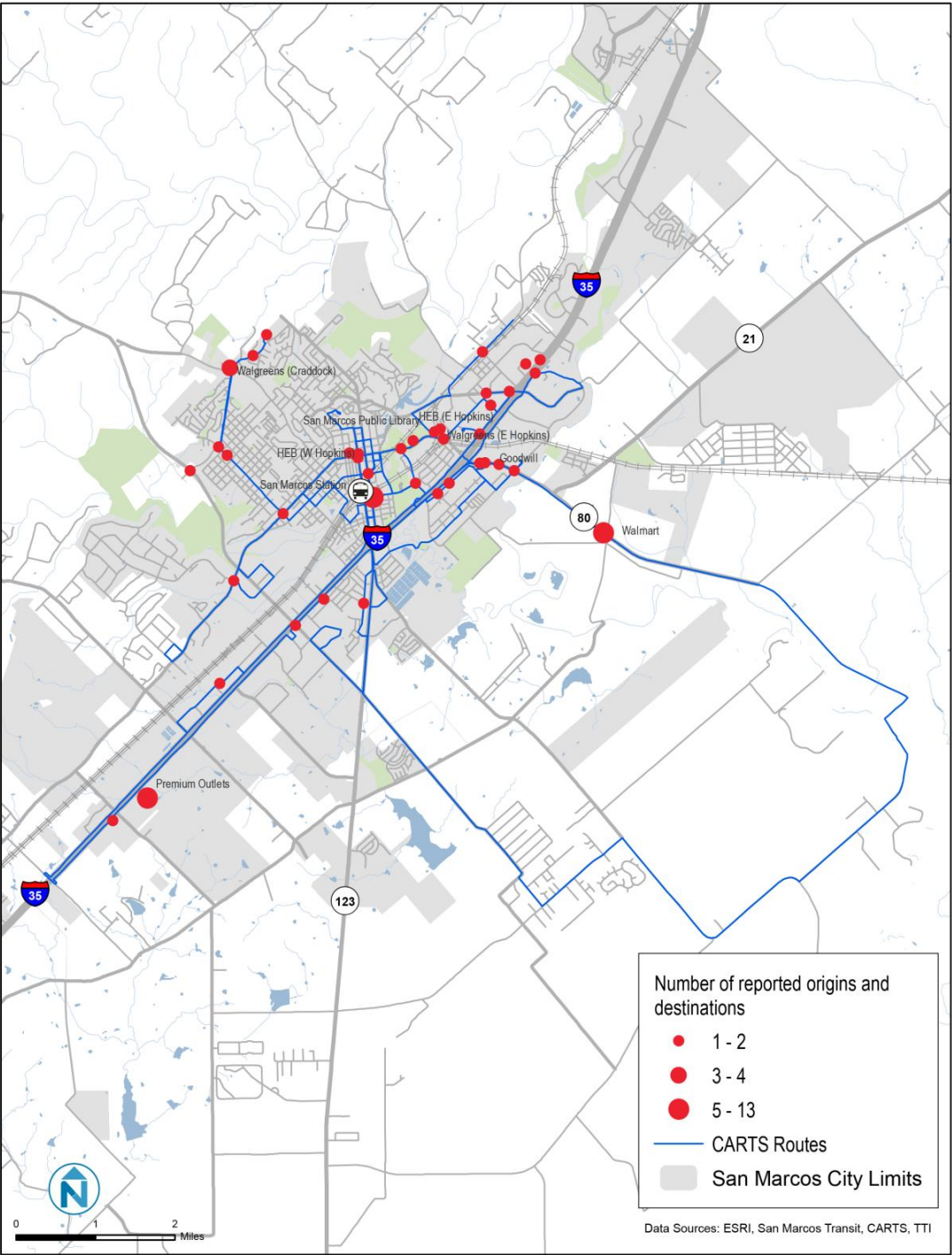
Trip purpose is shown in Figure 22. The most common tri purpose was shopping (41%), followed by work (31%) and "other" (13%). Very few riders reported traveling for social purpose or to get to school.

Figure 22   Intercept Survey Trip Purpose
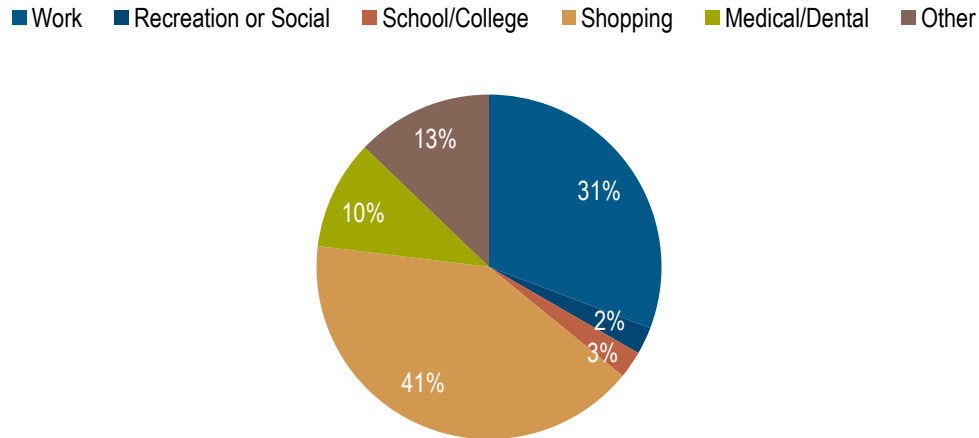
Intercept survey participants were asked to rate several characteristics of transit service in San Marcos (Figure 23). Overall respondents rated service very positively. The only aspects of service that over 20% of respondents rated as "poor" or "acceptable" were amenities at bus stops and service runs late enough.

Figure 23   Intercept Survey Transit Service Ratings
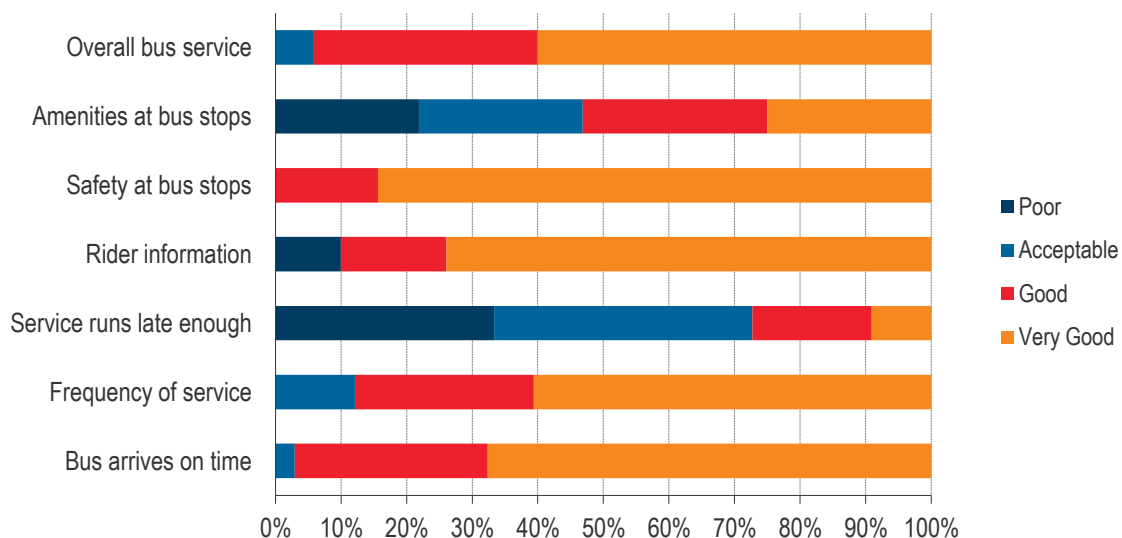
Respondents were asked to select three service improvements that were most important to them, shown in Figure 24. Later evening service and weekend service were by far the most common responses from survey respondents. Fewer than five respondents selected more frequent service, faster service, earlier service, or service to new areas.

Figure 24   Desired Service Improvements
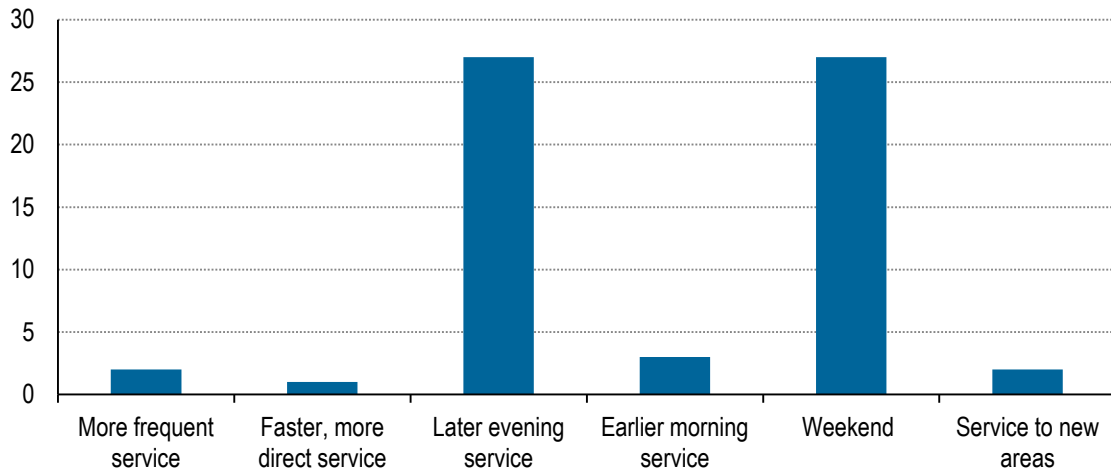
Figure 25 shows the household size of respondents. The average household size reported was 2.75 people. Approximately a third of respondents have only one person in their household, while 44% have 2-3 people and 22% have four or more people.

Figure 25   Household Size
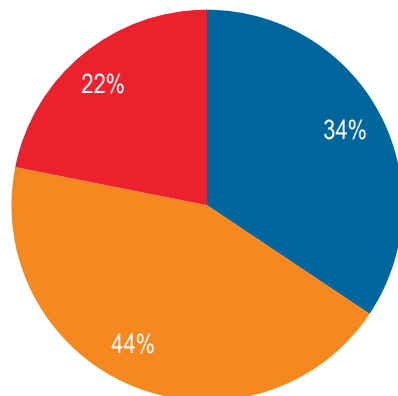
Figure 26 shows the average number of vehicles for intercept survey respondents. A majority (64%) reported zero vehicles in their household, while 30% reported one vehicle, and only 6% reported two or more vehicles.

Figure 26   Number of Vehicles
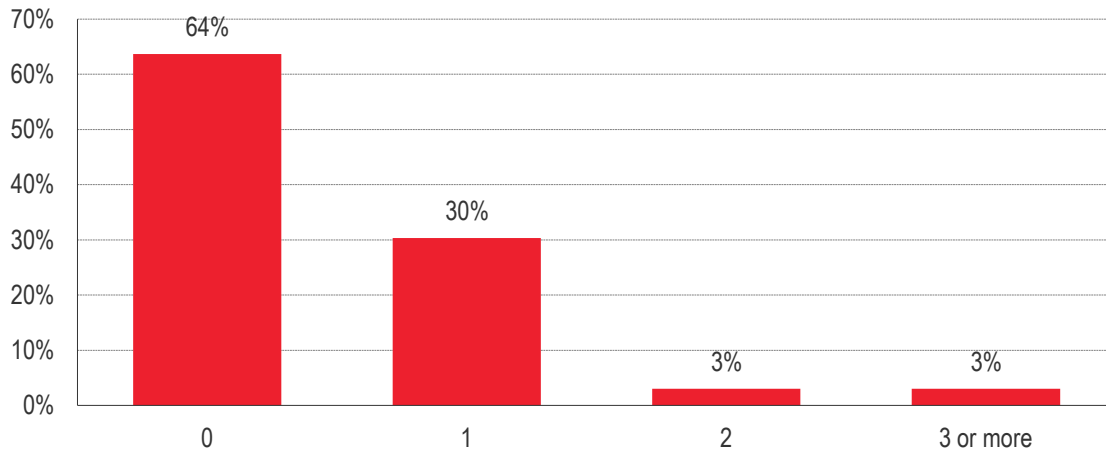
Respondents were asked whether they are currently employed, students, not employed, or other (Figure 27). Respondents were able to select multiple responses if applicable. Nearly half reported being employed, while an additional 14% reported they were both students and employed. Close to a third of respondents (30%) are not employed. Only 4% of respondents were students only, indicating that San Marcos Transit might be more heavily used by students who also need to reach employment locations, which may not be served through the Texas State University system. The findings also indicate that current ridership includes a number of riders who are not employed and is not heavily used by people traveling to and from work.

Figure 27   Employment of Respondents
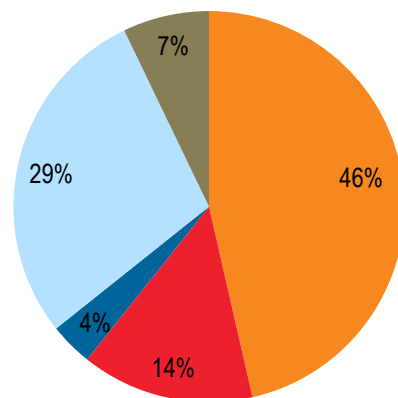
ONLINE SURVEY

An online survey was posted on the San Marcos Transit website from December 3, 2013 until January 27, 2014. A total of 467 responses were collected. The survey was completely voluntary and does not represent a statistically valid sample of the overall population in San Marcos.

Figure 28 shows the percentage of survey respondents that reported riding San Marcos Transit. The majority of online survey respondents (71%) are not riders, while 29% of respondents are riders.

Figure 28   Do you ride CARTS in San Marcos?
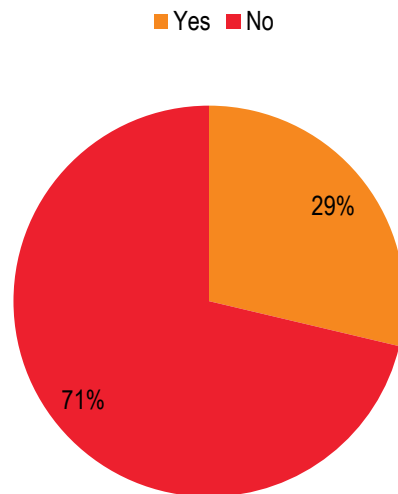
Figure 29 shows the reasons respondents cited for not riding San Marcos Transit. Over half (55%) of respondents do not ride because they are not familiar enough with San Marcos Transit. This suggests that more rider information and marketing might be necessary to raise awareness about available service. Over a third (37%) do not ride because service does not go where they want to go, and 27% do not ride because service doesn't operate early or late enough. Only 24% of respondents who do not ride cited "I prefer to drive" as the primary reason they do not ride San Marcos Transit.

Additional comments included preference for walking or biking, too many stops to make during the day, need service to Austin, ride Texas State buses, stops are not near enough to home, transfers take too long, service is too infrequent, and service does not rune early enough to get to work or school.

Figure 29   Reason for Not Riding
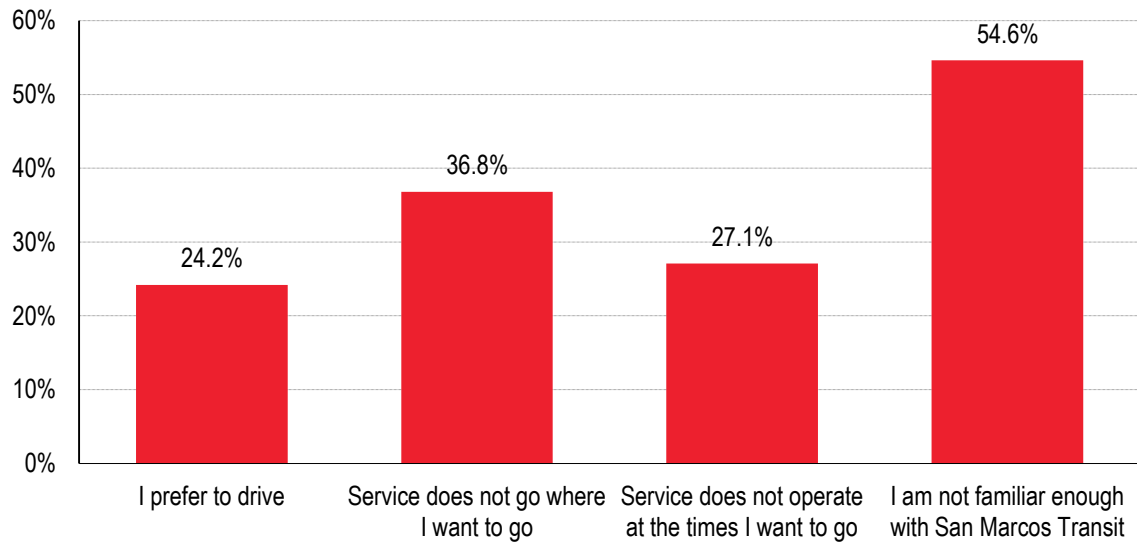
Respondents who do ride San Marcos Transit were asked to report what routes they ride (Figure 30). Route 10 and Route 7 were the most common responses.

Figure 30   Which San Marcos Transit Routes do you Ride?
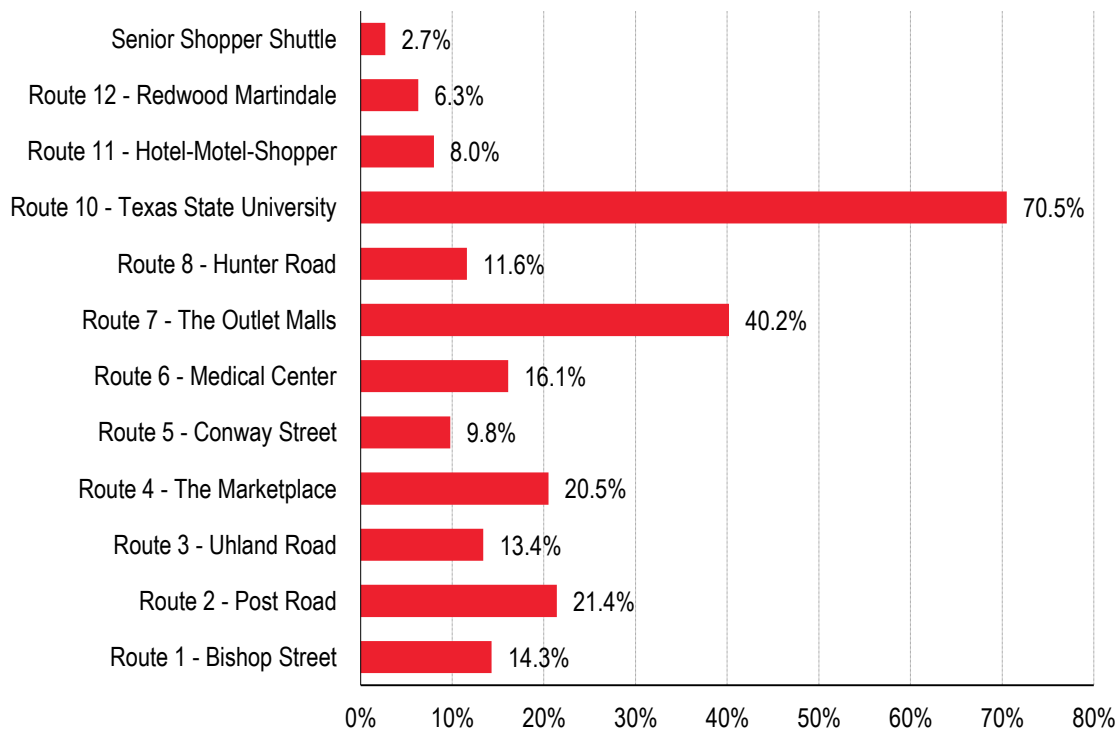
The majority of respondents who ride San Marcos Transit (70%) reach the bus by walking (Figure 31). Approximately 10% bike, 10% drive and park, and 10% get dropped off. Some respondents reported using multiple modes.

Figure 31   Transit Access Mode
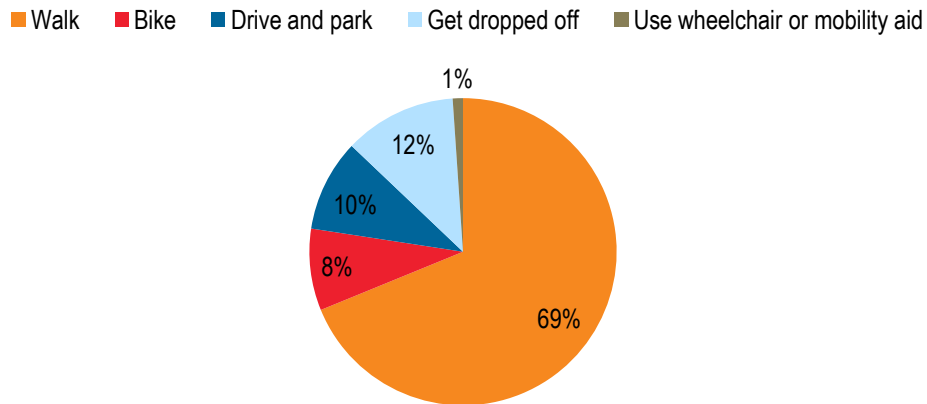
Online survey respondents rode less frequently than intercept survey respondents (Figure 32). Nearly 80% reported riding five or fewer times per week, while only 13% ride 6-10 times a week and 9% ride 11 or more times per week.

Figure 32   Online Survey Number of Trips per Week
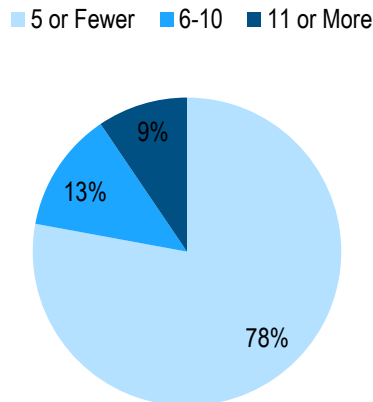
Survey respondents were asked to rate several aspects of San Marcos Transit Service in the same manner as in the intercept survey (Figure 33). The aspects of service with the most positive ratings were on time performance (bus arrives on time) and safety at bus stops. The service characteristics with the least favorable ratings were service runs late enough, frequency of service, and amenities at bus stops. Overall, 11% of respondents rated San Marcos Transit "Very Good", 31% rated it "Good", 39% "Acceptable", and 14% "Poor". The response to this question indicates that while the majority of riders find service at least acceptable, there are several aspects of service that riders would like to see improved.

Figure 33   Online Survey Transit Service Ratings
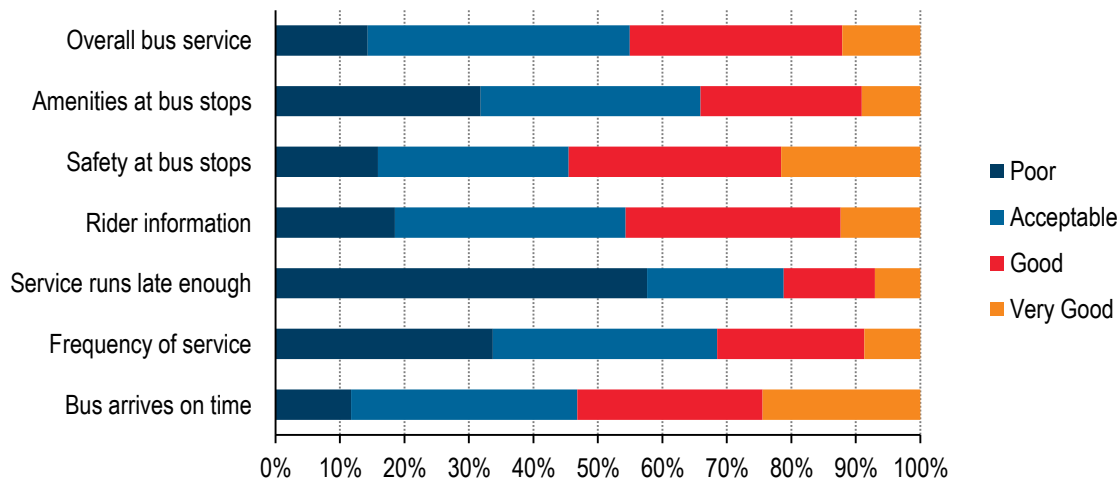
Online survey respondents were asked to rank a set of potential service improvements from 1 (most important) to 7 (least important). The service characteristics most ranked as 1, 2, or 3 were weekend service, more frequent service, and later evening service (Figure 34). The service characteristics that were most ranked as unimportant (5, 6, or 7) were earlier morning service, improved reliability, and service to new areas.

Figure 34   Online Survey Desired Service Improvements
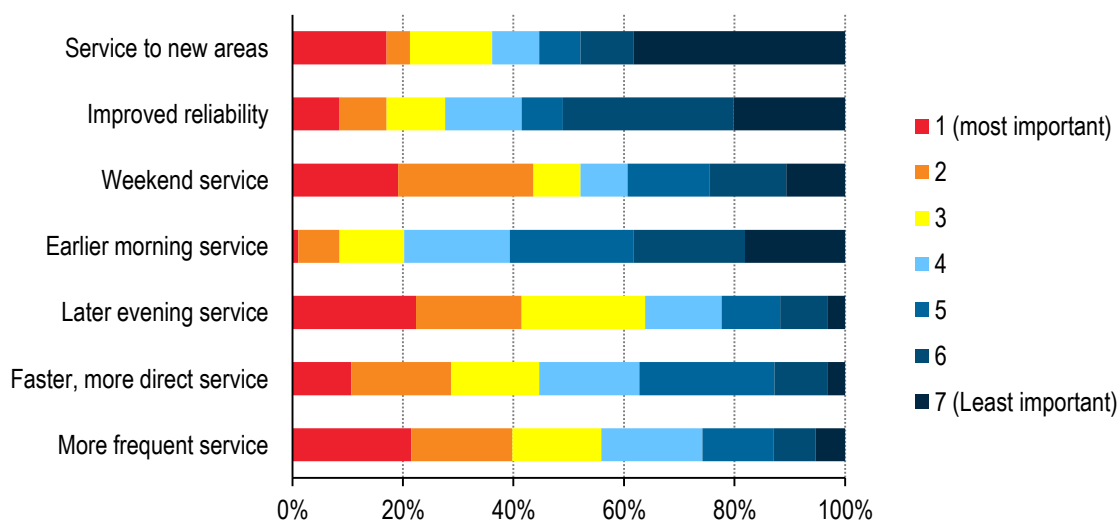
Figure 35 shows the household size of survey respondents by riders and non riders. Compared to the intercept survey respondents, both groups of online respondents were less likely to have a household of only one person and both were more likely to have larger households of four or more people. Online survey respondents who do ride San Marcos Transit were more likely have small households of one person and were also the most likely to have a household of four or more people. Online respondents who do not ride San Marcos Transit were the most likely of any group to have a household of 203 people.

Figure 35   Household Size of Riders and Non Riders
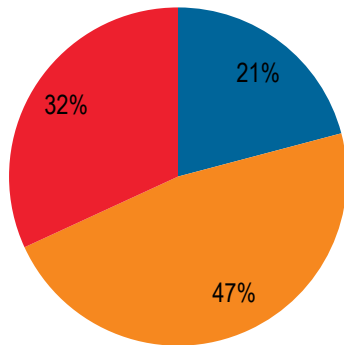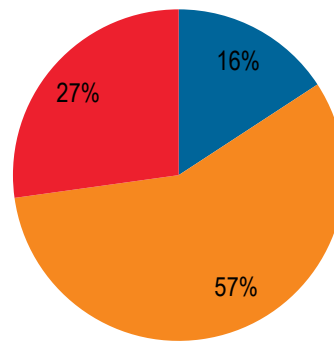
Vehicle ownership (Figure 36) did not differ dramatically between riders and non riders. Respondents who do ride San Marcos Transit were slightly more likely to have zero or one car, while non riders were slightly more likely to own two or more cars. Both groups were dramatically different compared to intercept survey respondents, 64% of whom reported owning zero vehicles.

Figure 36   Online Survey Respondent Vehicle Ownership by Rider Type
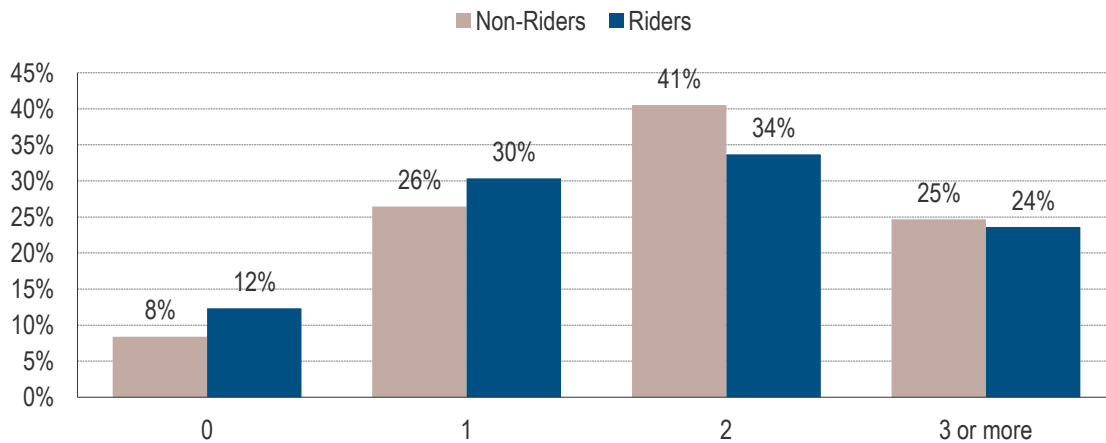
Figure 37 shows employment of respondents to the online survey. Although a similar percentage of respondents were employed compared to the intercept survey, there were significantly more students and significantly less unemployed and retired respondents in the online survey. Online outreach tools may not be well suited to these demographics, whereas they may work very well for reaching students.

Figure 37   Employment of Respondents
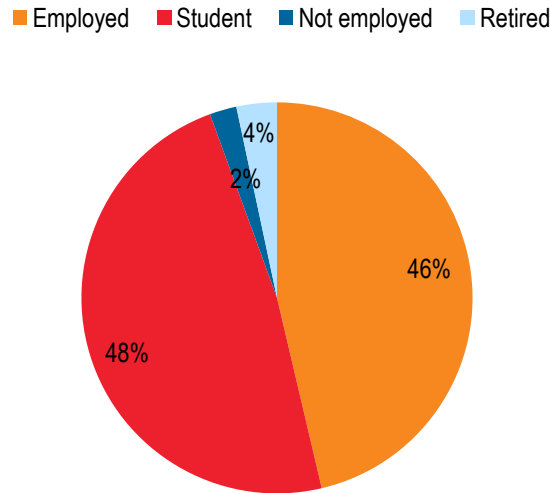
At the end of the online survey, respondents were able to submit open-ended comments and suggestions. The full text of these comments can be found in Appendix D. Several themes were clear from the comments:

- Service does not run late enough or on the days needed for most people to use it for commuting purposes, particularly given the service-oriented nature of employment in San Marcos. There is strong interest in later and weekend service.

- Numerous people mentioned the need for better service for commuter service as well as weekend service between San Marcos and Austin. Students mentioned the recent change to TSU service between San Marcos and Austin that has reduced travel options.

- Students and other residents have an interest in better integrating TSU service with CARTS San Marcos service, including a student pass option.

- Many people suggested increased marketing and improved customer information in order to improve knowledge of the system. Specific issues include general marketing and branding, amenities and information at stop locations, and more up-to-date information about stop locations as well as stop closures.

- Some residents do not feel that the current stop locations are within walking distance of their home.

- Some respondents expressed the need for transfer locations in addition to San Marcos Station. It was noted that for some trips an earlier transfer opportunity would save travel time and the station itself is not within walking distance of many destinations.

6 COMMUNITY ENGAGEMENT

To better understand community perceptions, needs, and priorities related to public transit, a series of stakeholder meetings with agencies and organizations that serve transit riders and community open houses were conducted in January and March 2014. A total of 98 individuals participated in the stakeholder meetings and community open house meetings.

Schedule:

- 1/14/2014 – Stakeholder meeting
- 1/14/2014 – Open House held at the San Marcos Transit Station
- 1/14/2014 – Open House held at the San Marcos Activity Center
- 1/15/2014 – Open House held at the San Marcos Activity Center
- 3/18/2014 – Open House held at San Marcos Activity Center
- 3/18/2014 – Open House held at Dunbar Recreation Center
- 3/19/2014 – Open House held at San Marcos Activity Center

STAKEHOLDER MEETINGS

A total of 35 individuals representing a wide variety of organizations participated in one of the two stakeholder meetings. Several different segments of the community were encouraged to participate, including organizations that serve seniors and people with disabilities, the educational community, the health-care community, other community organizations and the City of San Marcos. The following organizations were represented at the stakeholder meetings:

- Crossroads
- Hays County Health Department
- Hays/Caldwell Women's Center
- United Way Hays County
- Hays/Caldwell Council on Alcohol and Drug Abuse
- San Marcos Chamber of Commerce
- San Marcos Consolidated Independent School District
- Austin Resource Center for Independent Living (ARCIL)
- American Foundation for the Elderly Deaf (AFED)
- La Vista Retirement Community
- San Marcos Housing Authority
- Community Action
- Hays County Veterans
- Southside Community Center

At the start of each stakeholder meeting, participants were given a brief overview of the study, its goals, and the importance that public input will have. Participants were asked to describe the services offered by their business, organization, or agency, and to discuss what they viewed as the top transportation issues or challenges facing San Marcos. They were then asked to discuss their views on local transit services in San Marcos, including strengths and weaknesses and key transit needs. Then attendees were asked to participate in a "trade-off" exercise to help the project team understand their views about what should be considered for inclusion in the 5-Year Strategic Plan for Transit Development. See Figure 38 for more information.

COMMUNITY OPEN HOUSES

A total of 63 individuals attended a series of community open houses. The open houses were advertised on the San Marcos Capital Area Rural Transportation System (CARTS) website, City of San Marcos website, the San Marcos Records newspaper, and bus riders at the San Marcos Transit Station were approached and provided with information on January 14, 2014. The public reviewed maps and charts and asked team members questions. A "trade-off" survey was distributed at the open house meetings and participants were asked to provide suggestions and comments regarding CARTS services.

A number of major themes emerged during the stakeholder meetings and were also reflected in the open house comment cards. The major themes have been summarized below.

Perception of Transit

- Overall, stakeholders have a very favorable perception of CARTS and transit is seen as an important community service.
- Drivers were praised for their job performance. There were multiple stories of drivers taking extra time and attention for people with disabilities and seniors.
- The new service to Redwood was greatly appreciated.
- The curb to curb service was seen as an important asset for the community. However, we heard some complaints about seniors having long wait times after their appointments to be taken back home, and vehicles not showing up on time.
- Stakeholders like the Tuesday through Thursday senior route and found the service very helpful.

Service Improvements

- Stakeholders would like more late day and weekend service. Although some stakeholders wanted routes that would run until midnight, most stated they would be happy if service was extended from the current 6:00 am – 6:00 pm schedule, to a 6:00 am to 9:00 pm schedule. Stakeholders identified Ranch Road 12, Bishop Street, and Hunter Road as needing evening service to address employment needs. Many stakeholders suggested Saturday service to enable them to run errands and visit family on the weekends. Sunday service was also mentioned.
- While not all stakeholders were familiar with routes, the following list of destinations were identified as important for transit riders: HEB, Wal-Mart, Community Center, Dollar Store, Sr. Citizens Center, San Marcos Activity Center, CTMC Medical Complex, Wonder World Government Center, Cottonwood Center (Target), Thorpe

Lane, and the Outlet Mall. In addition, stakeholders mentioned Springtown and C M Allen, Austin Community College in Kyle, and connection to Texas State University.

- Stakeholders were mixed on the hotel route. Some thought it was beneficial to visitors; others thought CARTS should serve more residents in San Marcos and the resources could be used better elsewhere.

- Stakeholders would like the Texas State transit system (Bobcat Shuttle) to better coordinate with the CARTS system. They suggested that attracting students could increase ridership for CARTS. They also thought San Marcos residents could benefit from being able to ride the Bobcat Shuttle and then connect to the CARTS routes.

- Stakeholders would like more frequent service. Examples include:
  - 30 minute headways to the Central Texas Medical area.
  - An additional drop-off between 3:00 to 4:00 pm on Route 12 in Redwood.
  - To downtown, the outlet mall, Wal-Mart, HEB, and Bugg Lane.

- One stakeholder asked for service to Davis Lane.

- Several stakeholders thought an additional route that would stop at the San Marcos High School around 2:30 pm would be beneficial.

Passenger Information

- Many stakeholders complained about the lack of visibility of bus stops and bus top signage, specifically the stops on Thorpe Lane, Aquarina Springs Drive, Hopkins Street, Wonder World Drive, and Old RR 12.

- Stakeholders would like more information about bus service available around the community. Specific ideas included making printed schedules and route information available at stops and other key locations throughout the community.

- Stakeholders suggested conducting a public awareness campaign to get the word out regarding CARTS services. One stakeholder suggested proving incentives or passes for school children which could encourage their parents to ride. One suggested providing bus mentors to teach people how to use the stops. They encouraged the City and CARTS to hold events to teach people how to ride the bus and explain routes and services.

- Stakeholders suggested advertising on the City Website, on Time Warner and Grande's Community Channel. They suggested sending information to Texas State University and including information in the City's utility bills. One stakeholder volunteered to have her clients conduct a door-to-door campaign if CARTS would produce flyers.

Bus Stops and Amenities

- Stakeholders were concerned with the lack of crosswalks and poor walkability at some bus stops. Stakeholders identified the following stops that should be evaluated for safety: on SH 123, at La Vista, and at the Hays Nursing Home.

- Stakeholders suggested making changes to the bus stops at the intersection of Parker and Broadway, and suggested that the bus stop at Ebony and Parker needed to be closer to the park.

- Bus stop improvements are desired to help mitigate weather impacts on people waiting on the bus. These improvements include benches, shade structures, and lighting (if evening service will be added).
- Some stakeholders would like to see CARTS implement more technology, such as Wi-Fi on the interurban and smartphone applications, and encouraged CARTS to work with Google to see if they would provide funding for improvements.
- Some stakeholders expressed the need to keep shorter distances between bus stops so that women and children who walk at night would not have to walk as far and seniors and passengers with disabilities would have shorter distances to travel.

Strategic Plan

- Stakeholders encouraged the project team to take the following into consideration as they develop the 5-Year Strategic Plan:
  - Review the San Marcos Youth Master Plan (many youth today do not have driver's licenses).
  - Link transit planning to land use.
  - Integrate origins and destinations between retail, business, medical and recreational stops to residential routes.
  - Connect CARTS to regional transit services and planning, including Lone Star Rai, and Capital Metro.

Senior/Disabled Transportation Issues

- Stakeholders who praised the Tuesday through Thursday senior route suggested better linkage to and between senior facilities including Mariposa, LaVista, etc.
- Several stakeholders requested a discount for seniors.

Other Transportation Needs

- The Austin bus and fare are important services that should be kept.
- The frequency of the yellow route between Austin and San Marcos needs to increase to every hour.
- Additional service to New Braunfels should be added.

TRADEOFF EXERCISE

Attendees at the open houses and stakeholder meetings were asked to complete a survey with a series of tradeoff statements (see below) and asked to indicate their preference for each tradeoff. 92 participants handed in a completed survey. The results, included in Figure 38, highlight stakeholders' values regarding certain transit issues. The results should not be viewed as representative of the entire community. However, they do provide some information about the preferences of some individuals and organizations in San Marcos.

Figure 38   Tradeoff Exercise Summary

Tradeoffs	Choices	% of Responses
Improved Service	Improve afternoon frequency to 30 minutes	20%
	Increase hours of service to 6am-9pm	80%
	This trade-off showed the most consensus. Extending the hours of service from 6:00 pm to 9:00 pm was clearly favored over improving afternoon frequency to 30 minutes.	
Level of Service	Increase service in high ridership areas and reduce service in low ridership areas	49%
	Maintain service levels on all existing routes	51%
	The difference in the tradeoffs regarding level of service was much closer. More people selected maintaining service levels on all existing routes. That trend intensified when looking only at surveys that were turned in at the San Marcos bus station, 77% of respondents selected maintaining service on existing routes. However, when you take out the likely bus riders, 70% of the respondents selected increasing service in high ridership areas and reducing service in low ridership areas. There seems to be a difference of opinion between bus riders and the general public.	
Days of Service	Provide more weekday service	44%
	Add Saturday service	56%
	Adding Saturday service received greater support than providing more weekday service. That trend intensified when looking at the surveys from the San Marcos station and the stakeholder meetings with clients who rode the buses, nearly 80% of the surveys selected Saturday service.	
Directness of Service	Space bus stops every other block to minimize walking distance	35%
	Space bus stops every 3-4 blocks to minimize travel time	65%
	Respondents selected faster service over shorter walking distance to bus stops.	
Direct Route vs. Hub	Start/end all routes at San Marcos Station to ensure connections to all other routes	55%
	Add cross-town service that bypasses San Marcos Station to reduce out of direction travel	45%
	Only 58 people responded to the tradeoff question regarding the San Marcos station which was a much lower number than answered the other questions. Of those that responded to this question, 42 surveys were from the open house at the bus station or the stakeholder meeting which included bus riders so they would be likely bus riders. They support using the San Marcos Station to ensure connections. Of the 16 respondents that were not likely bus riders, 9 selected adding cross-town service that bypasses the San Marcos Station to reduce out of direction travel and 7 selected starting and ending all routes at the San Marcos Station to ensure connections to all other routes.	

7 ROUTE SUMMARIES

This section contains a summary of each route based on performance data and field observations. Average daily boardings and route productivity is based on daily driver logs averaged for the September 2012 through August 2013 time period. Stop-level boarding data and on-time performance data for Route 1 through Route 11 were collected over the course of four weeks in July 2013 and represent an average of 10 trip observations on each route. Route 12 stop level data were collected over the course of five days in December 2013 because the route was not yet in operation at the time of the July 2013 ridership survey. No on-time performance data were collected for Route 12. On time arrivals at the station are defined as trips arriving between 0 and 5 minutes after the scheduled arrival time.

Route 1 – Bishop Street

Description

Route 1 operates in the outbound direction via Guadalupe Street, Grove Street, Hull Street, Camacho Street, Patton Street, Gravel Street, Jackman Street, San Antonio Street, Bishop Street, and Craddock Avenue, where it turns around via the Fenway Loop between the cross streets of Old Ranch Road 12 and North LBJ Drive. In the inbound direction Route 1 follows the same alignment along Craddock Avenue and Bishop Street and then turns onto Hopkins Street, Mitchell Street, and MLK Drive, accessing the station from the North via Guadalupe Street. Route 1 gets within four blocks of the San Marcos Senior Center on Arizona Street and serves the Scheib Mental Health Center on Bishop Street. The primary market served by Route 1 is the residential complexes on Craddock Avenue.

Performance Characteristics

Route 1 has 47 daily boardings on average and productivity of 8.5 boardings per hour, just below the system average. Ridership is fairly consistent throughout the day with the 11:00 a.m. and 2:00 p.m. trips having the highest loads, just above six passengers. The 7:00 a.m. trip has the fewest riders, just over three, on average. The second to last stop in the outbound direction, at Hughson Drive and Craddock Avenue, has the highest number of average daily boardings of all stop s with combined five boardings per day in both directions. The most productive segment of the route is on Craddock Avenue. Due to barriers such as train tracks and one way streets in downtown, Route 1 has circuitous routing in both directions between the station and Bishop Street. Between the station and Jackman Street there is only one average daily boarding, and patrons hoping to access the Senior Center have to walk several blocks. The fact that the route operates on different streets in the inbound and outbound direction may be confusing to patrons. More similar inbound and outbound alignments may be easier to understand and reduce out of direction travel.

Route 1 is tied with Route 2 for the highest percentage of on-time arrivals at the station, 93.6%, indicating a good cycle time.

At a Glance	
Average Daily Boardings	47
Productivity (boardings per hour)	8.5
% On Time Arrival at Station	93.6%

Route 1 Boardings by Trip
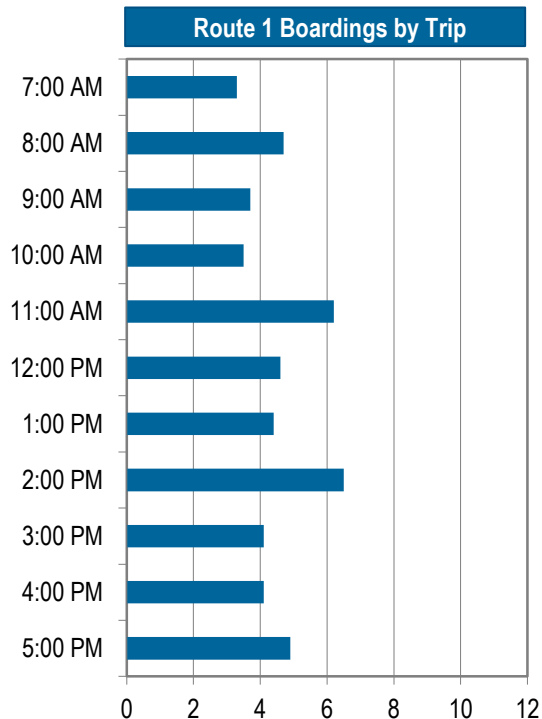
Route 2 – Post Road

Description

Route 2 operates in the outbound direction via Guadalupe Street, Cheatham Street, LBJ Drive, Edward Gary Street, San Antonio Street, CM Allen Parkway, and E Hopkins Street, turning onto Charles Austin Drive to travel behind the Texas State Stadium and via Aquarena Springs and Post Road, terminating just beyond Claremont Drive. In the inbound direction Route 2 follows the same alignment on Post Road, Aquarena Springs, Charles Austin Drive, and Hopkins Street, but continues past CM Allen Parkway on Hopkins Street, turns north on Edward Gary Street, and Serves University Drive before accessing the station via Guadalupe Street. Major stops on this route include residential complexes on Post Road and the stop at Hopkins Street and Charles Austin Drive, which serves HEB. Beyond the current terminus of the route there is a mobile home park and apartment complex that could potentially generate ridership.

Performance Characteristics

Route 2 has 49 daily boardings on average and productivity of 8.8 boardings per hour, just below the system average. Ridership on Route 2 peaks on the 9:30 a.m. trip and again on the 1:30 p.m. and 2:30 p.m. trips with lower ridership in the early morning, midday, and late afternoon. H-E-B on Hopkins is a major destination for this route. Combined with Route 3 there is service every 30 minutes to HEB. The majority of activity at this stop occurs in the outbound direction with nine alightings per day on average. This indicates that riders are transferring to Route 2 from other routes at the station in order to get to HEB. It should be noted that pedestrian access to HEB is poor from the stop location, with no sidewalks or signalized crossings. There is no boarding activity between LBJ Drive and the intersection of Hopkins Street and Riverside Drive in the outbound direction. In the inbound direction Route 2 serves downtown where there are three alightings and one boarding. More consistent alignments through downtown may encourage riders to access downtown from the station.

Route 2 is tied with Route 1 for the highest percentage of on time arrivals at the Station, 93.6%.

At a Glance	
Average Daily Boardings	49
Productivity (boardings per hour)	8.8
% On Time Arrival at Station	93.6%

Route 2 Boardings by Trip
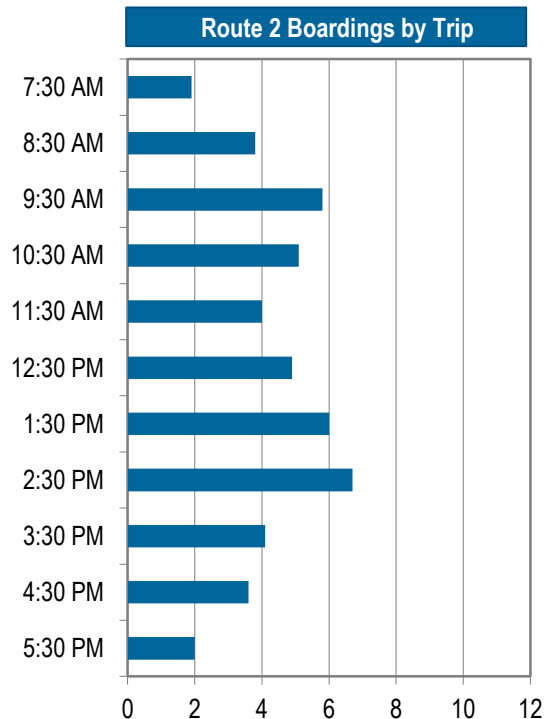
Route 3 – Uhland Road

Description

Route 3 operates between San Marcos Station and apartments on Uhland Road via Cheatham Street, Riverside Drive, E Hopkins Street, Thorpe Lane, Aquarena Springs Drive, and Uhland Road in the outbound direction. In the inbound direction Route 3 completes the apartment loop via Aquarena Springs, passes under I-35 then serves the Frontage Road before returning via E Hopkins Street, Riverside Drive, Cheatham Street, and accessing the station through downtown via CM Allen Parkway, San Antonio Street, Edward Gary Street, MLK Drive, and Guadalupe Street. The apartment complex area on Uhland Road has some of the highest population density in the city, and is a major ridership generator. In addition, HEB, other retail on Thorpe Lane, the Public Library, and Activity Center are a strong mix of destinations and draw multiple markets to this route.

Performance Characteristics

Route 3 has 66 boardings per day on average and the third highest productivity systemwide with 12 boardings per hour. Ridership his highest during the midday, which is common for routes serving retail corridors. HEB is the highest ridership stop besides San Marcos Station with 12 boardings combined in both direction per day. There are boardings and alightings in both the inbound and outbound direction at HEB, indicating that patrons are accessing HEB both from San Marcos Station and from origins such as the apartments on Uhland Road. Together Route 2 and Route 3 provide 30 minute service from San Marcos Station to HEB.

Route 3 arrives on time at the station 73.6% of the time, slightly below average compared to other routes. Delays may be caused by congestion at major intersections near I-35. In the outbound direction stops on Thorpe Lane and Aquarena Springs are clumped together. Given the nature of the street work and traffic patterns, it may be beneficial to identify on safe location for a stop and limit additional stops in order to speed running times.

At a Glance	
Average Daily Boardings	66
Productivity (boardings per hour)	12.0
% On Time Arrival at Station	73.6%

Route 3 Boardings by Trip
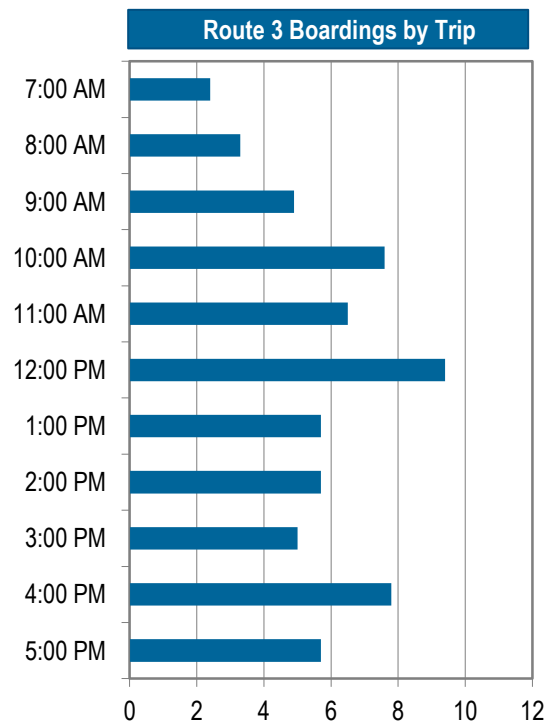
Route 4 – Marketplace

Description

Route 4 operates between San Marcos Station and Wal-Mart via Guadalupe Street, Cheatham Street, LBD Drive, Comal Street, CM Allen Parkway, Cheatham Street, Riverside Drive, turning onto the Frontage Road to cross under I-35, accessing Linda Drive via River Road, and continuing on Bugg Street and River Road to Wal-Mart. In the inbound direction Route 4 operates via Route 80 to I-35, turns onto the Frontage Road after passing under I-35, and returns to San Marcos Station via Riverside Drive, Cheatham Street, CM Allen Parkway, San Antonio Street, Edward Gary Street, MLK Drive, and Guadalupe Street. Most ridership on this route is generated by Wal-Mart and the Blanco Gardens neighborhood.

Performance Characteristics

Route 4 is the most productive route in the system with 12.9 boardings per hour. There are 71 boardings per day on average, 37 of which happen outside of San Marcos Station. All but three of these boardings occur on the south side of I-35, which is mostly un-served in the inbound direction. In the inbound direction it is not possible to cross I-35 in the same location as in the outbound direction due to the one-way frontage road. Linda Street, one of the most productive route segments in the system, is only served in one direction. Riders accessing the station must ride to Wal-Mart first. Riders hoping to make a return trip from Wal-Mart to Linda Drive must either walk back or ride back to San Marcos Station and wait for the next outbound trip. Route 5 operates at the top of the hour, providing service every 30 minutes to Wal-Mart in conjunction with Route 4. The alignment on the north side of I-35 is circuitous in both directions and generates very little ridership.

Route 4 arrives on time at San Marcos Station 90% of the time, indicating a good cycle time.

At a Glance	
Average Daily Boardings	71
Productivity (boardings per hour)	12.9
% On Time Arrival at Station	90.0%
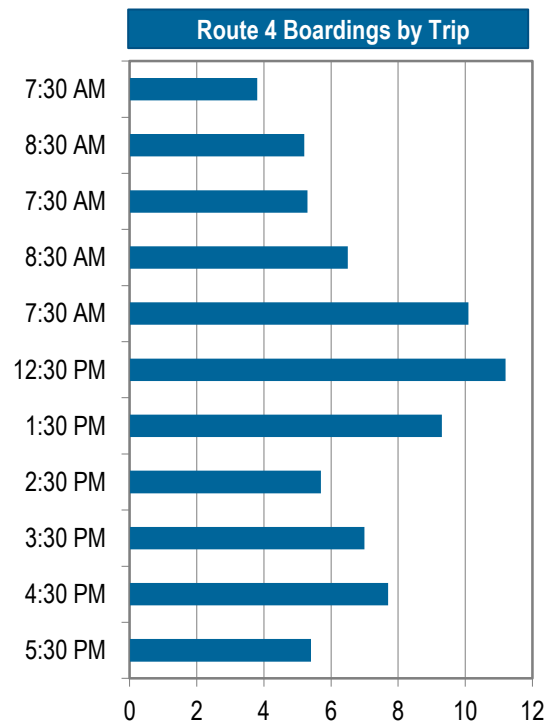
Route 5 – Conway Street

Description

Route 5 operates between San Marcos Station and Wal-Mart via Guadalupe Street, Cape Street, Sturgeon Street, Conway Street, Bugg Lane, and River Road. The alignment is identical in the inbound direction aside from deviating via Love Street, LBJ Drive, and MLK Drive to access Guadalupe Street in the right direction to access the station. Wal-Mart is the major ridership generator along with the residential Blanco Gardens neighborhood on Sturgeon Street and Conway Street.

Performance Characteristics

Route 5 has 57 average daily boardings and above average productivity with 10.3 boardings per hour. Ridership is highest on midday trips with the 12:00 p.m. trip carrying 10 riders. There are 17 boardings per day at Wal-Mart. There are 12 boardings combined in both directions at the two stops near Conway Park on Sturgeon Street. Two way service allows riders to access their destinations, whether Wal-Mart or San Marcos Station without riding out of direction. Between San Marcos Station and Blanco Gardens there is little ridership activity potentially due to poor pedestrian access and few ridership generators. However access to the neighborhood is limited by the street network. Together Route 4 and 5 provide 30 minute service to Wal-Mart.

Route 5 arrives on time at San Marcos Station 88.2% of the time, above average compared to the system.

At a Glance	
Average Daily Boardings	57
Productivity (boardings per hour)	10.3
% On Time Arrival at Station	88.2%

Route 5 Boardings by Trip
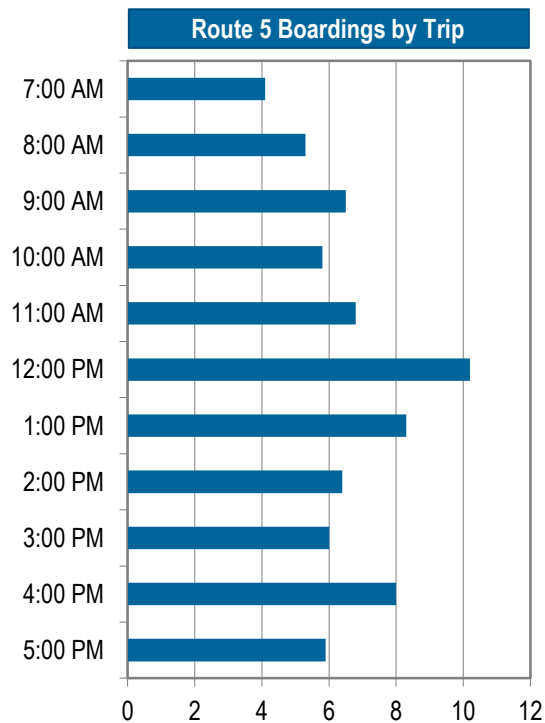
Route 6 – Medical Center

Description

Route 6 operates between San Marcos Station and Central Texas Medical Center (CTMC) via Guadalupe Street, deviating via Hays Street to serve Parker Drive, Belmont Drive, and De Zavalla Drive, continuing on Guadalupe Street, Wonder World Drive, and completing a terminal loop on Medical Parkway and Leah Avenue. In the inbound direction Route 6 follows mostly the same alignment, except deviating from Guadalupe Street to serve Broadway Street and Staples Road instead of Parker Drive. To access the station Route 6 operates on Love Street, LBJ Drive, MLK Drive, and Guadalupe Street. The primary trip generator on this route is CTMC. Sunrise Village, a senior living facility, is also an important destination.

Performance Characteristics

Route 6 performs below average with 38 daily boardings and productivity of seven boardings per hour. Ridership is highest on the 1:30 p.m. and 10:30 a.m. trips with 8.3 and 7.6 average boardings, respectively. The last trip of the day at 5:30 has the least boardings, with 1.4 riders on average. CTMC has the highest number of boardings per day with eight combined boardings in both directions. The Guadalupe Street corridor is difficult to serve due to the absence of sidewalks and high traffic speeds. Deviations to Parker Drive and Staples Road allow safer access, but also prevent two way service throughout the route. The Parker Road deviation is a more productive segment than the Staples Road deviation, but would be difficult to serve in the opposite direction due to unprotected left turns at De Zavalla Drive and turning onto Guadalupe from Hays Street.

Route 6 arrives on time at San Marcos station 74.5% of the time, slightly below average compared to other routes.

At a Glance	
Average Daily Boardings	38
Productivity (boardings per hour)	7.0
% On Time Arrival at Station	74.5%

Route 6 Boardings by Trip
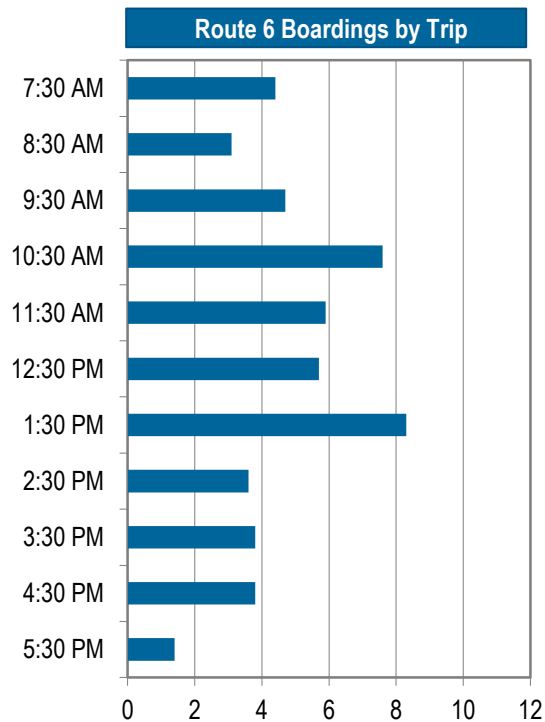
Route 7 – Outlet Malls

Description

Route 7 provides service to the Outlet Malls, leaving San Marcos Station via Guadalupe Street and turns onto the Frontage Road, deviating via Chisos Street, Barnes Drive, and McCarty Lane, returning to the Frontage Road until passing under I-35 at Posey Road and operating in the inbound direction via the Frontage Road, deviating at McKinley Place Drive to serve the Best Buy shopping center, and accessing San Marcos Station via Guadalupe Street, Love Street, LBJ Drive, MLK Drive, and Guadalupe Street. There are two outlet mall complexes on the inbound Frontage Road at Centerpoint Road which are the primary trip generators.

Performance Characteristics

Route 7 has the second most daily ridership, 67 boardings, and is the second most productive route wit h 12.2 boardings per hour. Ridership is low by comparison on morning trips, and greater in the afternoon with the 4:00 p.m. trip carrying 9 passengers. Frontage Roads operate one way on either side of the interstate, requiring passengers to either walk under the freeway to access destinations across from their bus stop or ride the route to the end and get off on the inbound direction. While the pedestrian environment is not ideal, the retail establishments along this route provide shopping and employment destinations.

Route 7 struggles with on time performance, arriving on time at San Marcos Station only 41.8% of the time (the lowest in the system). The actual average running time is 35 minutes, indicating that in most cases it misses the timed transfer, preventing riders from making connections. Deviations to Barnes Road and into the Best Buy shopping center add running time and may be unnecessary. In addition, there is very little ridership at Posey Road, the end of the route. In order to ensure that Route 7 makes connections, there may be opportunities to shorten the route.

At a Glance	
Average Daily Boardings	67
Productivity (boardings per hour)	12.2
% On Time Arrival at Station	41.8%

Route 7 Boardings by Trip
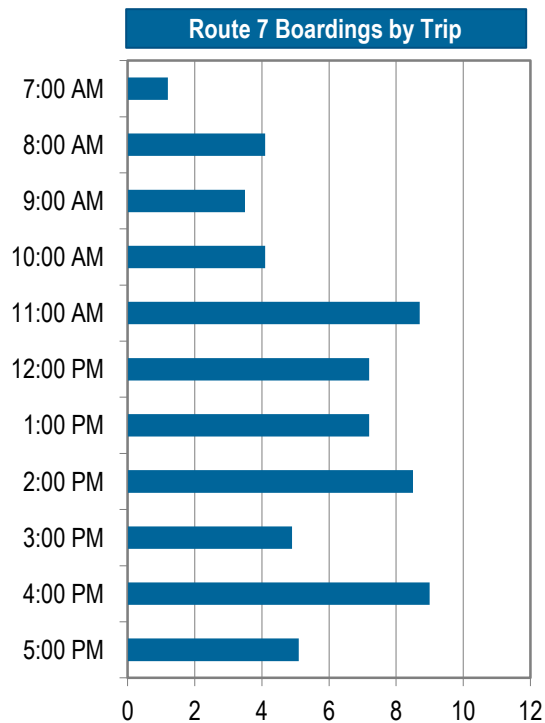
Route 8 – Hunter Road

Description

Route 8 leaves San Marcos Station via Guadalupe Street, Cheatham Street, and LBJ Drive, turning onto Hopkins Road, which becomes Hunter Road, and turning around via Suttles Avenue, Dees Street, and Reimer Avenue. In the inbound direction Route 8 deviates from Hunter Road to serve apartments and Hays County offices on Stagecoach Trail, returning to Hunter Road via Dutton Drive, and accessing San Marcos Station from Hopkins Street via Edward Gary, MLK Drive, and Guadalupe Street.

Performance Characteristics

Route 8 has 41 average daily boardings and below average productivity with 7.5 boardings per hour. Ridership is highest on the 12:00 p.m. trip with six boardings and is lower in the morning and evening. The last trip of the day carries only 1.4 people on average. The HEB at the intersection of Hopkins Street and Comanche Street and the last stop in the outbound direction at Hunter Road an Suttles Avenue (near the Mariposa Apartment Homes) each have five daily boardings. The Stagecoach Trail deviation in the inbound direction generates about six boardings all together. Hopkins Street between downtown and where it turns into Hunter Road has very little ridership activity. In the inbound direction Route 8 travels out of direction to access San Marcos Station via Edward Gary and MLK Drive rather than simply turning from Hopkins Street onto Guadalupe. There is no obvious destination served by this deviation.

Route 8 arrives on time at San Marcos Station 80.9% of the time, just above average. Operating on Hopkins Street may introduce variability in travel times due to congestion at peak times.

At a Glance	
Average Daily Boardings	41
Productivity (boardings per hour)	7.5
% On Time Arrival at Station	80.9%

Route 8 Boardings by Trip
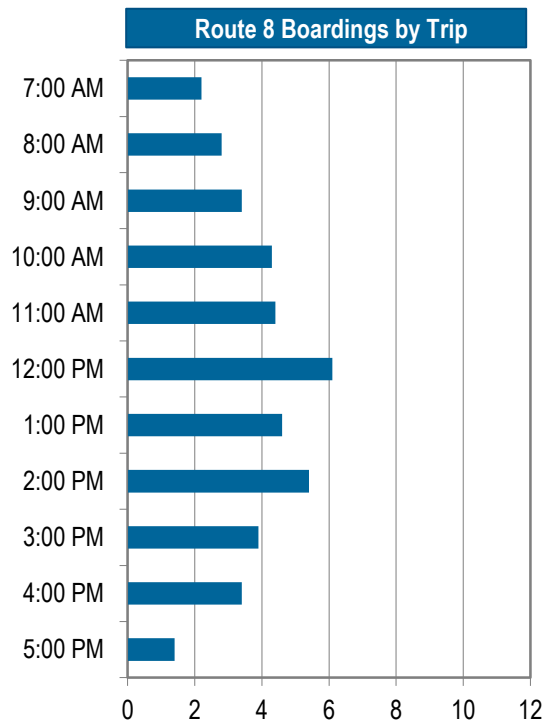
Route 10 – University

Description

Route 10 operates between San Marcos Station and Texas State University in the outbound direction via Guadalupe Street, Cheatham Street, LBD Drive, Woods Street, Comanche Street, and Student Center Drive. In the inbound direction Route 10 operates the same alignment but turns from Woods Street onto Guadalupe Street, Hopkins Street, Edward Gary Street, MLK Drive, and then Guadalupe Street.

Performance Characteristics

Route 10 has the third lowest productivity with 6.1 boardings per hour and 34 boardings daily. All trips have three or fewer riders on average. The last trip of the day has less than one passenger on average. The boarding and alighting survey was conducted while Route 10 was operating a different alignment that it operates currently. Stop-level ridership data is limited, but the majority of trips on Route 10 start or end at Texas State University. Some students commute to Texas State University using the CARTS interurban service and transfer to Route 10. The distance to the university, however, is walkable. Due to the short length of Route 10 there are limited origins and destinations along the route and a small market.

Route 10 has the second worst on time performance with two thirds of trips arriving on time. The variability in running time may be caused by the operating environment through Texas State University which is likely slow due to high levels of pedestrian traffic.

At a Glance	
Average Daily Boardings	34
Productivity (boardings per hour)	6.1
% On Time Arrival at Station	67.3%

Route 10 Boardings by Trip
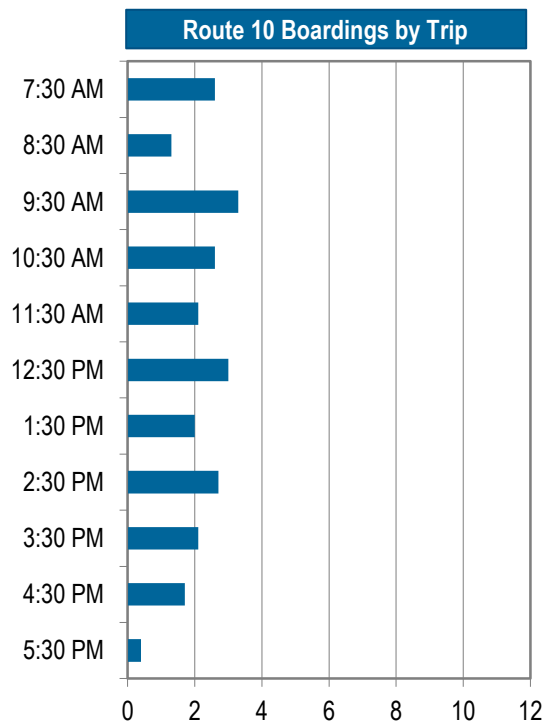
Route 11 – Hotel-Motel-Shopper

Description

Route 11 operates from San Marcos Station via Guadalupe Street, passing under I-35 and serving the Frontage Road until Aquarena Springs, where it passes back under I-35 and operates in the inbound direction on Frontage Road, deviating on Springtown Way to serve Springtown Villa, returning to Frontage Road, and returning to San Marcos Station via LBJ Drive, MLK Drive, and Guadalupe Street.

Performance Characteristics

Route 11 is has the second lowest productivity in the system with 5.8 boardings per revenue hour and 32 boardings per day. Most stops have one or fewer boardings per day and several stops have no ridership. The highest ridership stops, are on Frontage Road between Aquarena Springs and Jackson Lane in the inbound direction and at the intersection of the Frontage Road and River Road in the outbound direction. All of these stops are served by other routes (Route 3 and 4, respectively). Ridership is highest on the 11:30 a.m. trip with 4.5 boardings on average.

Route 11 has above average on time performance with 81.8% of trips arriving on time at San Marcos Station.

At a Glance	
Average Daily Boardings	32
Productivity (boardings per hour)	5.8
% On Time Arrival at Station	81.8%

Route 11 Boardings by Trip

San Marcos Five-Year Transit Plan | Final Report
CARTS / City of San Marcos
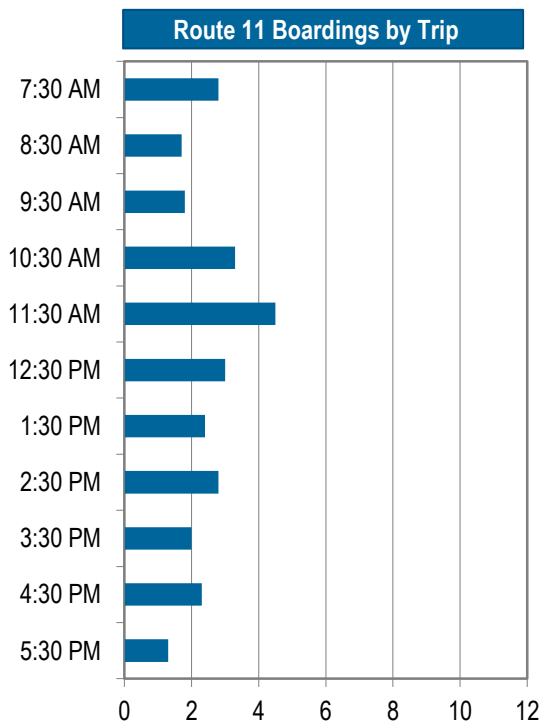
Route 12 – Redwood/Martindale

Description

Route 12 operates three trips per day between San Marcos Station, Martindale, and Redwood in a large loop. From San Marcos Station Route 12 operates on Guadalupe Street, I-35 Frontage Road, and Route 80 (San Marcos Highway), serving two stops in Martindale at the intersection of Route 80 and Lockhart Street and also Martindale City Hall on Main Street. Route 12 continues to Redwood via FM Road 1979, FM Road 621, and FM Road 1978 where it serves the gas station, Guadalupe Meat market, turns onto Crossover Road, continues onto Redwood Road to serve the Redwood Baptist Church. Route 12 returns to San Marcos Station via Redwood Road, Guadalupe Street, Love Street, LBJ Drive, MLK Drive, and Guadalupe Street.

Performance Characteristics

Route 12 is San Marcos Transit's newest route. While it only operates three trips per day, and thus has the fewest boardings systemwide, it also has the lowest productivity with 3.6 boardings per hour. The large loop structure forces all riders to ride significantly out of direction whether traveling to Martindale or Redwood. During stakeholder and public meetings riders of Route 12 from Redwood expressed a desire for a later afternoon trip in order to meet school schedules. The 11:30 a.m. trip has on average one rider. Stop-level data indicates that there are no boardings in Martindale on average. All ridership occurs either at San Marcos Station or in Redwood.

On time performance data was not collected for Route 12 because it was not operating at the time of the survey.

At a Glance	
Average Daily Boardings	11
Productivity (boardings per hour)	3.6
% On Time Arrival at Station	N/A

Route 12 Boardings by Trip
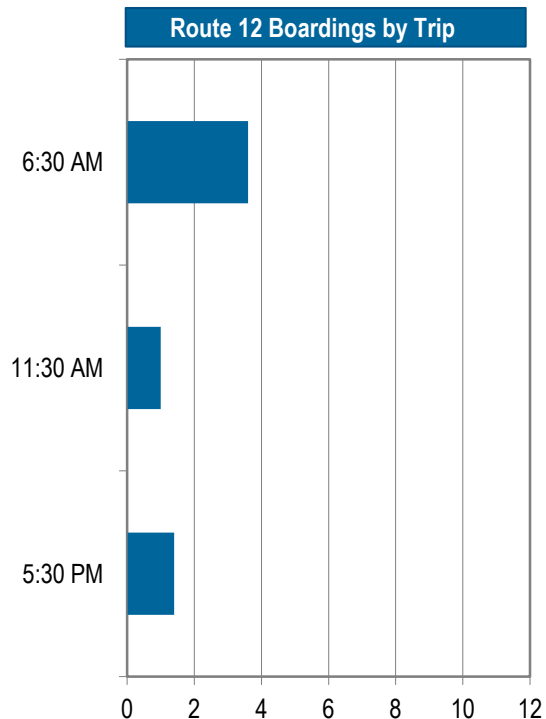
8 ROUTE RESTRUCTURE RECOMMENDATIONS

The following recommendations present a cost-neutral route restructure that will lay the foundation for growth as additional funds become available. Key features of the recommended system are:

- 30 minute service on major corridors and to major destinations
- New crosstown route to reduce travel time and transfers
- New transfer opportunities away from San Marcos Station
- Simplified downtown routing
- Improve route directness
- Improved efficiency and cost-effectiveness
- High probability of increased ridership

RECOMMENDED ROUTE RESTRUCTURE

Each of the six recommended routes are described below and detailed with a map. Some routes are modified versions of existing routes with the same number or modified versions of existing routes with different numbers. The recommended service span remains the same as it is today, 7:00 a.m. to 6:00 p.m.

Route 1 – Hopkins Street/Wonder World Drive

Currently two thirds of trips made on San Marcos Transit include a transfer at San Marcos Station. In order to reduce travel time and the need for transfers, the new Route 1 provides a "crosstown" travel pattern, one that does not serve San Marcos Station. Route 1 operates between the medical center on Wonder World Drive and Walmart via Hopkins Street. Transfers are available from Route 1 to other routes that serve San Marcos Station at stops in downtown at the intersection of Hopkins Street and Guadalupe Street as well as Hopkins Street and LBJ Drive. Operating every 30 minutes, the new Route 1 will provide frequent and direct service between medical appointments, grocery shopping, and civic institutions without requiring out of direction travel to San Marcos Station.

Resources from existing Routes 1, 6, 8, and 11 are reinvested in the new Route 1. Segments of existing Route 1 on Craddock Avenue are served by new Route 5. Segments of existing Route 8 on Hopkins Street are served by new Route 1. The medical center, served by existing Route 6 is served by new Route 1. Segments on Guadalupe Street and Parker Drive served by existing Route 6 are served by new Route 6.

Attributes

- Headways: 30 minute
- Buses run more than every 30 minutes on Hopkins Street in conjunction with Routes 2 and 3
- Does not serve San Marcos Station
- Major Activity Centers Served: Medical Center, Downtown San Marcos, San Marcos Activity Center, City Hall, H-E-B, Walmart

Figure 39   Recommended New Route 1
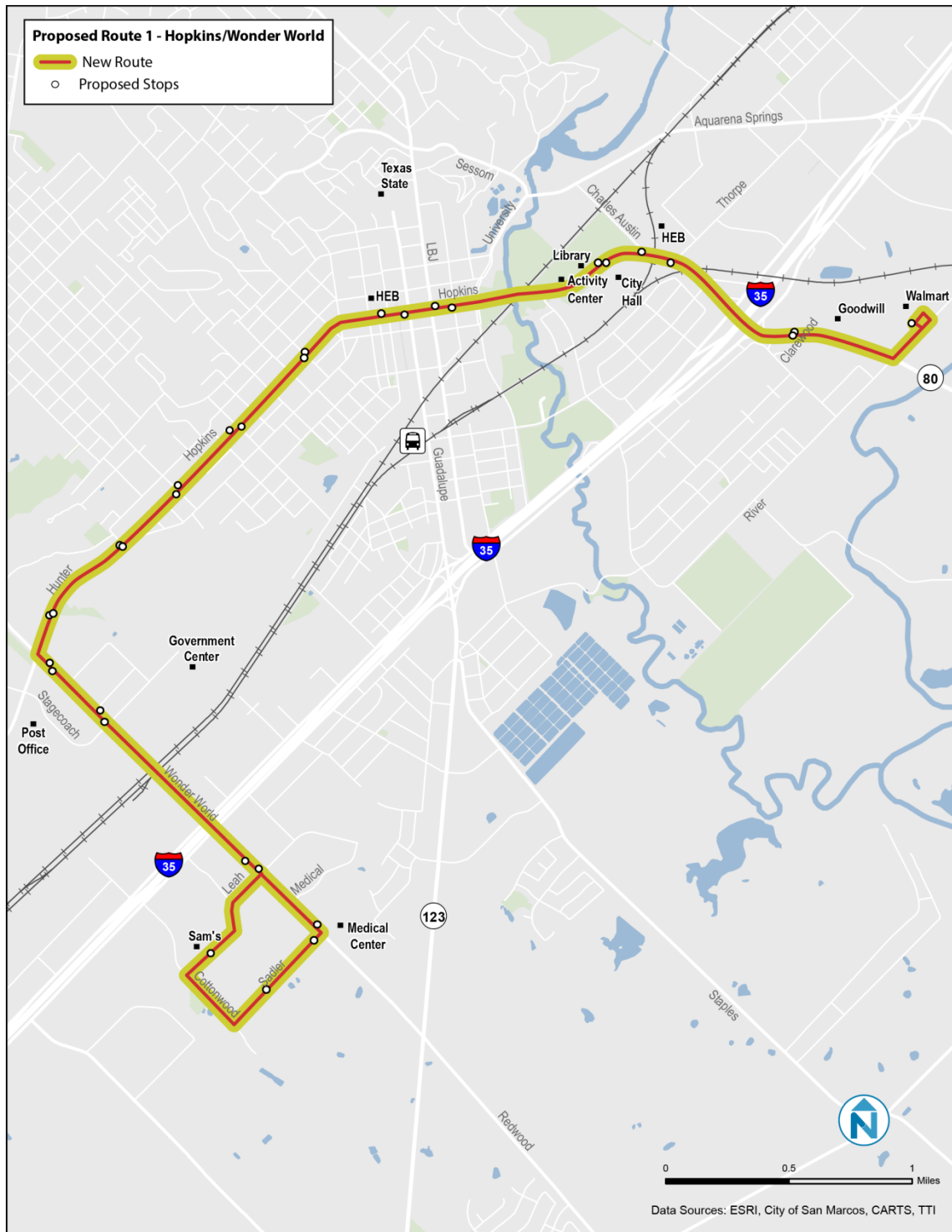
Route 2 – Post Road

Route 2 continues to serve residential areas on Post Road, extending beyond the existing terminus north of Clermont Street to Paintbrush Street, providing access to the San Marcos Regency mobile home park. From Post Road Route 2 serves Thorpe Lane via Uhland Road, Mill Street, and Eastwood Street rather than Aquarena Springs Drive and Charles Austin Drive, providing more frequent access to Midtown. Route 2 is interlined with Route 3 in order to provide service every 30 minutes to the HEB on Thorpe Lane. Routing between San Marcos Station and Hopkins Street is simplified, using LBJ Drive in the northbound direction and Guadalupe Street in the southbound direction.

Attributes

- Headways: 60 minute
- Buses run more than every 30 minutes on Hopkins Street and every 30 minutes on Thorpe Lane in conjunction with new Route 1 and Route 3
- Serves San Marcos Station
- Major Activity Centers Served: Downtown San Marcos, San Marcos Activity Center, City Hall, H-E-B on Thorpe Lane

Route 3 – Uhland Road

Route 3 has a strong market, serving residences on the Uhland Road/Aquarena Springs loop east of I-35. Route 3 remains mostly the same, with simplified routing to and from San Marcos Station via Guadalupe Street and LBJ Drive. The deviation serving the frontage road and Jackson Lane is removed in order to provide simple, bi-directional service. Route 3 is interlined with Route 2 in order to provide 30 minute service between San Marcos Station and Thorpe Lane.

 Attributes

- Headways: 60 minute
- Buses run more than every 30 minutes on Hopkins Street and every 30 minutes on Thorpe Lane in conjunction with new Route 1 and Route 2
- Serves San Marcos Station
- Major Activity Centers Served: Downtown San Marcos, San Marcos Activity Center, City Hall, H-E-B on Thorpe Lane

Figure 40   Recommended Route 2 Restructure
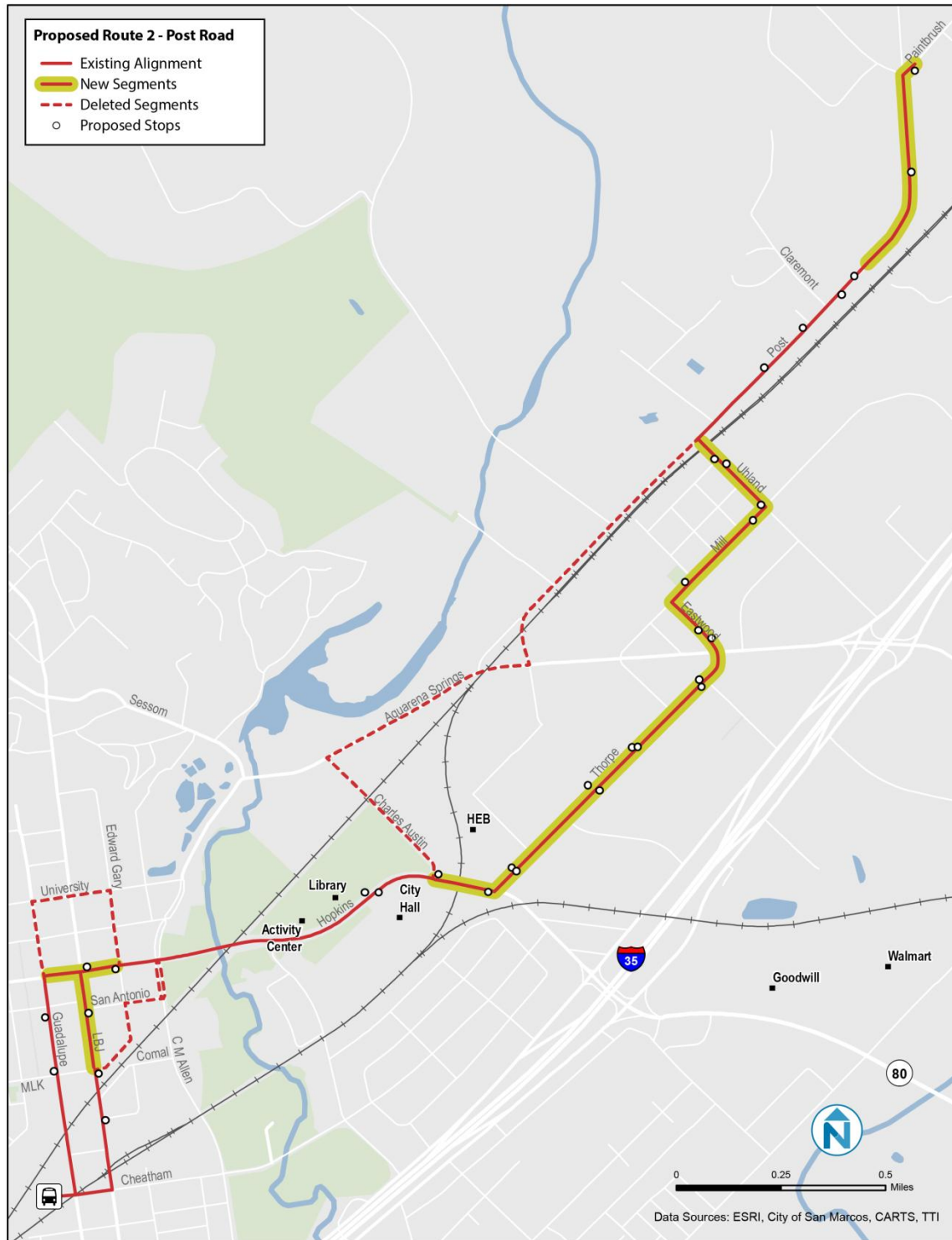
Figure 41   Recommended Route 3 Restructure
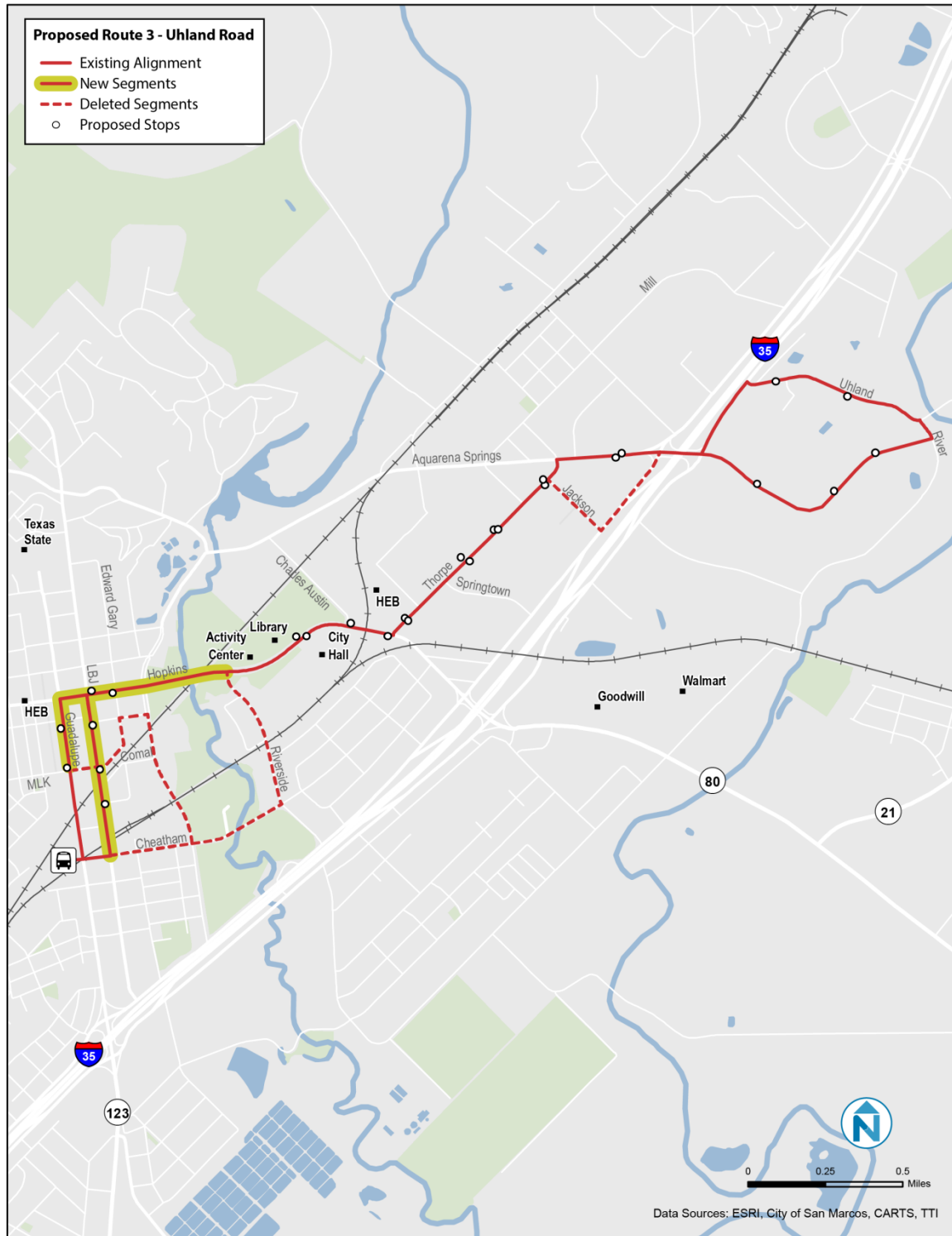
Route 4 – Linda Drive/Conway Drive

Route 4 uses resources from existing Route 4 and Route 5 to create a simple, bi-directional service between San Marcos Station and Walmart via the Blanco Gardens neighborhood. The Linda Drive corridor is one of the most productive in the system but is only served in one direction by existing Route 4 due to the one-way frontage road. The recommended Route 4 restructure provides access to Linda Drive in the inbound direction and also improved circulation within the Blanco Gardens neighborhood, connecting Linda Drive to Conway Drive. With resources from two existing routes, Route 4 will operate every 30 minutes, ensuring that passengers passing through San Marcos Station do not have to wait if traveling to Walmart.

Attributes

- Headways: 30 minute
- Serves San Marcos Station
- Major Activity Centers Served: Blanco Gardens neighborhood, Walmart

Figure 42   Recommended Route 4 Restructure
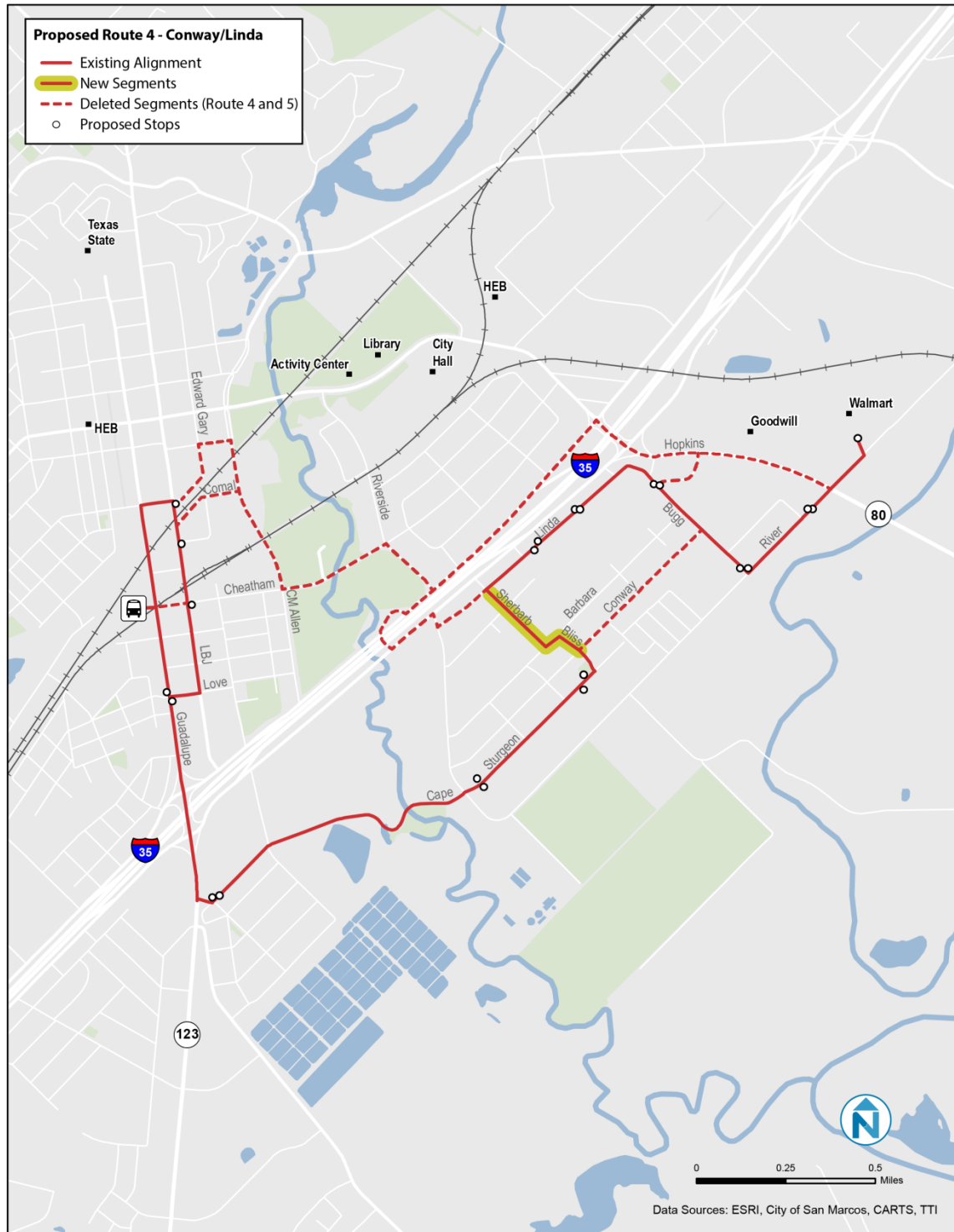
Route 5 – Outlets/University

Route 5 uses resources from existing Route 7 and Route 10 to create a direct connection between the outlet malls and neighborhoods west of Texas State University. Existing Route 7 has experienced on-time performance issues, causing missed transfers due to late arrivals at San Marcos Station. In order to address this new Route 5 only serves San Marcos Station in the eastbound direction. In the westbound direction passengers will board and alight on LBJ Drive where they can make connections by walking one block to the San Marcos Station or board Routes 2 or 3 as they leave the Station. Transfers to Route 1 are also possible at the Hopkins Street. Route 5 is extended beyond Route 10's existing terminus on Texas State University campus to the apartment complexes on Craddock Avenue that are served currently by existing Route 1. Route 5 operates every 60 minutes.

Attributes

- Headways: 60 minute
- Serves San Marcos Station in eastbound direction only
- Major Activity Centers Served: Outlet malls, Downtown San Marcos, Texas State University

Figure 43   Recommended New Route 5 (Restructured Route 7 and 10)
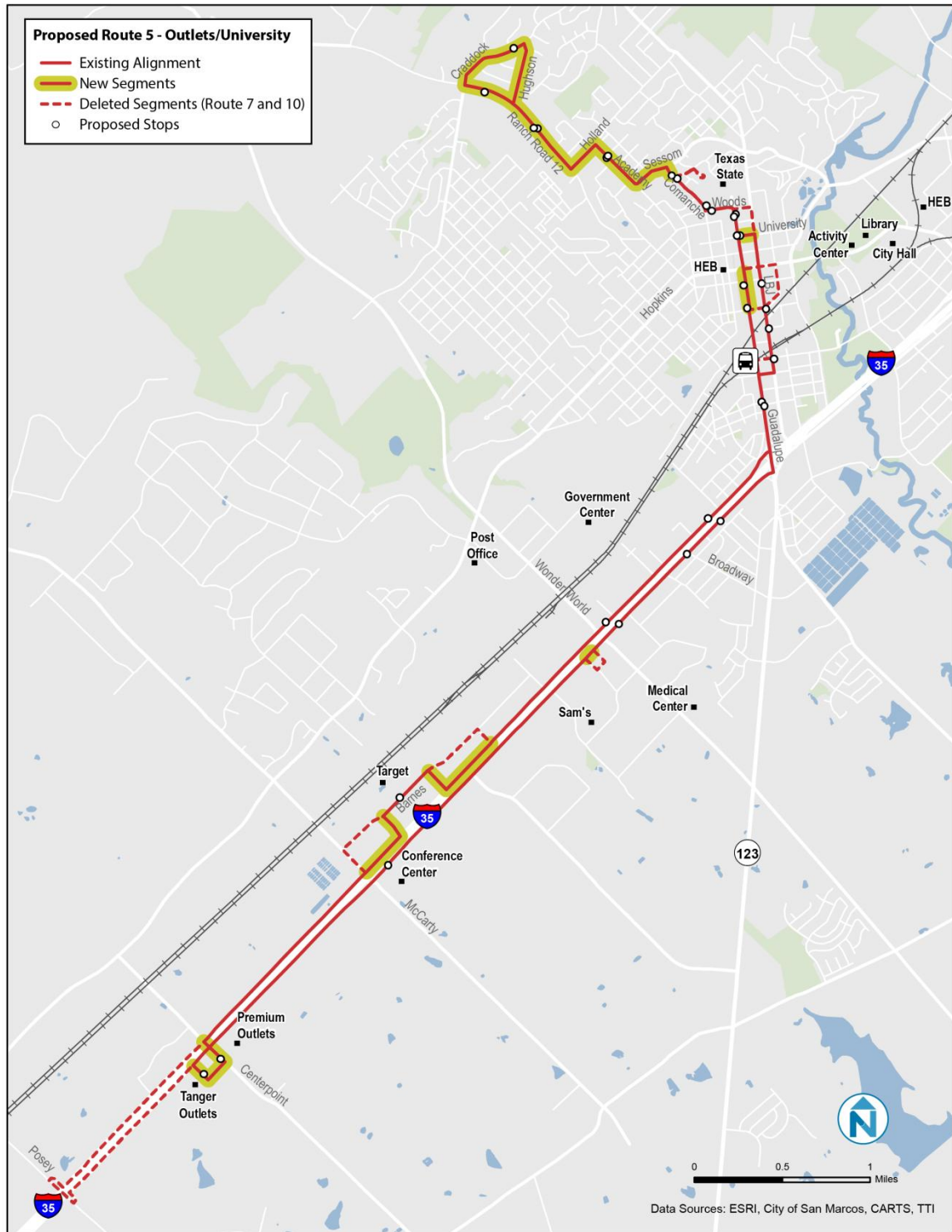
Route 6 – Guadalupe Street/Redwood

Route 6 is a restructure of the existing Route 12 and uses the same amount of resources to provide better service to Redwood. Service to Martindale, which showed zero average daily boardings, is discontinued. Route 6 operates between San Marcos Station and Redwood via Guadalupe Street, deviating on Parker Drive to serve destinations served by the existing Route 6. Recommended Route 6 operates six round trips daily, two morning, two afternoon, and two evening. One round trip can be completed in 30 minutes, leading to much reduced travel time in the outbound direction for residents of Redwood.

Figure 44   Recommended New Route 6 (Route 12 Restructure)
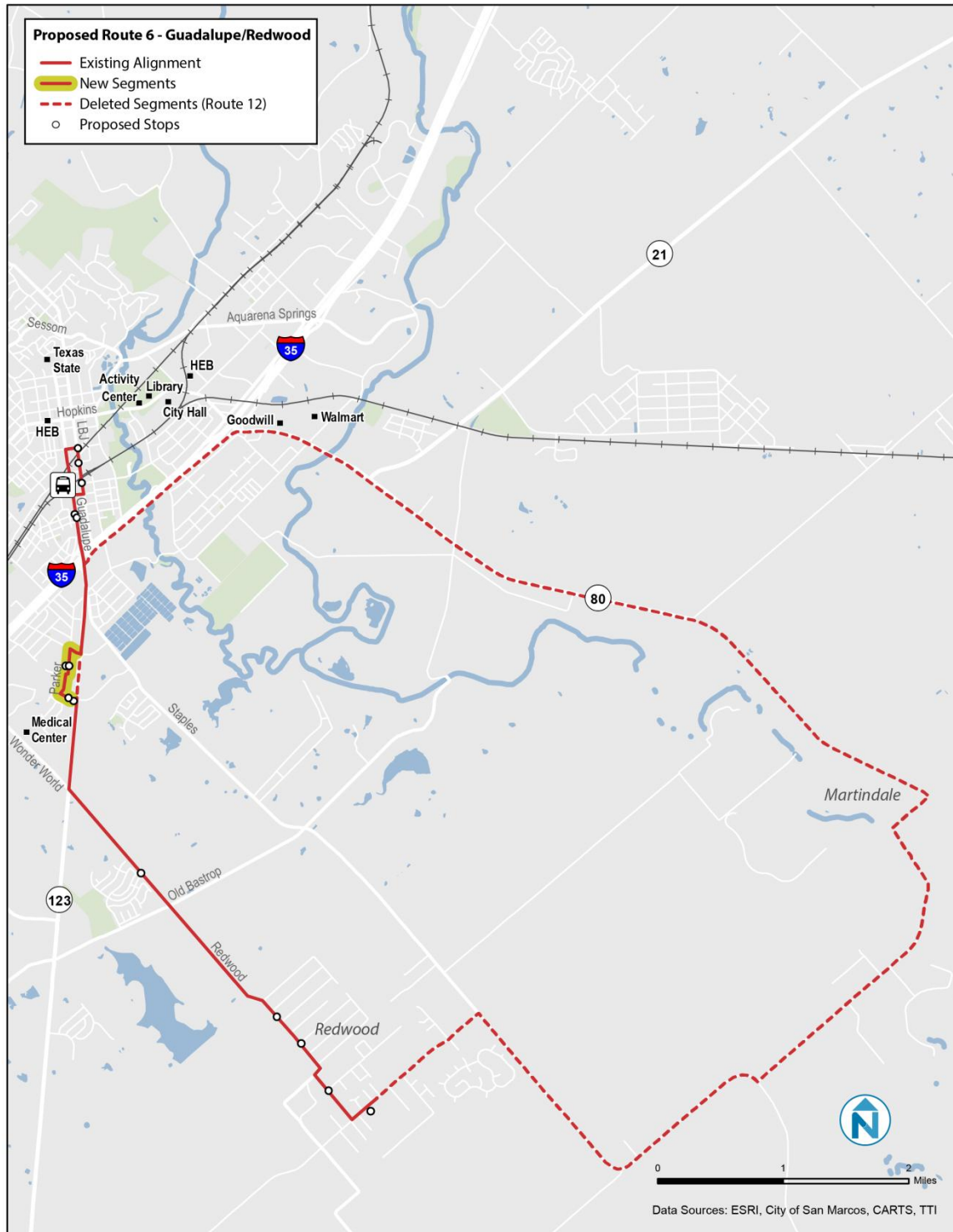
SUMMARY OF RECOMMENDED RESTRUCTURE

The tables below (Figure 45 and Figure 46) summarize recommended changes to existing routes and descriptions of recommended routes. The total number of annual hours operated in the existing system is equal to the total annual hours operated in the recommended system.

Figure 47 shows the segments from the existing system that will remain or be deleted in the recommended system as well as new segments recommended as part of the new system. While the recommended system operates on fewer streets, the system provides more frequent service to several corridors, shown in Figure 48. Figure 49 shows the recommended system map.

Figure 45   Summary of Recommended Changes to Existing Routes

Existing Route	Route Serves San Marcos Station	Frequency	Total Annual Hours	Recommendation
1 – Bishop Street	Yes	60	1,375	Delete, reinvest in new Route 1
2 – Post Road	Yes	60	1,375	Re-align to serve H-E-B and extend further on Post Road
3 – Uhland Road	Yes	60	1,375	Delete Frontage Road deviation
4 – Marketplace	Yes	60	1,375	Restructure using additional resources from Route 5
5 – Conway Drive	Yes	60	1,375	Restructure and combine resources for new Route 4
6 – Medical Center	Yes	60	1,375	Delete, reinvest in new Route 1
7 – Outlets	Yes	60	1,375	Combine with Route 10 to create new Route 5
8 – Hunter Road	Yes	60	1,375	Delete, reinvest in new Route 1
10 – University	Yes	60	1,375	Combine with Route 7 to create new Route 5
11 – Hotel Motel Shopper	Yes	60	1,375	Delete, reinvest in new Route 1
12 – Redwood/Martindale	Yes	3 trips / day	750	Delete service to Martindale, operate more trips to Redwood
Total Annual Hours			14,500	

Figure 46   Summary of Recommended Routes

Recommended Route	Route Serves San Marcos Station	Frequency	Total Annual Hours	Description
1 – Hopkins/Wonder World	No	30	5,500	Connects Medical Center to Walmart via Hopkins
2 – Post Road	Yes	60	1,375	Serves Post Road neighborhood and H-E-B
3 – Uhland Road	Yes	60	1,375	Serves Uhland Road loop and H-E-B
4 – Linda/Conway	Yes	30	2,750	Serves Walmart via Conway Drive and Linda Drive
5 – Outlets/University	Yes	60	2,750	Serves outlet malls, Texas State campus and Craddock Avenue
6 – Guadalupe/Redwood	Yes	6 trips / day	750	Service to Redwood via Guadalupe Street and Parker Drive
Total Annual Hours			14,500	

Figure 47   System Restructure Showing New and Deleted Segments
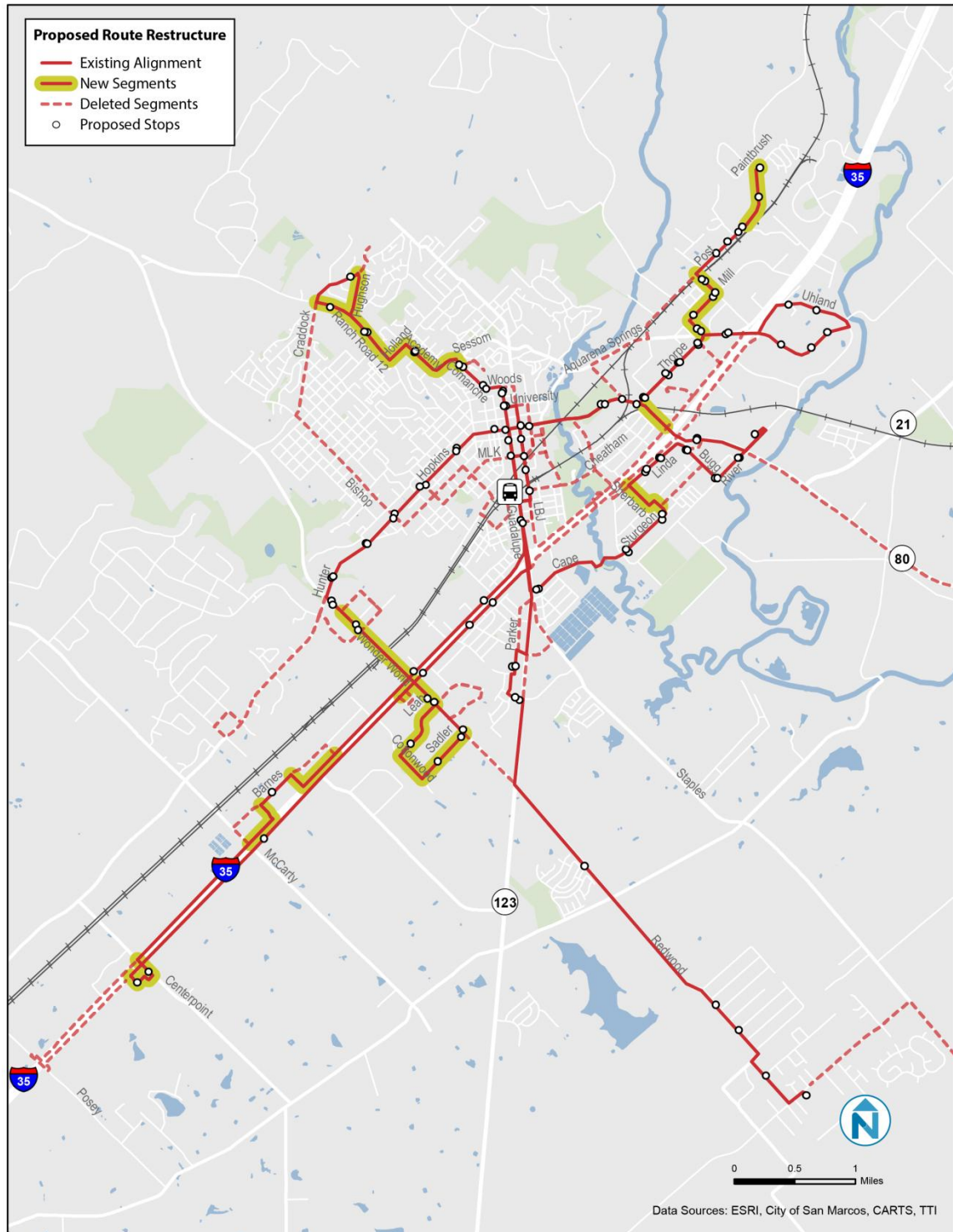
Figure 48   Corridor Frequency Comparison of Existing and Recommended Route Networks
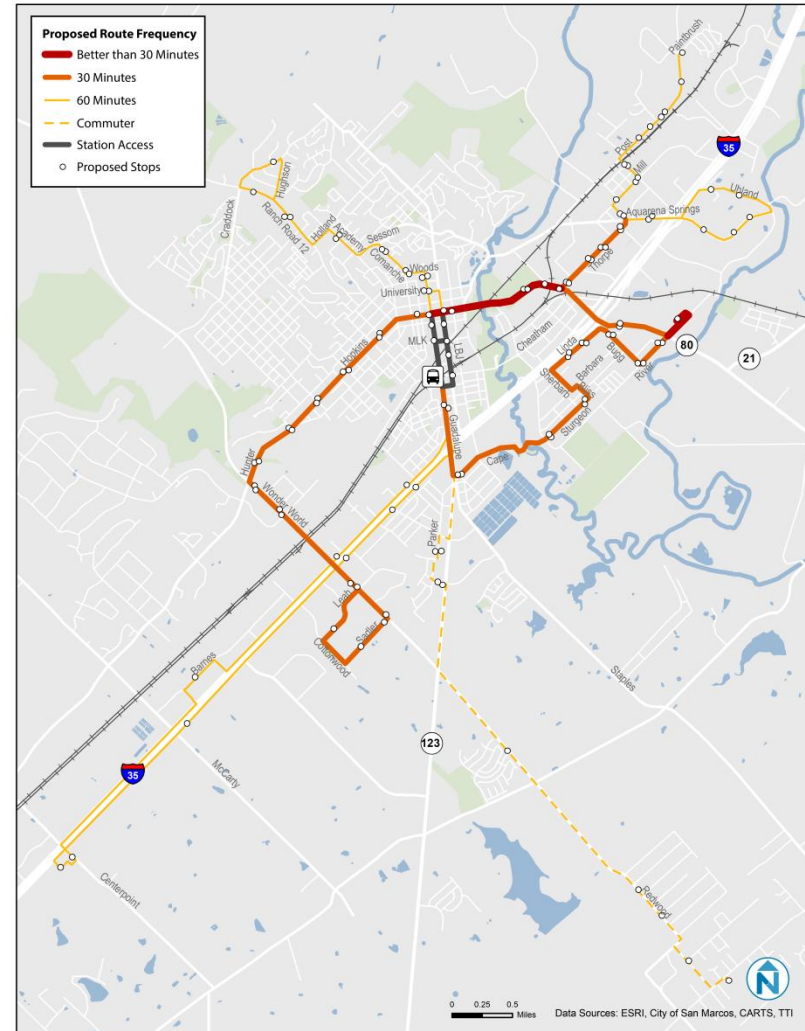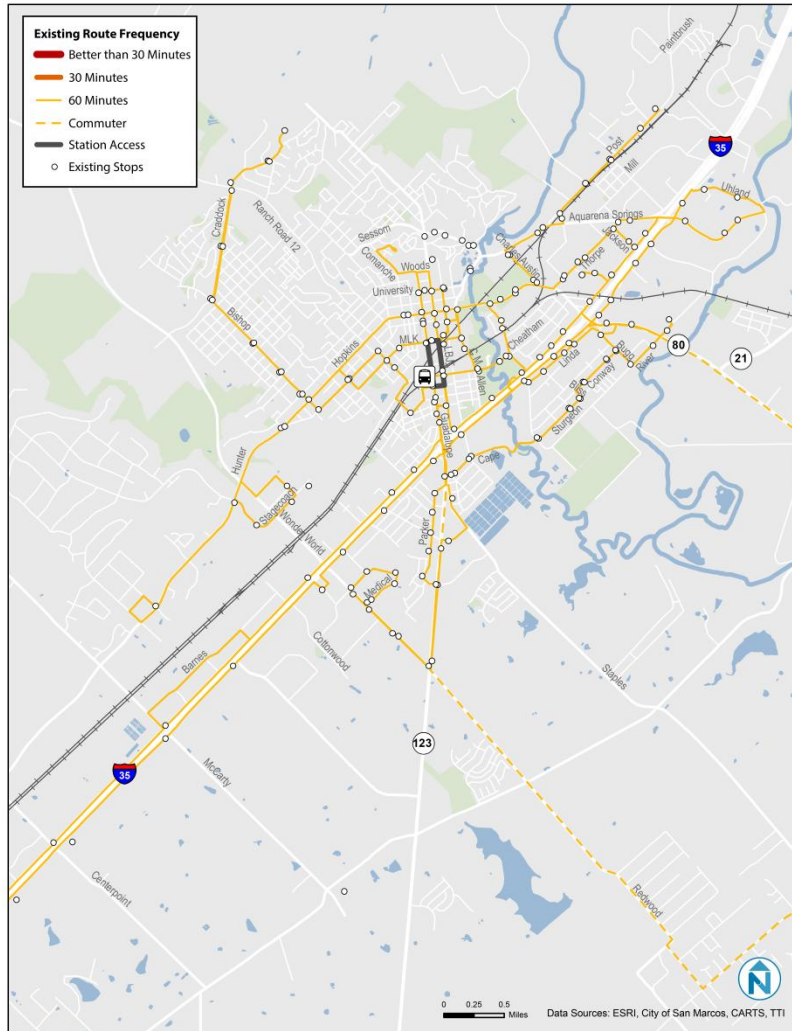
Figure 49   Recommended System Map
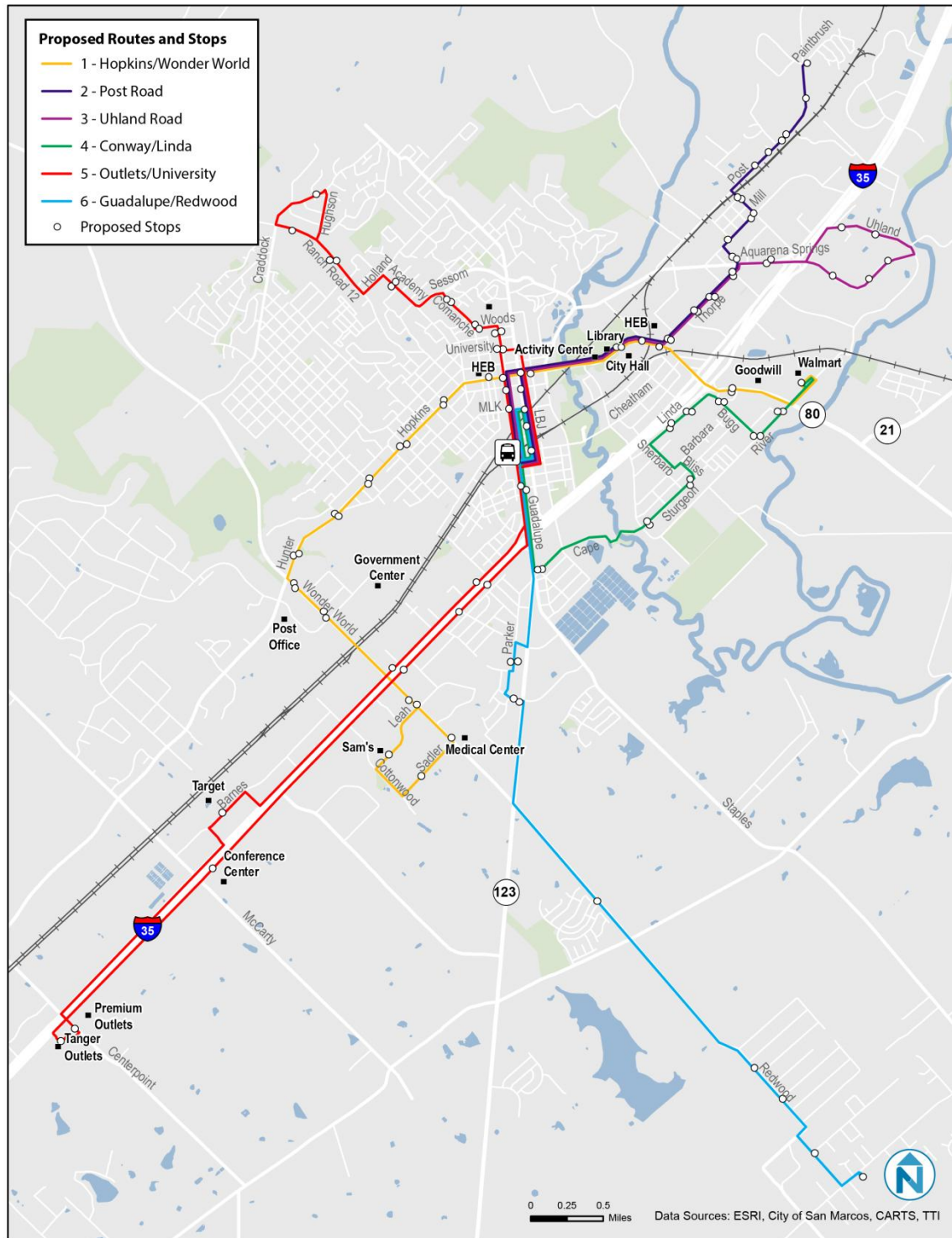
ANALYSIS OF SHORT-TERM SERVICE PLAN

¼ Mile Buffer Analysis

A buffer analysis was conducted to determine which existing stops fall within one quarter mile, a short walk, from the recommended routes. Of the 288 average daily boardings (not including 242 boardings at San Marcos Station), 28 are located outside of the quarter mile buffer. Assuming that most passengers make round trips, requiring two boardings, this equates to 14 impacted riders, or 9% of the total rider population. As shown in Figure 50, the majority of the boardings that fall within the quarter mile buffer have access to more frequent service as a result of the route restructure. Seventy percent of existing boardings are located near recommended routes with twice as many daily trips as are operated under the existing system.

One-Seat Ride to Major Shopping

Figure 51 demonstrates that the recommended system would provide a one-seat ride, requiring no transfers, to major shopping destinations, HEB and Walmart. In addition, stops on Hopkins Street provide a one-seat ride to either location. Once the HEB on the frontage road near the outlet malls is completed, even more stops will have direct access to shopping.

Figure 50   Existing Passengers Served by Recommended System
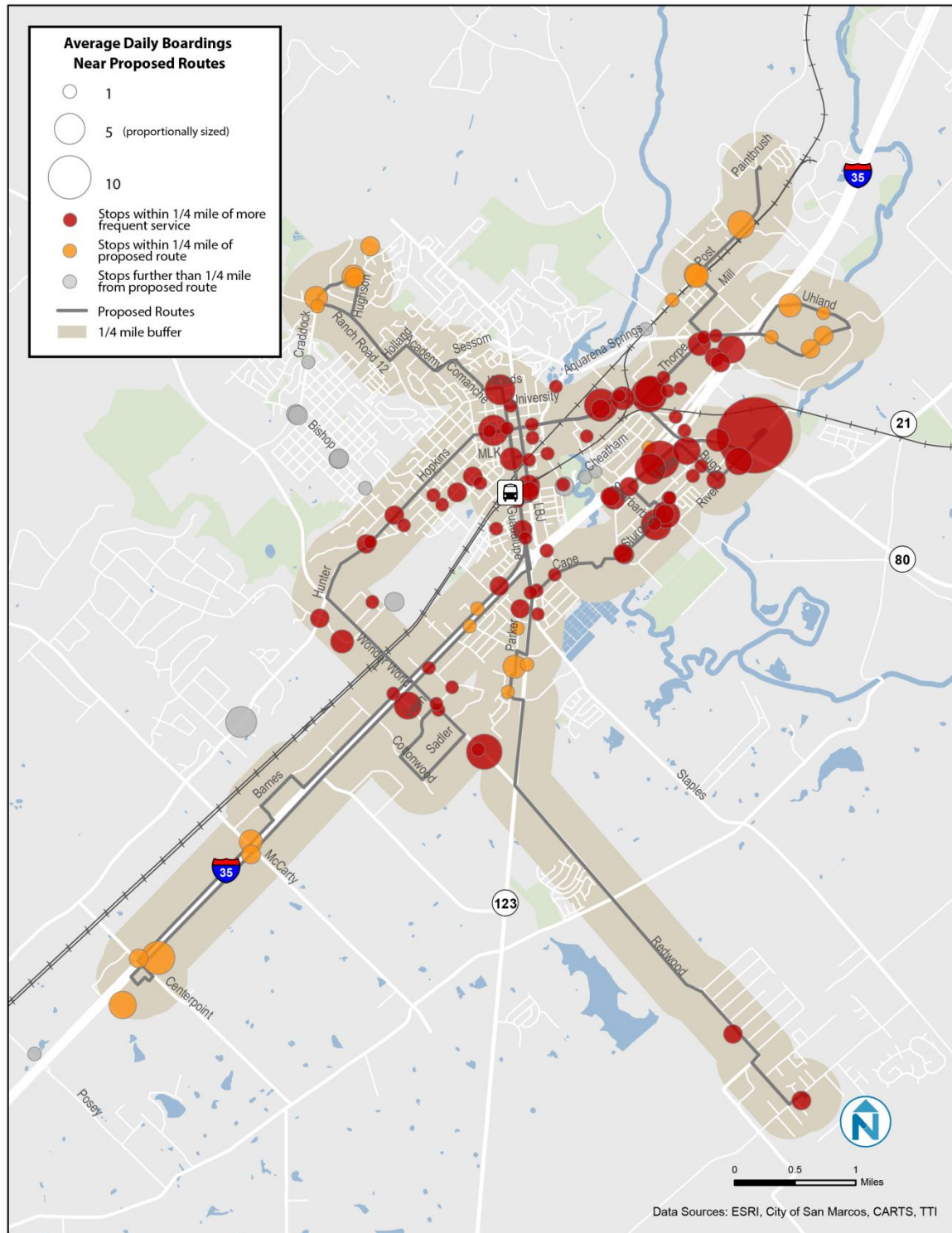
Figure 51   Recommended Stops Served by One-Seat Ride to Major Shopping Destinations
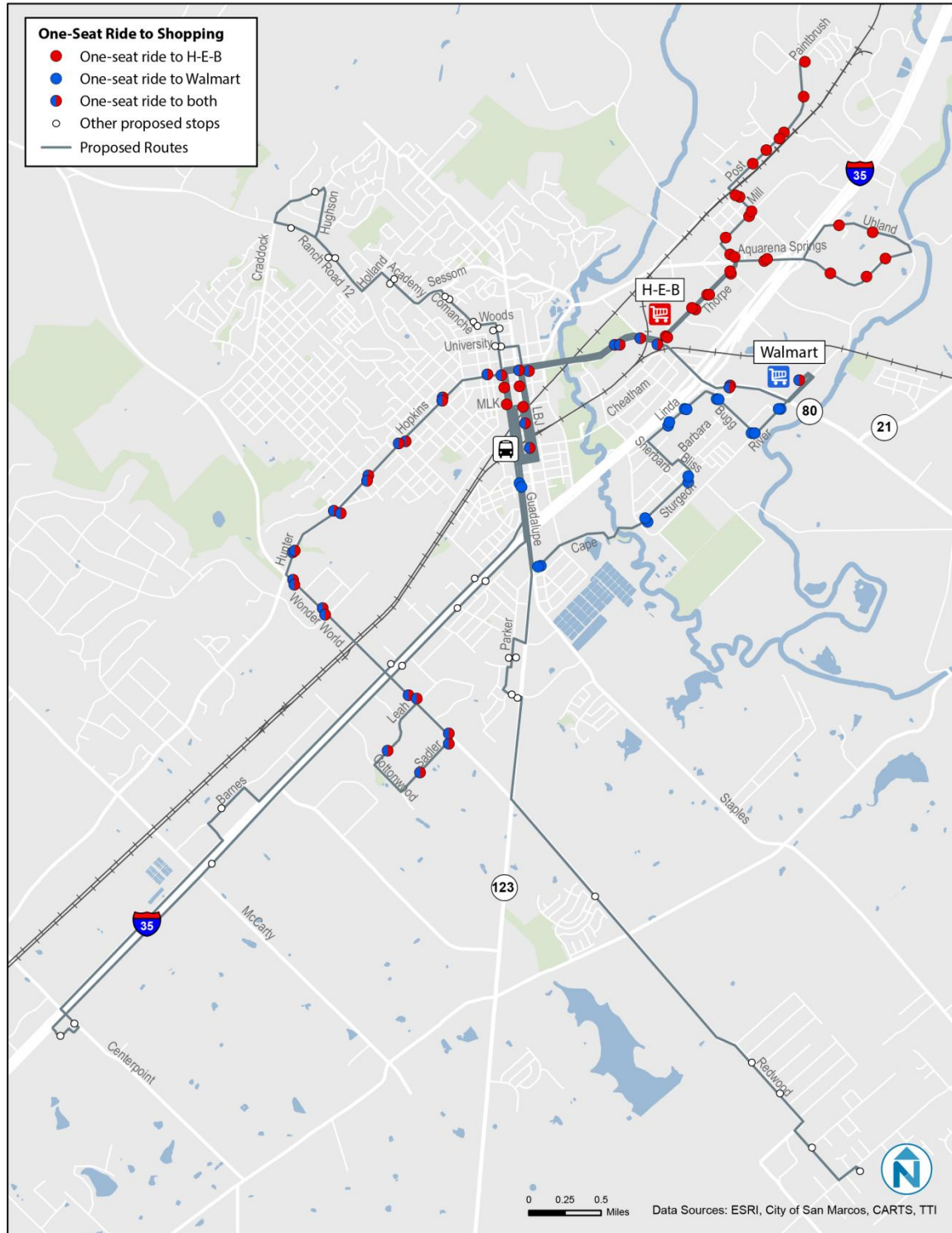
COMMUNITY FEEDBACK – ONLINE SURVEY

Between March 18 and March 31, 2014 the San Marcos community provided feedback on the proposed route restructure through an online survey. The survey presented a map and explanation of each of the proposed service changes, asked respondents to state their opinion of the proposed changes, and provided space for comments. There were 138 respondents, 36% of which are not transit riders, 34% of which ride at least one San Marcos CARTS route (excluding those who indicated that they only ride the CARTS Interurban Coach and/or the Bobcat Shuttle), and 30% of which ride are other transit riders, indicating that they only ride the CARTS Interurban Coach and/or the Bobcat Shuttle.

Figure 52 shows the percent of respondents that indicated that they ride each of the San Marcos CARTS routes as well as other transit in the area, the CARTS interurban service and the Texas State Bobcat Shuttle. Respondents were able to select multiple routes, meaning that the total responses add up to more than 100%. The most popular San Marcos CARTS route among respondents is Route 10, the Texas State University route. A large number of respondents are affiliated with the university due to an e-blast that was sent to the Texas State community notifying them of the survey. The next most common CARTS San Marcos route ridden by respondents is Route 7 which serves the outlet malls. Equal percentages of respondents do not ride any form of transit or ride the Bobcat Shuttle, 38%. Twenty percent of respondents indicated that they ride the CARTS Interurban Coach.

As shown in Figure 53, 96% of respondents accept or strongly support the proposed changes. San Marcos CARTS riders showed the highest degree of strong support for the proposed changes, 40%. Other transit riders, those who indicated that they only ride the Bobcat Shuttle and/or the CARTS Interurban Coach showed lower levels of strong support (25%), but only 5% indicated that they did not support the changes. Non-riders had the lowest degree of opposition to the proposed changes, 2%.

Forty open ended comments were received, ten of which were statements of support for the changes and the CARTS service in general. Other comments touched on the following themes:

- More Interurban service to San Antonio and Austin (later service)
- More frequency on San Marcos Routes (adding 30 minute service to routes 2, 3, and 5 as well as increasing service beyond 30 minutes)
- Requests for service to specific areas, though no single location was mentioned by more than one respondent

Figure 52   Routes used by Survey Respondents

Route	Percent
Route 1 - Bishop Street	3%
Route 2 - Post Road	6%
Route 3 - Uhland Road	4%
Route 4 - The Marketplace	7%
Route 5 - Conway Street	2%
Route 6 - Medical Center	9%
Route 7 - The Outlet Malls	12%
Route 8 - Hunter Road	7%
Route 10 - Texas State University	27%
Route 11 - Hotel-Motel-Shopper	2%
Route 12 - Redwood Martindale	2%
Senior Shopper Shuttle	1%
Bobcat Shuttle	38%
CARTS Interurban Coach	20%
None - I currently do not ride	38%

Figure 53   Opinions of Survey Respondents Regarding Service Changes by Respondent Type

	All Respondents	CARTS Riders (San Marcos)	Other Transit Riders	Non-Transit Riders
I oppose these changes	4%	5%	5%	2%
I find these changes to be acceptable	63%	56%	70%	65%
I fully support these changes	33%	40%	24%	33%
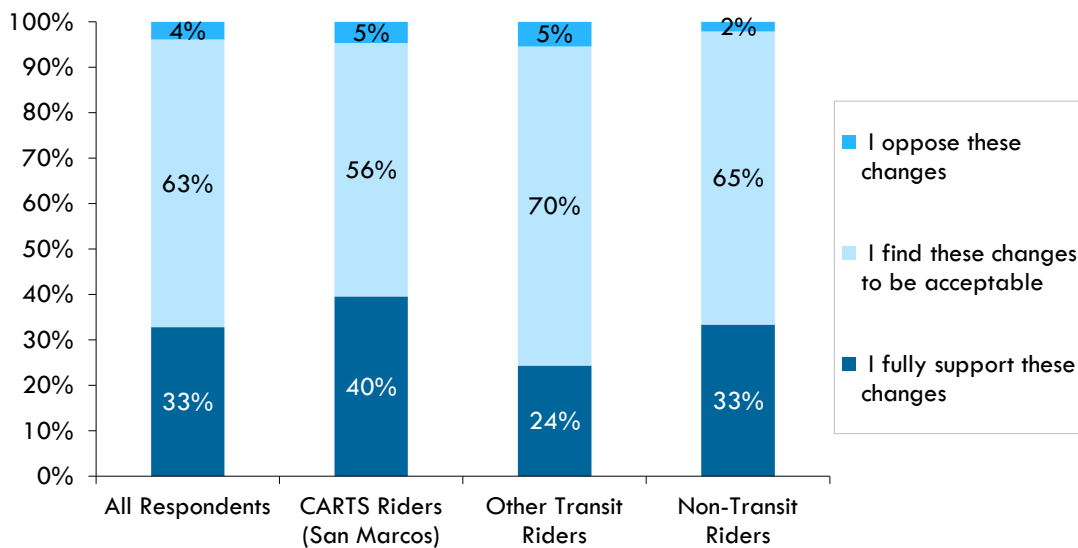
9 FUTURE SYSTEM EXPANSION

A primary goal of the San Marcos 5-Year Service Plan is to create a realistic and implementable plan for service expansion. Service expansion recommendations are based on community feedback for increased service and market analysis findings.

Service expansion recommendations are divided into four phases that build upon the system restructure. Service expansion recommendations can be implemented earlier depending on the availability of additional capital and funding sources. Recommended service expansion phases are summarized in Figure 54.

Figure 54   Recommended Service Expansion Plan

Category	Phase	Service Changes	Total Annual Hours
System Restructure	Phase 1	Cost neutral route restructure	15,000
Service Expansion	Phase 2	Extend service from 7am-6pm to 7am-8pm	17,500
	Phase 3	Add Saturday service to arterial routes	19,750
	Phase 4	Upgrade Outlets/University route frequency to 30 minutes	23,000
	Phase 5	Increase service on rural and senior routes Extend service from 7am-8pm to 6am-9pm Consider new routes	25,000

Detailed route characteristics for each expansion phase are included in Figures 55-58.

Figure 55   Phase 2 Route Characteristics

Route	Span		Frequency	Vehicles
1 – Hopkins/Wonder World	7:00 AM	8:00 PM	30	2
2 – Post Road	7:00 AM	8:00 PM	60	0.5[1]
3 – Uhland Road	7:00 AM	8:00 PM	60	0.5
4 – Linda/Conway	7:00 AM	8:00 PM	30	1
5 – Outlets/University	7:00 AM	8:00 PM	60	1
6 – Guadalupe/Redwood	6 round trips		-	1
Senior Shopper	3 round trips		-	1

Figure 56   Phase 3 Route Characteristics

Route	Span		Frequency	Vehicles
Weekday Service				
1 – Hopkins/Wonder World	7:00 AM	8:00 PM	30	2
2 – Post Road	7:00 AM	8:00 PM	60	0.5
3 – Uhland Road	7:00 AM	8:00 PM	60	0.5
4 – Linda/Conway	7:00 AM	8:00 PM	30	1
5 – Outlets/University	7:00 AM	8:00 PM	60	1
6 – Guadalupe/Redwood	6 round trips		-	1
Senior Shopper (Tue/Thu only)	3 round trips		-	1
Saturday Service				
1 – Hopkins/Wonder World	10:00 AM	6:00 PM	30	2
2 – Post Road	10:00 AM	6:00 PM	60	0.5
3 – Uhland Road	10:00 AM	6:00 PM	60	0.5
4 – Linda/Conway	10:00 AM	6:00 PM	30	1
5 – Outlets/University	10:00 AM	6:00 PM	60	1

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[1] Routes 2 and 3 are paired and require one bus to operate

Figure 57   Phase 4 Route Characteristics

Route	Span		Frequency	Vehicles
Weekday Service				
1 – Hopkins/Wonder World	7:00 AM	8:00 PM	30	2
2 – Post Road	7:00 AM	8:00 PM	60	0.5
3 – Uhland Road	7:00 AM	8:00 PM	60	0.5
4 – Linda/Conway	7:00 AM	8:00 PM	30	1
5 – Outlets/University	7:00 AM	8:00 PM	30	2
6 – Guadalupe/Redwood	6 round trips		-	1
Senior Shopper (Tue/Thu only)	3 round trips		-	1
Saturday Service				
1 – Hopkins/Wonder World	10:00 AM	6:00 PM	30	2
2 – Post Road	10:00 AM	6:00 PM	60	0.5
3 – Uhland Road	10:00 AM	6:00 PM	60	0.5
4 – Linda/Conway	10:00 AM	6:00 PM	30	1
5 – Outlets/University	10:00 AM	6:00 PM	60	1

Figure 58   Phase 5 Route Characteristics

Route	Span		Frequency	Vehicles
Weekday Service				
1 – Hopkins/Wonder World	6:00 AM	9:00 PM	30	2
2 – Post Road	6:00 AM	9:00 PM	60	0.5
3 – Uhland Road	6:00 AM	9:00 PM	60	0.5
4 – Linda/Conway	6:00 AM	9:00 PM	30	1
5 – Outlets/University	6:00 AM	9:00 PM	30	2
6 – Guadalupe/Redwood	16 round trips		-	1
Senior Shopper (Mon-Fri)	5 round trips		-	1
Saturday Service				
1 – Hopkins/Wonder World	10:00 AM	6:00 PM	30	2
2 – Post Road	10:00 AM	6:00 PM	60	0.5
3 – Uhland Road	10:00 AM	6:00 PM	60	0.5
4 – Linda/Conway	10:00 AM	6:00 PM	30	1
5 – Outlets/University	10:00 AM	6:00 PM	60	1

10 CAPITAL PLAN

The operation of fixed-route and paratransit bus service in San Marcos requires supporting capital in the form of buses, amenities, and technology. This chapter summarizes capital needs required to maintain and expand bus service over the next five years.

VEHICLE REPLACEMENT

The current San Marcos Transit fixed-route and paratransit fleet consists of 14 light-duty cutaway buses. Characteristics of the current fleet are detailed in Figure 59.

Figure 59   Current Fleet Information

Service	Year	Make/Model	Length	Wheelchair Capacity	Seating Capacity	Mileage (9/1/2013)
Fixed-route	2005	Ford	25'	2	18	203,179
Fixed-route	2008	Ford	25'	2	18	111,094
Fixed-route	2008	Ford	25'	2	18	124,713
Fixed-route	2008	Ford	25'	2	18	117,444
Fixed-route	2008	Ford	25'	2	18	136,051
Fixed-route	2008	Ford	25'	2	16	98,535
Fixed-route	2008	Ford	25'	2	18	167,219
Fixed-route	2010	International	27'	2	18	35,683
Fixed-route	2010	International	27'	2	17	32,449
Paratransit	2007	Ford	25'	4	16	137,490
Paratransit	2010	Ford	25'	4	16	70,202
Paratransit	2010	Ford	25'	4	16	73,106
Paratransit	2010	Ford	25'	4	16	73,201
Paratransit	2010	Ford	25'	4	16	80,357

The life cycle of vehicles vary by type and duty. As fixed-route and paratansit vehicles approach the end of their lifecycle, San Marcos must determine the appropriate vehicle type and duty for replacement. Figure 60 includes specifications, minimum life span and average cost of several vehicle types.

Figure 60   Bus Types[2]

Light-Duty Cutaway Typical Uses: Low demand fixed-route or demand-response services Length: 16 to 28 ft Seats: 10 to 22 Wheelchairs: 2-4 Minimum Life: 4 years or 100,000 miles Average Cost: $50,000-65,000	
Medium-Duty Cutaway Typical Uses: Low demand fixed-route or demand-response services Length: 25 to 35 ft Seats: 16 to 25 Wheelchairs: 2-4 Minimum Life: 5 years or 150,000 miles Average Cost: $75,000-175,000	
Heavy-Duty Small Bus Typical Uses: Moderate demand fixed-route services Length: 30 ft Seats: 22 to 30 Wheelchairs: 2-4 Minimum Life: 10 years or 350,000 miles Average Cost: $200,000-325,000	

The Federal Transit Administration provides vehicle funding through two programs:

- 5310 Enhanced Mobility of Seniors and Individuals with Disabilities (competitive)
- 5339 Bus and Bus Facilities

It is recommended that CARTS budget $100,000 per year for the replacement of vehicles. A vehicle replacement plan of 1 to 2 vehicles per year would avoid having the financial burden of replacing an entire fleet at one time.

It is anticipated that over time, specific routes will exhibit increased ridership loads that will make it necessary to increase capacity. If additional funding becomes available, the option to procure heavy-duty small buses should be considered.

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[2] FTA Useful Life of Transit Buses and Vans, April 2007

BUS STOP IMPROVEMENTS

CARTS and the City of San Marcos are cooperatively embarking on a multi-year effort to improve bus stops throughout the system. Currently, 75% of bus stops currently lack basic signage. Operators are instructed to pick up customers waiting along the route, thereby creating safety hazards and unnecessarily impeding traffic at times.

Beginning this summer, CARTS and the City of San Marcos will begin installing new signage at all bus stops in the system. Furthermore, CARTS and the City of San Marcos are committed to improving accessibility at stops and increasing the number of benches and shelters, based on bus stop guidelines described in Chapter 14.

Immediate and high priority bus stop improvements are listed below and depicted in Figure 61:

- Immediate Priority Improvements
  - 450 Linda - Southbound
  - Craddock & Lady Bird - Southbound
  - LBJ & Nicola - Northbound
  - SH 80 & Clarewood - Westbound
  - Thorpe & SH 80 - Northbound
  - Wonder World & Sadler - Westbound
- High Priority Improvements
  - 400 Linda – Northbound
  - 400 Linda – Southbound
  - 450 Linda – Northbound
  - Bugg & Clarewood – Eastbound
  - Bugg & Clarewood – Westbound
  - Centerpoint & Outlet Malls – Eastbound
  - Hopkins & Charles Austin – Westbound
  - Hopkins & Guadalupe – Eastbound
  - Hopkins & LBJ – Westbound
  - Hopkins & San Marcos City Hall – Eastbound
  - Hopkins & San Marcos Library – Westbound
  - Hopkins & Thorpe – Eastbound
  - Leah & Cottonwood – Southbound
  - SH 80 & Clarewood – Eastbound
  - Tanger Outlet Mall
  - Thorpe & SH 80 – Southbound
  - Walmart

Figure 61   Immediate and High Priority Bus Stop Improvements
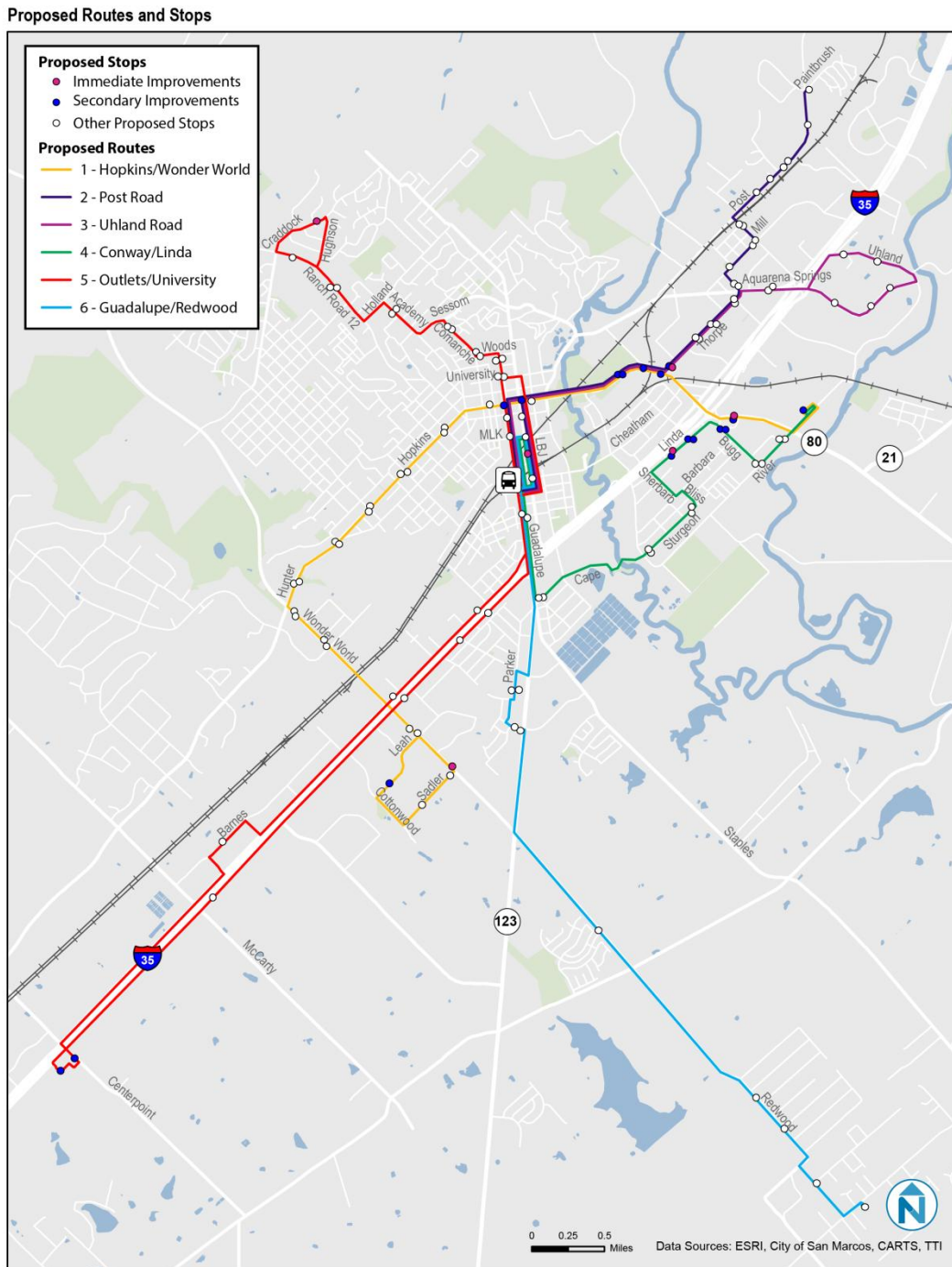
ADDITIONAL CAPITAL IMPROVEMENT CONSIDERATIONS

Fare box Upgrade

Upgrading the current non-electronic "drop box" fare boxes to a modern electronic system would provide several advantages such as automatic cash counting, ridership collection, and increased security. Modern electronic fare boxes also have the capability of supporting smart cards and magnetic cards, as well as reading ID cards. The cost of electronic fare boxes, including installation range from $13,000 to $15,000 per unit based on additional features such as smart card capability. Additional costs include data processing software/hardware, ticket vending machines, smart card encoders, fare media, cash fault, and spare parts.

Online Trip Planning

Online trip planning has the potential improve customer satisfaction and reduce the need for printed schedules. Google Transit is a powerful trip planning and online mapping tool that can improve the transit experience of existing riders and make transit options known to a new market of potential riders, particularly internet-savvy youth and adults. Google Transit makes public transportation easy to navigate and removes an element of the unknown that acts as a barrier for many potential transit riders. CARTS is currently working with the Texas Transportation Institute to implement Google Transit.

Real-Time Arrival Systems

Real-time arrival systems inform customers of when their bus is expected to arrive based on Automatic Vehicle Location (AVL) technology, which typically involves Global Positioning Systems (GPS) being installed on individual buses. Transit systems employing real-time arrive systems typically install LED or screen displays at high ridership stops. Other applications of real-time arrival data include smartphone apps such as OneBusAway and websites such as Nextbus.

The implementation of AVL technology also has the potential to attract and retain new customers, particularly youth and young adults. Real-time arrival information becomes more relevant in San Marcos as service transitions its focus from on timed-transfers at San Marcos Station to system with crosstown routes and varying frequencies.

Five-Year Service Plan| Final Report
CARTS San Marcos

11 FINANCIAL PLAN

The five-year financial plan is based on service expansion detailed in Chapter 9 as well as vehicle replacements and bus stop improvements detailed in Chapter 10.

operating and capital improvement budget for San Marcos Transit is based on the following assumptions:

- Census Impact Funding expires after FY 2014-2015
- A fare increase is proposed for Fall 2014. Most transit systems experience a decrease in ridership following a fare increase. Conversely, the proposed route changes are expected to increase system ridership.
- A bus stop improvement program initiated in FY 2013-2014 will continue.
- The current hourly rate of service (salaries, benefits, and fuel divided by service hours) is approximately $60/hour
- Salaries, benefits, and fuel increase proportionately with service expansion hours
- Service expansion is made possible by increased FTA 5307 formula funding. This will also require and increased local contribution from the City of San Marcos.

A comparison of the local contribution for several peer agencies is included in Figure 62.

Figure 62   Local Contribution for Peer Agencies
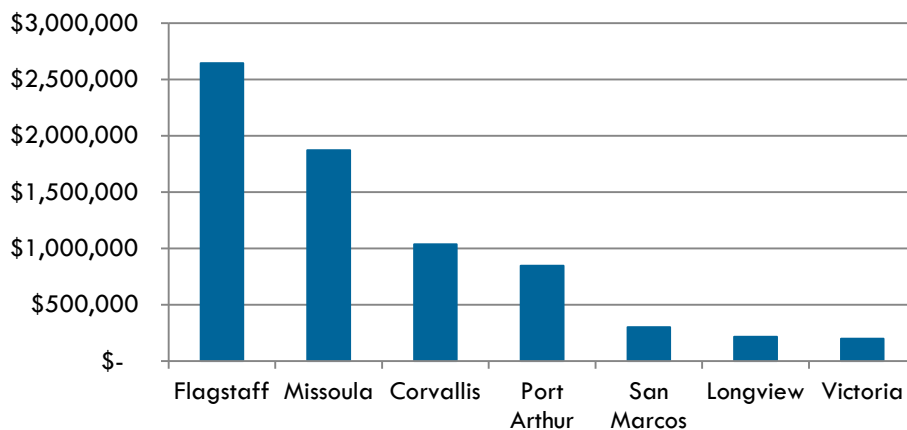
A five-year operating budget, based on a fully allocated cost of $60 per service hour, is detailed in Figure 63. Five-year revenue projections are detailed in Figure 64.

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Figure 63   Five-Year Operating Costs

Fiscal Year	Recommended Service Improvements	Fixed-Route Hours	Paratransit Hours	Total Hours	Cost per Service Hour	Total Operating Costs
2014-2015	Restructure routes	15,000	7,500	22,500	$60	$1,350,000
2015-2016	Extend evening service	17,500	8,500	26,000	$60	$1,560,000
2016-2017	Add Saturday service	19,750	9,500	29,250	$60	$1,755,000
2017-2018	Increase frequency on Texas State/Outlet Malls route	23,000	9,500	32,500	$60	$1,950,000
2018-2019	Increase weekday span, Senior and Redwood service	25,000	10,000	35,000	$60	$2,100,000

Figure 64   Five-Year Revenue Projections

Fiscal Year	Recommended Service Improvements	Federal 5307 Formula Funds	TxDOT Urban Formula Funds	Census Impact Funds	City of San Marcos Funds	Martindale/ Guadalupe County	Older Americans Act Title III Funds	Farebox	Total Revenue
2014-2015	Restructure routes	$655,000	$174,000	$100,000	$355,000	$6,000	$20,000	$40,000	$1,350,000
2015-2016	Extend evening service	$756,000	$179,000	$0	$551,000	$6,000	$20,000	$48,000	$1,560,000
2016-2017	Add Saturday service	$800,000	$180,000	$0	$697,000	$8,000	$20,000	$50,000	$1,755,000
2017-2018	Increase frequency on Texas State/Outlet Malls route	$800,000	$180,000	$0	$887,000	$8,000	$20,000	$55,000	$1,950,000
2018-2019	Increase weekday span, Senior and Redwood service	$800,000	$180,000	$0	$1,035,000	$10,000	$20,000	$55,000	$2,100,000

12 SERVICE DESIGN GUIDELINES

San Marcos Transit strives to serve as many local area residents, students, workers, and visitors as it can with its available resources. Service features that attract one type of rider to transit can deter other riders, and San Marcos Transit must balance these types of competing demands. However, there are certain service design principles that will improve service for nearly all riders; this section describes the guidelines San Marcos Transit aims to follow in order to attract the most riders and balance competing demands.

SERVICE DESIGN PRINCIPLES

Service should be simple

For people to use transit, service should be designed so that it is easy to understand. In this way, current and potential riders can grasp and use the transportation options available to take them where and when they want to go with ease. Most of the guidelines in this section are aimed at making service intuitive, logical, and easy to understand.

Service should be fast and direct

Passengers and potential passengers alike prefer faster, more direct transit services. In order to remain competitive with the automobile, special attention should be placed on designing routes to operate as directly as possible to maximize average speed for the bus and minimize travel time for passengers while maintaining access to service. Travel times and directness of service are affected by a series of factors, some under San Marcos Transit's control, and others related more to the environment in which service operates. Some of these factors include:

Route deviations should be minimized

Routes should not deviate from the most direct alignment unless there is a compelling reason. Potential exceptions include service to major shopping destinations, employment centers, medical services, and schools. In these cases, the benefits of operating the route off of the main route must be weighed against the inconvenience caused to passengers already on board. Route deviations should be implemented only if two or more of the following conditions are met:

- The deviation will result in an increase in overall route productivity.
- The additional time necessary for the deviation should not exceed five minutes.
- The deviation would not have a negative impact on timed transfers.

Routes should be bi-directional

Routes should operate along the same alignment in both directions to make it easy for riders to know how to return to their trip origin location. Exceptions can be made in cases where such operation is not possible due to one-way streets or turn restrictions. In those cases, routes should be designed so that the opposite directions parallel each other as closely as possible.

Major routes should operate along arterials

Core arterial routes should operate on major roadways and should avoid deviations to provide local circulation. The operation of bus service along arterials makes transit service faster and easier for riders to understand and use. Current and potential riders typically have a general knowledge of an area's arterial road system and use that knowledge for geographic points of reference. Arterials also tend to be more pedestrian-friendly than collector and neighborhood streets. Sidewalks, crosswalks, and adequate right-of-way for customer amenities are all important features that are typically present on arterial streets.

Service should be consistent

Routes should operate along consistent alignments and at regular frequencies. People can more easily remember repeating patterns than irregular sequences.

Routes should be appropriately spaced

Parallel routes operating closely together have the potential to split service demand. Appropriate route spacing requires a tradeoff between walking distance and service frequency. The guideline for route spacing in areas outside downtown is half a mile. Special conditions may exist that require routes to operate within closer proximity.

Route length should be of appropriate length

Routes should be the appropriate length to maximize ridership potential, minimize operational issues, and maintain clockface headways. Two routes serving different parts of the service area with a shared terminus, such as San Marcos Station, may be linked together as one route in order to operate more cost-effectively.

13 SERVICE LEVEL GUIDELINES

Service level guidelines define when service should be provided and how often it should be provided. These guidelines, in combination with the performance standards presented in Section 7, are used to determine appropriate service levels for each route. Service should be provided to meet the minimum span and frequency guidelines.

Service level guidelines are based on three route types:

- Arterial route
- Rural connector
- Senior shuttle

SERVICE SPAN

The number of hours per day when transit service is provided along a route, or between two locations, plays a role in determining the effectiveness of transit service for potential users. Transit service must be available near the time a trip needs to be made in order for transit to be a travel option. Ideally, transit service should operate according to the standard time periods specified (peak rush hours, midday, night, etc.) to minimize customer uncertainty.

Passenger needs and San Marcos Transit's financial capacity are key considerations in setting weekday service spans, and in deciding which routes are operated on Saturdays and Sundays. Weekday routes should permit workers and students to make their morning start times, and should end late enough to provide return trips home for second shift workers. Service oriented to non-work travel can start later and end sooner. Sunday service may not be necessary on many routes.

Minimum span of service guidelines are presented in Figure 65 and define the minimum period of time that different types of service should operate. Service could be started earlier and/or end later if demand warrants, but the extra service would be subject to the performance standards presented in Chapter 15.

Figure 65   Minimum Service Span Guidelines

	Arterial Route	Rural Connector	Senior Circulator
Weekdays			
Begin	6:00 AM	8:00 AM	9:00 AM
End	8:00 PM	6:00 PM	3:00 PM
Weekends			
Begin	8:00 AM	10:00 AM	—
End	6:00 PM	4:00 PM	—

Notes: The beginning span of service refers to the departure of the first inbound trip, and the ending span of service refers to the departure time of the last peak direction trip.

SERVICE FREQUENCY

Service frequency has a major influence on transit ridership; high frequency service is considered more attractive to users who don't need to wait as long in between buses. At the same time, frequency has a significant impact on operating costs, and service requirements increase exponentially with improvements in frequency.

Minimum service frequency guidelines are presented in Figure 66. Note that when a corridor is served by multiple routes, the overall service frequency in the corridor is effectively more frequent than for individual routes. For certain routes serving outlying areas, service frequencies may be reduced to maintain satisfactory farebox recovery ratios. As with all standards, this service frequency matrix should be considered a guide, not an absolute measure.

Clock-face service intervals (e.g. every 30 or 60 minutes) are easier for passengers to remember and can help facilitate better transfer connections between routes. Whenever possible, frequencies should be set at regular clock-face intervals.

Figure 66   Minimum Service Frequency Guidelines (Minutes)

	Arterial Route	Rural Connector	Senior Circulator
Weekdays			
Early AM	60	60	—
AM Peak	30	60	60
Midday	30	60	60
PM Peak	30	60	—
Night	60	—	—
Weekends			
All Day	60	120	—

Note: "—" indicates that the guideline does not apply.

14 BUS STOP GUIDELINES

BUS STOP SPACING

The distance between stops is of key concern to San Marcos Transit. More closely spaced stops provide customers with more convenient access as they are likely to experience a shorter walk to the nearest bus stop. However, transit stops are also the major reason that transit service is slower than automobile trips, since each additional stop with activity requires the bus to decelerate, come a complete stop, load and unload riders, and then accelerate and re-merge into traffic. Since most riders want service that balances convenience and speed, the number and location of stops is a key component of determining that balance.

Stops serving downtown San Marcos or major activity centers should be spaced at least 800 feet apart. Regular local stops on arterial streets should be spaced every 800 to 1,200 feet. In suburban and other low-density areas, stops may be spaced over 1,200 feet.

BUS STOP PLACEMENT

Bus stop placement involves a balance of customer safety, accessibility, and operations. All stops should be fully accessible with a concrete landing and access to sidewalk or pathway. Bus stops should be compatible with adjacent land use and minimize adverse impacts on the built and natural environment.

Bus stops should be placed at intersections to maximize pedestrian safety. Near-side and far-side stops are generally preferred over mid-block stops. Specific ridership generators may determine the placement of a bus stop.

Near-side stops allow passengers to board and alight closer to intersection crosswalks, which may facilitate better transfers. Near-side stops also allows for passengers to board and alight while the bus is stopped at the red light. Near-sided stops should be avoided when the right-turning lane traffic is very heavy.

Far-side stops are preferred at intersections in which buses make left turns and intersections with a high volume of right turning vehicles. Far-side stops encourage pedestrians to cross behind the bus. Far-side stops can also cause a bus to block an intersection if one or more buses are stopped, which is extremely dangerous.

Mid-block stops should only be considered if pedestrian crosswalks are present. Mid-block stops may be the only option at major intersections with dedicated turn lanes.

Infrastructure consideration for bus stop placement includes lighting, topography, and roadside constraints such as driveways, trees, poles, fire hydrants, etc.

BUS STOP AMENITIES

Bus stop amenities improve customer comfort and convenience. They also have the potential to increase ridership. Bus stop improvements should promote regional equity rather than focusing on select corridors or areas.

Bus stops generating at least 50 daily boardings qualify for a shelter. Shelters may be considered for stops with 25 daily boardings, meeting at least three of the following criteria:

- Adjacent major activity/employment centers
- Adjacent hospitals or social service agencies
- Adjacent apartments with 250+ units
- Adjacent schools
- Route intersections
- Service frequency greater than 30 minutes

Bus stops generating at least 15 boarding per weekday qualify for a bench. All bus stops with shelters or benches should also have a litter container. Other stops may have a litter container installed upon request. Bike racks may be installed at stops in areas of high demand or in concert with other local entities.

Circumstances that might preclude installation of amenities at a stop meeting threshold warrant are as follows:

- Amenities would threaten pedestrian or operational safety
- Adequate right-of-way is not available
- Regulations enforced by city, county, state, or federal government
- Service to the location is subject to potential changes
- Installation and maintenance costs are excessive
- Other circumstances that would negatively impact operations or service

BUS STOP SIGNAGE

At a minimum, new bus stop signage should include route(s) information (route number and terminal destination) and the CARTS customer service phone number. Additional features that improve customer service include a printed schedule with arrival times and a unique bus stop identification number for future online trip planning.

15 PERFORMANCE METRICS

San Marcos Transit strives to allocate resources equitably and efficiently. Service standards describe the methodology by which services are evaluated and modified. Routes and schedules should be evaluated bi-annually. Evaluation criteria include ridership productivity, schedule reliability, load factors, and cost effectiveness.

RIDERSHIP PRODUCTIVITY

Productivity standards are used to evaluate ridership and cost-effectiveness of each route.

Most service types are evaluated based on the average number of passengers per revenue hour.

Routes performing below 66% (lowest-performing routes) may require corrective action. At the opposite end of the scale, ratings above 133% (highest-performing routes) may indicate the demand for additional service or capacity.

Figure 67 depicts weekday productivity for arterial routes.

Figure 67   **Average Weekday Boardings per Revenue Hour**
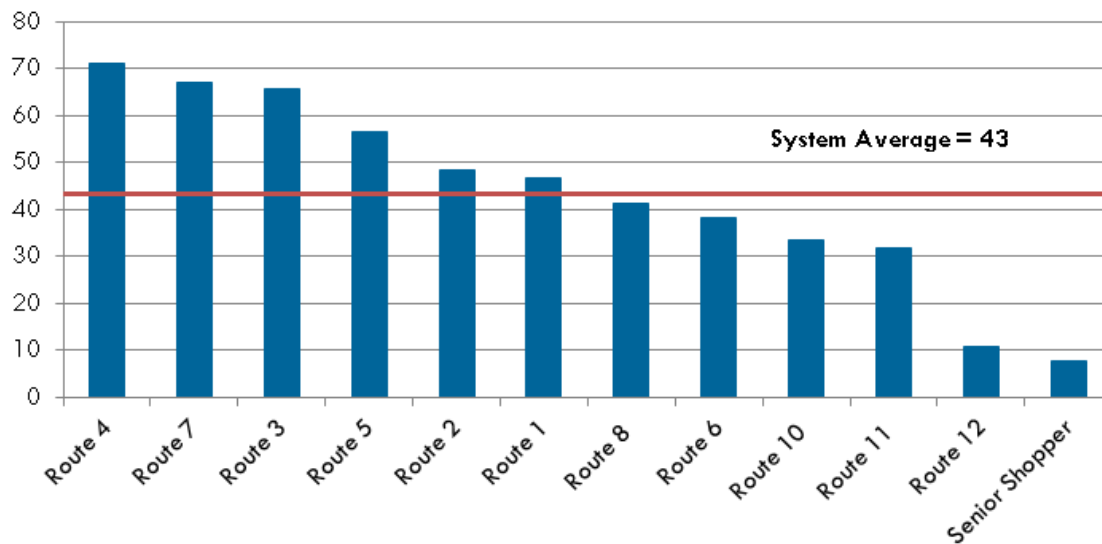
SCHEDULE RELIABILITY

On-time performance is a critical measure of the quality and reliability of services. Buses are considered on-time if they depart a designated time-point up to five minutes later than scheduled.

Buses should never depart a time-point ahead of schedule unless operators are given explicit permission to do so.

Under normal circumstances, system-wide on-time performance should exceed 90% at end of line locations, and 75% at time-points along the route. Services that fall below the guideline should be examined to determine the factors behind schedule adherence problems, which may include running time problems, traffic conditions, construction, or other issues.

LOAD FACTORS

Load factors reflect the ratio of passengers to total seated capacity. Load factors vary by route type and time of day. Overcrowding on buses often indicates the need for improved frequency or increased capacity. Appropriate load factors vary by time of day. During peak periods it is generally acceptable for some passengers to be expected to stand for part of the trip. In off-peak periods and for service that operates for long distances, service should be designed to try to provide a seat to all customers. Thus, during peak periods, routes operating primarily on local arterials may operate with loads of up to 120% of seating capacity.

COST-EFFECTIVENESS

Cost-effectiveness is typically expressed in terms of farebox recovery or subsidy per passenger. Farebox recovery is the percentage of operating expenses recouped by farebox revenues. Subsidy per passenger is the amount of public investment needed to cover the difference between the operating cost of a route and the revenue generated by fares, on a per-passenger basis.

Minimum farebox recovery ratios and maximum subsidies per passenger will be set by San Marcos Transit and reviewed regularly along with other productivity metrics.

POTENTIAL CORRECTIVE ACTIONS

In cases where routes do not meet minimum performance guidelines, changes should be made to improve route performance. These changes can include a variety of measures, including reconfiguring the route alignment to attract more passengers, targeted marketing, eliminating particularly unproductive segments, and reducing service levels. If no changes can be identified that improve performance, steps may be taken to discontinue the route unless it serves a demonstrable critical need that is not served by other routes or services (including paratransit service).

Service alternatives may be considered in low-density areas with moderate ridership potential. Demand-response service may carry a small passenger market more cost-effectively than traditional fixed-route bus service.

In cases where service expansion is considered, ridership and productivity estimates should be developed that indicate that there is a reasonable certainty that the new service will meet the performance guidelines within 12 months of implementation.

NEW AND ALTERED SERVICES

The evaluation of new service proposals will take place as proposals are received or needs identified. Ridership and cost projections for new and altered services should be prepared whenever service changes are proposed. New services should met minimum standards within one year. Staff may make fine-tuning adjustments during this period. New services are implemented on a trial basis, with the length of the trial period determined at the time of implementation.

16 SERVICE CHANGES

Service changes allow an opportunity to modify existing route alignments, schedules, bus stops, and facilities. New services are also developed through this process. Service changes occur at least annually or semi-annually. Major Service changes are generally considered when 25% or more of the routes are to be changed.

SERVICE CHANGE DEVELOPMENT

The service change process spans six to nine months from initial planning to implementation. Each route is reviewed six months after implementation.

Proposal development for major service changes and route eliminations

- Service & ridership analysis
- Review of customer and operator input
- Cost estimates
- Title VI and ADA review (if necessary)
- Initial routes and timing
- Community & public meetings (riders, general public, advisory committees, etc.)
- Proposal revisions
- Board/City Council approval

Proposed development for minor service changes

- Passenger Notice & Comment
- Comment Period
- Final recommendations
- Passenger Notices

SERVICE CHANGE IMPLEMENTATION

Implementation preparation

- Schedule development
- Operator work assignments
- Marketing and communication materials
- Capital upgrades (vehicles, facilities, stops, etc.)
- Information technology update

17 FARE ANALYSIS AND RECOMMENDATIONS

This peer review provides a comparative analysis of fixed-route transit characteristics of San Marcos Transit and eight other transit systems. Two types of peers were selected: similarly sized cities with major universities, and similarly sized cities in Texas. The selected peers are listed below and mapped in Figure 68.

- Major university town peers
  - Fayetteville, Arkansas (Ozark Regional Transit)
  - Missoula, Montana (Mountain Line)
  - Flagstaff, Arizona (Mountain Line)
  - Corvallis, Oregon (Corvallis Transit System)
- Texas peers
  - Victoria, TX (Victoria Transit)
  - Port Arthur, TX (City of Port Arthur Transit Department)
  - Longview, TX (Longview Transit)
  - Temple, TX (Hill Country Transit District)

Figure 68   Peer Cities

Major University Town Peers

Fayetteville, Arkansas

Fayetteville is served by Ozark Regional Transit, which also serves the cities of Springdale, Rogers, and Bentonville in northwest Arkansas. Service in Fayetteville is limited, with four routes operating in the city. Routes 41 and 47 provide circulation within the city, Route 40 connects Fayetteville to Springdale, and Route 54 provides express service on I-540 between Fayetteville, Springdale, Rogers, and Bentonville.

The University of Arkansas is located in Fayetteville. The city is similar to San Marcos in that it has a significant university transit system (Razorback Transit) providing service to on-campus locations and major off-campus living and shopping areas. There are nine Razorback Transit routes, and service is free to ride for all University students, faculty, and staff, as well as the general public. It is not included in this peer review.

Missoula, Montana

Missoula is served by Mountain Line, which has 18 buses operating on 12 fixed-routes serving the city and outlying areas. Service is focused on a transit center in downtown Missoula.

Missoula is home to the University of Montana. Additional service to the University is provided by the Associates Students of the University of Montana through a student transportation fee. Four routes provide service to park-and-ride lots, Missoula College, and late-night service to downtown

Missoula. ASUM services are free to ride and open to the public, but they are not included in this peer review.

Flagstaff, Arizona

Transit service in Flagstaff is provided by Mountain Line, which has 15 buses operating seven fixed-routes focused on a downtown transit center. Flagstaff is home to Northern Arizona University, which operates an on-campus shuttle but not off-campus service. Mountain Line carries significant numbers of students to campus, leading to high ridership and productivity.

Corvallis, Oregon

The City of Corvallis provides service through Corvallis Transit system, which has 10 buses operating on 15 fixed-routes. Oregon State University is located in the city and accounts for a large portion of the Corvallis Transit ridership. The University has an on-campus shuttle but does not provide service off-campus.

Corvallis Transit is unique in that it has been a fare-free system since 2011. Before going fare-free, its fare was $0.75, but University students, faculty, and staff rode free.

Texas Peers

Victoria, Texas

Victoria Transit provides service within the City of Victoria, Texas, with 10 buses operating on three fixed-routes.

Port Arthur, Texas

Transit service in Port Arthur, Texas is provided by the City of Port Arthur Transit Department, which has five buses operating on 11 fixed-routes.

Longview, Texas

Longview Transit provides service in Longview, Texas, with five buses operating on six fixed-routes.

Temple, Texas

Service within Temple, Texas is provided by Hill Country Transit District, known as "the HOP." It is a regional agency providing service to Temple, Killeen, Copperas Cove, Harker Heights, and Belton. Within Temple there are three fixed-routes, and a fourth route connects it with Belton, Nolanville, and Harker Heights. This peer review only includes the three fixed-routes operating in Temple.

METHODS

This peer review focuses on fixed-route services and does not include demand-response services. Data were assembled from a number of sources, including the National Transit Database and the individual transit agencies. Performance characteristics and operational costing data from the peers are from the most recent full year available, 2012.

Ridership, financial, and service data for San Marcos Transit routes are from the time period between September 2012 and August 2013. San Marcos Transit cost data are not split out by service type, so the study team apportioned the costs to fixed-route and paratransit based on each service type's portion of total system revenue hours. San Marcos Transit fixed-route farebox revenue is estimated to be $35,000, based on route-level fare data and the FY2014 budget.

COMMUNITY CHARACTERISTICS

Community characteristics of each peer are summarized in Figure 69 and Figure 70. San Marcos is smaller than all of the peer cities, with a population of approximately 50,000. Texas State University has an enrollment of approximately 34,000, which is larger than the universities in the other peer cities. The University of Arkansas (Fayetteville) and the University of Montana (Missoula) operate shuttle systems that are open to the public that supplement the cities' public transit systems. Northern Arizona University (Flagstaff) and Oregon State University (Corvallis) operate on-campus shuttles, but off-campus service is provided by the public transit systems.

The percentage of commuters using public transportation to get to and from work is small in all of the communities, with the highest percentages found in San Marcos (2.9%), Corvallis (2.7%), and Missoula (2.4%). The university town peers have higher usage of public transportation than the Texas peers. This is logical, as the university towns generally have more extensive transit systems than the Texas peers, particularly when the university shuttles are taken into account.

Figure 69   Major University Town Peers – Community Characteristics

City	San Marcos, TX	Fayetteville, AR	Missoula, MT	Flagstaff, AZ	Corvallis, OR
Transit Agency	**San Marcos Transit**	**Ozark Regional Transit**	**Mountain Line**	**Mountain Line**	**Corvallis Transit System**
City Population	50,001	76,899	68,394	67,468	54,998
Major University	Texas State University	University of Arkansas	University of Montana	Northern Arizona University	Oregon State University
University Enrollment	34,229	25,365	14,964	26,002	26,393
Separate University Off-Campus Shuttle?	Yes	Yes	Yes	No	No
Commuters using public transportation	2.9%	1.3%	2.4%	1.8%	2.7%

Figure 70   Texas Peers – Community Characteristics

City	San Marcos, TX	Victoria, TX	Port Arthur, TX	Longview, TX	Temple, TX
Transit Agency	**San Marcos Transit**	**Victoria Transit**	**City of Port Arthur Transit Department**	**Longview Transit**	**Hill Country Transit District**
City Population	50,001	64,376	54,010	81,092	69,148
Commuters using public transportation	2.9%	1.1%	0.7%	0.6%	0.4%

FARE ANALYSIS

Fare Type

Due to the hub-and-spoke nature of the San Marcos fixed-route bus system, many customers must transfer at San Marcos Station to reach their final destination. Approximately 38% of boardings are classified as transfers. Figure 71 depicts type of fares paid by customers of each route as a percentage of total fares paid.

Figure 71   Fare Type by Route, October 2013

Route	Full Fare	Senior	Mobility Impaired	Student	Multiride	Tx State Student	Tx State Staff	Transfer	Other
1-Bishop	35%	11%	2%	4%	4%	3%	2%	34%	5%
2-Post	29%	10%	2%	2%	2%	5%	0%	46%	4%
3-Uhland	31%	17%	0%	2%	0%	4%	1%	42%	2%
4-Marketplace	34%	14%	0%	1%	0%	4%	1%	43%	3%
5-Conway	29%	15%	1%	4%	1%	10%	4%	32%	4%
6-Medical	31%	12%	1%	3%	1%	5%	0%	43%	3%
7-OutletMalls	30%	5%	1%	4%	2%	15%	0%	39%	4%
8-Hunter	21%	9%	1%	2%	0%	28%	1%	36%	2%
10-University	5%	2%	0%	0%	0%	48%	4%	40%	0%
11-HotelMotel	24%	9%	2%	2%	3%	4%	0%	53%	3%
12-Redwood	48%	2%	0%	26%	1%	8%	0%	13%	1%
Senior	0%	100%	0%	0%	0%	0%	0%	0%	0%
Total	**26%**	**15%**	**1%**	**3%**	**1%**	**13%**	**2%**	**38%**	**3%**

Figure 72 provides a more accurate breakdown of customer fare types by excluding transfers.

Figure 72   Fare Type Breakdown Excluding Transfers

Texas State Staff 3%
Other 4%
Texas State Student 21%
Multiride 2%
Student 4%
Mobility Impaired 1%
Senior 24%
Full Fare 41%
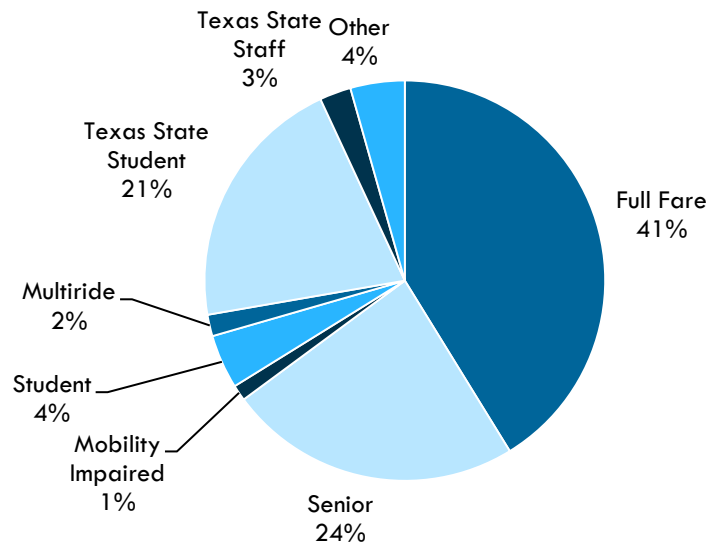
Fare Structure and Passenger Discounts

Figure 73 and Figure 74compare the fare structures and fare collection systems of San Marcos Transit and the peer agencies. The tables list prices for cash fares for fixed-route and paratransit services, monthly passes, and discounted multi-ride options, as well as age requirements for discounts and fare collection systems.

Figure 73   Major University Town Peers – Fare Comparison (Fixed-Route)

City	San Marcos, TX	Fayetteville, AR	Missoula, MT	Flagstaff, AZ	Corvallis, OR
Transit Agency	San Marcos Transit	Ozark Regional Transit	Mountain Line	Mountain Line	Corvallis Transit System
Cash Fares – Fixed Route					
Adult	$0.50	$1.25	$1.00	$1.25	Free
Senior	$0.25	$1.00	$0.50	$0.60	
People with Disabilities	$0.25	$1.00	$0.50	$0.60	
Youth/Student	$0.25	$0.60	$0.35	$0.60	
Child	Free	Free	Free	Free	
Transfer	Free	Free	Free	Not Offered	
Day Pass (Adult)	Not Offered	$3.00	$2.00	$2.50	
Monthly Passes – Fixed Route					
Adult	Not Offered	$30.00	$25.00	$34.00	Not Offered
Senior		$15.00	$12.50	$17.00	
People with Disabilities		$15.00	$12.50	$17.00	
Youth/Student		$15.00	$8.00	$17.00	
Discounted Multi-Ride Option – Fixed Route					
Adult	20 Ride Ticket ($10)	10 Ride Ticket ($10)	11 Ride Ticket ($10)	Not Offered	Not Offered
Senior	Not Offered		11 Ride Ticket ($4)		
People with Disabilities	Not Offered		11 Ride Ticket ($4)		
Youth/Student	Not Offered		Not Offered		
Paratransit					
Paratransit Fare	$1.00	$2.50	$1.50 & Up	$2.25 - $5.50	Free
Age Requirement for Discounts					
Senior	60 & Over	60 & Over*	60 & Over	60 & Over	N/A
Youth	6 – 18	6 - 18	6 - 18	7 - 17	N/A
Child	5 & Under	5 & Under	5 & Under	6 & Under	N/A
Fare Collection System					
Farebox Type	Non-Electronic	Non-Electronic	Electronic	Non-Electronic	N/A

*75 & Over Ride Free

Figure 74   Texas Peers – Fare Comparison (Fixed-Route)

City	San Marcos, TX	Victoria, TX	Port Arthur, TX	Longview, TX	Temple, TX
Transit Agency	San Marcos Transit	Victoria Transit	City of Port Arthur Transit Department	Longview Transit	Hill Country Transit District
Cash Fares – Fixed Route					
Adult	$0.50	$1.50	$1.00	$1.25	$1.00
Senior	$0.25	$0.75	$0.50	$0.60	$0.50
People with Disabilities	$0.25	$0.75	$0.50	$0.60	$0.50
Youth/Student	$0.25	$0.75	$0.50	$0.65	$0.50
Transfer	Free	Free	$0.50	Not Offered	Free
Day Pass (Adult)	Not Offered	Not Offered	Not Offered	Not Offered	Not Offered
Monthly Passes – Fixed Route					
Adult	Not Offered	$65.00	Not Offered	$40.00	$25.00
Senior		$35.00			
People with Disabilities		$35.00			
Youth/Student		$35.00			
Discounted Multi-Ride Option – Fixed Route					
Adult	20 Ride Ticket ($10)	10 - 20 Trip Pass ($13.50 - $27.00)	Not Offered	Not Offered	Not Offered
Senior	Not Offered	10 - 20 Trip Pass ($6.00 - $12.00)			
People with Disabilities	Not Offered	10 - 20 Trip Pass ($6.00 - $12.00)			
Youth/Student	Not Offered	10 - 20 Trip Pass ($6.00 - $12.00)			
Paratransit					
Paratransit Fare	$1.00	$1.50	$2.00	$2.50	$2.00
Age Requirement for Discounts					
Senior	60 & Over	60 & Over	65 & Over	60 & Over	60 & Over
Youth	6 -18	5 - 17	5 - 12	6 - 14	2 - 11
Child	5 & Under	4 & Under	5 & Under	5 & Under	Under 2
Fare Collection System					
Farebox Type	Non-Electronic	Non-Electronic	Electronic	Electronic	Non-Electronic

Fixed-Route Cash Fares, Transfers, and Day Passes

Corvallis has the lowest fares among the cities studied because it is a fare-free system. Among the cities that charge a fare, San Marcos has the lowest fares, with a $0.50 adult fare and $0.25 fare for seniors, people with disabilities, and students. Adult fares at the other systems range from $1.00 to $1.50. In general, fares for seniors, people with disabilities, and youths/students are about half the cost of an adult fare.

San Marcos offers free transfers, and four of the peer agencies do the same. Port Arthur charges $0.50 for a transfer, and Flagstaff and Longview do not offer transfers, but offer day passes instead. The cost for a Flagstaff day pass is $2.50, twice the cost of an adult fare, and in Longview it is it is $3.00, more than twice the cost of an adult fare. In either case, if a passenger is planning on boarding a bus more than twice in a day, it would make financial sense to purchase a day pass.

Monthly Passes

San Marcos does not offer a monthly pass, but five peer systems do. Adult pass costs vary widely, from $25.00 (Missoula) to $65.00 (Victoria). In general, if a rider makes a round trip on every weekday of a month (at least 20 days), it makes financial sense to purchase a monthly pass. For the agency, offering a monthly pass has operational and administrative benefits, such as reducing boarding time and reducing cash-handling.

Discounted Multi-Ride Options

Three of the peers offer discounted multi-ride options. These are either ticket books or passes that offer a discount for purchasing a certain number of rides in advance. Discounts generally range from 10 to 20 percent. Like monthly passes, these products have administrative benefits, such as reducing cash-handling.

San Marcos offers a 20-ride ticket booklet for $10, which is not discounted. Only 2% of customers purchase this fare type.

Paratransit Fares

The paratransit services of the studied systems vary widely, with some agencies serving limited geographic areas and others serving large areas. The San Marcos Transit paratransit fare is $1.00, and peer system fares range from $0 to $5.50.

Fare Collection Systems

The peers have a mix of fare collection systems, with three using electronic fareboxes and four using non-electronic. Flagstaff is planning on equipping its buses with electronic fareboxes soon. San Marcos Transit fixed-route buses currently use non-electronic fareboxes, but San Marcos Transit is looking at electronic fareboxes for the future.

Fare-Related Statistics

Figure 75 and Figure 76 present fixed-route fare-related statistics for each system studied, including fare revenues, average fare per passenger, subsidy per passenger, and farebox recovery.

- **Fare Revenue:** San Marcos has the lowest fare revenue of any of the cities studied that charge a fare, at approximately $35,000. Fare revenues for other systems range from $64,000 to $1.3 million.

- **Average Fare per Passenger:** Among cities that charge a fare, San Marcos has the second lowest fare per passenger, at $0.26 per passenger. The highest fare per passenger is Longview at $0.83 per passenger.

- **Subsidy per Passenger:** San Marcos has a subsidy per passenger of $5.04, placing it in the middle when compared to other systems. The highest is Port Arthur, at $14.52, and the lowest is Flagstaff at $1.99. Despite being a fare-free system, Corvallis has a very low subsidy per passenger at $2.16.

- **Farebox Recovery:** San Marcos has a low farebox recovery ratio at just 5%. Among Texas cities, Port Arthur has the same ratio, but the other systems have significantly higher ratios in the 11%-13% range.

Figure 75   Major University Town Peers – Fare-Related Statistics (Fixed-Route)

City	San Marcos, TX	Fayetteville, AR	Missoula, MT	Flagstaff, AZ	Corvallis, OR
Transit Agency	San Marcos Transit[1]	Ozark Regional Transit[2]	Mountain Line	Mountain Line	Corvallis Transit System
Annual Operating Costs	$717,095	$1,749,021	$3,573,838	$4,819,301	$2,449,988
Annual Fare Revenues	$35,000	$64,381	$276,150	$1,339,962	$0
Average Fare per Passenger	$0.26	$0.24	$0.30	$0.77	$0.00
Subsidy per Passenger	$5.04	$6.25	$3.57	$1.99	$2.16
Farebox Recovery	5%	4%	8%	28%	0%

Notes:
1. San Marcos Transit fixed-route operating costs estimated based on fixed-route's percentage of total system revenue hours (fixed-route + paratransit). Fixed-Route fare revenues estimated to be $35,000 based on route level fare data and FY 2014 budget.
2. Ozark Regional Transit is a regional system that serves other communities in addition to Fayetteville. Data are for the entire system, not just service inside Fayetteville.

Figure 76   Texas Peers – Fare-Related Statistics (Fixed-Route)

City	San Marcos, TX	Victoria, TX	Port Arthur, TX	Longview, TX	Temple, TX
Transit Agency	San Marcos Transit	Victoria Transit	City of Port Arthur Transit Department	Longview Transit	Hill Country Transit District[1]
Annual Operating Costs	$717,095	$1,109,926	$1,784,681	$1,648,403	$880,973
Fare Revenues	$43,927	$119,659	$87,508	$174,068	$110,412
Average Fare per Passenger	$0.26	$0.40	$0.75	$0.83	$0.66
Subsidy per Passenger	$5.04	$3.31	$14.52	$7.01	$4.58
Farebox Recovery	5%	11%	5%	11%	13%

Note:
1. Hill Country Transit District is a regional system that serves other communities in addition to Temple. Data presented in this table only include routes serving Temple.

CONCLUSIONS

The following are conclusions based on the information collected in this peer review:

- Among the university cities, San Marcos is unique in that it is the smallest city but has the largest university in terms of enrollment.

- In Corvallis, Flagstaff, and Missoula, the public transit agencies provide extensive service, including service to and from the universities. In Fayetteville, Ozark Regional Transit provides limited service, but the University of Arkansas Razorback Transit system provides extensive service in the city and is open to the public. Because the Texas State University Bobcat Shuttle operates separately from San Marcos Transit and is not open to the public, San Marcos residents receive a lower level of service than residents in the university peer cities.

- San Marcos has lower productivity (boardings per revenue hour) than Missoula, Flagstaff, and Corvallis. This is partially due to the fact that the systems in these peers carry many university students, but San Marcos Transit does not due to the presence of the Bobcat Shuttle system.

- Although San Marcos is smaller than the Texas peer cities, it has comparable levels of service and ridership. Its productivity, cost efficiency, and cost effectiveness levels fall in the middle of the peer cities.

- Aside from Corvallis, San Marcos has the lowest fares of the cities studied, which leads to low fare revenues and farebox recovery.

- Many of the peer systems offer discounted passes and multi-ride discount options, such as prepaid ticket booklet, but San Marcos does not discount their ticket booklet.

- Eliminating transfers and replacing them with day passes has become more common in the transit industry in recent years. By eliminating transfer slips, agencies can eliminate transfer abuse and potentially decrease administrative costs. If these are issues for the San Marcos Transit system, a switch from transfer slips to day passes should be considered.

- To decrease the subsidy per passenger and increase the farebox recovery ratio, fares on San Marcos Transit should be increased to $1.00 for adults, which is the fare price for several of the peers. Monthly passes and/or discounted ticket books could be introduced to lessen the impact on regular riders, increase ridership, and reduce cash handling responsibilities.

In the longer term, to reduce costs and increase ridership, the City of San Marcos and San Marcos Transit could consider eliminating the fare entirely, similar to what Corvallis did in 2011. There are a number of university communities around the country that have fare-free systems, including Amherst, Massachusetts; Boone and Chapel Hill, North Carolina; Bozeman, Montana; Clemson, South Carolina; Logan, Utah; and Macomb, Illinois. Benefits of fare-free systems include increased ridership, performance-based formula funding, the elimination of fare collection costs, and increased customer and operator satisfaction.

18 ADA COMPLEMENTARY PARATRANSIT PLAN

This chapter reviews the draft *San Marcos Transit ADA Paratransit Plan* and offers feedback on possible changes to the plan. Federal regulations require transit providers to prepare an ADA Complementary Paratransit Plan to indicate how they comply with the requirements of American with Disability Act (ADA)[3]. Chapter 19 highlights the required elements of an ADA Plan. A key aspect of an ADA Plan is to show the paratransit service's performance to a set of six equivalent (to fixed-route) service criteria and a description of the agency's eligibility process. San Marcos Transit is preparing the *San Marcos Transit ADA Paratransit Plan* to meet these requirements and to document the operation of ADA paratransit service within its service area.

In general, the *San Marcos Transit ADA Paratransit Plan* contains the required element of an ADA complementary paratransit plan. In addition it contains information that goes above and beyond the requirements. The draft plan provides language that is aimed at final customers and may be better suited for a Rider's Guide. It also specifies operational aspects that should be documented in separate policies and procedures documents intended for internal use by CARTS staff. The following sections review the draft plan in detail, offering suggestions on edits to the document and/or migration of content to other documents.

Draft Plan Sections

Background Section

Public Participation Process

Public participation is a key element of an ADA plan and probably should be elevated to its own section. The plan outline provided in Chapter 19 suggests public involvement as the sixth main section of the plan. If San Marcos envisions a citizens or stakeholder advisory committee for the paratransit system, its role should be discussed in this section.

This subsection of the draft plan refers to the CARTS Board of Directors approval. It should be noted that the final plan should include "certification" or evidence that Board accepted the document and annual certifications that the current version is still applicable if the service characteristics do not change. These could be in the form of Board minutes or other affidavit and contained in an appendix to the plan.

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[3] Title 49, Section 37 of the Code of Federal Regulations defines the rules governing the provision of complementary ADA paratransit service, including guidance on ADA plans.

Description of Fixed Route System

This subsection goes beyond a background discussion of the plan and San Marcos Transit. The content here should be part of the main plan, laying the groundwork for what "equivalent" service the ADA paratransit system needs to provide. It is common to include a map of the fixed routes so that the extent of the service area is illustrated. The current fare structure should be included here as a point of reference when comparing to the paratransit system. Information on the fixed-route fleet, especially with respect to accessibility should be included here. The subsection should be moved to become the next major section after the Background section.

San Marcos Transit ADA Complementary Paratransit Service Plan Section

This section provides a good description of the paratransit system and should probably be titled as such as the third major section after the fixed-route system description. The paratransit system description should focus on, and be organized along, the six service criteria:

- Service Area
- Service Hours
- Response Time (Trip Reservations)
- Fares
- Trip Purpose Restrictions
- Capacity Constraints

In addition, this section should provide information on the eligibility process regulations (see below for additional comments on the eligibility requirements) and can provide further information on policies and procedures related to the ADA. These may include the handling of Personal Care Attendants (PCAs), No Shows, etc.

Service Area

Acknowledging that the draft plan has this section highlighted as needing an update, the service area section should be as clear as possible regarding where ADA paratransit service is available. Even if the City Limits is chosen for the boundary a map should be considered for this section to clarify any confusion.

Eligibility Requirements

Again acknowledging that the draft plan has this section highlighted as needing an update, this section should be moved to after the discussion of the six service criteria. The actual eligibility process will be extensive and full of details. The section should acknowledge the presence of the eligibility process and link to it. The process may be better off as a standalone policy document that can be updated without having to update the ADA plan. The eligibility process can be referenced in the ADA plan or attached as an exhibit/appendix. This section of the ADA plan should declare that the eligibility policy meets the primary requirement set forth in the ADA regulations:

- Availability of application materials in accessible format
- Description of determination process, including method of notifying individuals about determinations
- System and timetable for processing applications and allowing presumptive eligibility

- Documentation that will be provided to persons determined ADA paratransit eligible
- Description of the administrative appeals process
- A policy for visitors

This review document summarizes considerations for the San Marcos eligibility process at the conclusion of the ADA plan review.

Reservations

This section constitutes the Response Time" section defined in the original FTA guidance. There is confusion regarding the handling of reservations over the weekend. The regulations[4] require transit providers to accept reservations during normal business hours, even if they are closed. This implies that voice mail technologies should be utilized to accept Monday trip requests over the weekend, and confirm the rider's request first thing Monday. The 14-day window can be used to promote longer lead time-reservations and assist San Marcos Transit in better optimizing its scheduling process, the day-before trip requests cannot be declined on a regular basis.

Unless documented in another policy documents, this section may also be used to stipulate San Marcos Transit's policy on trip reservation windows. At a minimum, the Plan should attest to meeting the one-hour window around the client's requested trip time. This is currently discussed in the Capacity Constraint section.

Subscription Service Policy

The 50% limit was originally put in place to make sure providers were not guaranteeing subscription trips while denying other trip requests. As providers are currently held to a no-pattern-of-denials requirement, they are allowed to take as many subscription trips as appropriate. The information in this section (other than the 50% limit discussions) should be moved to the end of this Paratransit Service description section as simply additional program information.

Fares

This section should include the current paratransit system fare structure.

Capacity Constraints

How San Marcos Transit defines a denial should be define here and/or in a separate policy document. The FTA has called out a number of agencies for improperly tracking trip denials. A common problem arises when trips are offered to a customer that is outside the window around his/her requested time, but still accepted by the client. These cases are still considered a denial by the FTA, even though a trip was executed. See Chapter 20 for further guidance on defining capacity constraints.

Types of Paratransit Service that the CARTS District Offer

This section is not essential to the ADA Plan and should be discussed in reference to a trip-by-trip eligibility process assuming San Marcos Transit utilizes one. The application of feeder service (whether to a CARTS fixed route or any other provider) will entail the evaluation of which

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[4] Code of Federal Regulations Title 49 – Transportation; Section 37.131

customers should be asked to participate and when and is probably not part of San Marcos' short-term operational model.

Pick Up Time

This section is better suited for a rider's guide and/or internal procedure's document. Some of the clarifying language here may be appropriate in the No Show section which alludes to the pick-up window. Care should be taken to avoid confusion between the pickup window, and the ADA mandated trip reservation window.

Return Trips after Appointment.

This section is better suited for a rider's guide and/or internal procedure's document.

Attendant and Companion Policies

This section is appropriate as written. Chapter 20 contains additional policy considerations for PCAs and guests.

Origin-to-Destination Assistance Policy

Origin-to-Destination service is not fully understood, and often misrepresented in the industry. Essentially, door-to-door service (at both ends) has to be offered when a customer's disability merits it. Some providers have misinterpreted this requirement offering door-to-door service as the norm, while others have fallen short of the requirement by claim they only provide curb service.

Shopping Trips

This section is better suited for a rider's guide and/or internal procedure's document.

Trip Cancellation Policy for a Scheduled Trip

This section is better suited for a rider's guide and/or internal procedure's document. San Marcos Transit may want to consider the tracking of late cancellations as part of a performance monitoring program (see discussion on paratransit performance monitoring later in this memorandum). Late cancellations are typically those made the day of the trip, but ahead of the no-show cut-off. These prevent a provider from optimizing their scheduling activities and should be discouraged, but not necessarily penalized.

No Show Definition and Policy

The details in this section are better suited for a rider's guide and/or internal procedure's document. The ADA Plan may simply want to acknowledge existence of a no show policy summarizing the progression of actions toward repeat offenders and the rights customers have in the appeals process. Any No Show language in a rider's guide should include details on, or links to, the appeals process. Chapter 20 provides additional guidance on developing No Show policies.

Dial-a-Ride Customer Guidelines

This section should be considered for a separate stand alone rider's guide to be made available in print or via the web. Chapter 20 provides guidance on the development of a riders or users guide.

Suggested Additions to Plan

The following sections should be considered when updating the plan. Each focuses on a required element of an ADA Complementary Paratransit Plan.

Comparison of Paratransit Service with Required Service Elements

This section should highlight how San Marcos Transit provides equivalent service per the six criteria. It should draw on the fixed-route and paratransit service attributes discussed in the earlier sections. The comparison can be simply presented in a table similar to Figure 76.

Figure 77   Sample Equivalent Service Comparison Matrix

Service Criteria	Consistent with Regulation (Yes/No)	Comments
Service Area	Yes	ADA Paratransit service is available within ¾ mile of all fixed routes
Response Time	Yes	Trips request are accepted until 5 p.m. the day before ride request and 14 days prior to ride request
Fares	Yes	The ADA Paratransit Fare is 2 times that of the fixed route
Trip Purpose	Yes	The reservation process does not solicit trip purpose information and there are no restrictions
Hours and Days of Service	Yes	Days and Hours for Paratransit Service are the same as fixed route,
Capacity Restraints	Yes	San Marcos Transit certifies that there are no capacity restraints resulting in a pattern of denials.

Coordination with Other Services

This section could discuss any coordination with CARTS or other connecting services, describing how ADA eligible riders can travel to/from the City of San Marcos.

Public Participation

As discussed earlier, the overall public participation process should be presented as a primary section of the plan.

Implementation Plan

This section could be used to highlight the reorganizing of the historical, regional demand response service to a formal ADA paratransit service for the San Marcos urbanized area. This section should provide a timeline with any phased-in implementation steps as applicable.

Supporting Policies

At a minimum, the eligibility process should be fully documented as a plan subsection or an appendix to the plan. In addition any policies that impact customer rights, or access, to service should be described or referenced in the plan. This may include any denial of service policies, reservation procedures etc.

19 ADA PARATRANSIT ELIGIBILITY PROCESS

This chapter reviews the draft ADA paratransit eligibility process proposed for implementation with the newly defined ADA paratransit service. The draft San Marcos Transit Dial-a-Ride eligibility application packet provides a high-level summary of the envisioned process for prospective customers. It also provides information on how to obtain the material in an accessible format if needed – one the required elements for an eligibility process. As discussed, a comprehensive description of the eligibility process should probably be codified as a formal San Marcos Transit policy describing these elements along with the identified appeals process, any fallbacks to presumptive eligibility when the defined timeline cannot be met, and visitor procedures etc. The customer information, either in the application packet or as a separate document should detail these aspects as well.

San Marcos Transit should review eligibility-related goals with its advisory committee and consider any District staffing and/or budgetary limitations before finalizing the eligibility process. Given the need to roll out a system in the near future, along with the stated objective for a manageable approach, a phased-in eligibility process probably makes sense. This will allow the District to implement a fully functional process without having to address too many new or complicated procedures in the first year. The nature of future changes to the process should be defined and explained to users where possible. It will be important to control customer expectations about the eligibility process and let them know that there may be changes to the process including:

- The nature of functional assessments – possibly from simple interviews to formal observations of user abilities
- The use of conditional eligibility to dictate trip-by-trip eligibility for paratransit and/or the use of feeder service
- A need to participate in fixed-route travel training programs before being certified for paratransit service

The eligibility policy should dictate how often customers need to be re-certified. If San Marcos Transit employs a phased-in approach, the initial re-certification periods should be shorted, possibly one or two years instead of the typical three years to mitigate customer reactions to change.

Draft Dial-a-Ride Eligibility Application Review

The following comments on the proposed draft San Marcos Transit Dial-a-Ride eligibility application packet are offered at this time, ahead of any resolution on the overall process. The packet appears to cover the typical elements used in the industry and represents a good starting point.

- The Current Transportation section contains the essential self declaration of potential functional limitations and could be titled as such.
- The questions about routes and stops near their home may be too specific in the name of determining general functional limitations. These may be better off saved for a future process that involves trip-by-trip eligibility. Instead ask about the applicant's ability to access or use any fixed-route bus or stop.
- This section may want to include questions about additional functional limitations including: walking a specific distance, vision, comprehension of bus schedules, etc.
- The distinction between temporary vs. permanent limitations should be ascertained. "Sometimes" is offered as an answer when asking about accessing and boarding their local bus. This should be extended to asking details about any temporary limitation (duration, conditions etc).
- Similarly, the need for a PCA should be a specific question. The "by yourself" qualifier in the current question may be confusing with respect to the level of assistance required.
- In the name of limitations, and providing information for the user database, the application may want to ask if the applicant can be left alone after drop off.
- Is travel training currently offered? If not, this question may need to be phased in.
- The Assistive Devices Used section may want to ask about the specs (especially weight) for their mobility device
- Are there any specific medical release requirements needed under the Applicant Agreement section?
- The Verification of Eligibility documents appears long but isn't necessarily so given the diverse set of limitation categories. That said, some professionals may find it burdensome and feedback from current users of the form, or a review by local practitioners may be beneficial. The use of a phased-in process will allow modification to the form.
- The information about the functional assessment in the "What Will Happen at the Eligibility Review" section may need to be phased in if the initial process is simplified.

Recommendation and Additional Resources

Rolling out the formal ADA paratransit program in January 2015 may minimize the need to phase in features of the eligibility process. San Marcos Transit should define the objectives for the process this spring or summer and strive to implement as many facets as possible without having to rely on changes in the coming years. Some form of functional assessment should be included in the program to better address rider capabilities and to manage the demand for paratransit services. These assessments may be conducted by staff or outside agencies based on personnel and budget capacities. The Easter Seals Project Action provides some resources that may assist San Marcos Transit in defining and implementing as assessment program[5]

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[5] Distance Learning Webinar June 2011: *Determining ADA Paratransit Eligibility: An Approach, Guidance and Training Materials*

20 ADA PARATRANSIT PERFORMANCE METRICS

This chapter suggests a framework for establishing paratransit performance measures and standards. ADA paratransit performance standards are typically developed in response to the need to show progress to agency goals or to document compliance with regulatory requirements. The following performance measures are used in the industry to assess system productivity and ADA compliance. Although there is general agreement on what to measure, there are few industry-accepted standards or target values. The noted indicators are among common performance measures used for demand response transportation.[6] These performance measures rely on key performance data, and often expressed as a ratio that normalize costs or benefits per unit of service delivered, for example cost per revenue hour or cost per passenger trip.

Most of these measures will require data on passengers certified as ADA eligible for complementary paratransit service.

The following measures are suggested for inclusion in the San Marcos Transit performance monitoring activities. San Marcos Transit should develop applicable standards (for acceptable performance) based on the industry norms along with local performance trends and agency goals once the ADA paratransit program performance is isolated from the larger dial-a-ride system.

Operating Cost / Revenue Hour

Most agencies track ADA paratransit operating costs for the system but do not typically make short-term adjustments based on the findings. This measure highlights an agency's cost effectiveness, normalizing operating costs (primarily labor and fuel) to the number of hours the service is provided and is useful when planning budgets or service changes. It is also useful for comparing operations between agencies when evaluating system operations. The measure is defined as annual operating costs divided by annual vehicle service hours.

Measure	Example Industry Standards/Norms
Operating Cost / Revenue Hour	Varies based on local labor, insurance, fuel etc. costs.

Operating Cost / Trip

This measure of effectiveness is defined as annual operating costs divided by the number of trips provided. For ADA paratransit services, it is common to include rider companions and attendants

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[6] Transit Cooperative Research Program (TCRP) Report 124, *Guidebook for Measuring, Assessing, and Improving Performance of Demand-Response Transportation*, (Washington DC: Transportation Research Board, 2008).

in the number of trips (i.e. total boardings). This measure allocates operating costs on a per passenger basis which is often useful when analyzing growth trends or when comparing modes and should be reviewed on an annual basis when setting budgets and reviewing service delivery options.

Measure	Example Industry Standards/Norms
Operating Cost / Trip	Varies based on local labor, insurance, fuel etc. costs.

Trips / Revenue Hour

The measure of effectiveness is defined as annual boardings (again including attendants and companions) divided by annual vehicle service hours. This productivity measure is a key performance indicator highlighting the number of passengers carried for a unit of service delivered. For demand-response services, it reflects the level of shared rides and amount of slack time in a route. Many agencies with contracted providers, especially those paying for actual service hours delivered, monitor productivity on a regular basis to assure an effective use of agency resources and to address any inefficiencies in short order. In these cases, agencies frequently build penalties and incentives into contract language to reward productivity improvements.

Measure	Example Industry Standards/Norms
Trips / Revenue Hour	Between 1.8 and 3.8for small urban systems[7]

On-Time Performance

This system reliability measure is defined as the percent of all trips where the passenger is picked up within the allotted appointment time window. This key measure gauges customer satisfaction levels as well as pointing to possible system capacity constraints or scheduling limitations. San Marcos Transit should track on-time performance given the possible impacts on customer service and ADA compliance.

Measure	Example Industry Standards/Norms
Percent of Trips On-Time	Between 92% and 96% for small urban systems[8]

No-Show/Late Cancellation Rate

This measure is defined as the percent of scheduled trips where the passenger is a no-show or failed to provide adequate notice that they cannot complete their trip. It shows how much unproductive vehicle and driver time is expended making unnecessary trips and not being available to transport other passengers.

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[7] TCRP Report 124, 53

[8] TCRP Report 124, 55

Measure	Example Industry Standards/Norms
No-Show/Late Cancellation Rate	No Show/Late Cancellation rates greater than 5% are often a point of concern

Advance Cancellation Rate

This measure is defined as the percent of scheduled trips that were cancelled more than two hours prior to the scheduled pick up time (and therefore not considered a no-show). This measure shows the degree to which the scheduling system has to respond to day-of-ride customer changes, also negatively impacting an agency's ability to efficiently schedule vehicle utilization.

Measure	Example Industry Standards/Norms
Advance Cancellation Rate	Typically seen as informal goals ranging from 5 to 10% with the lower values associated with agencies limiting the advanced reservation window to less than the allowable 14 days.

Trip Denials

Measure	Example Industry Standards/Norms
Trip Denials	Any pattern of denied service is not allowed per the ADA

Trip denials are tracked to show that an agency has the capacity to provide requested rides. Ongoing data on denials is required to show that the agency does not have a continued patter of denying trip requests. Denials should include any trip that could not be completed per the customer's original request, even if he/she agrees to a negotiated time outside of their original request window. It is important track all conditions that can be considered of capacity constraints are properly considered as denials including missed trips and excessively long trips.

Missed-Trip Rate

This measure is defined as the percent of scheduled trips that were not completed within the scheduled time because the agency vehicle failed to arrive within a scheduled pickup time window. It is a key indicator of system capacity, on-time performance, and customer satisfaction. The Draft San Marcos Transit ADA Paratransit Plan defines the pickup window. In reality customers will likely wait beyond the prescribed window for their ride. *Untimely Pickups* as cases where the vehicle arrived outside of the pick-up window, but the customer waited and completed the trip. For reporting purposes, these completed, but delayed trips should be counted as missed trips or San Marcos Transit should make sure that they are reported in addition to missed trips as the combination of the two could show a pattern of capacity constraints.

Measure	Example Industry Standards/Norms
Missed-Trip Rate	No industry standard; FTA suggests that agencies develop one

In-Vehicle Passenger Travel Time

This measure is defined the amount of time a passenger has to ride in the vehicle to complete his/her trip but is not typically monitored in the industry. The sampling of individual trips is often used to make sure a customer does not spend an excessive amount of time in a vehicle (especially compared to the equivalent trip time for a fixed-route trip).

Measure	Example Industry Standards/Norms
In-Vehicle Passenger Travel Time	Comparable to fixed route travel plus time to and from bus stops. Typically a single system-wide standard expressed in minutes is not appropriate but should be trip specific and standard should reflect methodology for comparing paratransit trip time to fixed-route equivalent time.

Reservation Call Hold Time

This measure is defined as the percent of calls answered with a maximum allowable hold time when waiting for a reservationist. It provides a reflection of the call center's capacity to handle calls and of customer satisfaction. Other associated measures such as the time to answer a call or the time before abandonment also provide indicators of the capacity of a call center.

Measure	Example Industry Standards/Norms
Reservation Call Hold Time	Industry standards suggest that 91% of calls should be answered within 3 minutes[9]

Additional Measures

A fully implemented performance monitoring program should include additional measures that evaluate operations from a non-service design perspective. These include:

- **Safety**. Preventable accidents per 100,000 revenue miles
- **Maintenance**. Road calls per 100,000 revenue miles, percent of fleet available for pull-outs, or mean time between vehicle failures
- **Customer Complaints**. Complaints per 100,000 boardings

Performance standards for these measures should be set based upon San Marcos Transit current performance and the District's expectations for appropriate safety, equipment reliability, and customer satisfaction levels.

[9] APTA Accessibility Paratransit Call Center Working Group, *Recommended Practice for Reservation Hold Times for ADA Complementary Paratransit Call Centers* (Washington DC: American Public Transportation Association, 2009)